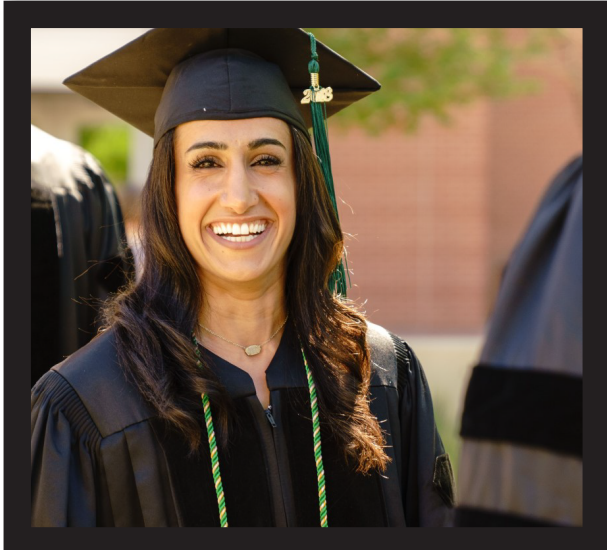
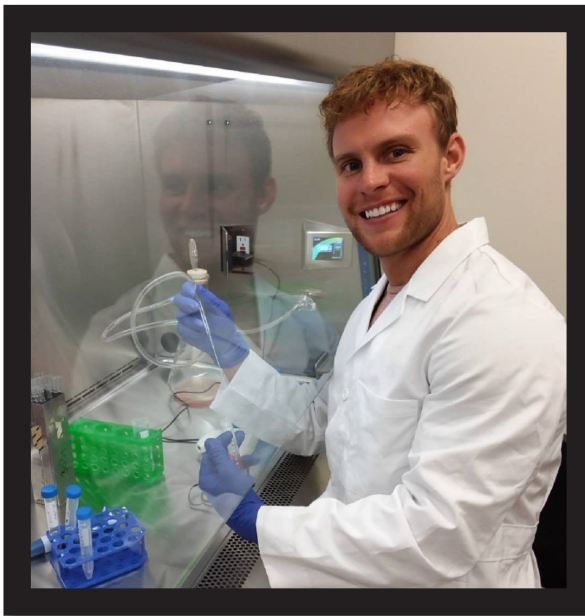


2018 FACTS AND FIGURES UNIVERSITY OF COLORADO SCHOOL OF MEDICINE

1883-2018
CELEBRATING 135 YEARS





**Dean's
Message**

The University of Colorado School of Medicine grew stronger in 2018 – a testament to the commitment of our faculty, staff, benefactors, and partners to improve the health of all in our community.

Our Anschutz Medical Campus received the largest gift in its history – \$120 million from The Anschutz Foundation and Philip Anschutz. Clinical revenues for our faculty practice and outpatient visits to our hospital partners on campus continued robust growth. An increasing number of our students come from backgrounds traditionally underrepresented in health care professions.

Construction of a new building that will house operations related to personalized medicine, mental and behavioral health, and clinical research will begin in 2019. Our education team is implementing updates to the medical school curriculum to offer enhanced integration of health science and clinical practice and an enriched pathway to rewarding, fulfilling careers.

Our campus, led by the School of Medicine, collected more than \$516 million in research funding for the fiscal year ending June 30, 2018. Researchers at the School of Medicine accounted for \$426.1 million of that funding. With that support, our scientists have made breakthrough discoveries and identified health-systems efficiencies that will improve care for all.

We have recruited extraordinary talent to our campus. Among them are C. Neill Epperson, MD, who joined the School as chair of the Department of Psychiatry, from the University of Pennsylvania Perelman School of Medicine, and Terry Fry, MD, who was named co-director of the Human Immunology and Immunotherapy Initiative and director of cancer immunotherapy, from the National Cancer Institute.

We also have retained key members of our faculty, including Evalina Burger, MD, who was named chair of the Department of Orthopedics. We also named Richard D. Schulick, MD, MBA, chair of surgery, as director of the University of Colorado Cancer Center.

While these are significant and tangible measures of success, the best reminders of how our work makes a difference is measured in the lives of the people who depend on us.

Consider Karen Possehl. Karen was diagnosed in 2016 with stage 4 pancreatic cancer at another medical center. She was told by her doctor that she wasn't a candidate for surgery, radiation, or chemotherapy and that the best treatment he could offer might extend her life by up to 11 months.

She came to the Anschutz Medical Campus for a second opinion. Her case was reviewed by a multidisciplinary team that included Cancer Center Director Richard Schulick. A treatment plan that would prolong her life was developed and her care was delivered by our faculty and the team of professionals at UCHHealth University of Colorado Hospital.

Two years after her initial diagnosis, Karen was without evidence of disease.

The work of Lilia Cervantes, MD, associate professor of medicine, offers another example of how what we do can improve the lives of others. A hospitalist at Denver Health, Lily has focused her research on the consequences of emergency-only dialysis care for undocumented immigrants with end-stage kidney failure.

In Colorado, as in some other states, undocumented immigrants were excluded from a Medicare benefit that would cover scheduled dialysis for patients with end-stage renal disease. As a result, patients were forced to wait until they needed emergency care. Patients often suffered and in some cases died. Providers struggled too because they weren't able to provide an appropriate level of care. Lily also found that the financial costs to the health care system were higher.

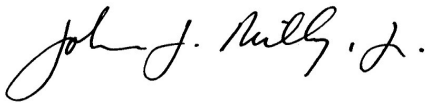
After years of research and published articles, Lily's work helped bring a change. Last fall, Colorado officials announced that they will allow undocumented immigrants with end-stage renal disease to get the care they need on a regular basis rather than waiting until they face an imminent threat to their lives. Lily's research on this issue played a vital role raising awareness on this critical issue.

Elizabeth Pomfret, MD, PhD, professor of surgery, this year performed the first liver transplant at UHealth University of Colorado Hospital involving an altruistic living donor. Pomfret's work saves lives. It also changes them.

For example, Hillary Yaffe, MD, was a living donor in 2008, providing a portion of her liver for transplant in her father, who suffered a chronic condition that would cut short his life. The physicians overseeing their care were Pomfret and her husband, James Pomposelli, MD, PhD, who were at that time at a medical center in Massachusetts.

Today, Hillary is training to be a transplant surgeon here with Liz and Jim, two of the most experienced living donor transplant surgeons in the United States. Hillary joined the Division of Transplant Surgery as a fellow in August.

With its laboratories and clinics, the Anschutz Medical Campus is a model academic medical center that is the envy of many of our peers. What really distinguishes us, though, is more than buildings and equipment. It's a passionate commitment by our clinicians, educators, and scientists to provide first-class care for our patients, excellent education for our students and trainees, and to support one another in the common cause of improving human health.



John J. Reilly, Jr., MD
Richard Krugman Endowed Chair
Dean, University of Colorado School of Medicine
Vice Chancellor for Health Affairs

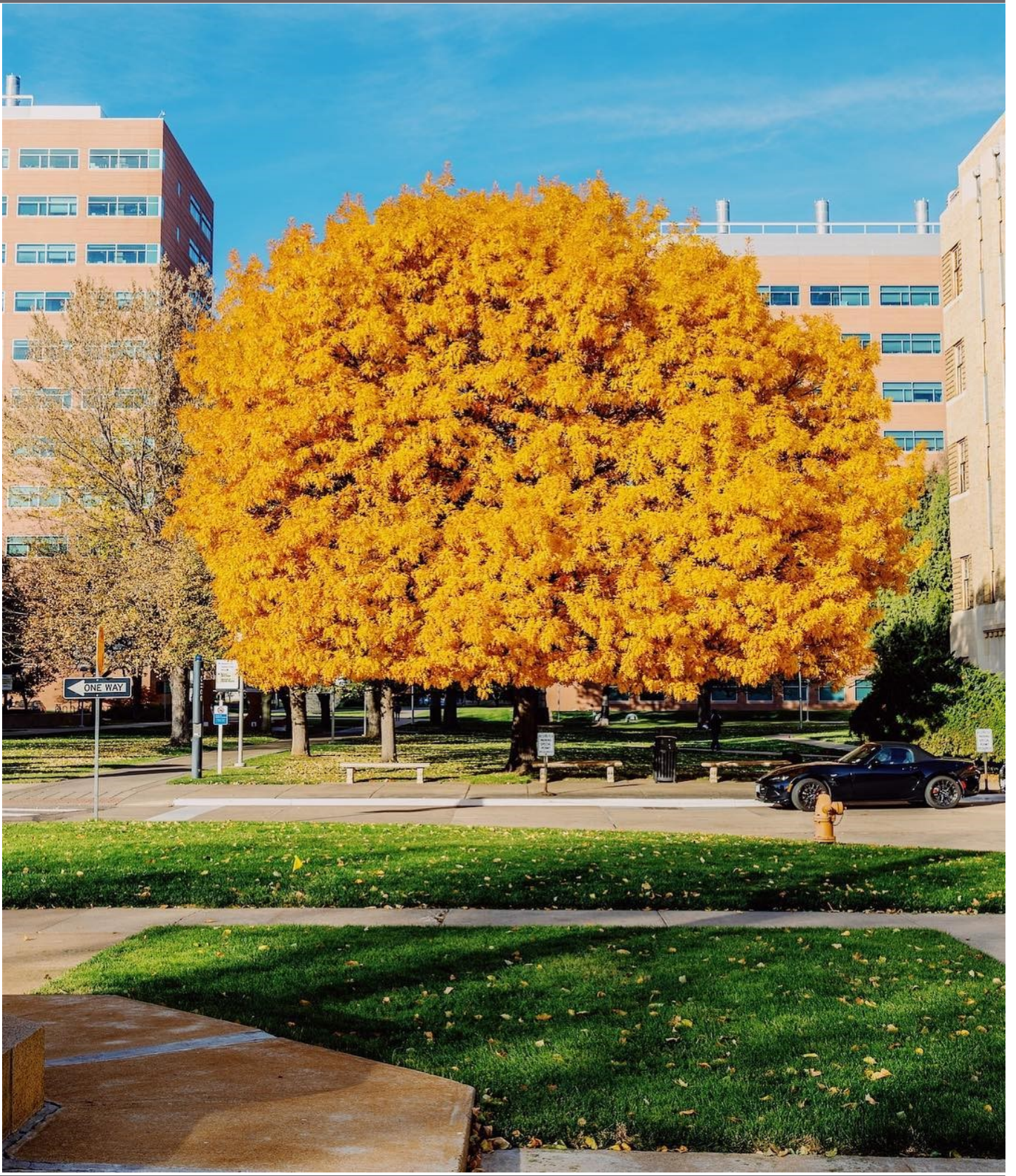


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*To see Faculty Awards and Accomplishments,
go to medschool.ucdenver.edu/factsfigures*

Mission Statement

Approved by the Executive Committee and Faculty Senate in January 1993

The mission of the University of Colorado School of Medicine is to provide Colorado, the nation and the world with programs of excellence in:

- ◆ **Education** - through the provision of educational programs to medical students, allied health students, graduate students and housestaff, practicing health professionals and the public at large;
- ◆ **Research** - through the development of new knowledge in the basic and clinical sciences, as well as in health policy and health care education;
- ◆ **Patient Care** - through state-of-the-art clinical programs which reflect the unique educational environment of the University, as well as the needs of the patients it serves; and,
- ◆ **Community Service** - through sharing the School's expertise and knowledge to enhance the broader community, including our affiliated institutions, other healthcare professionals, alumni and other colleagues, and citizens of the state.

Vision Statement

Approved by the Executive Committee (October 2008) and Faculty Senate (November 2008)

The University of Colorado School of Medicine will accelerate its growth at the new Anschutz Medical Campus from its status as the premier medical school in Colorado and the western region to its place in the top ten percent of American medical schools by the year 2020.

Values Statement

Approved by the Executive Committee (October 2008) and Faculty Senate (November 2008)

The University of Colorado School of Medicine works actively to:

- ◆ Advance science through research on the biological mechanisms that underlie illness.
- ◆ Improve both the medical care and science of the uniquely human components of health and disease.
- ◆ Provide specialized and personalized medical care in an efficient environment.
- ◆ Support positive wellness and clinical prevention programs that promote health across the lifespan and lower early mortality.
- ◆ Transmit a high level of primary and specialty clinical expertise to the coming generations of health professionals.
- ◆ Provide a welcoming, challenging, and diverse atmosphere of growth for those who answer the call to careers in health science and service.
- ◆ Develop a diverse funding portfolio that provides the means to develop, attract, and retain nationally competitive research faculty members.
- ◆ Advance competitive medical research productivity through increased external support for innovative research ideas.
- ◆ Enhance the cooperative relationships with affiliate hospitals toward common goals in education, research, and clinical care.
- ◆ Develop a common infrastructure with the affiliate institutions on the new Anschutz Medical Campus to improve the efficient use of joint resources.
- ◆ Expand scholarly collaborations across disciplines within the School of Medicine that stimulate research innovation and increase competitive research funding.
- ◆ Support productive faculty and institutional collaborations with its sister Schools within the University of Colorado Denver to maximize bioscience research potential.
- ◆ Expand productive working relationships with local communities outside the University but within the state and region, whether for clinical, teaching, or research efforts.
- ◆ Pursue entrepreneurial development both in education and in research through collaborations with the private business communities in Colorado and the western region.
- ◆ Further improve working relationships with State and federal government entities to provide direct investment and support for research and education.
- ◆ Build collaborative relationships with medical schools and universities around the globe to enhance mutual growth in medical expertise, scholarship and stature.

Diversity Values Statement

Approved by the Executive Committee (October 2008) and Faculty Senate (November 2008)

The University of Colorado School of Medicine believes that diversity is a value that is central to its educational, research, service and health care missions. Therefore, the SOM is committed to recruiting and supporting a diverse student body, faculty and administrative staff. The SOM adopts a definition of diversity that embraces race, ethnicity, gender, religion, socioeconomic status, sexual orientation and disability. The definition of diversity also includes life experiences, record of service and employment and other talents and personal attributes that can enhance the scholarly and learning environment.

The SOM shall strive to admit qualified students and appoint qualified residents, fellows, faculty, staff and administrators who represent diversity.

The SOM also shall develop programs that are designed to: Promote the academic advancement and success of minority students, house officers and faculty; enhance cultural and diversity instruction throughout the curriculum; break down racial and ethnic stereotypes and promote cross-cultural understanding; and promote unexplored research agendas and new areas of scholarship.

The SOM's diversity programs also seek to enhance diversity and cultural competency in the health care workforce, improve access to health care for poor, minority and underserved populations and, ultimately, eliminate racial, ethnic and socioeconomic disparities in health and health services.

The SOM will work with all departments and programs within the SOM, and with other University of Colorado campuses and their leaders, to achieve the goals outlined above and to promote a culture of inclusiveness, respect, communication and understanding.

The SOM will support the goals of the University's Vision 2020, which seek to develop a University culture in which diversity and academic excellence are seen as interdependent.



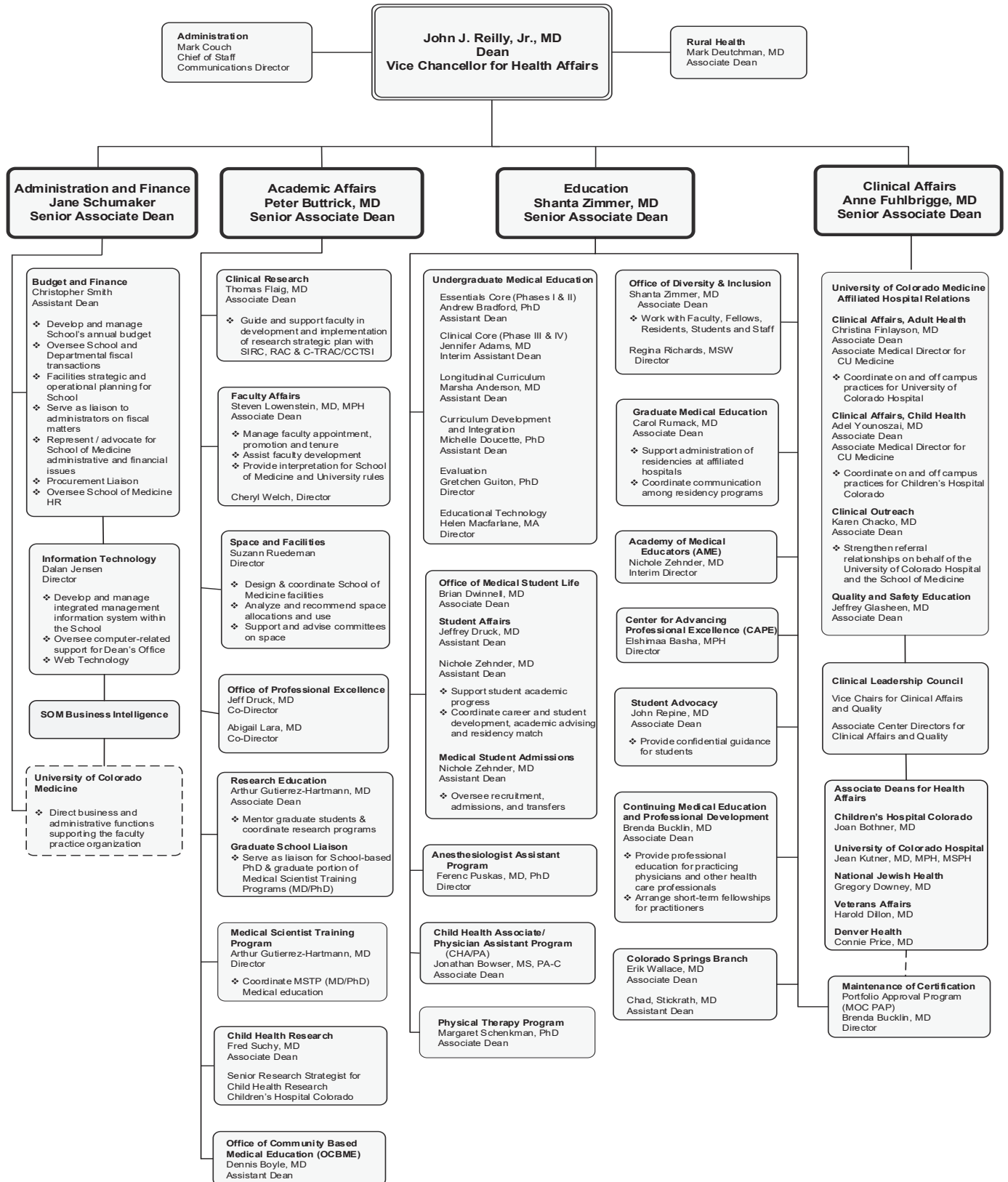
How we are organized



School of Medicine

UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

ADMINISTRATION ORGANIZATIONAL CHART

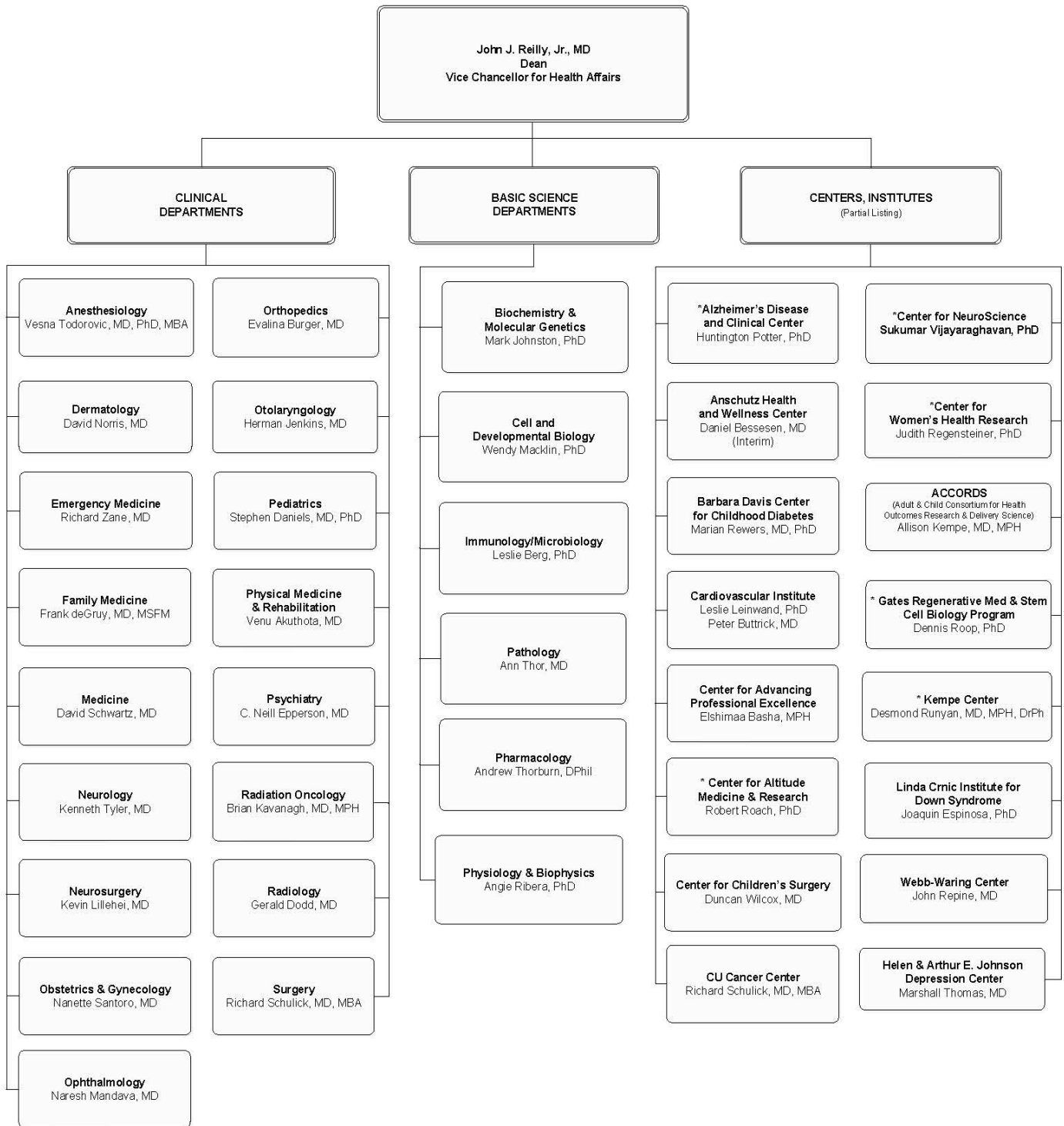




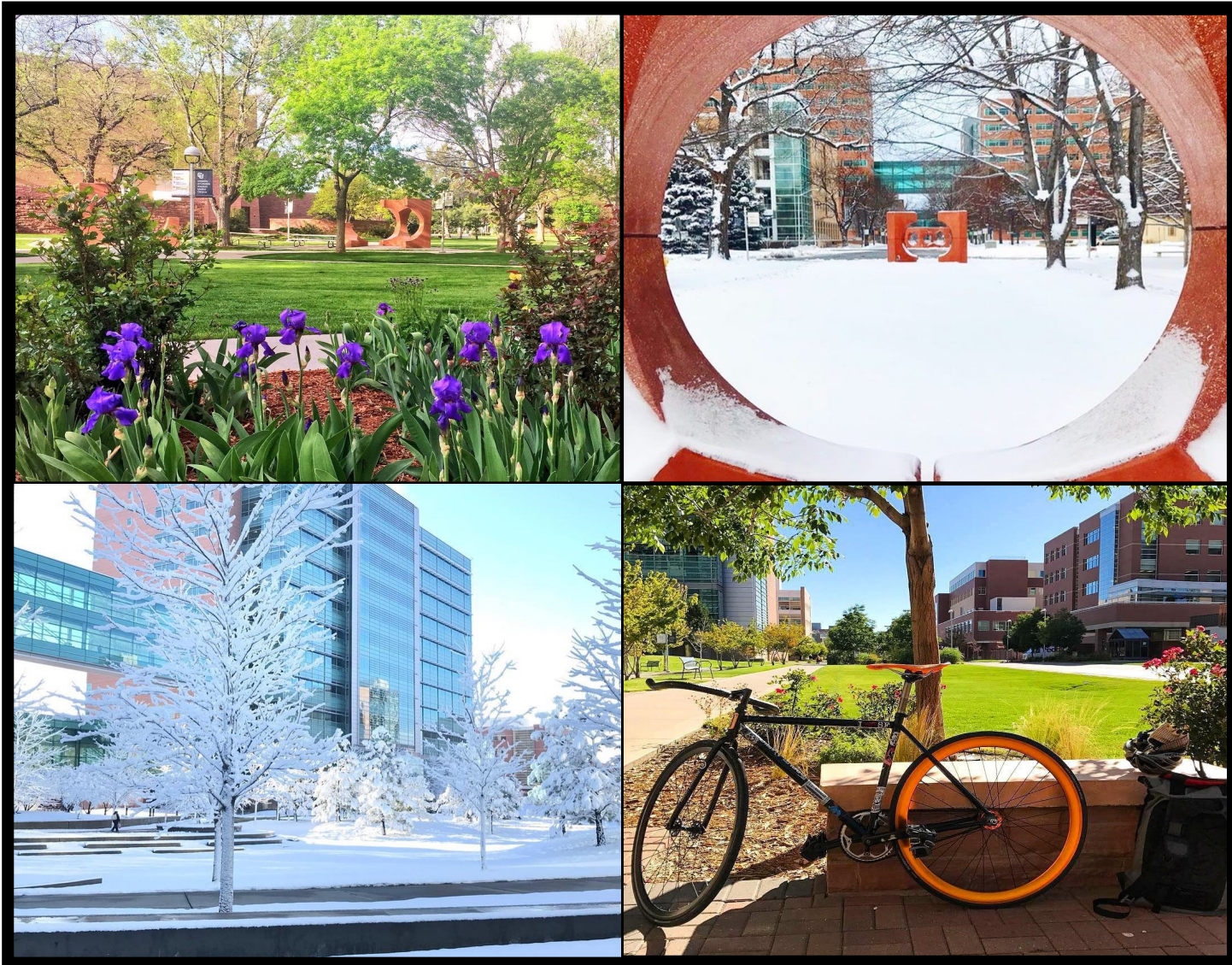
School of Medicine

UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

BASIC SCIENCE AND CLINICAL DEPARTMENT CHAIRS
CENTER AND INSTITUTE DIRECTORS



* Center housed in home department

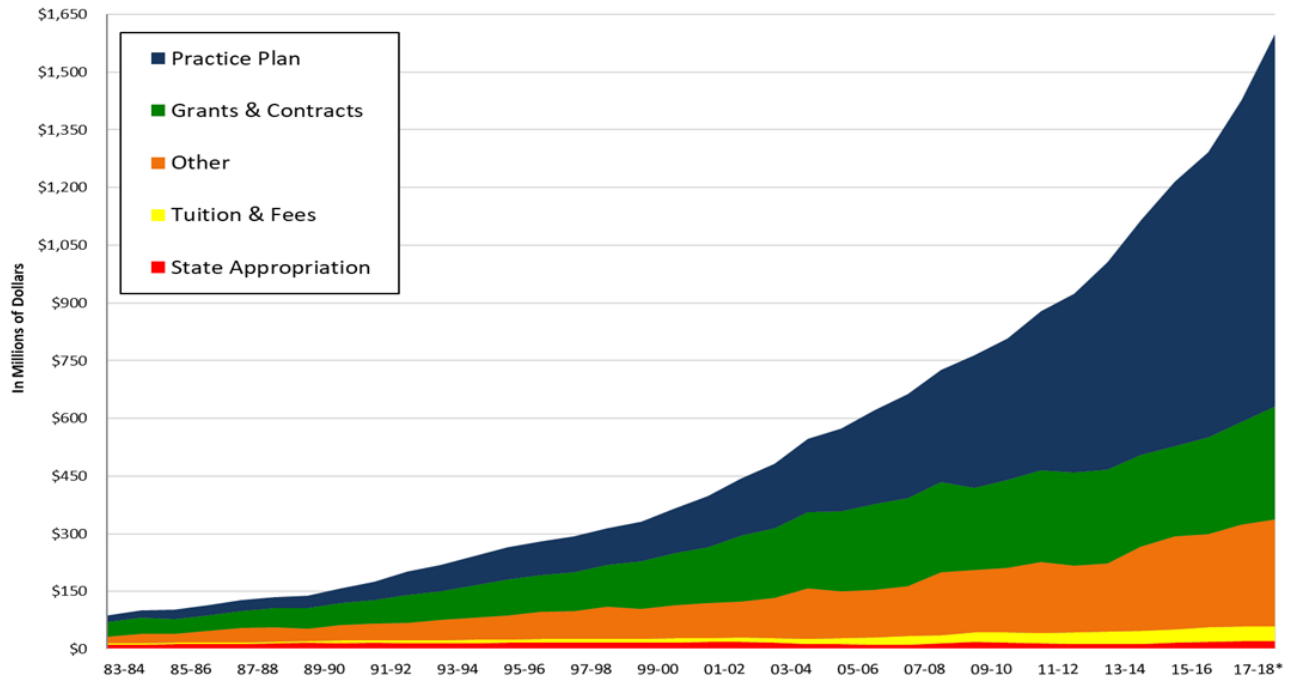


Top left: Photo courtesy of @cudenvergs; top right courtesy of @shesthemanning ; bottom left courtesy of @HabershamStreet; bottom right courtesy of @lee_rumy (all posted on @cuanschut Instagram)



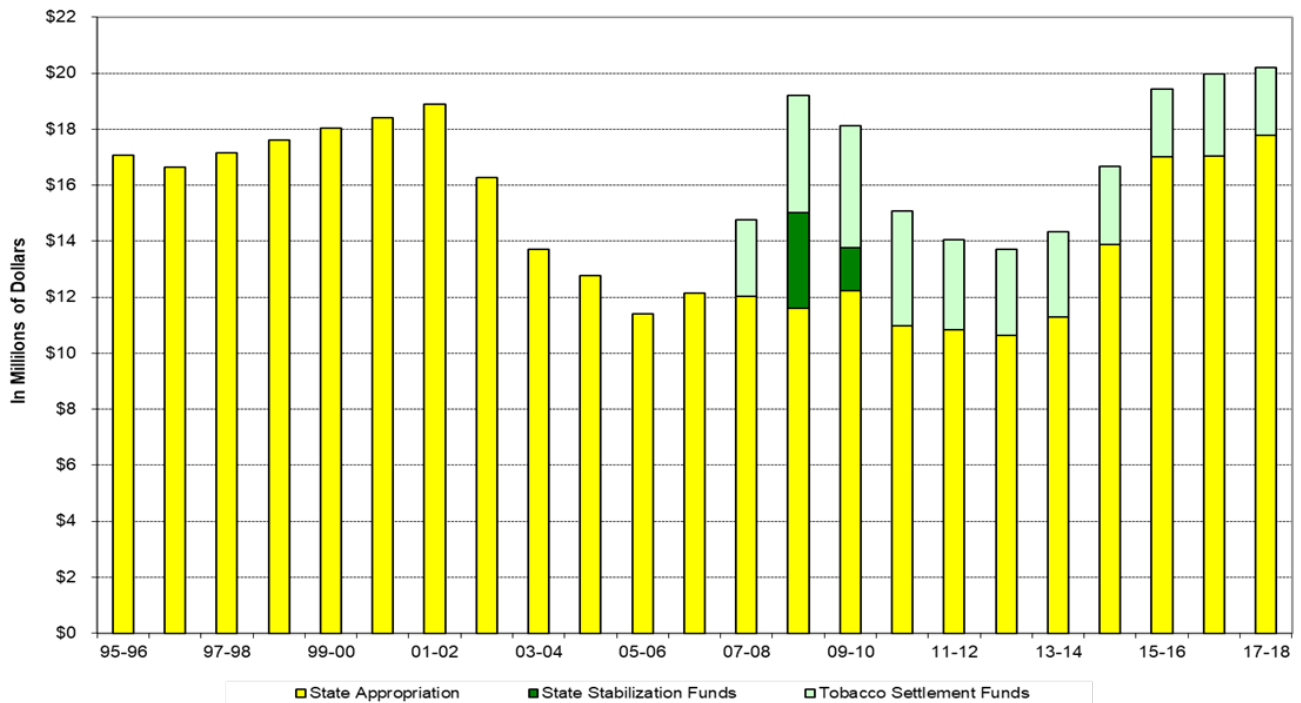
Administration and Business Affairs

CU School of Medicine Trend in Revenue Source Fiscal Years 1984 - 2018

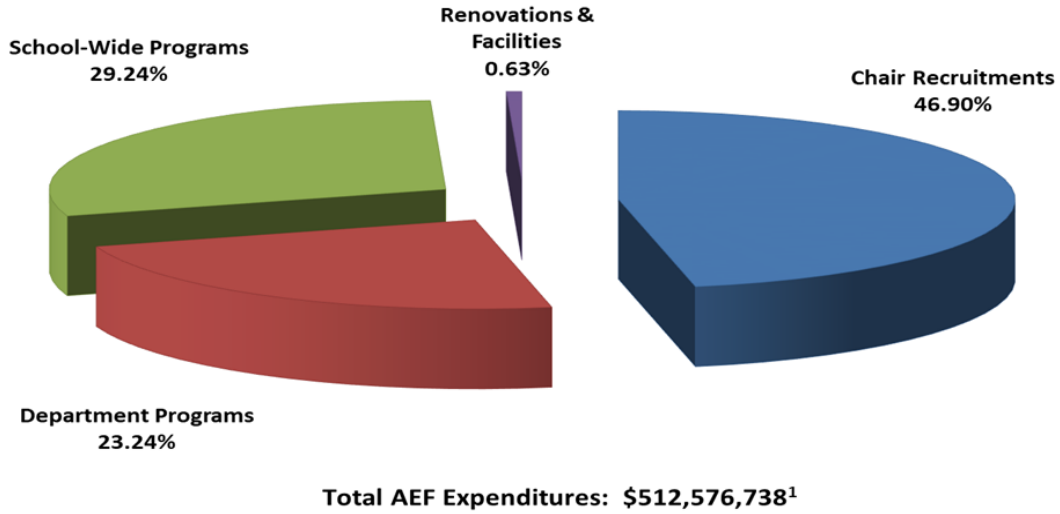


*FY 2017-18 Estimated

Trend in State Appropriation and Tobacco Settlement Funds Fiscal Years 1996 - 2018

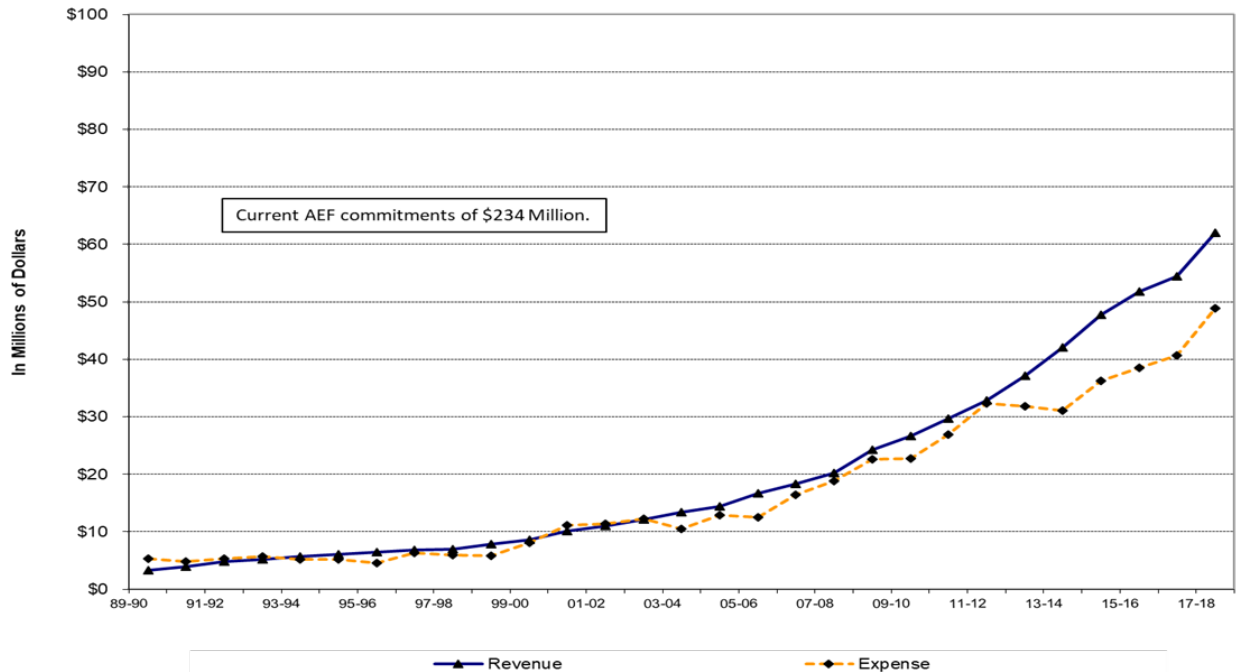


Academic Enrichment Fund Expenditures Fiscal Years 1983 - 2018¹

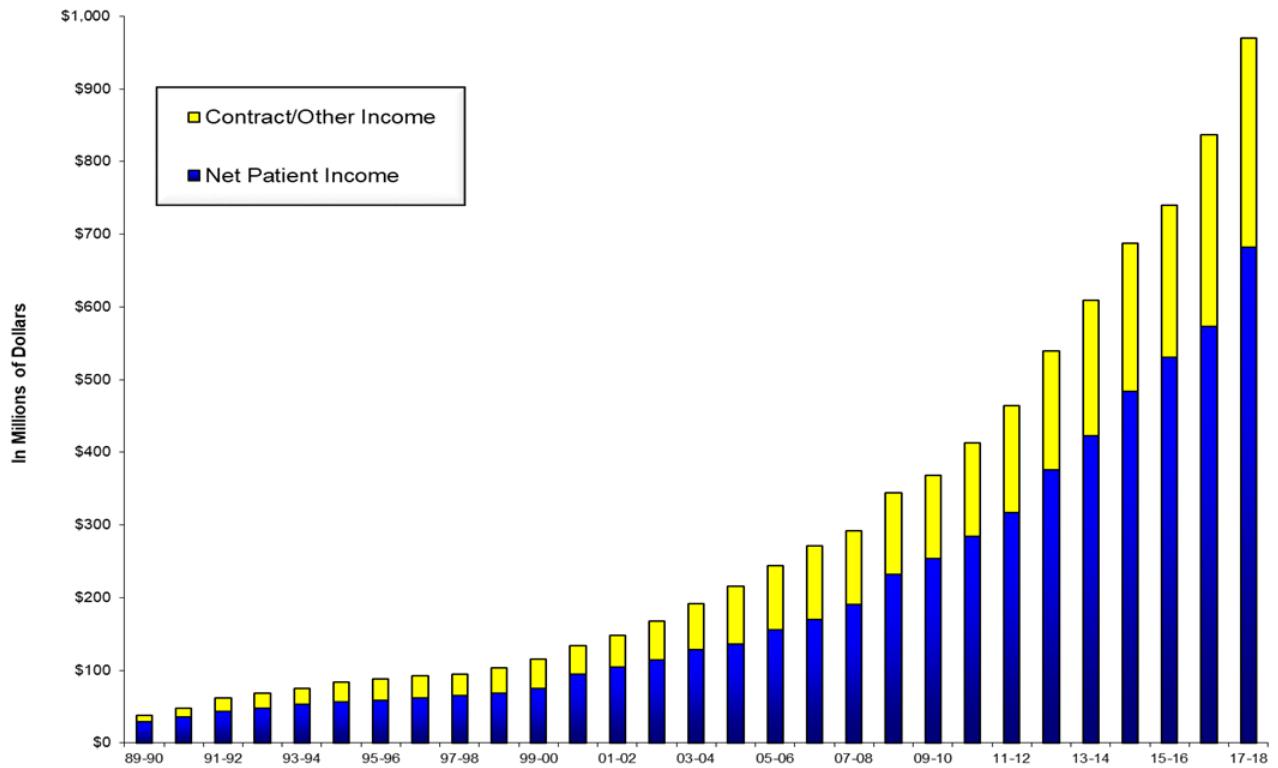


¹ Figures are based on expenditures through June 30, 2018

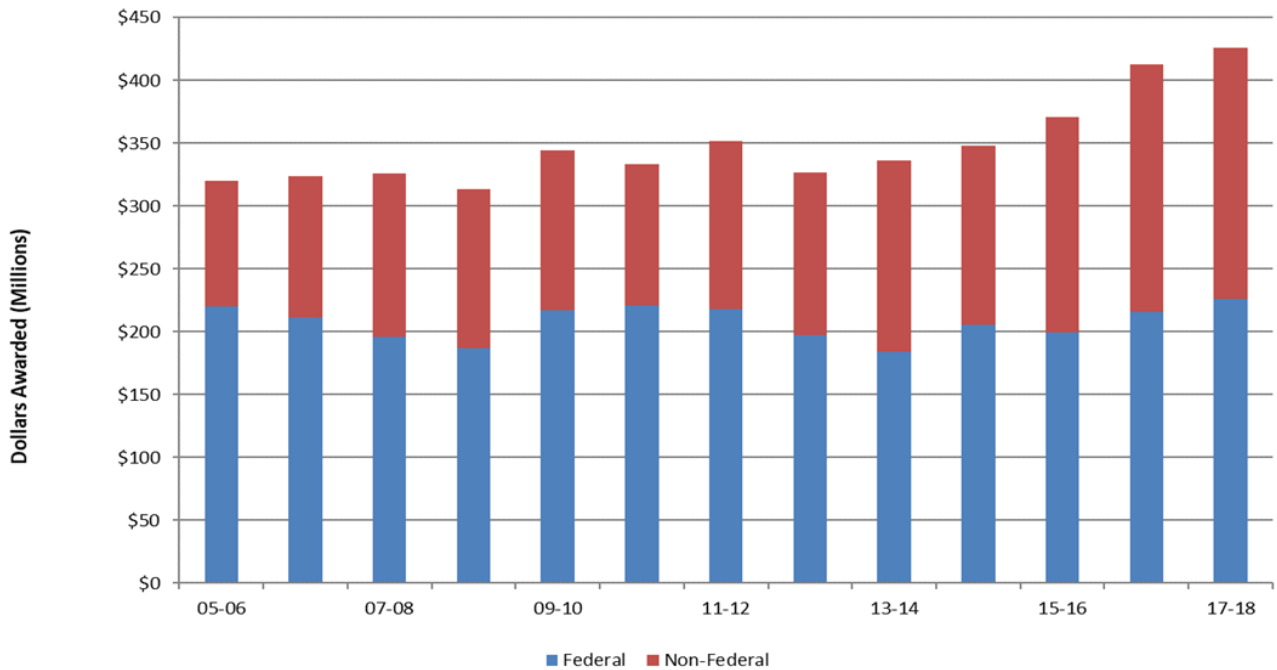
Academic Enrichment Fund Trend in Expenditures Fiscal Years 1990 - 2018



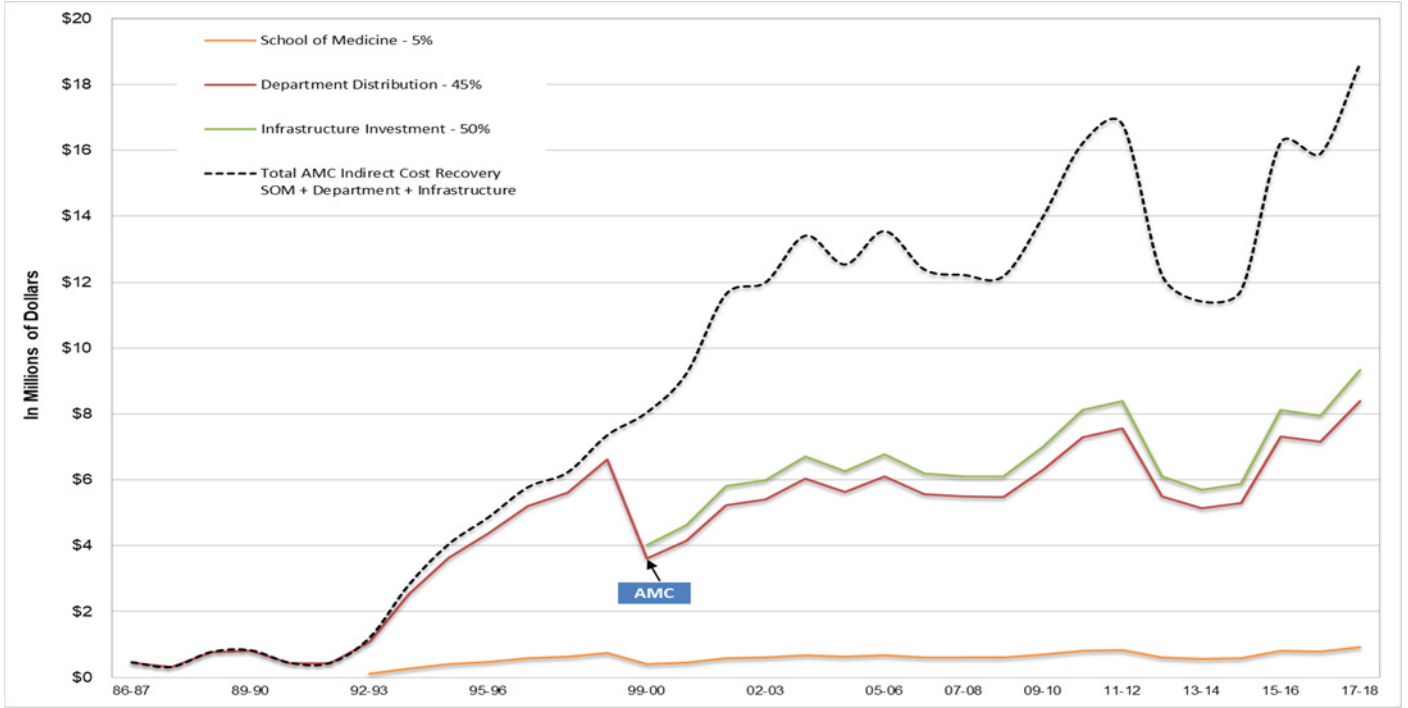
CU Medicine Patient and Contract Income Fiscal Years 1990 - 2018



Sponsored Research Award Trend Fiscal Years 2006 - 2018

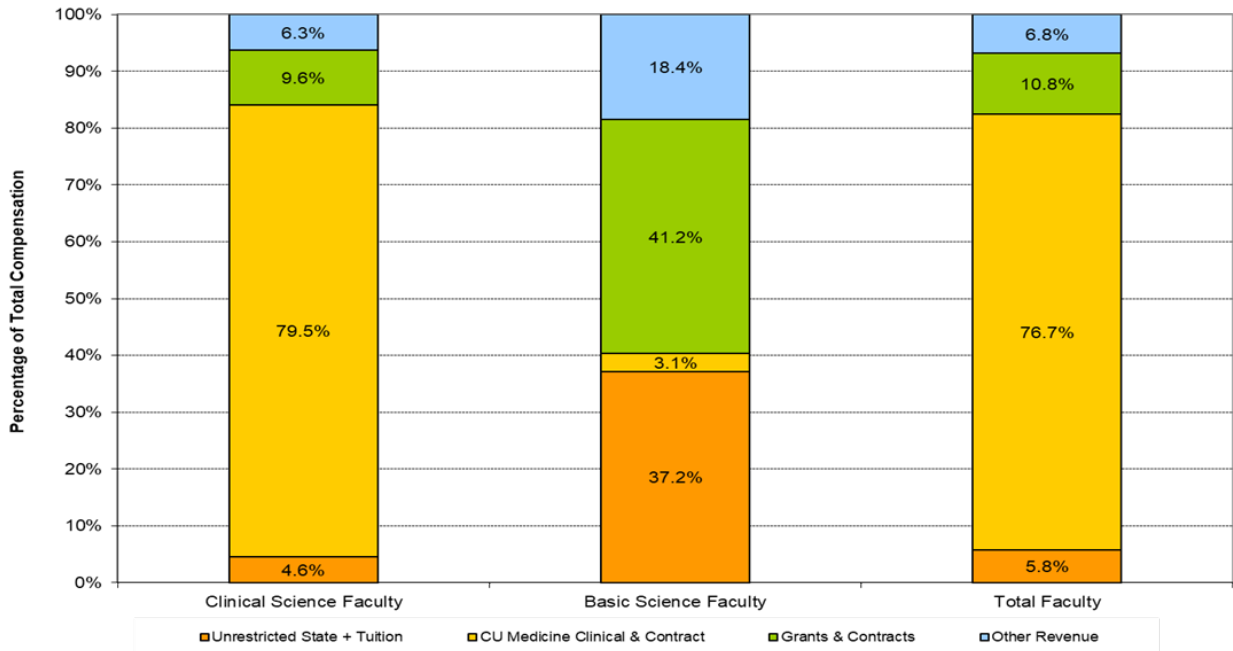


Trend in ICR Revenue Returned to the School of Medicine Fiscal Years 1987 - 2018



Notes: ARRA is included in FY10-14.
AMC signifies ICR utilization for AMC building financing.

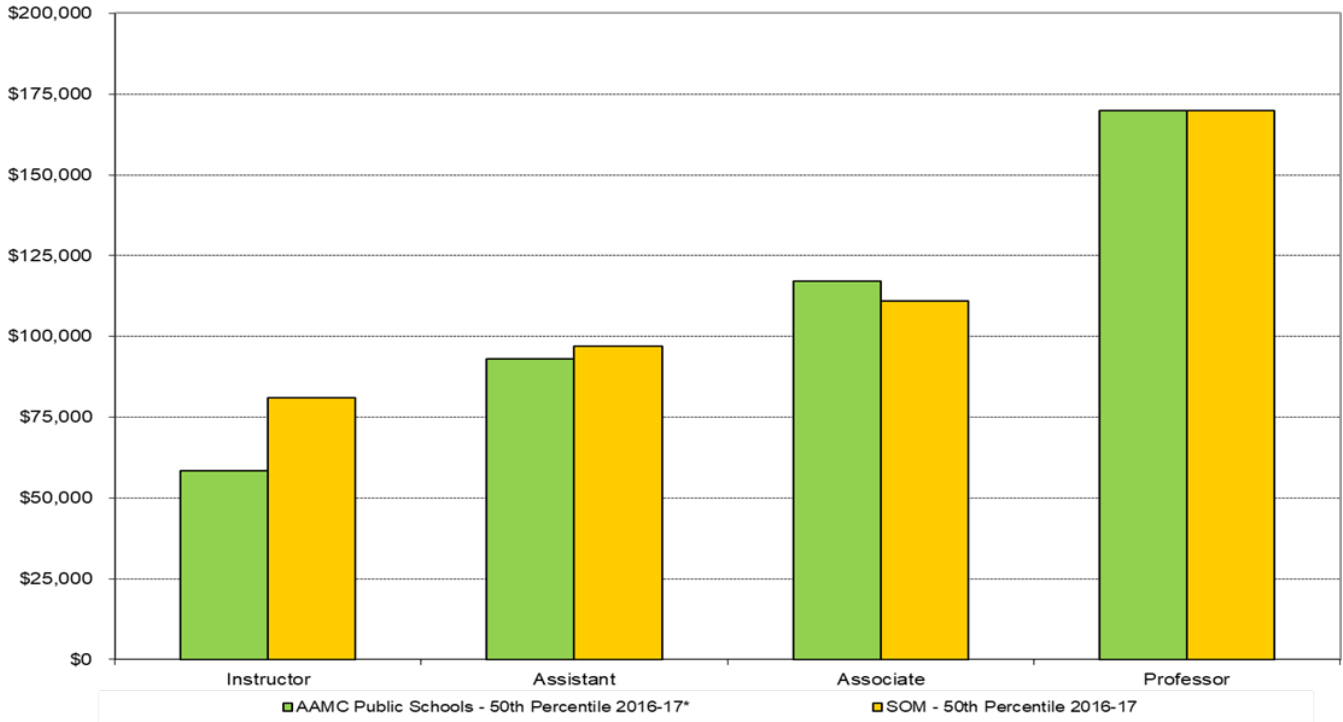
Source of School of Medicine Faculty Compensation Fiscal Year 2017 - 2018



*Pathology PhD/MS/BS is included in Basic Science Faculty

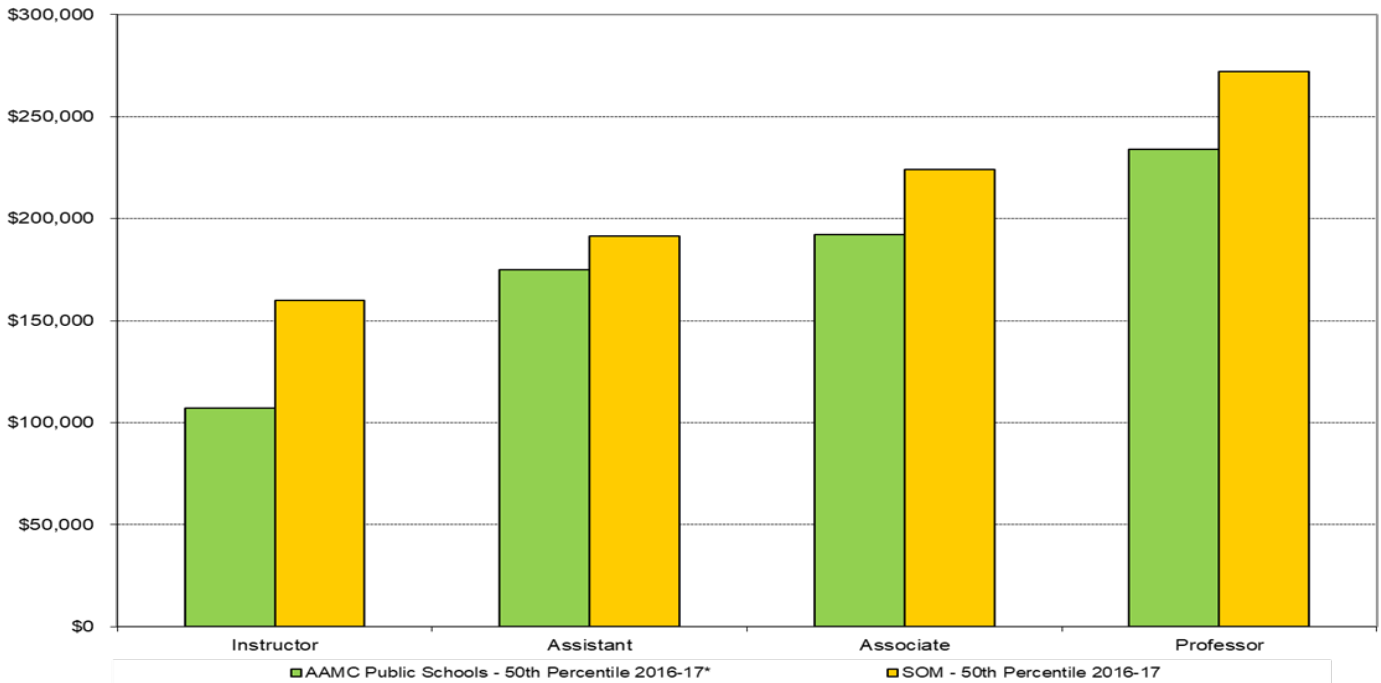
Source: Table I 2017-18 Data - Centers/Institutes excluded

Comparison of Faculty Salaries to AAMC Benchmarks for Basic Science Departments



Source: AAMC Faculty Salary Survey 2016-17
Most recent available benchmarks

Comparison of Faculty Salaries to AAMC Benchmarks for Clinical Science Departments



Source: AAMC Faculty Salary Survey 2016-17
Most recent available benchmarks

CU School of Medicine Endowed Chairs

Department/Program	Total
Anschutz Health and Wellness Center	1
Barbara Davis Center for Diabetes	6
Center for Women's Health Research	2
Charles C. Gates Center for Regenerative Medicine and Stem Cell	3
Colorado Prevention Center	1
Dean's Office	3
Linda Crnic Institute for Downs Syndrome	1
University of Colorado Cancer Center	16
Webb-Waring Center for Cancer, Aging Antioxidant Research	1
Department of Anesthesiology	1
Department of Biochemistry and Molecular Genetics	1
Department of Dermatology	1
Department of Family Medicine	3
Department of Medicine	33
Department of Neurology	4
Department of Neurosurgery	1
Department of Obstetrics and Gynecology	1
Department of Ophthalmology	3
Department of Orthopedics	2
Department of Pathology	1
Department of Psychiatry	2
Department of Radiation Oncology	2
Department of Surgery	8
Total	97
Pediatrics- Children's Hospital Colorado	45

Source: The University of Colorado Foundation and the Children's Hospital Foundation-Denver.





Clinical Affairs

Clinical Affairs

The Office of Clinical Affairs partners with clinical leaders to strengthen the clinical practice of the faculty in the CU School of Medicine. Program integration with the School's affiliated partners promotes our collective ability to improve access to faculty expertise and provide safer, patient-centered care at the lowest possible cost. Our affiliated partners include: UCHealth University of Colorado Hospital, Children's Hospital Colorado, Denver Health, the Veterans Affairs Hospital, and National Jewish Health.

Anne Fuhlbrigge MD, MS, serves as senior associate dean for clinical affairs. Fuhlbrigge partners with Associate Deans **Christina Finlayson MD**, **Jeffrey Glasheen MD**, **Benjamin Honigman MD**, and the recently appointed **Adel Younoszai MD**. Finlayson and Younoszai serve dual roles with University of Colorado Medicine, as associate medical directors of the adult- and child-health practices, respectively. Glasheen serves as a leader in quality and safety education in his dual role with the UCHealth University of Colorado and as CQO for the UCHealth system. Honigman led many clinical outreach initiatives, including the CU Medicine-UCHMG collaborative task force. Additional clinical leadership is provided through the School of Medicine vice chairs and associate center directors for clinical affairs, who make up the **Clinical Leadership Council**. Together, with the Office of Value Based Performance, these physicians identify opportunities for clinical, quality, and patient-safety improvements and help unify and drive projects across the Anschutz Medical Campus to benefit patient outcomes.

Practice improvement initiatives focus on crucial areas, such as team-based care and development of quality ambulatory dashboards. The auto routing of clinical documentation continues to improve primary care – specialty provider communications. In addition, in April, 2018 the launch of the Coordinating Optimal Referral Experience (CORE) project exceeded expectations in both adoption and impact. CORE, which includes both asynchronous MD to MD consults (e-consults) and enhanced referrals is also improving the interaction/communication between primary care and specialty physicians. This program promises to increase access to specialty care, improve patient and provider experience, and decrease overall cost of care. Initiation of CORE within the child health practice launched in August 2018. Further expansion across adult and child health specialties are anticipated for FY2019. With our affiliated partners, UCHealth and CHCO, we continue work on developing Clinically Integrated Networks (CINs), committed to the quadruple aim of improving health outcomes for the patient, provider, and staff experience, while also reducing total cost of care.

The child health practice has significantly enhanced patient access to care, opening a new clinic in Broomfield. This expansion will support the CHCO North facility, continued growth in the Specialty Outreach Clinics in Fort Collins and Durango as well as expansion of multidisciplinary clinics to meet the needs of our complex patients. Telehealth pediatric specialty visits have continued to double year over year, enhancing access to children and families across Colorado, Wyoming and Montana. In the adult health practice we are also growing the number and variety of our community based practices. In the past year we added two family medicine practices and a urology practice in south metro Denver. These community-located practices bring access to care closer to where our patients live and work. The successful opening at these practice locations anticipates the FY2019 opening of Highlands Ranch Hospital with a multispecialty medical office building offering a wide variety of services in that community. Confir

The Institute for Healthcare Quality, Safety and Efficiency (IHQSE) resides in the Office of Clinical Affairs and offers seven distinct training programs. **The Certificate Training Program**, is a yearlong, intensive leadership training program in quality and safety, which has trained nearly 80 clinical teams from both UCHealth University of Colorado Hospital and Children's Hospital Colorado since 2013. This training and practical project experience has led to significant improvements in outcomes, reductions in length of stay, enhanced clinic flow, and less medical and surgical harm. IHQSE also offers a **mini-CTP course** as an introduction to quality priorities, improvement initiatives, and strategic planning for unit-based teams. Since 2014, both a one-day **Introductory Training Program** and a two-day **Clinical Leadership Development** course have brought organizational leadership skills and process-improvement knowledge to almost 400 additional participants. Finally, 2018 saw the creation of the **Foundations in Patient Safety Program** (introduction to case review, just culture, and safety-based improvement work) as well as the creation of the **Lean Training Program** (process-improvement skills course focused on workflow) and **6S Training Program** (process-improvement skills course focused on physical workspace optimization).

CU Medicine

University of Colorado Medicine (CU Medicine) is a 501(c)(3) practice organization that supports the clinical practice of the CU School of Medicine by providing business infrastructure services. The President of CU Medicine is John Reilly, Jr., MD, and the Executive Director is Jane Schumaker.

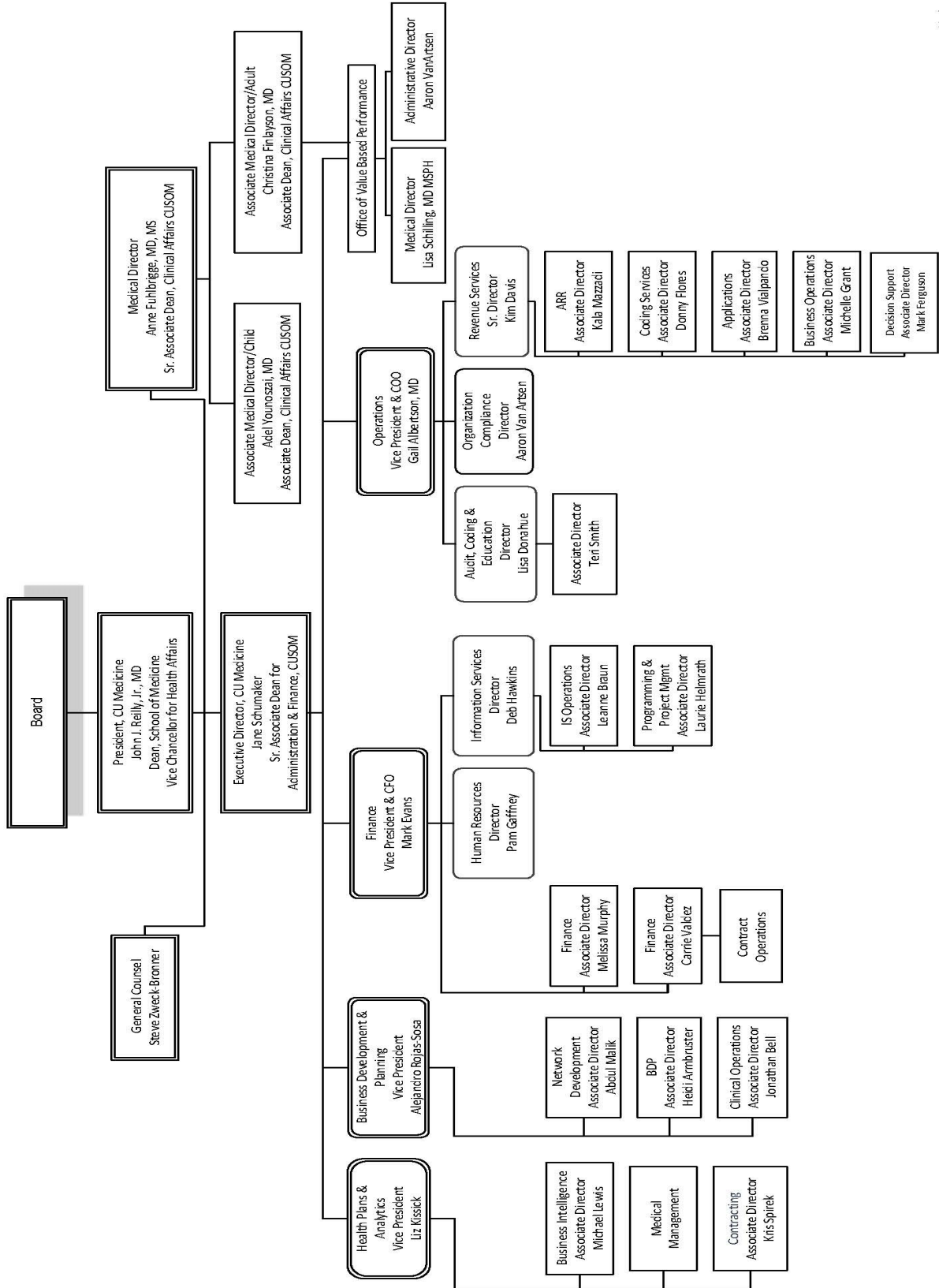
CU Medicine services include managed care contracting, revenue cycle management, compliance, business development and financial services for physicians and advanced practice professionals, and infrastructure for population health. All faculty of the CU School of Medicine are members of CU Medicine. The organization is governed by a Board of Directors chaired by the Dean of the CU School of Medicine. The Board is comprised of the chairs of clinical departments, a basic science chair, elected faculty representatives, and designees of the Children's Hospital Colorado and UCHealth University of Colorado Hospital.

In October 2016, the UPI board approved using University of Colorado Medicine as the name of the practice plan to recognize that the organization represents all faculty of the University of Colorado School of Medicine, including physicians and advanced practice providers.

On the following page is a current organization chart.



University of Colorado Medicine Administrative Organization Chart





Diversity and Inclusion

Office of Diversity and Inclusion

The School of Medicine's Office of Diversity and Inclusion (SOMODI) is led by Associate Dean **Shanta M. Zimmer, MD**, and Director **Regina Richards, MSW**. Stephanie Flores, MA continues to provide administrative and program support in her role as the Office of Diversity and Inclusion Business Professional and Program Coordinator for the BA/BS-MD Program. The addition of Janet Meredith in 2017, strengthens SOMODI's opportunities for student community engagement efforts in partnership with 2040 Partners in Health and CSTAHR (Community-Students Together Against Healthcare Racism).

At CU School of Medicine, diversity remains a value central to the School's educational, research, community service, and health care missions. Therefore, the SOM is committed to recruiting and supporting a diverse student body, housestaff, faculty and senior administration. The SOM has adopted a definition of diversity that embraces race, ethnicity, sexual orientation, gender identity, disability, religion, political beliefs, rural upbringing, and socioeconomic status. The SOMODI serves as the central point of responsibility for coordinating, developing, and evaluating the School's diversity initiatives and programs, spanning pipelines to practice and community engagement.

The Dean-appointed School of Medicine Diversity Council serves as the guiding committee for the work of the office and includes members from the Anschutz Medical Campus and external community members. The council meets monthly to support the implementation of the December 2015 Diversity Plan, which is currently being updated. <http://www.ucdenver.edu/academics/colleges/medicalschoo/administration/diversity/aboutus/Documents/DiversityPlan2015.pdf>

Diversity Council initiatives in 2017-2018 included monitoring strategies to continually measure and enhance the diversity, inclusiveness, and climate of the School of Medicine, enhancing recruitment and retention efforts of students, residents, faculty, staff, administrative leadership, and fundraising. Accomplishments include:

- Expanding membership to include the Child Health Associate/Physician Assistant and Physical Therapy Programs.
- Strengthening and restructuring the Lesbian Gay Bi-Sexual Transgender (LGBT) curriculum from the student perspective.
- Supporting community engagement. Since 2012, 94 medical students have participated in CSTAHR community-based participatory research projects.
- Implementing faculty search guidelines.
- Overseeing Cultural Accommodations Policy
- Strengthening partnership with the University of Colorado's Office of Equity
- Hosting the Women Leaders at Anschutz Medical Campus Networking Event
- Continuously reviewing of campus pipeline programs, including post-baccalaureate and BA/BS-MD programs
- Supporting diversity in higher education

Pipeline Programs:

Pipeline development and local, regional, and national recruitment continues through partnerships with the School of Medicine Office of Admissions, the Anschutz Medical Campus Office of Inclusion and Outreach, and other CU System networks to recruit under-represented in medicine (URiM) students.

<http://www.ucdenver.edu/about/departments/DiversityAndInclusion/programs/Pages/default.aspx>

The SOMODI in partnership with the School of Medicine Office of Admissions continues to participate and co-sponsor the Annual Pre-Admissions Workshop (PAW) in partnership with and the Four Corners Alliance (University of New Mexico, University of Arizona, University of Utah, University of Colorado, and the Association of American Indian Physicians). Twenty-Five American Indian and Alaskan Native pre-med students attend the three-day workshop that has a positive impact on their decisions to pursue careers as physicians or other health care professionals. The BA/BS-MD Program, housed in the University of Colorado Denver and the SOMODI, is a diversity pipeline program recruiting highly qualified Colorado high school students from broadly diverse backgrounds to participate in a combined eight-year program that assists students in developing a commitment to serve the healthcare needs of Colorado in the future. Directed on the Anschutz Medical Campus by Matthew Taylor, MD, PhD, and assistant director, Julia Brandt, MD, the program admits ten high school students each year.

www.cudenver.edu/babsmd. The first matriculates graduated from the program from the CU School of Medicine in May 2018 and successfully matched in programs across the country in Internal Medicine and Ophthalmology. Nationally, Regina Richards was elected as Vice Chair of the Association of American Medical Colleges (AAMC) BA-MD Affiliate Group.

Students

The Office of Diversity and Inclusion continues to collaborate closely with the holistic admissions process to help matriculate a diverse and inclusive student body within the School of Medicine. In each of the past five years the entering class of the School of Medicine has included 25 percent to 30 percent URiM students. Senior SOMODI leadership host informal meet-and-greets throughout the academic year for all URiM MS1s to increase SOMODI's visibility and to share information about resources available to students.

The CU Chapter of the Student National Medical Association (SNMA) is co-advised by Richards and Brandi Freeman, MD, Department of Pediatrics. This year, SNMA faculty recognition awards were presented to Freeman for her leadership in diversity and inclusion efforts both nationally and locally. The student recognition award for leadership was presented to Eduardo Javier Carrera, SNMA Class President for the Class of 2018. SNMA's national impact areas are community outreach, engaging in pipeline programs, and medical education. The Colorado chapter of SNMA provides an inclusive community of support for medical students from diverse backgrounds, in addition to volunteer community service opportunities throughout Colorado. SOMODI continues to be engaged in the 2040 Partners in Health Community Advisory Network. Highlight of this collaboration continues to be the multi-year mentored scholarly activity project of CU-UNITE Track medical students exploring intervention strategies to help providers understand and reduce occurrences of discrimination in healthcare. Other student projects include:

- collaboration with the Community-Campus Partnership, where medical students develop and implement a leadership curriculum for 12-18 year olds; and
- expansion of the Mentored Scholarly Activity project reviewing School of Medicine curriculum in response to unconscious bias concerns

The CU School of Medicine Chapter of White Coats for Black Lives Matter held its second annual 18-minute die-in event, representing opposition to police violence and killings of African Americans and Latinos in the United States. Participants include students, faculty, and staff from School of Medicine, School of Pharmacy, and the Child Health

Associate/Physician Assistant and Physical Therapy Programs.

The SOMODI in partnership with a School of Medicine student leader has developed FirstUP, a mentoring program designed to support first-generation medical students. Fourteen mentor/mentee partnerships matched and the program will launch with the Class of 2022. Mentors are current faculty members and CU alumni practicing physicians. Thank you to CU Office of Alumni for their partnership on this project.

Graduate Medical Education

A successful Graduate Medical Education (GME) second-look day, led by collaborations between the Departments of Emergency Medicine, Pediatrics, Family Medicine, Surgery and the Division of Internal Medicine, occurred at the Hyatt Regency Aurora-Denver Conference Center in February 2018. This event increased the visibility of all GME programs. All participating programs recruited URiM residents to their entering intern classes in 2018. Twenty-six prospective URiM residents attended Resident Second Look Day 2018 from eight programs and four of those applicants matched into our GME programs. Planning for the 2019 event is underway. The SOMODI continues to work with GME Programs to train programs on review of holistic GME recruitment processes.

SOMODI continues to provide guidance and support for multiple NIH T32 training grants within departments and programs to enhance their efforts to increase diversity in the grantee pool, as well as to support efforts around mentorship and retention of scientists from URiM background.

Faculty and Staff

Recruitment and retention of a highly skilled diverse faculty continues to be a priority within the School of Medicine. The Dean continues to support a hiring initiative that provides salary support for highly qualified URiM recruits to the School.

Development of a community for faculty and staff continues with the University of Colorado Organization for Racial and Ethnic Support (UCOLORES) led by Amira del Pino-Jones, MD, and Brandi Freeman, MD. For 2017/2018, UCOLORES has hosted a series of faculty development activities for members and a leadership book club to help build bridges and develop relationships for informal mentoring partnerships and supportive relationships among diverse faculty and staff.

The Departments of Medicine, Surgery, Radiology, OB/GYN and Otolaryngology have created and granted protected time to the position of Vice Chair of Diversity and Inclusion as a commitment to D & I initiatives and strategies. Shanta Zimmer, MD, provides mentorship for these positions.

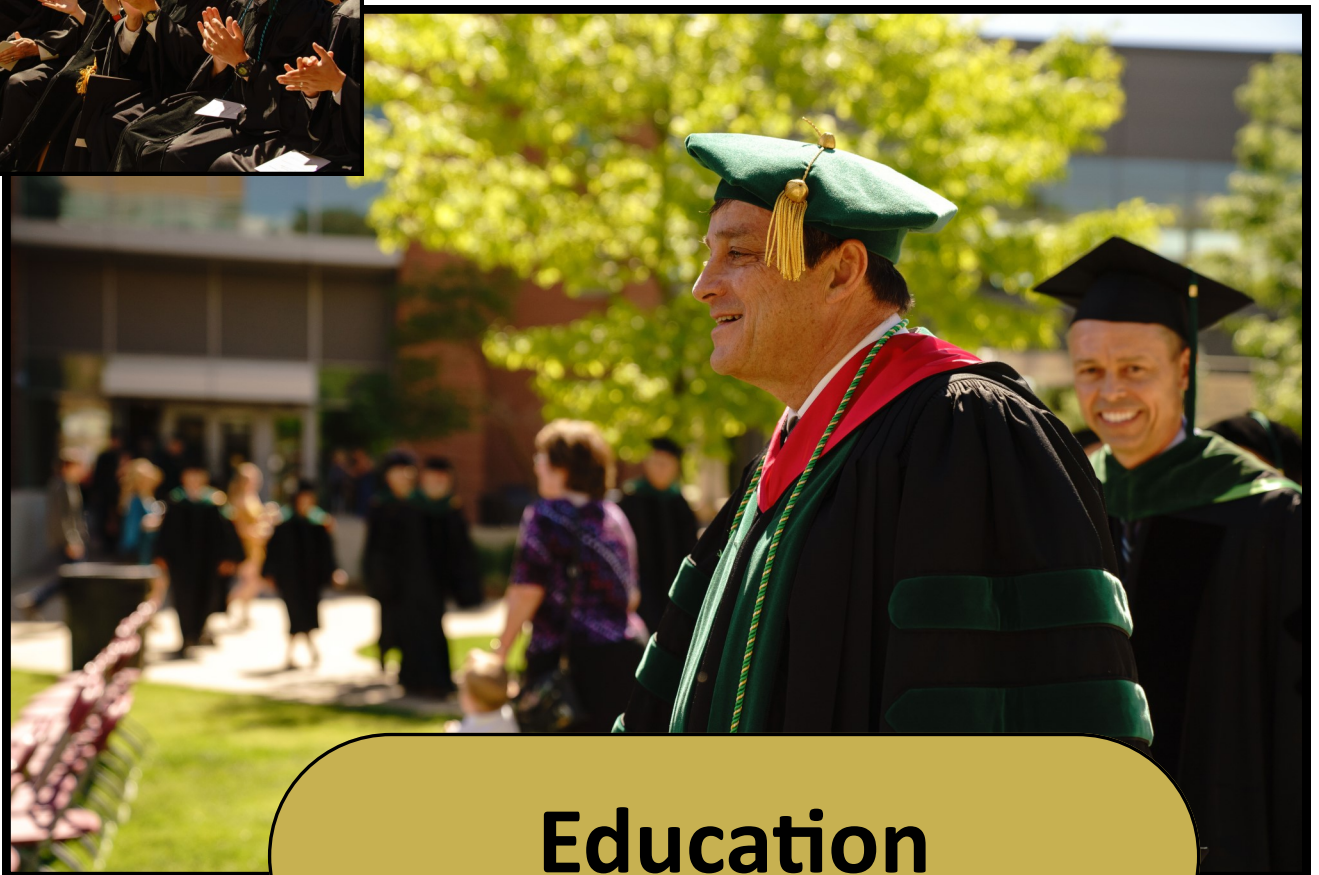
SOMODI recently hosted a Welcome Meet and Greet for newly hired African American and Hispanic Latino faculty and their families to introduce them to the Denver Community-at-Large.

Community

Support of the growing community on and around the Anschutz Medical Campus is an important priority to the SOMODI. Students from Anschutz Medical Campus schools, including Medicine, Pharmacy, Nursing, Dental Medicine, and from the Physical Therapy program work together in Aurora's DAWN clinic where they provide multidisciplinary care and serve as health care navigators to uninsured patients and learn the importance of team work and advocacy on the health of communities.

The Second Annual Toast to Diversity and Call to Action was held September 22, 2017 where 200 people attended a celebratory event to build community among minority faculty, residents, and students while highlighting the importance of Diversity on the Anschutz Medical Campus. This event catalyzes efforts for continued engagement, mentorship and retention of our talented faculty, students and trainees. The third annual Toast to Diversity and Call to Action was held September 20, 2018.

The Office of Diversity and Inclusion continues to focus on service, coordination, and collaboration with colleagues on the Anschutz Medical Campus and University of Colorado Denver as we work toward an institutional climate of diversity and inclusiveness that appreciates what our talented students, trainees, faculty, and staff bring to the University of Colorado School of Medicine. www.medschool.ucdenver.edu/diversity



Education

Education

The education programs at the School of Medicine are under the leadership of **Shanta M. Zimmer, MD**, Senior Associate Dean for Education. The University of Colorado School of Medicine is committed to lifelong and interdisciplinary learning for health care professionals. We have many programs to serve the needs of undergraduate, graduate and post-graduate students, beginning with pipeline programs in middle schools to attract and prepare a diverse and talented applicant pool. Students graduating from the MD program will be able to compete for positions in our Graduate Medical Education program that offers outstanding training for residents and fellows. Once graduates complete their training as physicians, physician assistants, physical therapists, and anesthesia assistants, the office of Continuing Medical Education and Professional Development offers lifelong educational programs designed to improve competence, performance, and health outcomes. Included in this section is information on the Academy of Medical Educators that was created to support and enhance all educational programs and teachers at the University of Colorado School of Medicine. The following pages reflect information on all of the school's programs including Anesthesiology; Center for Advancing Professional Excellence; Child Health Associate/Physician Assistant; Genetic Counseling; Graduate Medical Education; Office of Continuing Medical Education and Professional Development; Physical Therapy; and Undergraduate Medical Education.

Academy of Medical Educators

The Academy of Medical Educators (AME), under the leadership of **Nichole Zehnder, MD**, seeks to create a community of dedicated educators who work together to promote excellence in teaching and curriculum throughout the health sciences community. To support this goal, AME inducted 10 new members for a total of 93 members who serve the campus through a series of programs that provide faculty development, coaching, recognition, small grants and other scholarship opportunities, and advocacy in medical education.

In 2017-18, the AME continued to provide regular faculty development opportunities through workshops, online education and a growing number of individual sessions to departments and programs. Under the leadership of Mona Abaza, MD, the Teaching Certificate Program graduated six participants and enrolled its sixth cohort. This program provides participants with training in core teaching skills through a combination of online and in-person workshops that are tailored to their individual needs. The longstanding and successful Teaching Scholars Program, under the leadership of Janet Corral, PhD, Chad Stickrath, MD, and Mary Jane Rapport, DPT, graduated 16 interprofessional participants who are trained in curriculum development, program evaluation and medical education scholarship. The AME also graduated its third class from the Leadership in Educational Administration Program with 10 scholars under the leadership of Rita Lee, MD, and Read Pierce, MD. This program trained these high potential leaders in both administrative and leadership skills necessary to thrive as they advance in their roles. The AME continues to run the popular bi-annual Residents and Fellows as Teachers Elective, led by Mel Anderson, MD, and the iTEACH coaching program. The latter program provides faculty with one on one direct observation and coaching on their teaching skills.

In addition to faculty development and career advancement for educators, the AME has worked hard to promote education and educators on campus. The AME hosted the Sixth Annual Educational Scholarship & Innovation Symposium where seven awards were given for excellence in education, and five grants were awarded for a total of \$15,855 to improve educational innovation and scholarships on campus. The AME has markedly grown its role in supporting the scholarship of education. We are also a Best Evidence Medical Education Review Site, and a core research infrastructure that provides advice, research assistant support, and mentorship for medical education research projects.

Funding for the AME is provided through the School of Medicine Dean's Office and Graduate Medical Education with additional support for the small grants programs from the Rymer Family and the Office of Faculty Affairs. Please visit the website for detailed information on each of the above: <http://www.ucdenver.edu/academics/colleges/medicalschoo/education/academy/Pages/default.aspx>

Anesthesiologist Assistant Program

The University of Colorado’s Master of Science Program in Anesthesiology is an intense, 28-month graduate level program housed within the Department of Anesthesiology located at the Anschutz Medical Campus. When the first class matriculated in the fall 2013, it became only the ninth program of its kind in the United States. While there are currently 12 accredited anesthesiologist assistant programs offering similar education, the University of Colorado is the only school located in the western half of the country.

The program is divided into two phases: a 16-month integrated didactic and clinical curriculum, followed by a 12-month clinical phase. Prior to transitioning into the clinical program, students must have successfully completed four semesters of basic science, as well as a general and advanced anesthesia curriculum. Upon graduation, students will have over 2,700 clinical training hours, not including simulation. Students sit for the national certifying exam provided by the National Commission for Certification of Anesthesiologist Assistants (NCCAA) prior to graduation. Students who successfully complete the program requirements are awarded a Master of Science Degree in Anesthesiology from the School of Medicine.

Mission

The mission of the MS-Anesthesiology Program is to educate and train highly skilled Anesthesiologist Assistants in the cognitive, psychomotor, and affective learning domains to work within the anesthesiologist-led Anesthesia Care Team to provide quality patient care.

Leadership

Vesna Jevtovic-Todorovic, MD, PhD, MBA – Chair, Department of Anesthesiology

Joy Hawkins, MD – Vice Chair of Education, Department of Anesthesiology

Stacy Fairbanks, MD – Medical Director

Ann-Michael Holland, CAA, MMSc – Program Director

David Dunipace, CAA, MS – Associate Program Director

Erik Nelson, MD – Associate Medical Director

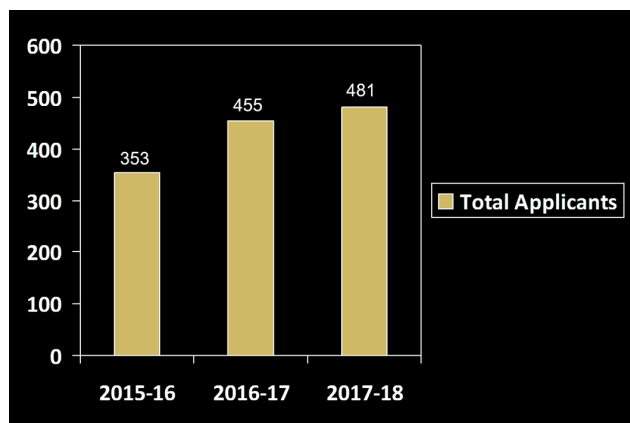
Carlos Rodriguez – Program Manager

Website

www.medschool.ucdenver.edu/aaprogram

Student Overview

When the fall 2018 semester begins, the MS-Anesthesiology Program will have a total of 37 students enrolled. The program admissions process is extremely competitive, with the last application cycle producing 481 applicants. Of those applicants, only 13 were admitted. The MS-Anesthesiology Program has now had three graduating classes, and a total number of 23 graduates. Below are some application numbers and student body statistics for the most recent cohorts of the program.



Current Student Demographics			
	Class of 2018	Class of 2019	Class of 2020
Students	11	13	13
Average Age	27	26	25
Male : Female	6 : 5	8 : 5	7 : 6
In-State	8	7	3
Out-of-State	3	6	10
Average GPA	3.6	3.4	3.5
Average MCAT	59 th Percentile	56 th Percentile	56 th Percentile

Recent Accomplishments

Curriculum and Instruction

The MS-Anesthesiology Program offers an intense, 28-month didactic curriculum designed by expert faculty and complemented by clinical rotations. The program boasts a unique curriculum that features didactic courses taught almost primarily by attending anesthesiologists. This structure gives students the opportunity to formally interact with all members of the anesthesiology team from the beginning of training. The MS-Anesthesiology Program has also developed a one-of-a-kind collaboration with the Master of Modern Human Anatomy Program, which gives our students access to an innovative and tailored anatomy curriculum, including medical imaging labs, ultrasound training, and cadaver dissection. Senior year didactics include a senior project in research or quality improvement to supplement clinical requirements, and an interactive Senior Seminar where students lead problem-based learning discussion (PBLD) sessions covering interesting cases and subject matter. In addition to classroom didactics, the students begin clinical hours within the first month of the program. MS-Anesthesiology students become very comfortable with the operating room environment even before completing the didactic portion of the program. This comfort transforms into self-sufficiency as the students rotate through a variety of clinical subspecialties, including pediatrics, trauma, cardiothoracic, regional, neuroanesthesia, and obstetrics. While University Hospital provides fantastic learning opportunities, program officials have also established multiple affiliation agreements with outside clinical sites to enable students to rotate in clinical settings all along the Front Range and across the country. Students finish the program extremely well-rounded and comfortable in a variety of environments.

Simulation Lab

The Simulation Lab is an integral part of the overall curriculum during the first year and is comprised of three semesters. The students are taught a variety of skills and concepts utilizing both low-fidelity simulators for task training and a high-fidelity simulator, the SimMan 3G for scenario training. Task training exercises include basic and advanced airway management, anesthesia machine operation, setup and use of anesthetic agents, invasive monitor placement, and regional anesthesia techniques. Crisis Resource Management skills are taught using the SimMan 3G and include ACLS protocols, local anesthetic toxicity management, difficult airway management, and treatment of severe bronchospasm to name a few.

Diversity Scholarship

In order to facilitate an avenue for increasing diversity in the Anesthesiologist Assistant Program, the Department of Anesthesiology has established its first Diversity Scholarship to provide support to students who are traditionally underrepresented in health science graduate programs. Scholarship funds will cover \$39,475 of tuition over the last four semesters of the MS-Anesthesiology Program.

Community Outreach

The MS-Anesthesiology students have completed community service projects every semester of the program's existence. Students have prepared meals for Ronald McDonald House Charities of Denver, using all sponsored food items from area businesses; raised money by hand making and selling scrub caps to benefit Lifebox, an organization that sends pulse oximeters to low resource and lower-middle income countries at no or reduced cost; helped to collect used medical supplies for Project Cure, the largest provider of donated medical supplies and equipment to developing countries around the world, and staffed booths at local fundraising events, such as Strides for Epilepsy 5K and university health fairs. The students are currently organizing their fifth annual charity golf scramble at Arrowhead Golf Course, where all proceeds go to the Tuberculosis Sclerosis Alliance and March of Dimes. In the past four years, the student-led golf scramble has raised over \$13,000 for charities and brought students, faculty, staff and the community together for great causes.



Center for Advancing Professional Excellence

The Center for Advancing Professional Excellence (CAPE) is a state-of-the-art standardized patient and simulation center. Working alongside forward-thinking faculty, current and future health care professionals gain access to the latest innovations in teaching and learning. Through simulation experiences, learners have the opportunity to learn, develop, and improve patient-centered care. With 18,000 square feet, the CAPE is a unique resource in the Rocky Mountain region. This education environment allows learners to gain real-world experience working with patients, handling clinical situations, and collaborating with fellow health care professionals. The CAPE promotes excellence in the health professions through education and assessment of clinical skills including communication, physical examination, clinical reasoning, and teamwork. We continue to grow and innovate while accommodating more learners and health care professionals. Our community of supporters fuel our efforts to bring a world-class education within reach for current and future health professionals in metro Denver, the region, and beyond.

Annual Achievements include:

- Ongoing accreditation by the Society for Simulation in Healthcare. The accreditation further establishes CAPE as an international leader within the simulation community in the areas of Teaching, Assessment, Research, and Education.
 - Continued advanced training of standardized patients capable of providing a broad array of clinical portrayals, physical exam teaching, including training in sensitive exams, simulation technologist capabilities, and communication and remediation coaching. The CAPE now boasts 75 standardized patients who represent the diverse population of Colorado. In the past year, the standardized patients provided 24,973 hours of work. This is an increase of approximately 2,000 hours from the previous year. The CAPE provided over 42,000 learner contact hours for Anschutz Medical Campus schools.
 - Participation in various research endeavors including partnerships with the Centers for Disease Control and Prevention and Veterans Affairs. We also provided educational services for many pilot and small grant awards across the campus throughout the year.
 - Partnership with the Colorado Department of Public Health and Environment to rollout the first competency-based skills assessment for patient navigators who serve a diverse population across the state of Colorado.
 - Partnership with College of Nursing faculty to integrate simulated patients in newly developed mental health curriculum for undergraduate nursing students.
 - Partnership with the Patient Navigator Training Collaborative to integrate simulated patients in motivational interviewing training for patient navigators using telehealth methodologies.
 - Partnership with Children's Hospital Colorado Simulation Lab to integrate simulated patients in pediatric simulation trainings for interns, residents, and fellows.
 - Partnership with the Center for Personalized Education for Physicians and faculty from the Departments of Emergency Medicine, Anesthesiology, and Obstetrics and Gynecology to offer competence assessment, reentry to clinical practice, and education services for health care professionals utilizing various simulation modalities.
 - Partnership with the Academy of Medical Educators and the School of Medicine to provide extensive faculty development in the areas of communication and professionalism.
 - Under the leadership of **Kirsten Broadfoot, PhD**, and in partnership with all health professions on campus, ongoing implementation and evaluation of a communication toolbox for the purpose of improving and standardizing assessment of communication skills across all health care professions.
- Ongoing community engagement through connections with campus partners and groups, such as the Area Health Education Center program, Aurora Courts, and local K-12 schools.

Program Information

Director: **Elshimaa Basha, MPH, CHSE**

Administrator: **Carissa Smith, MBA**

IT Senior Professional: **Larry Armstrong, BS**

Simulation Educators: **Donnie Betts, BA, Jocelyn Blake, BA, Donahue Hayes, and Danielle O'Connor, BA**

Simulation Specialist: **Jedidiah Jensen, BA**

Program website: <http://www.ucdenver.edu/academics/colleges/medicalschoools/education/cape>

The Child Health Associate/Physician Assistant Program

The University of Colorado PA Program has gained national recognition for its curriculum in primary care medicine. The Program confers a Professional Master's Degree (MPAS). In accordance with the mission of the program, the Child Health Associate/Physician Assistant (CHA/PA) Program curriculum provides comprehensive physician assistant education in primary medical care with additional training in pediatrics and the need for service to disadvantaged, at risk, and medically underserved populations. Graduates are well prepared to perform in primary care practice with patients across the lifespan.

Mission Statement

The mission of the Child Health Associate/Physician Assistant Program is to provide comprehensive physician assistant education in primary care across the lifespan, with expanded training in pediatrics and care of the medically underserved.

Program Curriculum

The Colorado Curriculum is a cutting-edge, learner-centered educational platform designed to foster clinical decision-making and life-long learning skills. The curriculum is based on clinical presentations rather than traditional courses. This approach mimics how patients present for care and how clinicians actually practice medicine. The Colorado Curriculum utilizes an iterative approach to learning, such that clinical presentations that are introduced in the first year are revisited at a more advanced level during second year. The program curriculum aims to provide a strong foundation to equip students for a lifetime of learning, clinical care, and service. Students are expected to be self-directed, motivated, and responsible for their own learning, using critical thinking and reasoning. Courses emphasize



the integration of basic sciences and clinical medicine through the presentation of information in clinical context, employing the use of small group experiences, case-based learning, patient "actors," patient simulators, lectures, and collaborative sessions to build knowledge, skills, and attitudes important for physician assistants. Interdisciplinary training is woven throughout to facilitate the development of a collaborative approach to patient care. The University of Colorado PA Program is a nationally recognized leader in physician assistant education. We believe this next phase of our curriculum, with its foundation in best practices for learning, supports our learners in their journey to be excellent health care providers.

Educational content is enhanced through the applications of family-centered care, behavioral and psychosocial perspectives as well as social and community initiatives for health and wellness. The program has integrated content in public health, oral health, professionalism, and interprofessional education. Students with a personal area of interest may also have the opportunity to participate in specialized tracks to enhance learning in Rural, Urban-underserved, Global Health, Pediatric Critical and Acute Care, and Leadership and Advocacy.

The curriculum includes a fully integrated clinical curriculum across all three years with clinical rotations in the hospital and community settings. During clinical experiences, students participate in history-taking, physical examination and assessment, development of a differential diagnosis and clinical decision-making, and planning of treatments and interventions. Students work closely with preceptors and other members of the health care team and are evaluated on skills and competencies required for patient care.

As a part of the University of Colorado School of Medicine, the faculty of the entire school and its affiliates contribute greatly to the quality of the learning experiences provided at the CHA/PA Program. Affiliations with the UHealth University of Colorado Hospital, Children's Hospital Colorado, and Denver Health and Hospitals, in addition to community centers and clinics, provide a network of clinical rotations to enhance the training of students. The faculty from the Departments of Pediatrics, Family Medicine, Surgery, and the Department of Medicine's Division of Internal Medicine, along with others, regularly participate in both classroom and clinical training of the CHA/PA Program students.

Program Faculty and Leadership

The education, scholarship, and service roles of the principal faculty of the CHA/PA Program provide students with experienced faculty mentors with clinical practices in general pediatrics, family medicine, and pediatric subspecialties. Program faculty serve in national leadership roles in the Physician Assistant Education Association (PAEA), which is the only national organization representing PA educational programs in the United States. At present, our faculty serve their colleagues around the country in various roles within PAEA: Amy Akerman, MPAS, is on the Government Relations Committee. CHA/PA Program Director Jonathan Bowser, MS, PA-C, is the President Elect of the association and will serve out his presidential term in 2019. Our faculty are also involved in teaching national workshops for PAEA. These are attended by faculty from programs around the country. Jackie Sivahop, MS, PA, and Joyce Nieman, MHS, PA-C, have led several workshops for clinical educators. Rebecca Maldonado, MS, PA-C, has taught a workshop on learner remediation.

International Connections

The University of Colorado CHA/PA Program continues its partnership with the Trifinio Clinic, where CHA/PA students engage in clinical experiences in this clinic site in rural northwestern Guatemala. Our global partnerships continue to offer new perspectives on our educational program and the work we do here, helping us provide better care for our patients in the US and abroad.

Student Overview

The CHA/PA Program has a very competitive admissions process and continues to attract top students from across the country. During the 2017-18 admission cycle, the program received 1,601 applications, of which 144 were interviewed to admit 44 students.



Program graduates are employed in all areas of primary and subspecialty areas of practice including pediatrics, family medicine, surgery, internal medicine, emergency medicine, dermatology, and many more. The program has a 98% five-year average NCCPA board pass rate.

Program Leadership

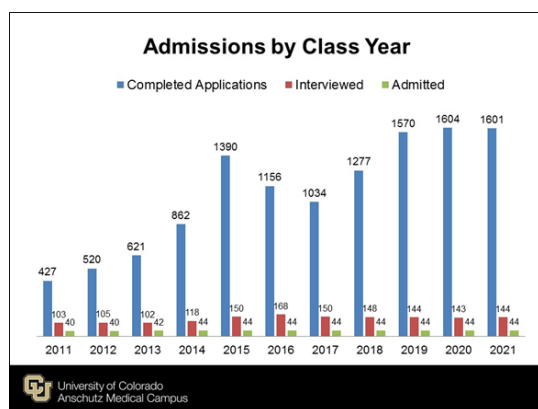
Program Director: **Jonathan Bowser MS, PA-C**

Medical Director: **Tai Lockspeiser MD, MHPE**

Associate Director: **Rebecca Maldonado MS, PA-C**

Associate Director: **Jacqueline Sivahop MS, PA-C**

Program website: <http://medschool.ucdenver.edu/paprogram>



Student Demographics	Class of 2018	Class of 2019	Class of 2020
Total Students	44	44	44
CO Resident	24	22	22
Non-Resident	20	22	20
Overall GPA	3.73	3.74	3.75
Science GPA	3.68	3.69	3.71
Diverse Students	4	8	6
Regular Track	30	30	Pending
Rural Track	4	4	Pending
CU UNITE Track	4	3	Pending
Global Health Track	1	2	Pending
LEADS	1	1	Pending
Pediatric Critical Care	4	4	Pending
Average Age	25	25	26

Genetic Counseling Program

The Master of Science in Genetic Counseling Program prepares students for professional practice and board certification as genetic counselors. The program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC). Upon graduation, alumni are eligible to sit for the national certification exam administered by the American Board of Genetic Counseling (ABGC). Established in 1971, the Genetic Counseling Program is the third oldest training program for genetic counselors in North America and one of only two such programs in the Rocky Mountain region.

Mission Statement

The mission of the Genetic Counseling Program is to train competent, compassionate, and innovative graduates who will effectively integrate professional practice and human genomics to deliver quality, client-centered genetic counseling services, promote informed health policy, and engage in scholarship, advocacy, and leadership activities throughout their careers.

Program Curriculum

The intensive 21-month curriculum integrates extensive coursework in human clinical and laboratory genetics and genomics, psychosocial and counseling theory, research, and ethical, legal, social and professional practice issues with more than 1,000 hours of direct, supervised clinical training in pediatric, metabolic, reproductive, oncology, adult, and specialty genetics clinics. During the second year, students complete a scholarly mentored capstone project addressing a current clinical practice, laboratory, educational, policy or service delivery issue in genetic counseling. Students are encouraged to submit abstracts for presentation of their projects at national meetings and to publish their findings in peer-reviewed journals.

Professional Practice of Program Alumni

Genetic counselors play a critical, expanding role in the healthcare system. They are at the forefront of precision genomic medicine initiatives. As genetic risk assessment and genetic testing become integral components of virtually all medical specialties, genetic counselors help to ensure quality, informed, client-centered delivery of these services. The Bureau of Labor Statistics identifies genetic counseling as one of the fastest-growing healthcare fields.

CU Anschutz Genetic Counseling Program alumni practice throughout Colorado and the nation. Sixty percent of the genetic counselors currently in Colorado trained in the CU program. Practice settings of alumni include hospitals, academic, and private genetics centers, diagnostic laboratories, clinical research programs, biotechnology companies, state public health departments and patient advocacy organizations.

As members of multidisciplinary healthcare teams, genetic counselors provide scientific expertise, education, risk assessment, non-directive support for decision making and psychosocial needs, and community resources. Genetic counselors are central to the provision of quality, comprehensive care of individuals and families affected with or at risk for specific genetic conditions, or with genetic predispositions to cancer, cardiovascular, or other diseases. Genetic counselors in clinical settings use a client-centered approach to ensure that patients and their medical providers can understand and appropriately utilize genetic information and laboratory tests to promote informed healthcare choices. Laboratory-based genetic counselors serve as professional liaisons to hospital systems, individual health care providers and their patients. They help providers and patients understand new testing modalities and appropriate testing options, conduct utilization management review to promote cost-effective use of genetic testing, and provide individualized results interpretation. Genetic counselors in both clinical and laboratory roles utilize their scientific expertise to research genomic variants and ensure that clinical interpretation of often novel findings of genomic testing reflects current knowledge. Many program alumni are faculty at their institutions, promoting genomic literacy as educators of trainees, other healthcare professionals and the public, and conducting clinical and translational research. Many alumni facilitate support and advocacy groups for genetic conditions, engage in health care policy development regarding genetic services, and provide consulting to biotechnology and other industries. It is an exciting time for the program's graduates to be entering the genetic counseling field, as professional roles and opportunities continue to expand and evolve in the context of precision genomics-based healthcare.

Student Profile:

Admission to the Genetic Counseling Program is highly competitive and is conducted through a national match program. Applications to the program increase each year. In the spring 2018 admissions cycle, 171 individuals applied for the six available positions in the incoming Class of 2020, a 27% increase from the previous year. The mean GPA of the incoming students is 3.82. The mean GRE scores of this group are: Verbal - 80%ile, Quantitative - 61%ile and Analytical - 85%ile.

Students in the Class of 2020 come from four states, including Colorado, and from Canada. They include six females ranging in age from 25 to 56 years (median 28 years). Two incoming students have master's or doctoral degrees. Prior professional and volunteer experiences include crisis counseling, community services/advocacy work, basic and clinical research, administrative work for a commercial genetics laboratory, and secondary science teaching.

Notable Accomplishments - 2017-2018 Academic Year

- 100% of the program's 2017 graduates taking the American Board of Genetic Counseling Certification Exam achieved certification on their first attempt, while nationally, 86%-88% of examinees achieved passing scores during this period.
- Capstone research projects of two students in the 2017 graduating class were selected for poster presentation at national meetings, including the 2017 National Society of Genetic Counselors Annual Education Conference and the 2017 American College of Medical Genetics Conference.
- All students in the 2018 graduating class were employed prior to graduation and entered clinical practice in the specialties of pediatrics, oncology, and fetal health.

M.S. Genetic Counseling Program Information:

Program Director: **Carol Walton, MS, CGC**

Assistant Director, Clinical Training: **Kathleen Brown, MS, CGC**

Medical Director: **Peter Baker II, MD**

Website: www.ucdenver.edu/geneticcounseling

Graduate Medical Education



2017-18 ANNUAL REPORT

The Graduate Medical Education (GME) Office is under the leadership and direction of **Carol M. Rumack, MD**, Associate Dean for GME at the University of Colorado School of Medicine (CUSOM) and Designated Institutional Official (DIO) for the Accreditation Council for Graduate Medical Education (ACGME). Ashley Walter, BA, is the Director of Finance and Administration.

Rumack and staff are responsible for the oversight of ACGME accreditation and educational environment as well as payroll, benefits, and administrative issues for all residency and fellowship training programs.

Mission: The GME Office will achieve the highest level of accreditation for the CUSOM institution and residency and fellowship programs, and provide leadership, education, and support to its residency and fellowship programs to educate residents and fellows to be outstanding physicians.

The GME Office implements policies of the Graduate Medical Education Committee (GMEC) of the School of Medicine. The ACGME charges the GMEC with responsibility for monitoring and advising on all aspects of residency education including compliance with ACGME work hours, patient safety and quality improvement requirements, and in maintaining a strong learning environment.

The GMEC is composed of program directors, designated representatives of the major teaching hospitals, and officers of the Housestaff Association. GMEC reports to the Dean of the School of Medicine through the Associate Dean for GME and Senior Associate Dean for Education. The website is: www.medschool.ucdenver.edu/gme

2017-18 GME Highlights

The University of Colorado School of Medicine GME:

Trains 77% of the total residents and fellows in Colorado

Is the largest of 13 sponsoring institutions in the state of Colorado

Is the 18th largest institution of 818 nationally

Oversees and provides support to approximately 125 Program Directors, 100 Program Coordinators, and 1,500 Faculty

Has no ACGME institutional citations

Anticipates its ACGME Institutional Self-Study Date in October 2025

6th Annual GME Outstanding Program Coordinator Awards

The Graduate Medical Education Committee, in collaboration with the Program Coordinator Council (PCC), recognized two outstanding program coordinators.



Jennifer Weber
Internal Medicine



Pamela Sullivan
Rose Family Medicine

Jennifer Weber and Pamela Sullivan were excellent candidates. Jennifer Weber was the CUSOM GME Nominee for the ACGME 2019 National Program Coordinator Award.

2017-18 ACGME CUSOM RESIDENT & FACULTY SURVEY RESULTS

Residents and Faculty of all ACGME accredited programs are required to complete this annual survey. Results of the surveys are utilized by ACGME as a key performance indicator for program quality and compliance with work and training environment requirements and for CUSOM institutional performance. 102 programs were surveyed.

RESIDENT SURVEY RESULTS: 93% response rate

Duty Hours	Faculty	Evaluation
Educational Content	Resources	Patient Safety/Teamwork

FACULTY SURVEY RESULTS: 90% response rate

Faculty Supervision & Teaching	Educational Content	Teamwork
Resources	Patient Safety	

**INSTITUTION IS AT OR ABOVE NATIONAL MEAN FOR ALL SURVEY QUESTIONS AND CATEGORIES
GMEC – OVERSIGHT & EDUCATION**

NEW ACGME PROGRAMS APPROVED				
Programs	Positions	Length of Training (years)	Site Visit Scheduled	Citations
Physical Medicine/Rehabilitation – Sports Medicine	1	1	N/A	N/A
Addiction Medicine	3	1	N/A	N/A

ACGME PROGRAM SITE VISITS		
Programs	Site Visit Date	Citations
Neurological Surgery	2/13/2018	1
Allergy/Immunology (CHCO)	5/8/2018	N/A
Medical Biochemical Genetics	5/9/2018	N/A
FM - UCH Rural Training Track	5/9/2018	N/A

PROGRAM CLOSURE 6/30/2018
Rose Family Medicine - 17 Residents
6 graduated
6 transferred to UCH FM
5 transferred to other local institutions

GMCC APPROVED NEW NON-ACGME FELLOWSHIP PROGRAMS	
Perioperative Management of Liver Transplantation	NeuroAnesthesiology
Regional Anesthesiology & Acute Pain Management	Preventive Medicine – STD Fellowship
Family Medicine Junior Faculty Fellowship	Interventional Pulmonology
Thyroid Cancer	Neurohospitalist

GMCC SPECIAL REVIEWS – ACGME SURVEY ISSUES (or OTHER ISSUES)			
Programs	Month/Year	Programs	Month/Year
ANES – Pediatric Anesthesiology	6/2017	ORT – Sports Medicine	2/2018
MED - Nephrology	6/2017	MED – Allergy/Immunology (NJH)	6/2018
MED - Pulmonology	6/2017	OTO – Pediatric Otolaryngology	6/2018
MED – Sleep Medicine	6/2017	PATH – Forensic Pathology	6/2018
FM – Preventive Medicine	7/2017	PED – Adolescent Medicine	6/2018
PED – Medical Genetics	7/2017	PED – Allergy/Immunology CHCO	6/2018
SUR – Pediatric Surgery	11/2017	PED – Endocrinology	6/2018
MED - Cardiovascular Disease	12/2017	OTO – Pediatric Otolaryngology	6/2018

New Program Directors (PDs) & Program Coordinators (PCs)					
ACGME Programs	2013/14	2014/15	2015/16	2016/17	2017/18
New PDs	6	13	12	10	11
New PCs (and/or transferred to another program)	12	18	14	20	15
2017-18 average turn-over rate: PDs = 10% PCs = 18%					

Figure 1

2018-19 GME Enrollment Data & Trends
(Numbers reflect enrollment as of August 1, 2018)

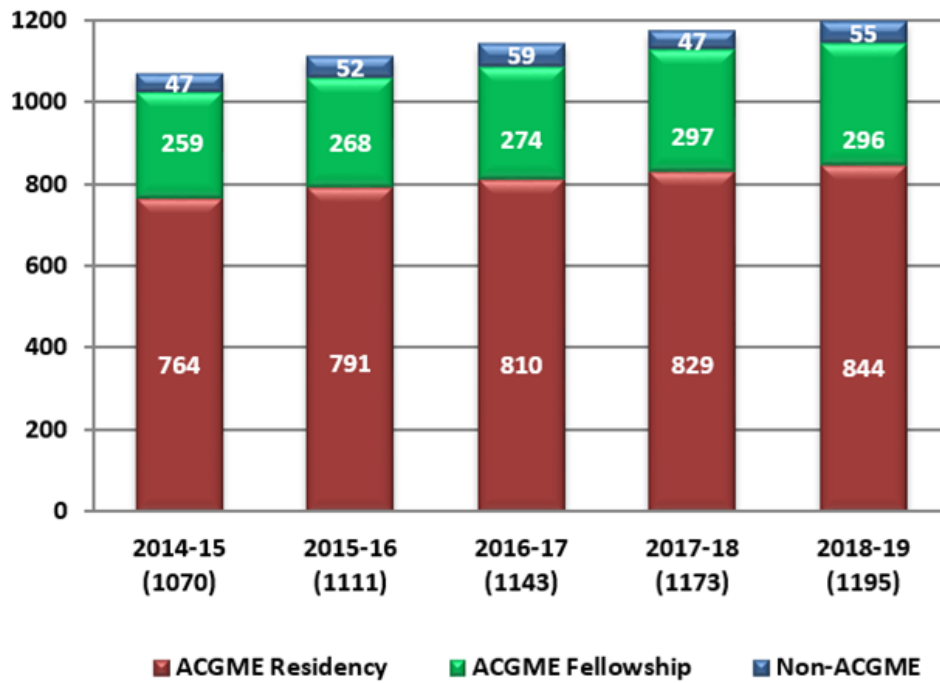


Figure 2

Number of GME Programs

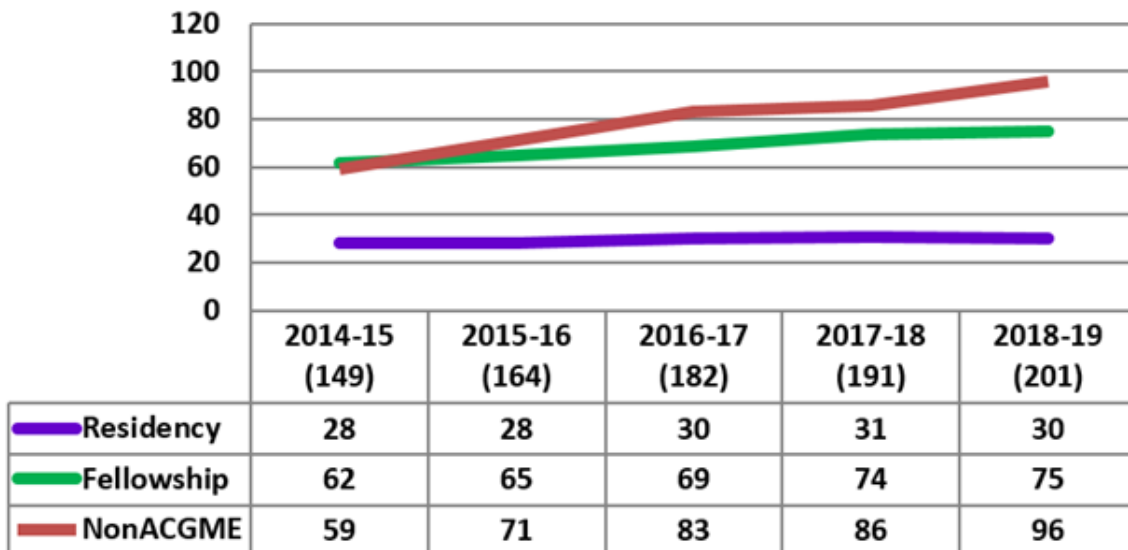


Figure 3

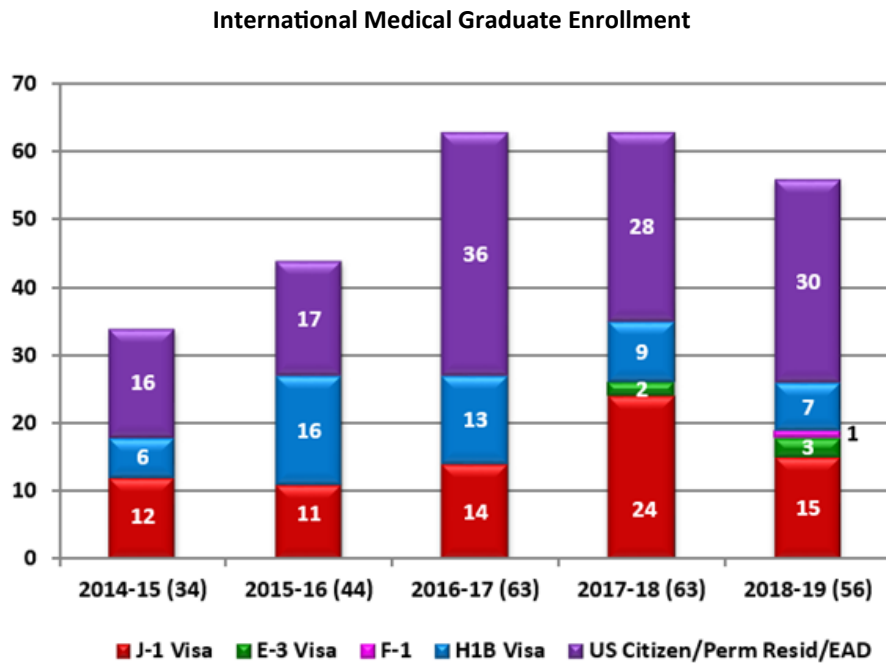


Figure 4

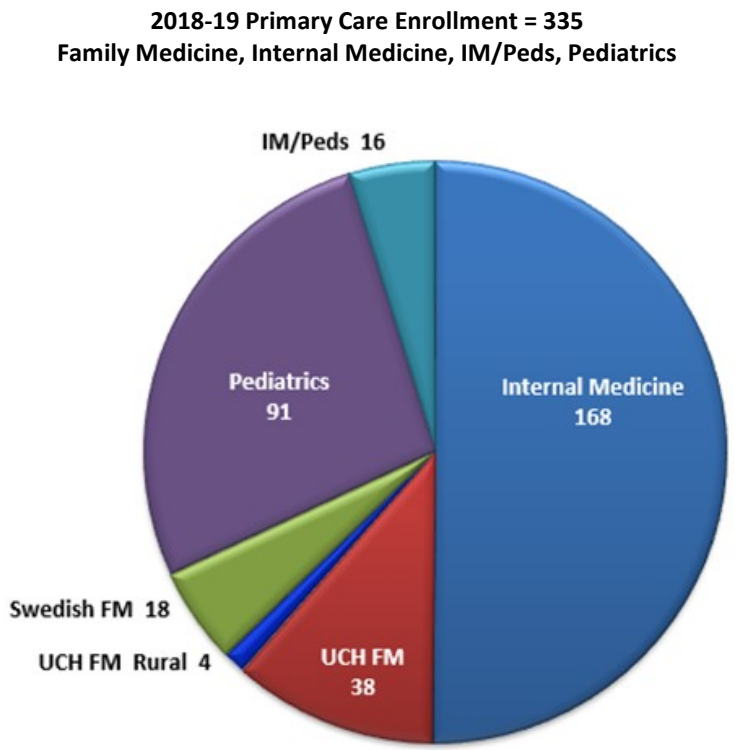


Figure 5

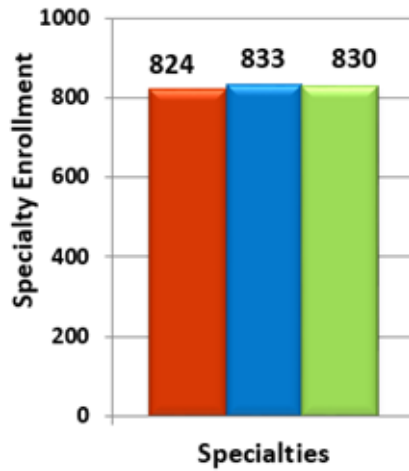
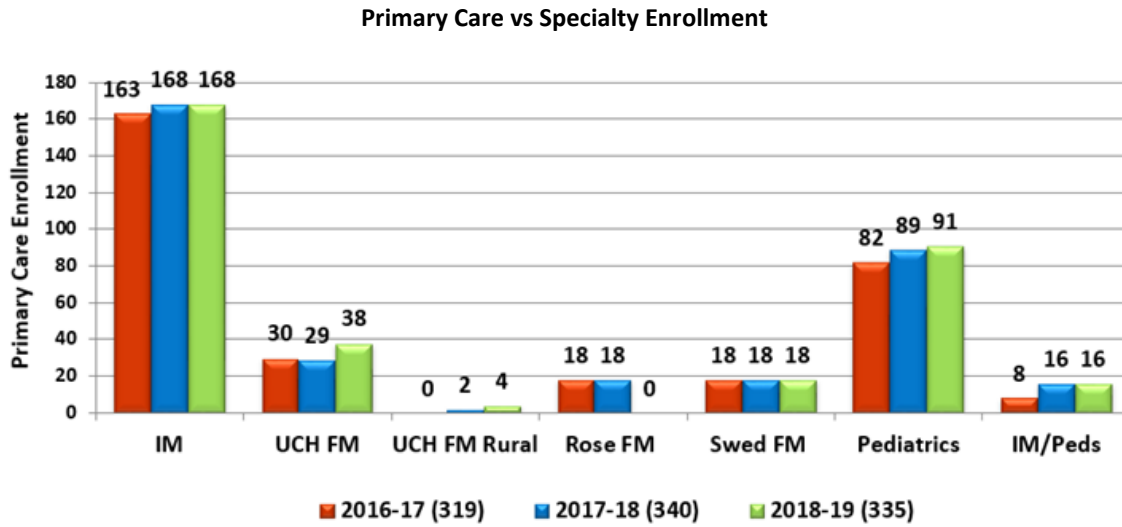
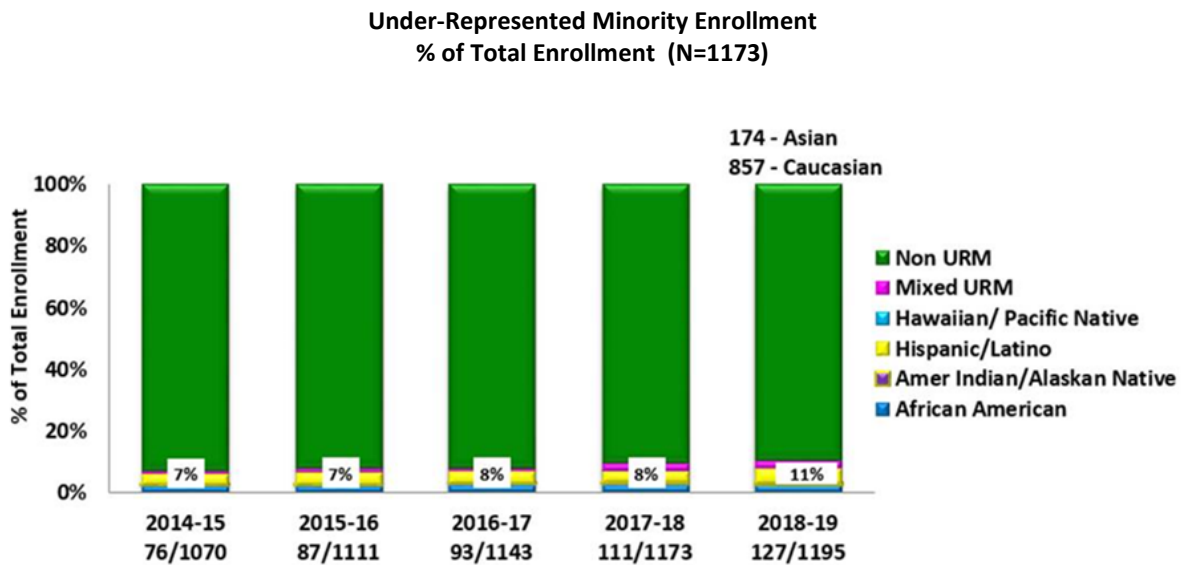


Figure 6



GRADUATE SATISFACTION – GME 2017-18 GRADUATE SURVEY



Internal Medicine and Pediatric interns, photo courtesy of [@amf913](#) (posted on @cuanschutz Instagram)

For the 2017-18 academic year 374 residents and fellows graduated from ACGME and Non-ACGME approved programs. All graduates completed the 2017-18 GME Graduate Survey.

Figure 7

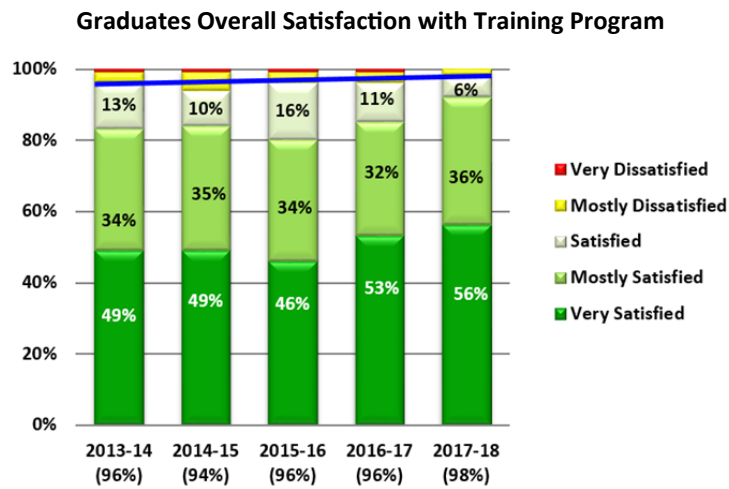


Figure 8

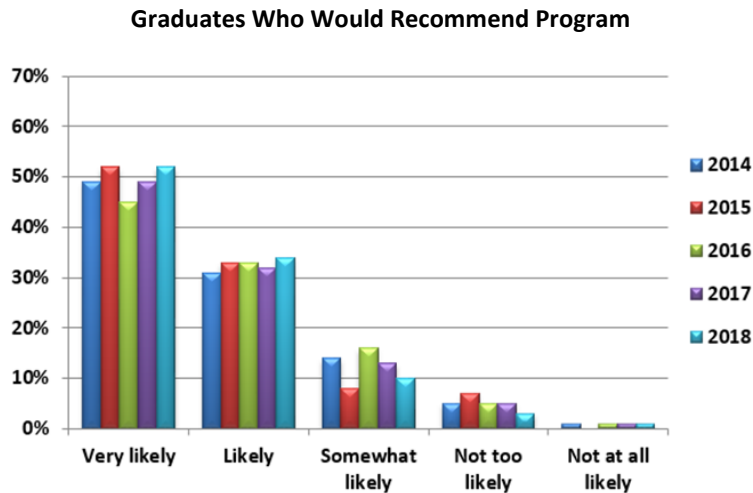


Figure 9

GME Graduates - Professional Plans

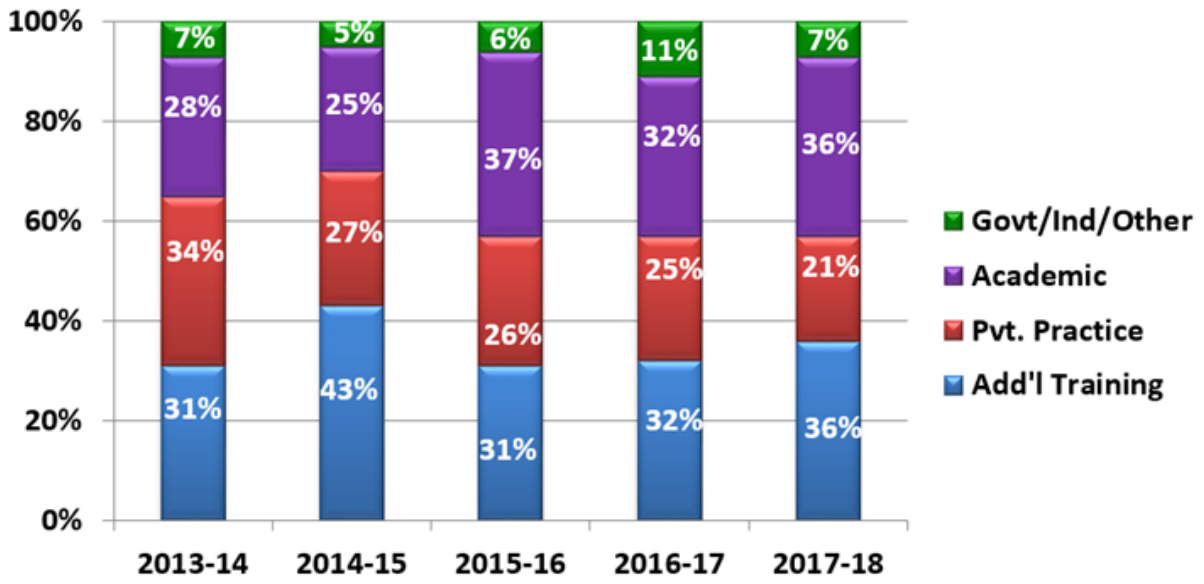


Figure 10

Practice in Colorado After Completion of Training – All 2017-18 GME Graduates

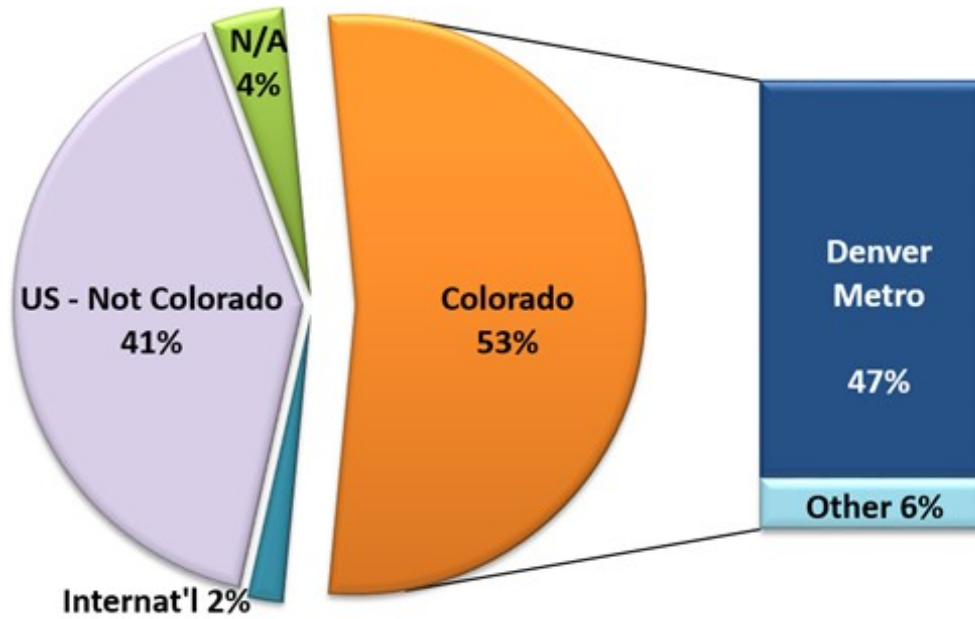


Figure 11

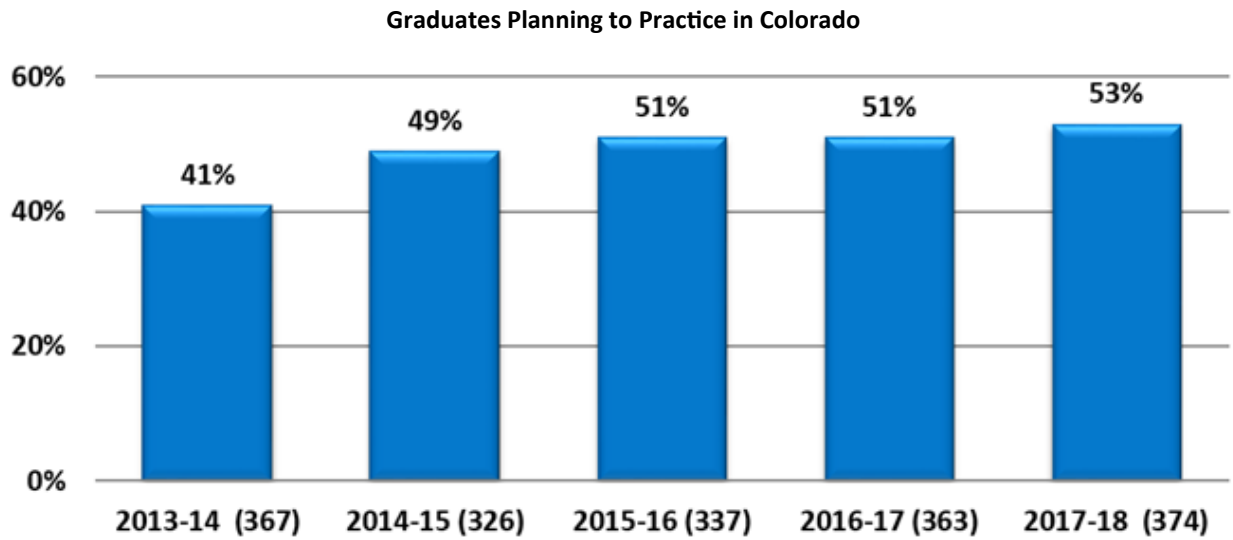


Figure 12



Figure 13

2018 Graduates Staying in Colorado Will Serve

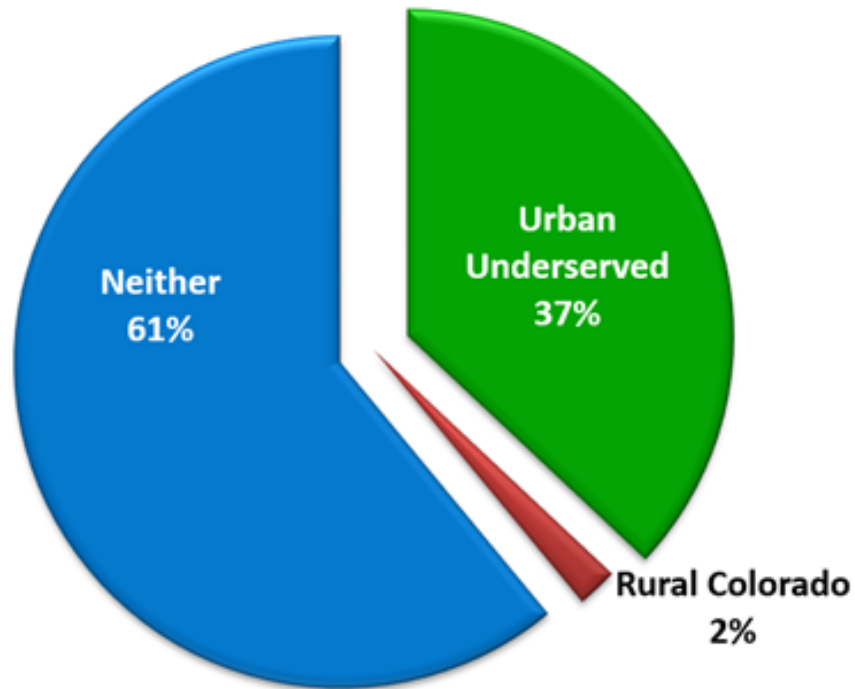


Figure 14

Where Will 2018 Primary Care Graduates Practice?
(96/373) FM, IM, IM/Peds, Peds

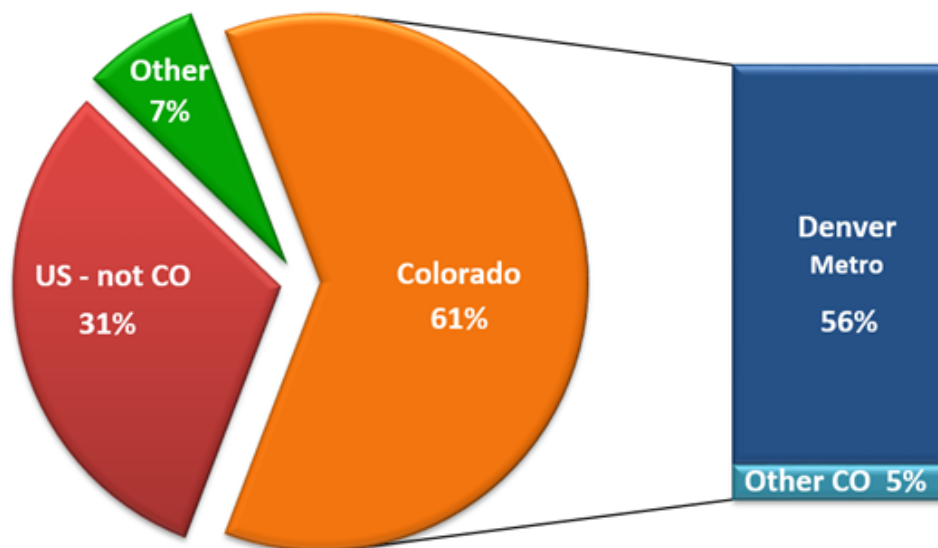


Figure 15

Where will 2018 Specialty Graduates Practice?
(278/374)

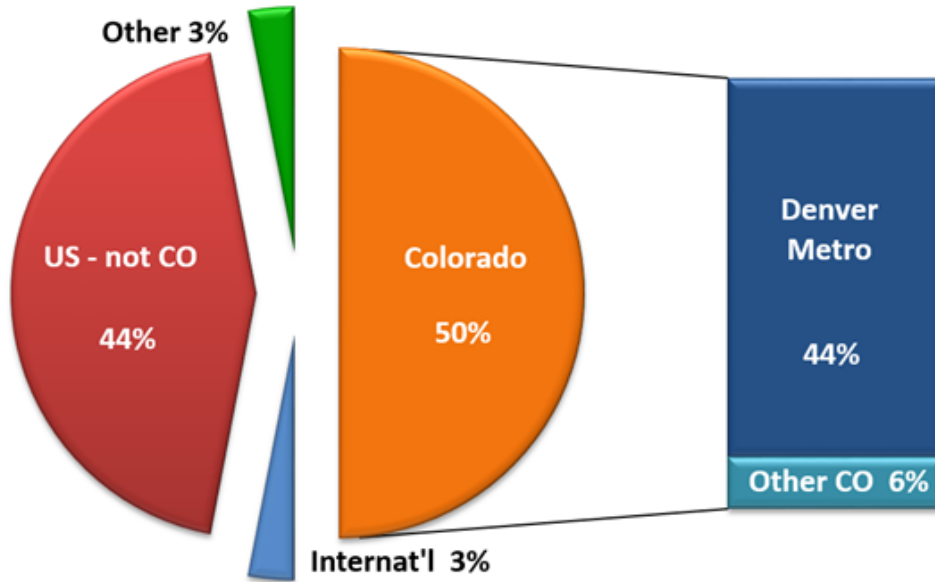
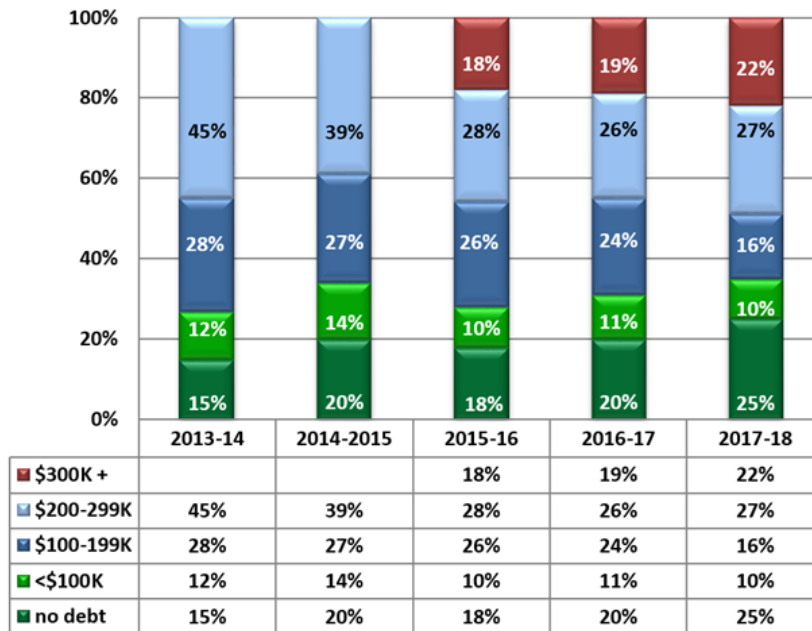


Figure 16

Resident/Fellow Financial Debt



Office of Continuing Medical Education and Professional Development

The Office of Continuing Medical Education & Professional Development (OCME&PD) revised its mission statement in 2017 to include enhancement of “learners’ knowledge, competence, performance, or patient outcomes through continuing medical education and professional development activities that are linked to practice and focused on health care quality gaps.” Learners are expected to “apply new knowledge and skills in order to improve performance and patient outcomes in their practice settings.”

Brenda Bucklin, MD, Professor of Anesthesiology, serves as Associate Dean for Continuing Medical Education & Professional Development. In addition, the OCME&PD office is staffed by Pam Welker (Administrator), Carolyn Wieber (Conference Manager), Ellen Ricker (Conference Manager), and Donna Jones (Faculty Liaison). The OCME&PD is funded by administrative fees, tuition, and minimal administrative support. In 2017, the OCME&PD office reached more than 16,000 MD/DO and 10,000 non-MD learners. In addition, 2,707 hours of instruction were certified for AMA PRA Category 1 Credit™. Plans for the future include pilot programs for providing ABIM Medical Knowledge MOC Points for live courses, aligning CME activities with the quality improvement enterprise, increasing interprofessional education opportunities, preparing a mid-cycle review for ACCME accreditation in 2021, and continuous quality improvement of our CME process. For more information, visit our website at medschool.ucdenver.edu/cme or email Pam.Welker@ucdenver.edu or Brenda.Bucklin@ucdenver.edu.

Physical Therapy

The University of Colorado School of Medicine Physical Therapy Program, in the Department of Physical Medicine and Rehabilitation, prepares each student to become a Doctor of Physical Therapy (DPT). Physical therapists are recognized as experts in movement and function and treat patients of all ages in many different settings. Graduates of the CU Physical Therapy Program are prepared to collaborate with other healthcare providers to meet the musculoskeletal, cardiovascular, and neuromuscular needs of patients through direct access to care.

The CU Physical Therapy Program was ranked No. 15 of 217 accredited physical therapy programs in the United States by *U.S. News and World Report* in 2016. This program has been continuously accredited since its inception in 1947, receiving an unconditional 10-year accreditation in 2010. The program celebrated its 70th Anniversary in 2017 with a highly successful series of events attended by alumni, colleagues, and business leaders.

The mission of the University of Colorado Physical Therapy Program is to lead discovery and innovation to improve movement, participation, health and wellness for individuals and society through excellence in education, research, clinical care, and service.

The vision is to transform health and foster wellness in individuals and society through education, discoveries, engagement and innovation. The values of the University of Colorado PT Program serve to support our mission and vision, shape our culture, and reflect the physical therapy profession’s vision and core values.

Applicants to the CU Physical Therapy Program

Applicants to CU Physical Therapy Program come from a wide range of academic backgrounds. There are minimum prerequisites, similar to those for the MD Program that emphasize basic sciences, quantitative ability, and humanities. In addition, many of the applicants have substantial experience in healthcare-related professions. Some have advanced degrees and all have worked clinically as volunteers or in paid positions in preparation for application to the CU Physical Therapy Program.

Applicant Data 2017-18

- ◆ Completed Applications: 760
- ◆ Interviewed: 149
- ◆ Enrolled: 67
- ◆ GPA: 3.7
- ◆ GRE Verbal: 156
- ◆ GRE Quantitative: 155

Students of the CU Physical Therapy Program

Students enter this program with high qualifications and graduates of the program pass a national licensure examination with scores well above the average for the United States. The program is innovative and the faculty members are among the leaders in physical therapy education. The 2018 entering class of physical therapy students has many unique life experiences that enhance and enrich the student body and they are exceptionally qualified academically. Among this cohort many students have had extraordinary research accomplishments, valuable experiences with individuals around the world, noteworthy physical endeavors, and honorable service to their communities. This includes a student who contributed to research in cognitive aging and traumatic brain injury studies and another who quantified the effect of concussion on the motor cortex. Domestic and international travel experiences have included participation in camps for children with muscular dystrophy and life-threatening illnesses and an internship at a school for children with disabilities in Chennai, India. One student studied abroad in 16 countries. The CU PT Program has been joined by an individual who spent four years in the U.S. Navy, an EMT and several first-generation college students. In addition, there are students who excel in pottery, photography, dog training, and piano playing.

Many students enter the Physical Therapy Program with expertise in yoga, dance, and sports, often teaching these skills for life-long health and wellness to others. Most of the students are involved in more traditional sports and exercise, such as soccer and running, but others have received national and international recognition in steeplechase, ski racing, ultramarathons, roller derby, and cycling. Ethnically, many students have Hispanic backgrounds, one student identifies as Black, two as Black/Hispanic and three students are Vietnamese. Approximately 65-70 students enter the CU Physical Therapy Program each year. Most students come from Colorado, but students are accepted to the program from across the United States and from other countries.

Demographics of Admitted Students

Class:	2018	2019	2020
Female	76%	74%	69%
Male	24%	26%	31%
CO Resident	47%	62%	52%
Non-Resident	53%	38%	48%
Minority	10%	10%	21%
Average Age	24	24	24
Cumulative GPA	3.72	3.77	3.7
Math/Science GPA	3.64	3.73	3.65

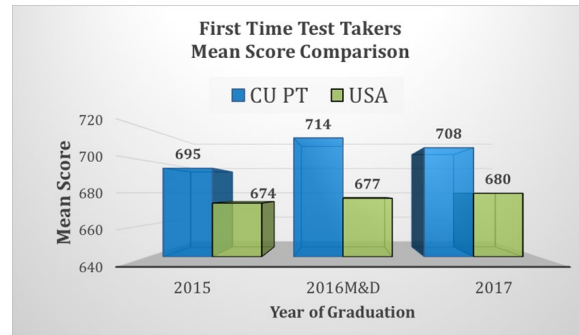
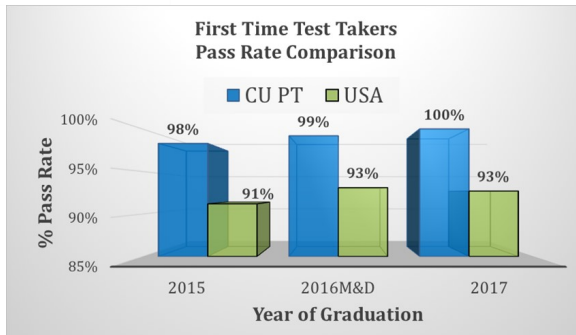
Graduates of the CU Physical Therapy Program

Graduates from the CU Physical Therapy Program perform exceptionally well on the national licensure examination, administered by the Federation of State Boards of Physical Therapy (FSBPT). Since 2011, 98% of our graduates have passed the exam on their first attempt. Graduates are employed in a variety of settings, including outpatient, inpatient from pediatrics to geriatrics.



FEDERATION OF STATE BOARDS OF PHYSICAL THERAPY

Summary of scaled results based on FSBPT criterion-referenced passing score of 600.



Note: Due to curricular changes, there were two graduating classes in 2016: May and December. Data for the Class of 2018 will be post-December 2018 graduation.

Faculty

Faculty of CU Physical Therapy Program are experienced with education, scholarship, clinical care, and service roles and are highly committed to the education of the CU PT students. Many of the faculty members are recognized both nationally and internationally for their scholarships. All are members of the American Physical Therapy Program Association (APTA) where they serve in leadership roles on the Board of Directors of APTA, and as President of the Cardiovascular and Pulmonary Section of APTA. They serve other professional organizations, as members of NIH grant review sections and committees, and on community organizations, including President of Colorado State PT Board, Department of Regulatory Agencies, the DAWN Clinic, and the Stout Street Clinic for individuals who are homeless. Over the past ten years, the faculty have developed a robust and substantial research initiative with a current research portfolio of over \$10 million.

Curriculum

In 2011, the CU Physical Therapy Program was one of the leaders in physical therapy education to revise its curriculum to accommodate a yearlong paid internship. This new curriculum, which was launched in 2014, prepares students for graduation in two-and-a-half years, rather than three years under the previous curriculum. This change was initiated to reduce the financial burden to students due to the decreased time without income and to assure that graduates are prepared to work in the increasingly complex health care environment.

The curriculum specifically addresses four issues currently affecting entry-level physical therapy education:

Workforce readiness: In the current health care environment, clinical enterprises do not have the time and flexibility to assist the new graduate to develop the necessary skills to fulfill all the roles of a practicing clinician beyond those associated with direct day-to-day patient management. The internship includes time allocated for structured learning.

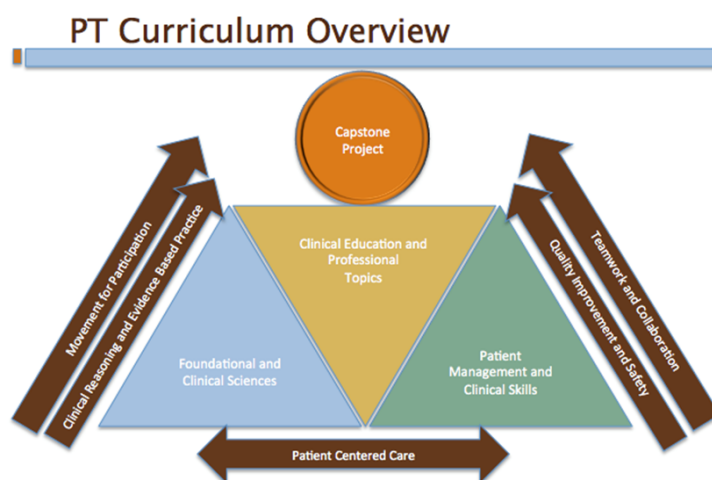
Mentoring time: Because of challenges in the current health care system, experienced clinicians have insufficient time to mentor new graduates. The internship model provides a mechanism to adjust for unreimbursed time that experienced clinicians spend mentoring the new graduate.

Billing restrictions: In some settings, clinical enterprises are limited in their ability to bill for student-provided services to patients with Medicare, and in some cases Medicaid. In addition, students in these settings are subjected to more stringent supervision requirements. The billing and supervision restrictions limit the ability of clinical sites with high Medicare census to educate students in their clinics, and prevent students from reaching independence, which is the goal of clinical education. This concern is overcome because the intern is a licensed clinician for three-quarters of the internship.

Student Debt: In this new model of education, the student will begin to receive a salary almost a year earlier than in the previous model, substantially reducing the time without income.

The curriculum is comprised of two-and-a-half years of pre-graduation didactic and clinical experiences followed by eight months of post-graduation clinical experience. The pre-graduation phase includes nine semesters of didactic coursework and 38 weeks of clinical experiences. Curricular content is divided into foundational and clinical sciences, patient management and clinical skills, professional topics, and clinical education experiences. Patient management includes orthopedic, cardiovascular, and neurological physical therapies, as well as physical therapy for patients with a variety of other medical conditions. Professional topics include courses focused on professional skills and behavioral attributes, as well as courses in evidence-based practice, research design and methods, and clinical reasoning.

The curriculum has been highly successful, with a 100% pass rate on the physical therapy licensure board exams. Faculty of the CU Physical Therapy Program review and revise the curriculum annually to ensure that content and emphasis are consistent with the ever-changing health care needs.



Curricular Threads

The curriculum is carefully designed to integrate five content areas that are threaded throughout the curriculum:

- Patient-Centered Care
- Clinical Reasoning and Evidence-Based Practice
- Movement for Participation
- Teamwork and Collaboration
- Quality Improvement and Safety

Center for Advancing Professional Excellence

The Center for Advancing Professional Excellence (CAPE) provides an outstanding environment for our students to practice certain physical therapy examination, intervention, and communication skills. One experience focuses on learning in an ICU environment and two comprehensive examinations and assessments take place during the first and second years of the program. The Doctor of Physical Therapy Program is one of the few physical therapy programs in the United States where students can work with standardized patients and mannequin simulation in conjunction with a full-service Center of Excellence.

Interprofessional Education

The CU Physical Therapy Program participates in the longitudinal Interprofessional Education and Development (IPED) curriculum that is designed to develop competencies in teamwork and collaboration, values and ethics, and quality and safety to prepare our students for interprofessional collaborative practice. Each student is assigned to a team of students, which includes students from some or all of the following schools/programs: School of Medicine (Physical Therapy, Medicine, Child Health Associate/Physician Assistant, Anesthesiologist Assistant), School of Pharmacy, College of Nursing, and School of Dental Medicine. Over the first two years of the curriculum, the interprofessional student team meets to understand and apply fundamental content in teamwork, communication, quality and safety, and ethics. In year two, students spend an afternoon in the Center for Advancing Professional Excellence (CAPE) to take part in two team simulations/standardized patient encounters.

Clinical Reasoning Capstone Project

The didactic curriculum culminates in a capstone project. The capstone project includes the writing and presentation of a case report that synthesizes the didactic content of the curriculum with the student's clinical experiences, while highlighting the application of evidence-based practice and clinical reasoning.

Research initiatives

Entry-level DPT students are encouraged to participate in research under the guidance of nationally recognized faculty mentors, and present their findings through national scientific conferences and peer-reviewed publications. Several research facilities are available that enhance the ability of faculty to conduct rehabilitation research and to mentor students who seek to develop research skills while completing their physical therapy education. One facility, the Interdisciplinary Movement Science Laboratory, contains state-of-the-art equipment for motion analysis of gait and other functionally relevant tasks. A sister facility in the Geriatric Research, Education, and Clinical Center (GRECC) contains an instrumented treadmill with a motion analysis system that allows intervention and outcome research for populations with walking dysfunction. These motion analysis facilities are also equipped for studies involving electromyography (EMG) and transcranial magnetic stimulation (TMS). Additionally, a third facility, the Human Performance Laboratory is equipped to quantify fundamental daily tasks, balance, and strength. The Gersten Education and Research Office houses graduate students, post-doctoral fellows, research assistants, and physical therapy students who assist with research projects.

Scholarships

The CU Physical Therapy Program made a commitment to develop robust scholarship support to help offset the cost of education to students. Scholarships are available, emphasizing merit, commitment to working in rural Colorado and Wyoming, and service to medically underserved communities with health disparities. The CU Physical Therapy Scholarship and Endowment Advisory Board was formed in 2012. It has increased both the PT Program endowments, and the current use funds from less than \$300,000 in 2011 to over \$3 million in 2017. Over \$189,000 is committed for annual disbursements. The Board, CU Physical Therapy Program leadership, and the Alumni Association are working together to increase the endowment and current use funds with a goal of being positioned to distribute over \$200,000 in scholarships annually.

Pediatric Physical Therapy Residency Program

The mission of the University of Colorado Pediatric Physical Therapy Residency Program is to provide a comprehensive program of didactic, clinical, and professional experiences to develop pediatric physical therapy specialists. Through clinical care experiences, educational excellence, exposure to research, and active engagement in scholarship, teaching opportunities, professional and community service, and participation in collaborative teamwork, residents will become future leaders in the profession.

The University of Colorado Physical Therapy Pediatric Residency Program is one of only 20 active accredited Pediatric PT Residency Programs nationally and consists of planned post-professional clinical and didactic education for licensed physical therapists who have graduated from an accredited DPT program. The program is designed to significantly advance preparation of the physical therapist as a pediatric board-certified clinical specialist through experiences and mentorship in multiple pediatric clinical settings. Future leaders in pediatric physical therapy are developed through coursework and clinical experiences during the 13-month Residency Program. In addition to clinical opportunities with structured mentorship, the program also includes participation in the Leadership and Education in Neurodevelopmental Disabilities (LEND) program through JFK Partners (www.jfkpartners.org) and access to the resources of the University of Colorado Physical Therapy Program. The American Board of Physical Therapy Residency and Fellowship Education (ABPTRFE) accredits all residency and fellowship programs, and the University of Colorado Pediatric Residency Program was reaccredited in 2017 for ten years.

The seventh Pediatric PT Resident Graduate successfully completed the Residency in July 2018. The applicant pool continues to be exceptionally strong with applicants from across the United States, vying for a single position in this Residency during the 2018-2019 application cycle. Accomplishments of the residency graduates include leadership positions in clinical care, professional organizations and several published manuscripts in *Pediatric Physical Therapy*.

The first six residents have taken and passed the clinical specialist examination to be recognized as Pediatric Clinical Specialists by the American Board of Physical Therapy Specialists (ABPTS). The earliest this exam can be taken is the year following completion of the Residency. Clinical sites during the 2017-2018 residency included the ENRICH Early Intervention team through JFK Partners, Highlands Ranch Therapy Care Clinic of Children's Hospital Colorado, Rise School of Denver, Cherry Creek School District, acute care and inpatient rehabilitation in Children's Hospital Colorado and Adam's Camp.

PhD Program in Rehabilitation Science

Rehabilitation Science is an interdisciplinary and translational field of study that integrates knowledge from the basic and clinical sciences to improve our understanding of human movement, physical function, and disability across the lifespan. Students receive individual mentorship from nationally recognized rehabilitation scientists in state-of-the-art research facilities, with a customized curriculum to meet the unique interests of each student. Breadth of knowledge is acquired through foundational coursework in research design, biostatistics, and rehabilitation science, whereas depth of knowledge is gained through elective coursework in one of five areas of focus: clinical trials research, health services research, translational research, mechanistic research, and implementation science. This approach prepares students to become independent research scientists who integrate knowledge from multiple perspectives ranging from the molecular to the systems level to solve complex problems of physical disablement that will advance clinical practice in the field of physical rehabilitation.

Students of the PhD Program in Rehabilitation Science are highly successful, as evidenced by many measures. Such measures include grants and fellowships awarded to our students during their pre-doctoral studies and contributions as co-investigators to investigations that are funded by Foundations and NIH. Students regularly publish peer-reviewed manuscripts, either as first or contributing authors. In the seven years since this program began admitting students, six students have completed their doctoral work, and they are all either currently completing post-doctoral fellowship training or they have secured faculty positions.

Program Leadership

Margaret Schenkman, PT, PhD, FAPTA

Associate Dean for Physical Therapy Education
Director, Physical Therapy Program

Mary Jane Rapport, PT, DPT, PhD, FAPTA

Director, Pediatric PT Residency Program

Jenny Rodriguez, PT, DPT, MHS

Director, Clinical Education

Joe Palmer, III, PT, DPT

Assistant Director, Clinical Education

Jennifer Stevens-Lapsley, PT, PhD

Director, PhD Program in Rehabilitation Science

Website: <http://medschool.ucdenver.edu/pt>

Undergraduate Medical Education

The Undergraduate Medical Education (UME) office oversees students entering medical school with the goal of earning the Doctor of Medicine degree. The students dedicate four or more years to an intensive period of study, clinical rotations, and personal growth. The UME office is responsible for guiding the students throughout their journey to become a doctor of medicine. The process begins with selecting the students who are personally and academically prepared to make the journey. The students receive counseling, financial/career advising, a rigorous curriculum in basic and clinical sciences, state-of-the-art experiences in simulation, rigorous assessments, and technological support throughout their medical school experience. This section of the Facts and Figures book will review some activities in each of these areas for the 2017-2018 academic year: (<http://medschool.ucdenver.edu/MDDegree>).

Following the successful visitation by the Liaison Committee on Medical Education (LCME) in March 2017, under the leadership of Robert Anderson, MD, the Office of Medical Education leadership transitioned and Shanta Zimmer, MD, became the Senior Associate Dean for Education. Our undergraduate medical education team decided, with encouragement from Dean John J. Reilly, Jr., MD, to embark on a process to revise our curriculum, focusing on preparing our graduates for the future of medicine, science and health systems. On October 30, 2017, we conducted a kickoff retreat for the process. With approximately 150 participants, this introductory event served as a catalyst to share ideas and begin the hard work of deciding how our curriculum can be redesigned. We chose the principles of **leadership, curiosity and commitment** required for our future graduates to compassionately and skillfully practice in the ever-changing health care systems and communities of tomorrow as superb clinicians, innovative educators and creative investigators. Eleven curriculum subcommittees engaged in the work of reviewing educational literature, looking for “best in class” educational exemplars and coming up with a uniquely CU approach. Student and faculty engagement in the process has been tremendous and each committee prepared a summary report with recommendations for the future of the CU School of Medicine curriculum. These recommendations were reviewed and discussed at a second retreat in late June 2018, again with large support from faculty, students, and residents from the Graduate Medical Education programs. At this school wide event, the subcommittees proposed a new curriculum framework that will redefine the current approach to training doctors around three pillars of foundational and advanced science, longitudinal clinical care, and an augmented focus on health systems science, which includes the role of the physician in society and communities. The next phase of curriculum implementation will require continued time and effort from our dedicated faculty of scientists, clinicians, and educators with careful input from the students and community members.

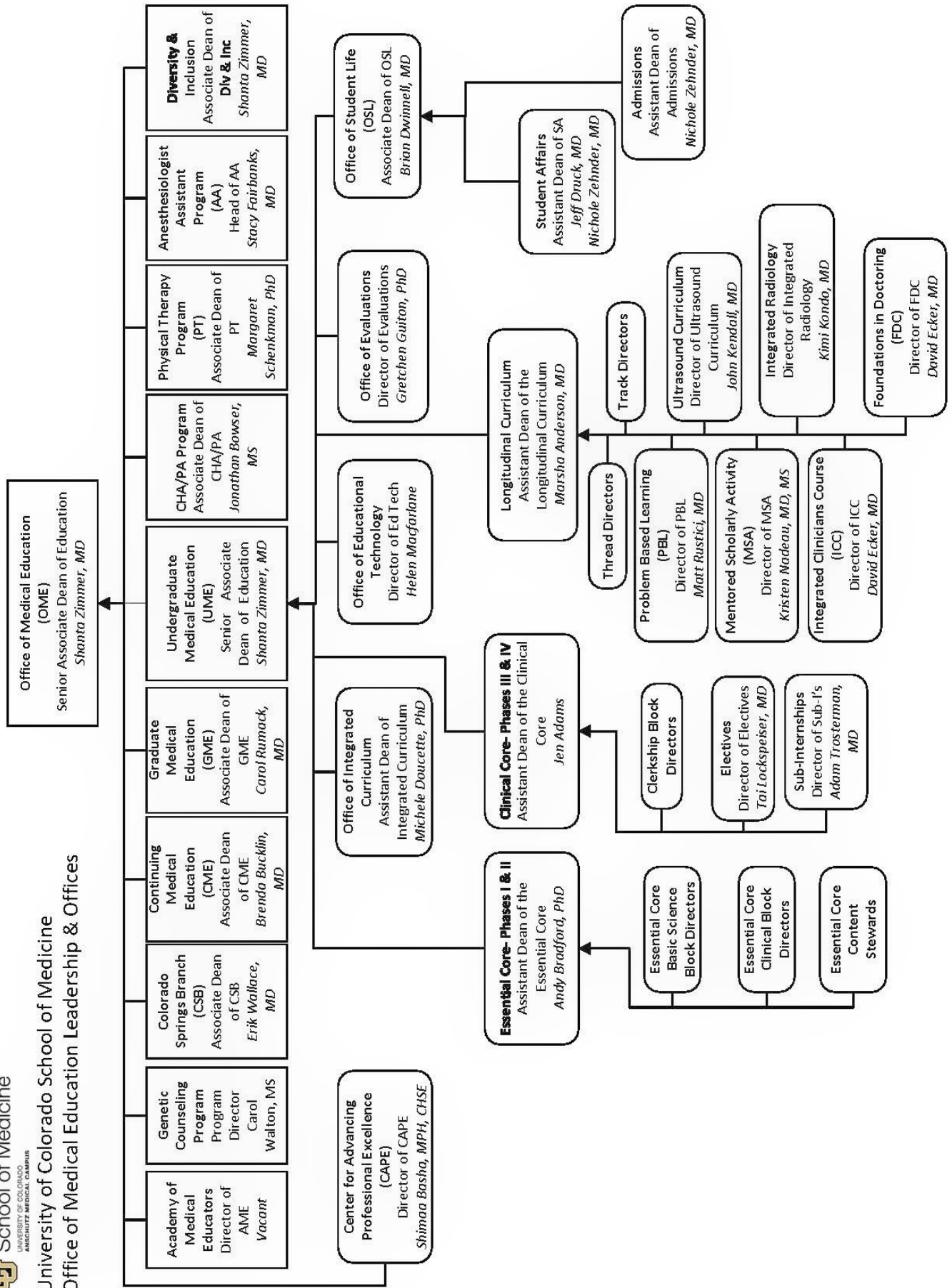
In addition to curriculum reform, meanwhile, we have diligently been working on other initiatives throughout the 2017-2018 and early 2018-2019 academic years. In March 2018, the Colorado Springs Branch (CSB) matched its first cohort of 22 medical students into top residencies and then celebrated their graduation as members of the class of 2018 in May. The first cohort of CSB students performed in an outstanding fashion during their years at CUSOM and we are now at a steady state with the branch supporting students in their longitudinally integrated curriculum each year.

In the summer 2018, a group of students will serve as curriculum ambassadors mentored by faculty educators to develop pilot projects in curriculum reform. These student-faculty teams are designing and evaluating new approaches to basic science content delivery, learning styles, advising and coaching. We are hopeful that the process of continuous improvement will be the culture that defines our new approach to medical education.

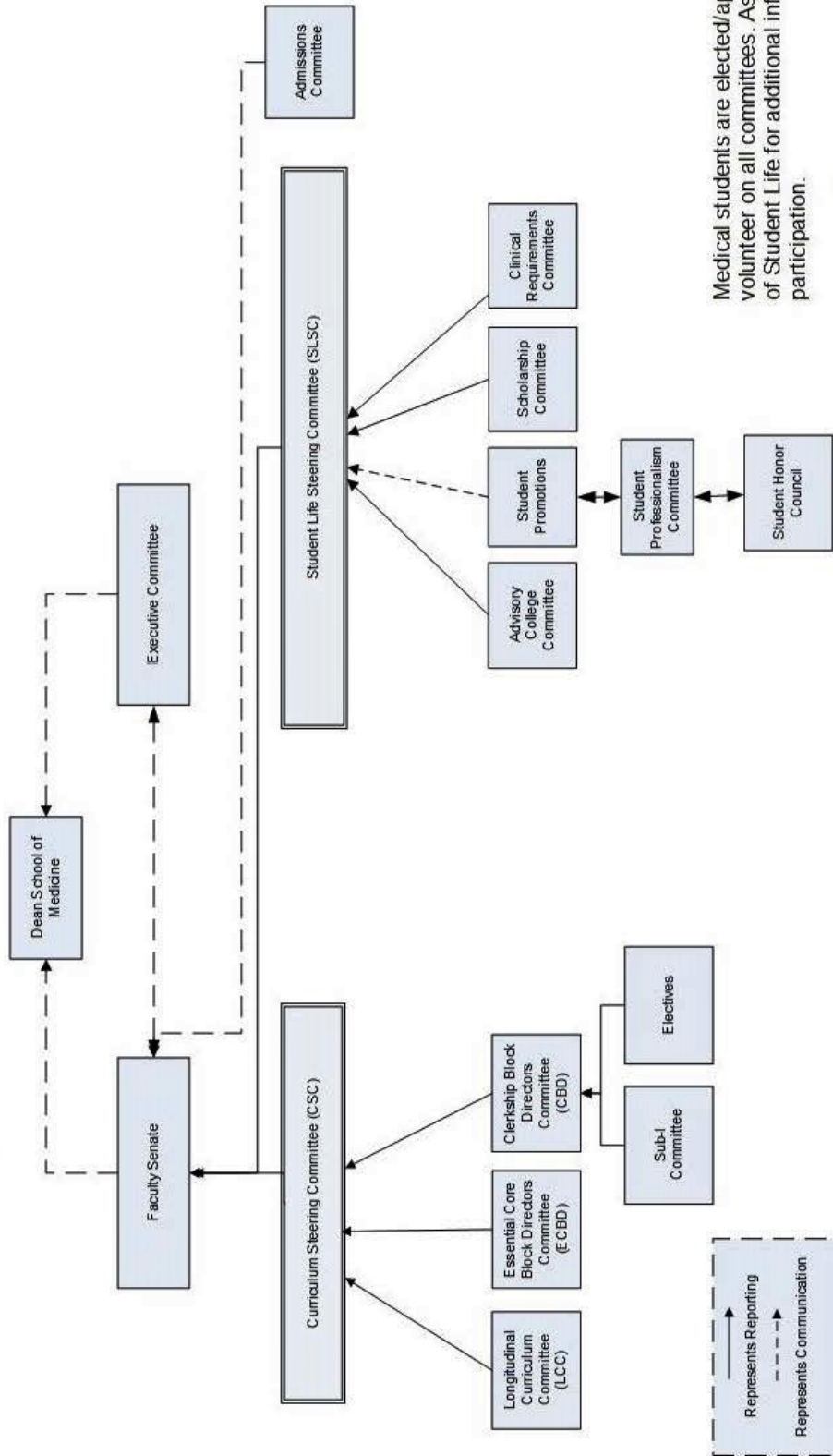




University of Colorado School of Medicine
Office of Medical Education Leadership & Offices



Undergraduate Medical Education Committee Structure



Committees

The activities of the Undergraduate Educational Program at CUSOM are overseen by two committees: The Curriculum Steering Committee and the Student Life Steering Committee.

The SharePoint® intranet houses information on all the UME education committees.

The curriculum committees meeting agendas and minutes are posted here: <https://mysom.ucdenver.edu/education/CurrComm/SitePages/Home.aspx>.

The Student Life Steering Committee and subordinate committee documents are posted here: <https://mysom.ucdenver.edu/education/Student-Life-Steering/SitePages/Home.aspx>.

If you do not have access and would like to, please contact the Office of Educational Technology at SOM.EdTech@ucdenver.edu.

Curriculum Steering Committee

Chair: **Stu Linas, MD**

- a. The Curriculum Steering Committee (CSC) is responsible for the oversight, design, implementation, integration, evaluation, review, and revision of the medical curriculum. With appropriate faculty input, the CSC will
 - oversee the medical education program, including design, integration, evaluation and improvement;
 - guide, review, approve course, block, and thread content and educational formats;
 - systematically establish the evaluation procedures for curriculum, student and faculty assessment;
 - focus on helping achieve specific curricular outcomes associated with graduating superior physicians;
 - periodically review and amend educational policies; and
 - recommend, facilitate, and develop procedures to assure that suggested changes to the curriculum are implemented.
- b. The Curriculum Steering Committee posts all of its materials on a Sharepoint site available to its users.

Specific accomplishments are outlined in the table below:

CSC Accomplishments for FY 2017-2018:

New Members	<ul style="list-style-type: none"> ● New Faculty-Senate Approved Voting Members: Kristen Nadeau, MD ● Class of 2021 representatives: Alec Kerins, Abby Leibowitz ● MSTP representative: Wells Lariviere ● Ex-Officio Members: Brian Dwinnell, MD; Matthew Rustici, MD; Erik Wallace, MD
Continuous Quality Improvement (CQI) and Phase Reports	<ul style="list-style-type: none"> ● Presented to CSC every 2/3 years ● Phases 1 and 2 Report ● Phase 3 Report ● Longitudinal Curriculum Report ● CQI reports from several Individual Blocks
Key Change(s) to Curriculum	<ul style="list-style-type: none"> ● New Cumulative Final Exam for Each Block in Phases 1/2 ● Changed grading to Pass/Fail in Phases 1/2 No Honors in Phases 1/2 ● Approved recommendations of the Healthcare Disparities Task Force New Course:(CHES) Culture, Health, Equity and Society Curriculum Encompasses Medicine and Society, Culturally Effective Medicine and First Course ● Changed criteria for awarding Honors and High Pass in Phase 3 H awarded if meet criteria rather than fixed percentage ● Changed criteria for ranking students for MSPE (Dean’s) letter for Internship More emphasis on Phase 3 ● Updated White Book ● Changed timing of 4th year electives to accommodate students who are not on track ● Centralized process for International Electives

Task Forces	<ul style="list-style-type: none"> ● Admissions Prerequisites ● Reflective Writing in the Curriculum ● Colorado Springs Branch ● Competency ● Healthcare Disparities
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Student Life Steering Committee

Chair: **Jenny Soep, MD**

Overview

The medical school faculty has responsibility for overseeing the medical school curriculum and for contributing significant input and oversight into noncurricular aspects of medical student life. Constructive and systematic evaluation by faculty can be expected to result in thoughtful, consistent, and constructive oversight of selected student life issues such as selection, promotion, advising, financial counseling, mentoring, professionalism, health and well-being, record-keeping, and visiting students. Such oversight will result in creativity and innovation in adapting to changing aspects of medical student life, and will enhance their professional development. In view of a central role of the faculty and the dynamic nature of student life issues, the Student Life Steering Committee (SLSC) is charged with oversight of noncurricular student professional life policies and procedures. The SLSC will work closely with the Senior Associate Dean for Education (SADE), the Associate Dean for Student Life (ADSL), and the Committees of Undergraduate Medical Education to develop, guide, revise, adjudicate, and implement policies and procedures relevant to medical student professional life. Actions of the SLSC will be reviewed by the SADE and the ADSL and reported annually to the Faculty Senate.

Charge

- To oversee, review, guide, evaluate, recommend changes, review new policies and procedures when appropriate, and assure consistent implementation of established policies and procedures regarding noncurricular aspects of medical student professional life.
- Recommend to the Faculty Senate and Senior Associate Dean for Education changes in policies and procedures relevant to noncurricular aspects of medical student professional life.
- Assist with the development and implementation of policies and procedures that stimulate evolutionary change that optimize medical student professional life and professional development.
- Monitor and constructively respond to data obtained from evaluation and outcome instruments regarding medical student noncurricular professional life.
- Apply relevant Liaison Committee for Medical Education Standards and Elements to insure that medical student noncurricular issues are monitored, addressed, and updated to ensure standard compliance and to enhance medical student professional development and well-being.
- Address the needs of students, and/or issues that might arise and are relevant to medical student life, and are outside the purview of established UME and School of medicine oversight committees.

Reporting Procedures

- SLSC will receive timely reports and updates from the Student Promotions Committee (including the Sub-committee on Student Professionalism), the Scholarship Committee, the ADSL, the Clinical Requirements Committee, and the Admissions Committee.
- SLSC will inform the SADE of ongoing issues and activities and report to the Faculty Senate.
- A Faculty Advisor from one of the School of Medicine's Advisory Colleges
- Associate Dean for Diversity & Inclusion

Voting Membership

- A clinical and a basic science faculty member involved with medical student activities
- President, Medical Student Council
- An MSTP student
- One Medical student representing Phases I or II

- Faculty Senate representative (recommended by the President of the Faculty Senate)
- Director of Evaluation for Undergraduate Medical Education
- A community-based physician-educator faculty member

Nonvoting Membership

- Senior Associate Dean for Education
- Associate Dean for Student Life
- Associate Dean for Curriculum
- Assistant Dean for Student Affairs
- Assistant Dean for Admissions
- Director of Student Life
- Director of Finance & Administration, UME
- Director of Educational Technology
- Associate Dean for Colorado Springs Branch
- Other faculty, students, or administrators with expertise as needed

Leadership:

The SLSC will be chaired by a senior faculty member with experience in student life activities and appointed by the Senior Associate Dean for Education.

Terms of Appointment:

Faculty members in this committee are appointed for three-year terms. Terms are renewable for one additional cycle (three additional years). Medical and MSTP students are appointed by Medical Student Council to a term of up to one to four years.

For more information visit: http://www.ucdenver.edu/academics/colleges/medicalschoo/education/degree_programs/MDProgram/administration/Pages/UMECcommittees.aspx

Clinical Block Directors Committee

The Clinical Block Directors Committee is responsible for the design, implementation, and assessment of the Phase III medical student curriculum. The committee meets regularly to develop and implement the curriculum. The following individuals served as Clinical Block Directors in 2017-18: Jennifer Adams, MD, Brandy Deffenbacher, MD, Todd Guth, MD, Christopher King, MD, Meghann Kirk, MD, Pearce Korb, MD, Paul Montero, MD, Tyler Muffly, MD, Jason Papazian, MD, Kelley Roswell, MD, Joe Sakai, MD, Frank Scott, MD, Roberto Silva, MD, Jennifer Soep, MD, Chad Stickrath, MD, and William Sullivan, MD. Assistant block directors included: Austin Butterfield, MD, Rebecca Cohen, MD, Mike Overbeck, MD, Meghan Treitz, MD, Scott Vogel, MD, and Thomas Whitehill, MD.

Several opportunities are available for third-year students to increase continuity and authenticity of clinical experiences. These include: the Longitudinal Integrated Clerkship at Denver Health (DHLIC), the Colorado Springs Branch Longitudinal Integrated Clerkship (COSMIC), the Integrated Longitudinal Medical Clerkship (ILMC) in rural Colorado, and the VA Sequential Training (VAST) Program.

Tai Lockspeiser, MD, MHPE, is Director of Electives for the Clinical Core Curriculum. Adam Trosterman, MD, is Director of Sub-Internships. Kristina Tocce, MD, Assistant Dean of the Clinical Core Curriculum is responsible for planning, management, and leadership of Phases III and IV.

For more information visit our website at:

http://www.ucdenver.edu/academics/colleges/medicalschoo/education/degree_programs/MDProgram/administration/Pages/UMECcommittees.aspx

Essentials Core Block Directors Committee

The Essentials Core Block Directors (ECBD) committee (comprised of 19 Block Directors, student representatives from each phase and the MSTP and ex officio members) meets monthly to review block evaluations and summaries along with Essential Core policies. Each Block is reviewed on an annual basis. This past year, the ECBD introduced cumulative exams and approved the transition to proctored exams for the upcoming academic year (AY18-19). ECBD also approved the adoption of pass/ fail criteria, eliminating honors grades, in the pre-clinical years, effective for the class of 2022. Overseen by **Matt Rustici, MD**, Block Directors and staff undertook an extensive, ongoing review of all assessments with a goal of improving the quality of multiple choice questions and including more Step 1 style practice questions for each block. ECBD continues to work with the Office of Student Life to identify and support struggling students and improve the learning environment. ECBD has been well represented on curriculum reform committees and looks forward to being active participants in that process. The ECBD committee continues to be an excellent venue for communication between block directors, faculty, staff and students. In addition, the committee will continue to have regular meetings between the Essentials Core, Clinical Core, Advanced Studies, and Longitudinal Curriculum leadership to provide communication, coordination, and oversight of curriculum issues across all four phases of the curriculum.

For more information visit the website at:

http://www.ucdenver.edu/academics/colleges/medicalschoo/education/degree_programs/MDProgram/administration/Pages/UMECcommittees.aspx

The Essentials Core curriculum consists of nine integrated, interdisciplinary blocks that present basic science in a clinical context and are each directed by a basic scientist and a clinician. The Essentials Core is overseen by **Andrew Bradford, PhD**, Assistant Dean. Each block lasts approximately eight to 10 weeks and consists of lectures, team-centered learning, problem-based learning sessions, laboratory exercises, and small group discussion sections, to prepare students for entry in the clinical blocks in their third year. Students also begin working on their Mentored Scholarly Activity (MSA) during Phases I and II and are able to choose from a variety of electives to personalize their curriculum, and explore interests outside the standard curriculum. They also begin to learn basic communication and physical exam skills during the Foundations of Doctoring course that provides early exposure to clinical practice and emphasizes a humanistic approach to medical care. Woven through the Essentials Core blocks, and the clinical blocks that follow them, are longitudinal elements or threads that integrate behavioral and social sciences, informatics, evidence-based medicine, healthcare policy, culturally effective medicine and ethics, and professionalism into the curriculum. The longitudinal elements are overseen by **Marsha Anderson, MD**, Assistant Dean of Longitudinal Curriculum. The overarching goal of the Essentials Core is to provide the scientific foundation and critical thinking skills for our students' future medical education and to equip them for a lifetime of learning, research, clinical care, and community service. (Website: <http://medschool.ucdenver.edu/essentialscore>).

Clinical Core: Phase III

The Clinical Core Curriculum consists of competency-based clerkships and blocks* that provide opportunities for mastery of the core knowledge, skills, and attitudes required of physicians. The curriculum provides intensive clinical experiences in the hospital, ambulatory clinics, emergency room, labor and delivery suite, and operating rooms. For each of these block/clerkships, goals and learning objectives have been developed by the CBDs to reflect the clinical experiences and are mapped to ACGME competencies. In addition, overarching medical education program objectives have been developed by a consensus-based process. These objectives are defined in outcome-based terms that allow assessment of medical students' progress in developing competencies to be achieved at the time of graduation. These objectives reflect the expectations of physicians by the profession and the public.

Integrated Clinician Courses (ICC) punctuate the clerkships and blocks with a focus on advanced clinical skills, translational clinical science, and communication. Students use learning logs to record conditions observed, diseases, and procedures. Low- and high-stakes assessments have been incorporated into each clerkship or block. Shelf exams or block-developed medical knowledge exams, clinical evaluations, mid-point feedback sessions, mid- or end-of-block standardized patient exams and clinical practice exams provide additional opportunities for assessment of students' clinical performance and opportunities for feedback on student performance. Clinical block directors monitor students' clerkship experiences at all clinical sites. More information about Phase III can be found at: http://www.ucdenver.edu/academics/colleges/medicalschoo/education/degree_programs/MDProgram/clinicalcore/Pages/default.aspx

***Clerkship:** a course of clinical medical training in one specialty. **Block:** a course of clinical medical training within more than one specialty.

Clinical Core: Phase IV

The Phase IV (fourth year) curriculum consists of 32 weeks of educational requirements, including a required four-week sub-internship, two Integrated Clinician Courses, 24 weeks of elective time, and a capstone presentation of students' Mentored Scholarly Activity projects. Phase IV is designed to foster the development of graduates who are knowledgeable, skillful, and ethical, as well as broaden and balance the overall education of each student. It serves the purpose of career exploration and focuses students in preparation for graduate medical education. Working with the Office of Student Life, Phase IV is designed to foster: 1) knowledge base development; 2) career preparation/development; and 3) vocational mentorship while meeting the needs of students. For more information about Phase IV: http://www.ucdenver.edu/academics/colleges/medicalschoo/education/degree_programs/MDProgram/clinicalcore/Pages/default.aspx and http://www.ucdenver.edu/academics/colleges/medicalschoo/education/degree_programs/MDProgram/electives/Pages/Phase-IV-Electives.aspx

Foundations of Doctoring Curriculum 2017-2018

The Foundations of Doctoring Curriculum (FDC) is a three-year longitudinal experience beginning in Phase I of medical school which teaches communication and physical examination skills, clinical reasoning, and professional development. The vision of FDC is to prepare medical students to be outstanding physicians who will care for our diverse society. Standardized patient encounters and regular clinical exposure in a physician preceptor’s practice are key components of this curriculum. **Wendy Madi-gosky, MD, MSPH** completed her tenure as Director of FDC this academic year after 12 years of leadership, improvement and innovation. Associate Directors include: **Deb Seymour, PsyD** (Communication), **Todd Guth, MD** (Clinical Skills), **Brandy Deffen-bacher, MD** (Physical Exam) and **Kristin Furfari, MD** (Preceptorship.) Changes in 2017-20178 included refinement of Physical Exam guidebook materials, further development of clinical reasoning sessions, creation of ‘Doctor Bag’ resources, and reorgani-zation of CAPE Assessments to align with core PE teaching. For more information, visit our website at: <http://medschool.ucdenver.edu/FDC>.

If you are interested in volunteering as a preceptor for the Foundations of Doctoring Curriculum, please email Foundations.Doctoring@ucdenver.edu. The table below provides data on the FDC preceptors for the academic year 2017-2018:

Preceptor Specialty by Practice Setting	Private Practice	Clinics for Underserved plus Denver Health	Kaiser Permanente	UCHealth, CHCO, VA	Total
Family Medicine	34	25	17	23	99
Internal Medicine	21	28	11	49	109
Pediatrics	20	20	11	46	97
OB/GYN	10	3	1	10	24
Emergency Medicine	39	13	2	26	80
Other*	15	16	1	111	143
Total	139	105	43	265	552**

* Anesthesiology, Cardiology, Cardiothoracic Surgery, Endocrinology, Gastroenterology, Geriatrics, Gynecological Oncology, Hematology & Oncology, Infectious Diseases, Interventional Radiology, Neurology, Ophthalmology, Orthopedic Surgery, Palliative Care, Pathology, Pediatrics-Genetics/Neurodevelopmental Disabilities, Physical Medicine and Rehabilitation, Plastic Surgery, Psychiatry, Pulmonology, Radiology, Renal, Rheumatology, Sports Medicine, Surgery, Urology, Vascular Surgery, Weight Management & Women’s Health

**146 Preceptors have 2 or more students

Integrated Clinicians Course

Students experience the Integrated Clinicians Course (ICC) in one-to-two-week blocks of time throughout Phase III and Phase IV of the curriculum. The course is designed to integrate multiple concepts into students' growing clinical experiences, such as advanced clinical and communication skills, translational basic science, medical-legal topics, medical errors and quality improvement, ethics and professionalism, scholarly activities, and career development and exploration. Led by **David Ecker, MD**, and **Amira del Pino-Jones, MD**, the ICC curriculum was first implemented in May 2008. Feedback from the students has been positive. The course undergoes continued modifications to ensure content remains timely, valuable, and aligned with other curriculum content. Hidden Curriculum sessions occur within the clinical blocks and ICC in Phase III and Phase IV. For more information visit the ICC website at <http://medschool.ucdenver.edu/icc>.

Medical Student Research Track

www.coloradoresearchtrack.org

Leadership: Allan Prochazka, MD, MSc, Director of Medical Student Research Track, Professor of Medicine

The Research Track aims to foster development of an identity as a physician capable of being involved with and completing all aspects of a research project from the identification of a health care-related scientific question to the written dissemination of scientific information as a first author on a manuscript developed for submission. Since its inception in 2007, 95 students have completed the track and 78 are currently enrolled in the program: Class of 2018 with 18 students, Class of 2019 with 18, Class of 2020 with 26, and Class of 2021 with 16. The 95 graduates have published 77 papers; 81% of Research Track graduates have published at least one paper.

Students work with an experienced faculty mentor through all four phases of the School of Medicine curriculum, including two full-time research months in the summer after the first year, and two more full-time research months during their fourth year. Preliminary and final results are presented locally, regionally and nationally. In addition, the track provides seminars related to research ethics, and teaches students how develop polished, professional research presentations and papers. Research Track students will be prepared to continue to work as researchers during their residencies and future medical careers.

The Research Track relies on the generous funding support of the following departments and endowments. Funding sources commit to support a student through their four years as a Research Track student, which includes four months of stipends for full time work, as well as travel to present at the Western Student Medical Research Forum and one national meeting in the student's area of specialty.

Funding Department or Source	Students sponsored in 2017-2018
Anesthesiology	6
Biochemistry and Molecular Genetics	2
Cancer Center	7
Center for Regenerative Medicine and Stem Cell Biology	1
Child Psychiatry	2
Data Science to Patient Value (D2V)	1
Dermatology	1
Medicine	8
Neurology	3
OB/GYN	3
Substance Abuse Grant	3
Surgery	8

Funding Department or Source	Students sponsored in 2017-2018
Orthopedic	5
Ophthalmology	4
Pathology	5
Pediatrics (some partially funded by Pediatric Pulmonology Grant)	5
Physical Medicine and Rehabilitation	1
Rheumatology Grant	2
Schweppe Endowment	11
Substance Abuse Grant	3
Surgery	8

Health Sciences Student Research Forum

The 32nd Annual Student Research Forum was held on December 12, 2017. The forum was organized and funded by the School of Medicine Dean's Office and overseen by Allan Prochazka, MD, MSc, Director of the Colorado Research Track. Over 60 students presented their research from across the Anschutz Medical Campus, representing the Schools of Medicine, Nursing, Pharmacy, Public Health, and Dental Medicine, and the Graduate School. Over 40 faculty members volunteered their expertise to judge posters. Approximately 325 first-year and third-year medical students also evaluated posters as student judges. A total of \$7,360 in award money was given to the 23 highest scoring presentations in the form of \$320 monetary prizes.

Research Track Student Awards and Honors

Western Student Medical Research Forum

Twenty-four Research Track Students from the Class of 2020 presented at WSRMF in late January 2018 in Carmel, CA along with 460 other medical students and residents from western US states. One Research Track student was honored with the award below:

Pierce Lewien	WAFMR/WAP/WSCI Student Subspecialty Award Winner
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Schweppe Outstanding Scholars

The Schweppe Scholars Program, funded by the Schweppe Foundation, is designed to support two outstanding CU School of Medicine students from each class cohort in the Research Track. Support continues through all four years at SOM. 2017-2018 Schweppe Scholars were:

Katherine Lind, Mario Perez, & Kelli Robertson	Class of 2018
Amanda Glickman and Kaitlin Gorman	Class of 2019
Diana Clabots, Tiffany Cung, Derek George, and Pierce Lewien	Class of 2020
Claire Koljack, Alexis Sunshine	Class of 2021

Mentored Scholarly Activity Program

The Mentored Scholarly Activity program (MSA) is a required longitudinal curriculum across all phases for all School of Medicine students. The goal of the MSA curriculum is to foster self-directed, life-long learning over the course of the medical student career. The MSA requires students to identify and work with a mentor to complete their projects, which also prepares them for working with mentors in their careers and serving as mentors to others in the medical profession. The 2017-2018 MSA leadership team and their topic expertise consisted of **Kristen Nadeau, MD, MS**, Director (Clinical Research), **Leana May, DO, MPH**, Associate Director (Global Health), **Daniel Goldberg, JD, PhD**, Associate Director (Bioethics, Humanities, Arts and Education), **Rita Lee, MD**, Associate Director (Public Health and Epidemiology), and **Robert Sclafani, PhD**, Associate Director (Basic Biomedical Science). The MSA program has a broad definition of scholarship, and students can choose a project that represents their interests. The timing of the project work is also flexible, with some students doing most of the work during the summer between the first and second year, other students working throughout all four years, and some doing the majority of the work during the fourth year. Over 350 CU faculty members currently serve as mentors. MSA has partnered with the Colorado School of Public Health to work with the Colorado Biostatistics Consortium to assist medical students with their study design and data analysis. Librarian liaisons at the Health Sciences Library provide expert consultations for literature reviews tailored to the student's project topic. Projects culminate with a scholarly paper and a Capstone poster presentation in March of the students' graduation year. Twenty-seven percent of MSA students have either published or had a manuscript accepted or pending publication. For the graduating Class of 2018 Capstone Poster Forum Event, approximately 45 faculty members volunteered to evaluate the posters of 143 student presenters, and each student evaluated posters of their peers.

For more information on becoming a volunteer faculty mentor, please contact the MSA program, at MSA.SOM@ucdenver.edu. (Website: <http://medschool.ucdenver.edu/msa>)

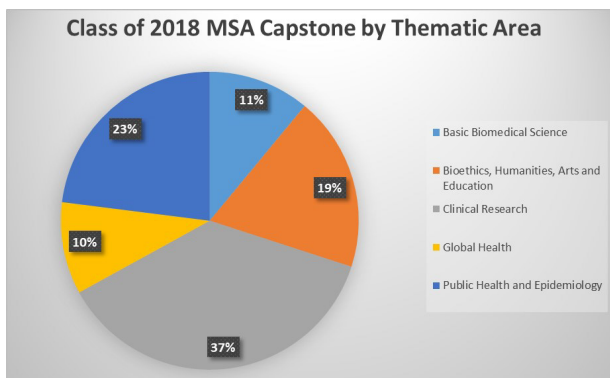


Figure 1: MSA Projects by Thematic Area, Class of 2018 N=143

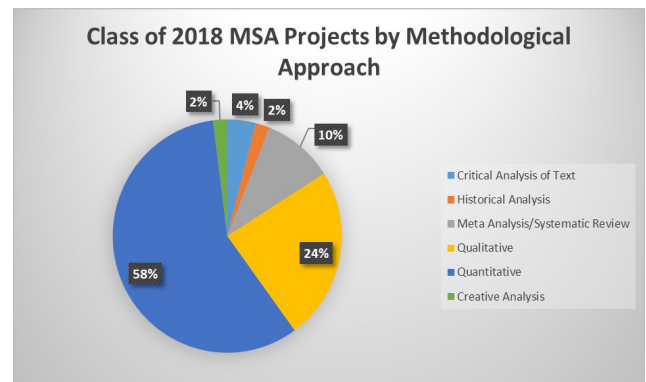


Figure 2: MSA Projects by Methodological Approach, Class of 2018 N=143

Problem-Based Learning

Matthew Rustici, MD, is the director for Problem-Based Learning (PBL). The PBL curriculum runs during the first two years of medical school and groups of eight students meet with one facilitator for 30 sessions that each last two hours. The PBL cases are designed to improve skills in clinical reasoning, communication of medical information, self-directed learning and research strategies to answer clinical questions. Groups also discuss how ethics, professionalism, cultural differences, and medical systems affect the care delivered to patients. PBL helps students develop skills in a safe and constructive environment where they are able to learn how to “walk and talk like a doctor” before they start their clerkships. Faculty and volunteer community clinicians facilitate the PBL group discussions and are recruited prior to the start of a new academic year. For further questions, please contact the PBL director Matt Rustici at matthew.rustici@ucdenver.edu or visit our website at: http://www.ucdenver.edu/academics/colleges/medschool/education/degree_programs/MDProgram/longitudinal/pbl/Pages/default.aspx.

Educational Technology

The Office of Educational Technology is responsible for the technology support of the MD program and the Office of Medical Education, including Curriculum, Evaluation, and Student Life.

The Ed Tech Office collaborates closely with the School of Medicine Director of Information Technology, colleagues in the School of Medicine Information Technology Support Services, CU Online, Technology Support Services and University Information Services to form the Medical Education Technology Alliance (META). META's goal is to provide outstanding tech support for medical students and collaborate in the innovative reform of the MD curriculum.

The Education Technology office supports: the admissions process; the electronic curriculum; the applications and data infrastructure of UME; integrations between University, school and vendor systems; student technology use, including developing laptop requirements; implementation and ongoing support of electronic assessment system in Essentials Core; support and development of the Undergraduate Medical Education (UME) website; systems of student registration management and evaluation and assessment; and guidance on best practices, mobile device support and laptop troubleshooting and repair.

Major accomplishments of the office this year include:

- Continued development of the student data warehouse, process implementation to support the data integrity, and participation in governance of the data, development of data dictionary and data model, reporting and training for reporting
- Implementation of processes for data extraction, transformation and loading (ETL) of student data
- Leaders in the implementation of data visualization tools in UME
- Development of predictive models of student success in collaboration with education leaders
- Learning Management System support for Essentials Core, Clinical Core and Sub-Internship courses and development and maintenance of standardization for optimized student experience
- Implementation of a clinical site scheduling system for Phase III
- Implementation of evaluation and assessment using a new vendor system in collaboration with the Office of Evaluation
- Support of student Apple and Windows laptops and mobile devices, and the development of good digital practices
- Maintenance and continued development of ExamSoft electronic assessment system and continued support of medical student use of system on personal devices
- Continued development and support of a homegrown clinical experience logger used in the Foundations of Doctoring Curriculum and in the Clinical Core
- Pilot of a clinical experience logger in a vendor system with the leadership of the Hospitalized Adult Care clerkship
- Continued development of reports to track and report student use of clinical experience logger for student grade, Phase administration, and LCME purposes
- Curriculum Inventory and curriculum roadmap system development for program use and curriculum upload to the AAMC Curriculum Inventory
- Evaluation of electronic vendor tools to support admissions and student data systems leading to the selection of an Admissions system
- Continued development of a scheduling system to provide personal calendar subscriptions for students in the Essentials Core and Integrated Clinician Courses, including student and administration interfaces

For more information on education technology go to medschool.ucdenver.edu/meta.

Evaluation Office

The mission of the UME Evaluation Office is to enhance the quality of medical education at the University of Colorado School of Medicine by providing comprehensive and systematic evaluation of the undergraduate medical education program and by contributing to the continuous quality improvement efforts of the School through participatory evaluation processes.

To accomplish its mission, the Evaluation Office (1) collects and provides information about the quality and effectiveness of educational experiences; (2) supports teaching faculty, curriculum developers, and decision-makers to use data as they assess program results, identify ways to improve program quality, and test innovative endeavors; and (3) documents program activities and outcomes to assess the extent to which the educational program has met its objectives and the accreditation standards of the Liaison Committee on Medical Education. To support the continuous quality improvement of the educational program, the Evaluation Office involves faculty and students in identifying relevant questions, data collection and analysis methods, and interpretation of results for educational improvement.

Foundational to the work of the Evaluation Office is the collection, analysis and reporting of high-quality data from students about the courses and teaching. In AY 2017-2018, students completed 8,102 course and 66,952 teaching evaluations. Routine reporting activities include:

Generate 33 Continuous Quality Improvement (CQI) reports for each required course, block, clerkship or thread for annual presentation at one of the three curriculum sub-committees and biannual presentation at the Curriculum Steering Committee (CSC). Additionally, the Evaluation Office generates phase-level CQI reports for the Essential Core and Phase III Clinical Core, thus allowing comparisons across courses. In recent years, reporting has been extended to include reporting for the 22 Sub-Internships and for the over 200 elective courses.

Generate and Distribute Faculty Teaching Reports to PRISM. All faculty teaching in any Phase of the curriculum receive a report if they have been evaluated by a minimum of three students. For University-affiliated faculty teaching students in any of the four years of undergraduate education, the Evaluation Office uploads the teaching evaluation directly into PRISM. Because of its quality and maintenance, the evaluation database supports the Office of Community Based Medical Educators to identify faculty needing an official appointment in the School of Medicine per LCME standards.

Generate and Distribute 748 Resident Teaching Reports to 54 Residency Programs. The Evaluation Office distributes resident evaluation reports to the residents and the program directors of the 54 residency programs at University of Colorado School of Medicine, Denver Health, Exempla St. Joseph's, and HealthOne-PSL at the end of the academic year. The school's residency program directors also receive a formative teaching report on their resident's mid-year.

The Evaluation Office supports program development efforts and provides special analyses to assist educational activities and curricular program decision making. During 2017-2018, the Evaluation Office activities include the following:

- Evaluate the Impact of the MD Program Experience. The Evaluation Office collects outcome data annually from program directors of PGY-1s and PGY-1 graduates on critical areas of competence. The Evaluation Office also administers "end of phase" evaluations to students, on their attitudes and perceptions of skills and behaviors and on a diverse array of desired outcomes, including competencies, professional identity formation, and career interests. With the data collected as part of the AAMC's Medical Student Graduation Questionnaire, the Director of the Evaluation Office annually reports findings to the CSC.
- Evaluate the Quality of the Learning Environment. The Evaluation Office collects student data on perceptions of the learning environment, wellness, and personal characteristics such as empathy and professional identity. Student responses are examined in relationship to changes over the course of the program and to individual curricular experiences (e.g., clinical core pathways). These data are used to evaluate specific programmatic efforts (e.g., Advisory College Program, longitudinal clinical experiences) and to monitor the environment of the program.
- Support Standardizing and Centralizing Policy Review of student and faculty policies relevant to medical student education. The Evaluation Office oversees the review and updating of the MD Policies and Procedures Student Handbook (aka "White Book") twice a year; once in the fall with the matriculating class and in the spring with the rising third-year students. In the past year, the office staffed the review and approval of numerous policy changes through the Student Life Steering Committee and the Curriculum Steering Committee.
- Expand Student Participation in CQI Block Reviews in Phases I & II. The Evaluation Office involved student course representatives in writing a student review of the course to be included in each Essential Core Block CQI Report. Additionally, student comments are now analyzed to provide an overall student perspective.

- Evaluate innovative efforts to improve the curriculum. Additional evaluation work continues as part of multi-year efforts to evaluate relatively new parts of the curriculum, including Integrated Radiology Curriculum and the Colorado Springs Branch clerkship. The Evaluation Office worked with the School of Medicine Competency Committee to pilot test two peer assessment forms of professionalism with Phase I and Phase II students. Other work includes evaluation of innovative approaches to prepare for USMLE Step 1; a longitudinal quantitative analysis to understand the factors that place students at risk for underperforming in our curriculum and on national board exams; and a survey of student exposure to diverse populations during Phase III.
- Provide technical support to student and faculty studies. The Evaluation Office support in this arena is broad ranging. Studies include surveys of student issues preferences that Reform Committees are considering, evaluation of assessment items in one of the Essential Core Blocks. The office, in conjunction with the Data Warehouse Governance Committee, works with students and faculty to collect study data from medical students and assure anonymity.
- Leverage processes to improve data access, quality and usefulness. The expansion in reporting, on an increasingly regular basis, results from increased automation of reports. Data quality is enhanced by careful accounting of instructional and teaching hours in CQI Reports and by the constant review of teacher and student evaluation assignments. The Evaluation Office keeps abreast of changes in surveying techniques and approaches, and continually brings these into all steps in the evaluation process.

Summary of AY 2017 - 2018 Student Ratings of Courses and Faculty by Phase

Essentials Core Curriculum (Phases I & II)	Mean	
	Phase I	Phase II
"Rate the overall quality of the block"	3.70	3.95
"Overall teaching" rating for lecturers	4.25	4.36
"Overall teaching" rating for small group facilitators	4.52	4.56

(5-point scale, e.g., 1=*Unacceptable*; 5=*Excellent*)

Clinical Curriculum (Phases III & IV)	Mean
Core Curriculum (Phase III)	
"What was the quality of the clerkship as a whole?"	4.15
Advanced Studies (Phase IV)	
"What was the quality of the sub-internship rotation as a whole?"	4.51
"Rate the quality of this elective as a whole." (<i>Clinical Electives</i>)	4.49
Clinical Teaching Evaluations (combined Phase III and IV)	
"Overall, how effective is this attending's teaching?"	4.60
"Overall, how effective is this resident/fellow's teaching?"	4.63

(5-point scale, e.g. 1=*Poor*; 5=*Excellent*)

Evaluation Office staff include:

- Gretchen Guiton, PhD**, Director of Evaluation
- Jennifer Gong, PhD**, Assistant Director of Evaluation
- Brooke Parsons, MPA**, Evaluator
- Susan Peth**, Senior Evaluation Specialist

The Evaluation Office website can be found here: www.medschool.ucdenver.edu/evaluation.

Office of Student Life

The Office of Student Life, which includes both Admissions and Student Affairs, experienced a transition this year as **Brian Dwinell, MD**, assumed the position of Associate Dean of Student Life in August 2017, and Brad Miller assumed the role of Director of Student Life in October 2017. Assistant Deans Jeff Druck, MD, Nichole Zehnder, MD, and Kristina Tocce, MD, along with Office Manager Sean Spellman and the entire staff maintained the many functions in the Office of Student Life during the transition.

The mission of the office is to provide support for applicants and students throughout their cycle with the School of Medicine and to specifically provide multiple levels of support to a diverse group of students to help ensure their academic success, and to support their personal well-being. The office provides services for prospective students, current students, and graduates during their time with the School of Medicine and beyond. The process starts when a candidate expresses an interest in being considered for the MD program, and it continues through their matriculation, their time as a student and into their careers as they need support for medical licensing. The Office provides guidance, advice, and administrative assistance to applicants and students. The Office is responsible for the admissions interview and selection process, monitoring student registration, student progress and graduation. The Office is responsible for organizing and managing the Scholarship Process, through the School's Scholarship Committees. The office organizes and manages many events including the Second Look Day, the first-year orientation, the white coat/stethoscope ceremony, Match Day, and the hooding and oath ceremony at graduation.

The office provides organization and support for the Student Promotions Committee and the Data Warehouse Governance Committee. The Student Life Steering Committee (formed in 2014) provides faculty input and oversight of many of the functions related to the office.

For more information visit our website at: <http://www.ucdenver.edu/academics/colleges/medicalschoo/education/studentaffairs/Pages/studentaffairs.aspx>

Scholarship Committees

During the 2017-2018 academic year, the office continued to manage the SOM Scholarship Committee, the Adler Scholarship Committee, as well as the ARCS scholarship process and several other scholarships. This year, the School of Medicine provided scholarships to over 201 medical students, 48 of whom were entering students and 153 continuing. The total amount of scholarship money awarded was \$4,038,922.

- The President's Medical Scholarship, a four-year scholarship, was awarded to three students who started in 2017 as members of the class of 2021. Scholarships were at the level of \$19,122 to \$64,200 per student per year, with the goal of increasing the educational benefit derived from a diverse student body.
 - In addition, the President's fund matched scholarships for an additional 9nine entering students who received Distinguished Scholarships.
 - Thirty three first-year students were awarded Distinguished Scholarships ranging from \$5,000-\$38,000 per year for four years for a total of \$2,605,160. These were the Justina Ford Scholarship for Commitment to the Underserved, the Florence Sabin Scholarship for Commitment to Community Health, the COPIC Foundation Scholarship, the National Western Stock Show Scholarship, the Donald A. Bennallack Scholarship and the Harry K. Albert Memorial Scholarship. An additional three students received a one-year \$15,000 scholarship from the Colorado Medical Society.
 - Merit and Diversity scholarships were awarded to an additional 65 current students for a total of \$994,763, because of a generous donation from CU Medicine.
 - 10 seniors from the class of 2018 received a total of \$156,500 from the Adler MSA Scholarship in recognition of excellence for their completed MSA projects.
- Seven students received ARCS Scholarships based on their research excellence.

For more information visit our website at: <http://www.ucdenver.edu/academics/colleges/medicalschoo/education/studentaffairs/Pages/studentaffairs.aspx>

Student Affairs

There was a leadership transition in Student Affairs this year with **Brian Dwinnell, MD**, becoming the Associate Dean of Student Life, one year after the retirement of Associate Dean Maureen Garrity, PhD. The Assistant Deans for Student Affairs for the past two years have been **Jeff Druck, MD**, and **Kristina Tocce, MD**. In July 2018, Dean Tocce transitioned to a new position as the Regional Director of Planned Parenthood. **Nichole Zehnder, MD**, was appointed as a new Assistant Dean of Student Affairs, complementing her role in the Office of Student Life as the Assistant Dean of Admissions. In addition to her qualifications for the position, the dual Student Affairs and Admissions role affords the office new opportunities for longitudinal tracking of students. Druck also assumed the role of Co-Director of the Office of Professional Excellence, which allows for considerable synergy in our efforts to improve the learning environment.

The Office of Student Life (OSL) is responsible for the oversight of the majority of student support services including academic, career, and personal advising, financial aid, residency applications, support and referrals for struggling students, and USMLE Step Exam preparation. This past year, OSL added additional learning resource expertise to support student study skills. OSL is also responsible for the coordination of major student activities including the Advisory College program, student interest groups, orientation, the match process, Match Day, graduation, visiting externs, student scheduling, and the Student Promotions Committee.

In 2012, Student Affairs kicked off a student-led initiative to establish Advisory Colleges in the School of Medicine. Eight colleges were established and were named after Colorado Fourteeners. The colleges were designed to develop and foster mentoring and advising relationships with peers and faculty throughout phases. In the current academic year, leadership in the colleges included 16 Faculty Mentors, over 70 Resident Advisors, two student directors and 32 Fourth Year Student Advisors. The major change to the program effective two years ago was that each faculty mentor received 0.1 FTE, securing their ability to spend time with the college programs. The program continues to expand; the content focuses on student wellness, mentoring, career and academic advising. Faculty Mentors participate in monthly faculty development sessions to assure appropriate instruction on student mentoring. As we progress through curricular reform, we anticipate the Advisory College Program and associated faculty advisors will take a more prominent role in the curriculum.

Last year, the University approved the creation of a Master's in Medical Science, a project spearheaded by Druck. This degree is for students who complete the first two years of medical school but are otherwise unable to continue. This degree recognizes the significant amount of effort and discrete knowledge our students obtained during this time and may assist in obtaining employment in a variety of fields going forward. We have had eight students receive the Master's in Medical Science since the initiation of the program.

Areas of responsibilities and service include:

- Working with students having academic or personal struggles, connecting them with learning resource experts and/or making appropriate referrals
- Overseeing major events, including Orientation, Match Day, and Graduation
- Overseeing USMLE Step 1 preparation
- Providing programming and support for students in the areas of personal and professional development, career exploration and planning, stress and burn-out, student wellness and study/time management skills, and preparation for the Match
- Providing programming and support for Advisory Colleges, and other faculty who are mentoring or advising students
- Working individually with students who are struggling academically, clinically, or personally assisting them in identifying available resources
- Providing a part-time learning specialist to assist students with academic preparation
- Working with specialists in the financial aid office to support student debt management
- Working with donors and departments to provide and administer scholarships and awards
- Scheduling Phase III and Phase IV students; confirming grades for all four phases
- Manage the visiting student (extern) process, both from the home school and the host school
- Tracking student data including grades, evaluations, absences, clinical requirements

- Advocating for students by sitting on the various curriculum committees at the School of Medicine
- Overseeing and providing support for student groups, visiting students and externs, Alpha Omega Alpha, and Gold Humanism Honor Society
- Working with the Student Promotions Committee for successful transitions and remediation and when necessary, working with the struggling students to facilitate the decisions of the Student Promotions Committee.

On Match Day, March 16, 2018, 156 students matched into residency positions. The table below shows a full list of specialty matches, where 39.7% matched in Primary Care specialties (Family Medicine, Internal Medicine, Medicine – Primary track, Med-Peds and Pediatrics). Some of these students may ultimately choose to specialize. The top residency choices included Internal Medicine (30 categorical matches), Emergency Medicine (20 matches), and Family Medicine (16 matches), Surgery Prelim (14 matches), Pediatrics (13 matches), Anesthesiology (12 matches), Obstetrics-Gynecology and Medicine-preliminary (each had 8 matches).

Colorado will retain 37.8% of the class. California will receive 10.9% of the class, Texas will receive 6.4% of the class, 4.5% will go to Washington and 3.8% will be going to Illinois and New York. The remaining 33% of the class will be spread throughout 27 other states.

2018 Residency Match Data	
Number of Students	Specialty Choice
18	Anesthesiology
2	Dermatology
20	Emergency Medicine
16	Family Medicine
30	Internal Medicine
2	Med-Peds
4	Neurology & Child Neuro
1	Neurosurgery
8	Obstetrics/Gynecology
5	Ophthalmology
5	Orthopedics
2	Otolaryngology
5	Pathology
13	Pediatrics
2	Phys Medicine & Rehab
5	Psychiatry
3	Radiology, Diagnostic
19	Surgery-Categorical/Prelim
2	Transitional
3	Urology



On May 25, 2018, 163 students graduated with MD degrees.

For more information visit our website at: <http://www.ucdenver.edu/academics/colleges/medicalschoo/education/studentaffairs/Pages/studentaffairs.aspx>

Admissions

The Office of Admissions team continues to be led by **Nichole G. Zehnder, MD**, Assistant Dean for Admissions and Associate Professor, Department of Medicine. **Vaughn Browne, MD, PhD**, Associate Professor, Department of Emergency Medicine serves as Chair of the Admissions Committee. During the 2017-2018 application cycle the School of Medicine received 7,347 primary applications for a class size of 184. Of these 184 entering students, 10 students entered the MD/PhD Program and 24 will participate in the Longitudinal Integrated Clerkship during their third year of medical school. Additionally, the Office of Admissions recruited and interviewed applicants for multiple pipeline programs, accepting students into the University of Colorado Denver BA/BS-MD Program and the University of Colorado Denver Post -Baccalaureate Program.

The Office of Admissions continues to employ a holistic admission process. Grades and MCAT scores are significant variables in deciding who is invited for interviews, but greater emphasis is placed on the total applications which includes letters of recommendation, both the primary and supplemental essays, and the applicant’s experiences and attributes.

Demographics

Class of	2020	2021	2022	Applicant Data 2017-18 Primary AMCAS Applications: 7,347 Completed Secondary Applications: 4,845 Interviewed: 642 Offered Admission: 326 Cumulative GPA: 3.76 Math/Science GPA: 3.72 MCAT (total): 511 ,
Class Size	184	184	184	
Female	86	90	97	
Male	98	93	87	
CO Resident	135	119	90	
Non-Resident	49	65	94	
URiM*	52	52	52	
Average Age	24	25	25	
Cumulative GPA	3.72	3.69	3.76	
Math/Science GPA	3.74	3.66	3.72	
MCAT (total)	32/511	32/511	511	
One student in the class of 2021 declined to answer the question regarding gender. * Under-Represented in Medicine as defined by CUSOM Diversity Plan				

Annual achievements include:

- Vaughn Browne, MD, PhD and Karina Goodwin, MS, led the office’s recruitment and outreach efforts, reaching prospective applicants at more than 20 local and regional and seven national events.
- In partnership with the Child Health Associate/Physician Assistant Program, the Office of Admissions refined a model for an innovative interview process that includes situational judgment testing and increased observation of applicants’ personal attributes. Launch for the new interview process will occur in September 2018.
- In the 2017-18 year, updated applicant tracking and servicing technology platforms were developed and launched, “going live” to applicants and admissions committee members in July 2018.
- The office continues to seek faculty for committee membership. If interested, please contact the Office of Admissions (303-724-8025) for an appointment.

Additional detailed information may be found at: <http://www.ucdenver.edu/academics/colleges/medicalschoo/education/studentaffairs/Pages/studentaffairs.aspx>

Senior Program Leadership

Nichole G. Zehnder, MD
Assistant Dean for Admissions

Vaughn Browne, MD, PhD
Chair, Admissions Committee

Brad Miller, MS
Director of Student Life

Brian Dwinnell, MD
Associate Dean for Student Life





NASA astronaut Kjell N. Lindren, MD, School of Medicine class of '02, donating his white coat at the Matriculation Ceremony held on August 10, 2018.



Faculty Affairs

Office of Faculty Affairs

Mission:

The mission of the Office of Faculty Affairs is to provide services and support to faculty members, departments and programs, in order to advance the teaching, research, patient care and service missions of the School of Medicine.

Specific Objectives:

The Office of Faculty Affairs will work collaboratively with School of Medicine, campus and university leaders to promote faculty and organizational success. Specifically, the Office of Faculty Affairs will:

- Assist departments and divisions to recruit, develop, promote and retain outstanding teachers, clinicians and scholars;
- Assist faculty, department chairs and administrators to understand and comply with the rules of the university and the School of Medicine;
- Develop and implement policies and practices that promote diversity, professionalism, collaboration and academic integrity across the School of Medicine;
- Develop and implement policies and practices that ensure fair and consistent treatment of faculty, according to the rules of the university and the School of Medicine;
- Develop and implement policies and practices to build and sustain faculty vitality and success, through faculty development, mentorship, leadership training and resiliency;
- Develop and maintain a comprehensive faculty evaluation and post-tenure review system that uses valid and relevant measures of faculty performance, ensures faculty accountability, is linked to faculty self-improvement, provides reliable data for promotion and tenure decisions and reflects the missions and values of the School of Medicine;
- Assist faculty members to participate effectively in the shared governance of the School of Medicine;
- Conduct periodic faculty surveys to measure faculty satisfaction, vitality and career success, and develop and implement policies to address challenges and guide change; and
- Provide administrative support for faculty appointments, promotions, tenure awards, post-tenure and annual performance reviews and other activities.

Office of Faculty Affairs Leadership:

Steven R. Lowenstein, MD, MPH
Associate Dean for Faculty Affairs
Cheryl Welch
Director, Office of Faculty Affairs

Website: <http://medschool.ucdenver.edu/faculty>

Full-Time (\geq50% FTE) Faculty, Listed by Department (Instructor and Above) July 1, 2018			
	University Paid	Affiliate Paid	Total
Total Full-Time Faculty Count	3,429	843	4,272
Basic Science Departments			
Biochemistry & Molecular Genetics	35	2	37
Cell & Developmental Biology	28	1	29
Immunology and Microbiology	36	18	54
Pathology	73	22	95
Pharmacology	31	0	31
Physiology & Biophysics	15	0	15
Subtotal	218	43	261
Clinical Science Departments			
Anesthesiology	266	24	290
Dermatology	37	4	41
Emergency Medicine	118	35	153
Family Medicine	136	72	208
Medicine	715	347	1,062
Neurology	92	5	97
Neurosurgery	58	5	63
Ob/Gyn	101	20	121
Ophthalmology	45	6	51
Orthopedics	113	15	128
Otolaryngology	57	5	62
Pediatrics	896	79	975
Physical Medicine & Rehabilitation	72	16	88
Psychiatry	203	101	304
Radiation Oncology	27	0	27
Radiology	87	33	120
Surgery	188	33	221
Subtotal	3,211	800	4,011

Full-Time ($\geq 50\%$ FTE) Faculty, Listed by Rank (Instructor and Above) July 1, 2018			
	University Paid Faculty	Affiliate Paid Faculty	Total
Instructor/Sr. Instructor	1,376	204	1,580
Assistant Professor	909	281	1,190
Associate Professor	644	226	870
Professor	500	132	632
Total Full-Time Faculty Count	3,429	843	4,272

Clinical Faculty July 1, 2018	
Volunteer	2,887
Paid (<.50 FTE)	351
Total Full-Time Faculty Count	3,238



Medical Scientist Training Program

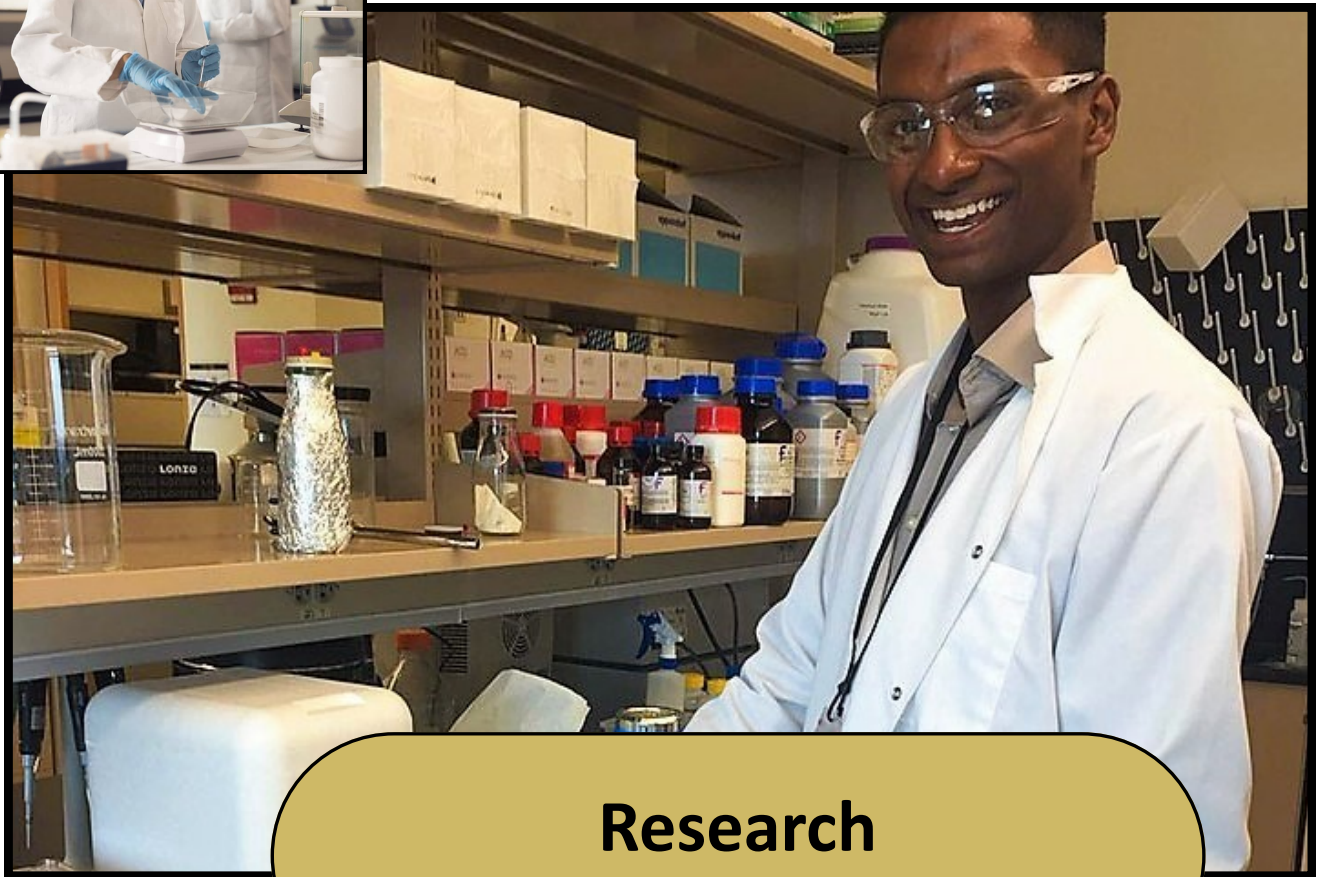
Medical Scientist Training Program

The Medical Scientist Training Program (MSTP) is a multidisciplinary, inter-institutional MD/PhD dual degree training program educating students in clinical medicine and biomedical research. Its mission is to provide students with the breadth and depth of training necessary to excel as future physician-scientist faculty and leaders in biomedical investigation. Post-baccalaureate students are recruited from a national pool of about 400 applicants, and those selected have proven exceptional talents in research science, a curiosity to solve mechanisms of disease, a drive for discovery, a well thought-out motivation to pursue a career in medicine, and exceptional leadership.

The program was formed in 1983. In 1992, the program received MSTP status by successfully competing for National Institutes of Health (NIH) T32 funding, and recently being renewed for another five years after successfully submitted a competitive grant renewal and hosting a NIH Site visit in November 2017. Currently, the program receives about \$834,079 per year to support 16 trainees. The program has leaders and mentors. **Arthur Gutierrez-Hartmann, MD**, has been the director of the MSTP since 1994 and has been selected for numerous local and national mentor awards, and national leadership roles in MD/PhD and graduate education. **Patricia Ernst, PhD**, serves as the Associate Director for Pre-clinical training and provides individualized guidance to each student via regular meetings and interactions focused on their first two years in the program. **Jorge DiPaola, MD**, serves as the Associate Director for clinical years, which focuses more on the last two years of medical school guidance for residency and career goals. The program has been competitively reviewed and funded by NIH for each of the past five cycles. The program has been a campus and national leader in recruiting diverse students, and has received diversity awards from CU and commendations from the National Institute of General Medical Sciences, highlighting the Colorado MSTP on its diversity website.

There are more than 200 faculty mentors for students to choose in 17 PhD programs at the Anschutz Medical Campus, National Jewish Health and the CU Boulder campus. There are currently 80 students in the program: 10 in the first year (MS-I), 12 in the second year (MS-II), 43 in the PhD research years, and 15 in the School of Medicine clinical years (MS-III and MS-IV). Since 1983, 213 students have matriculated in the program.

Graduates of the MSTP obtain residencies at the nation's elite programs, with about 75 percent of those completing their training now in academic medicine, government (NIH or Centers for Disease Control and Prevention), or industry, including starting biotech companies. Importantly, an increasing number of MSTP graduates are now faculty at the University of Colorado Anschutz Medical Campus, with hopes of recruiting more alums "back home." The Colorado MSTP and its leaders have been key in establishing the National Association of MD/PhD Directors and Administrators, the MD/PhD Section of the Association of American Medical Colleges' Graduate Research, Education, and Training Group, and the Annual National MD/PhD Student Conference. Finally, the program has taken the initiative to bring together, via social and academic venues, all MD/PhDs on the Anschutz Medical Campus, across all stages of training, from student to faculty status, to establish an interactive, supportive cadre of physician-scientists, in order to optimize career success for this group. Additional details of the Medical Scientist Training Program can be found at: www.ucdenver.edu/mstp



Research

Center photo courtesy of awomul (posted on @cuanschutz Instagram)

Bottom photo courtesy of @dishhy16man (posted on @cuanschutz Instagram)

Bridge Funding

The bridge funding program of the CU School of Medicine was established in 2006 when reductions in the National Institutes of Health (NIH) budget began to threaten the viability of faculty research projects. The program's purpose is to provide support to principal investigators while they re-apply for funding. The Bridge Funding Committee is advisory to the Dean. Applications are reviewed in April and November.

From the first review in 2006 through April 2018, 197 awards have been made to 159 faculty members in a total amount of \$9.629 million. From the start through April 2016, 136 of these awardees, who received \$8.18 million in bridging awards, have gained \$111.0 million in total research dollars, a more than 13.5-fold return on investment on bridge-funding grants.

Bridge Funding Committee
Raphael Nemenoff, PhD – Committee Chair Mair Churchill, PhD Nancy Hadley-Miller, MD Marvin Schwarz, MD Robert Sclafani, PhD Kurt Stenmark, MD John Weil, MD Peter Buttrick, MD

<http://www.ucdenver.edu/academics/colleges/medicalschoo/research/researchdevelopment/Pages/BridgeFunding.aspx>

SIRC

The Strategic Infrastructure for Research Committee (SIRC), created in 2003, reviews proposals to fund research infrastructure that can be available as a core facility or program to all appropriate users on campus. One of the major benefits of the SIRC process is critical peer review and the return of constructive comments that have strengthened the quality and productivity of the School of Medicine's research and have improved the cost-effectiveness of the Dean's Academic Enrichment Fund (AEF). Applications for ongoing cores must include a plan for sustainability. This committee is advisory to the Dean.

SIRC applications are solicited quarterly. Through the April 2018 review the SIRC process has made 91 awards totaling \$16 million in Dean's funds, and 6 additional 2-to-5-year awards to projects from the 2009 research retreat totaling \$7.3 million.

<http://www.ucdenver.edu/academics/colleges/medicalschoo/research/researchdevelopment/Pages/SIRC.aspx>

Strategic Infrastructure for Research Committee (SIRC)	
Paul Jedlicka MD - Chair Glenn Furuta, MD Karyn Goodman, MD Craig Jordan, PhD Anne Libby, PhD	J. Mark Petrash, PhD Tamim Shaikh, PhD Lori Sussel, PhD Peter Buttrick, MD

Research Advisory Committee

The Research Advisory Committee (RAC) was established by the Research Strategic Plan of 2003 as a way to advise the Dean of the School of Medicine on matters related to research, and it now also advises the Vice Chancellor for Research. The committee meets monthly. RAC has recommended in the past that a center for stem-cell biology and regenerative medicine should be established and that a campus child-care facility should be constructed as a means of retaining research faculty—and as the right thing to do. The RAC selected the six proposals to be presented at the research retreat of 2009 and collated faculty reviews submitted at the conclusion of the retreat, which was the basis for funding decisions. RAC deliberations over this past year included a comprehensive review of the current list of core facilities on campus. The RAC updated the core list and created a proposed definition of a core facility in order to help keep this list current. A recommendation regarding core support was provided to the Dean. The RAC also conducted a campus-wide survey to collect projected animal space needs in order to help with space development plans in the coming years. A recommendation to reevaluate the master plan for campus development to address the expanding animal space needs was provided to the Dean.

<http://www.ucdenver.edu/academics/colleges/medicalschool/research/researchdevelopment/Pages/RAC.aspx>

Research Advisory Committee (RAC)	
Mary Weiser-Evans, PhD – Committee Chair	Edward Janoff, MD
Steve Abman, MD	Craig Jordan, PhD
Kathleen Barnes, PhD	Jeff Kieft, PhD
Peter Buttrick, MD	Doug Novins, MD
Robert Eckel, MD	Suzann Ruedeman
Thomas Flaig, MD	Jill Slansky, PhD
Eva Grayck, MD	Fred Suchy, MD
Jay Hesselberth, PhD	

Clinical-Translational Research Advisory Committee

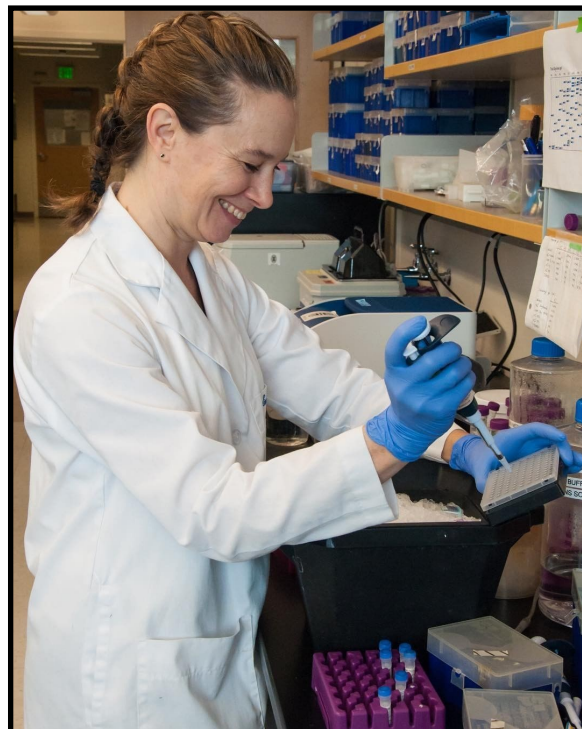
Clinical-Translational Research Advisory Committee (CTRAC) membership represents the research leadership of the entities that make up the Colorado Clinical and Translational Sciences Institute (CCTSI): School of Medicine, College of Nursing, Skaggs School of Pharmacy and Pharmaceutical Sciences, School of Dental Medicine, University of Colorado Denver (UCD) downtown campus, National Jewish, University of Colorado Hospital and Children’s Hospital Colorado, and the Regulatory Compliance/Clinical Research Support Center. It meets quarterly and advises the Dean and the Vice Chancellor for Research on matters related to the conduct of patient-related and community-based research. Its other major mission is to educate members and their constituencies about activities, opportunities, and needs across the programs of the CCTSI and the Anschutz Medical Campus (AMC) and to promote collaboration and exchange of ideas. Over the past academic year, CTRAC efforts have included framing possible responses to changes in National Institutes of Health funding of the CCTSI, priorities for strengthening campus infrastructure for patient- and population-directed research, and improved collaborations across all components of the AMC and UCD.

Clinical-Translational Research Advisory Committee (CTRAC) / Colorado Clinical and Translational Sciences Institute (CCTSI) Internal Advisory Committee

William Hiatt, MD – Committee Chair

David Badesch, MD
Peter Buttrick, MD
Anthony Elias, MD
Thomas Flaig, MD
Amy Gannon
William Hay, MD
Lynn Heasley, MD
John Heldens
Michael Kahn, MD, PhD
Peter Kaufmann, PhD
Wendy Kohrt, PhD

Alison Lakin, RN, PhD
Tim Lockie, MS, MBA
Daniel Matlock, MD
Meredith Mealer, PhD
Peter Mourani, MD
David Ross, PhD
Janelle Sheeder, MSPH, PhD
Ron Sokol, MD
Fred Suchy, MD
Steve VanNurden



*Photo courtesy of [@colorado.cancer](#)
posted on [@cuanschutz](#) Instagram)*



New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Richard K Albert, MD	<i>Sigh Ventilation to Reduce the Incidence and/or the Severity of the Acute Respiratory Distress Syndrome</i>	Department of Defense
Anirban Banerjee, PhD	<i>Trauma Reprograms Cells</i>	National Institute of General Medical Sciences/NIH/DHHS
Kathleen Barnes, PhD	<i>Multi-omic studies of asthma severity in an African ancestry population</i>	National Institute of Allergy and Infectious Diseases/NIH/DHHS
Bryan Bergman, PhD	<i>Skeletal muscle diacylglycerol and sphingolipids: Impact of localization and species on insulin resistance in humans</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Cathy Bodine, PhD	<i>RERC for the Advancement of Cognitive Technologies</i>	Administration for Community Living/DHHS
Angela Bonaguidi, LCSW, LAC	<i>Project REACH - Risk Education for At-Risk Communities on HIV/AIDS T1025821</i>	Substance Abuse and Mental Health Services Administration
Virginia Borges, MD	<i>ORIEN AVATAR Participation</i>	Moffitt Genetics Corporation d/b/a M2GEN
David Ross Camidge, MD	<i>GO39733 PH IA/IB Open-label, Dose-escalation study of the safety and pharmacokinetics of RO7198457 as a single agent and in combination with atezolizumab in patients with locally advanced or metastatic tumors.</i>	Genentech, Inc.
Victoria Catenacci, MD	<i>Optimal Timing of Exercise Initiation Within a Lifestyle Weight Loss Program</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Victoria Catenacci, MD	<i>Comparison of Weight Loss Induced by Intermittent Fasting Versus Daily Caloric Restriction in Individuals with Obesity: A 1-Year Randomized Trial</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Eric Andrew Coleman, MD	<i>Practice Change Leaders for Aging and Health</i>	John A. Hartford Foundation, Inc.

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Eric Andrew Coleman, MD	<i>Practice Change Leaders for Aging and Health</i>	John A. Hartford Foundation, Inc.
Dana M. Dabelea, MD, PhD	<i>The Early Life Exposome and Childhood Health - The Colorado Healthy Start 3 Cohort Study</i>	Office of the Director, National Institutes of Health/NIH/DHHS
Richard E. Davis, PhD	<i>Chromatin diminution in nematodes</i>	National Institute of Allergy and Infectious Diseases/NIH/DHHS
W. Perry Dickinson, MD	<i>Transforming Clinical Practices Initiative-PTN</i>	State of Colorado
W. Perry Dickinson, MD	<i>Evidence NOW Southwest</i>	Agency for Healthcare Research and Quality/DHHS
W. Perry Dickinson, MD	<i>State Innovation Model</i>	State of Colorado, Office of the Governor
Anthony David Elias, MD	<i>NCI National Clinical Trials Network - Lead Academic Participant Sites</i>	National Cancer Institute/NIH/DHHS
Anthony David Elias, MD	<i>Targeting Androgen receptor in breast cancer: enzalutamide as a novel breast cancer therapeutic</i>	Department of Defense
Kristine M. Erlandson, MD	<i>Pitavastatin to Reduce Physical Function Impairment and Frailty in HIV (PREPARE)</i>	National Institute on Aging/NIH/DHHS
Kristine M. Erlandson, MD	<i>MS700149: A Phase IV, prospective, randomized, open label, proof of concept study to evaluate the effect of recombinant human growth hormone on physical performance in the treatment of HIV associated frailty.</i>	Emd Serono, Inc.
Mary Weiser-Evans, PhD	<i>Development of a Bidirectional Optogenetic Minimally Invasive Peripheral Nerve Interface with Single Axon Read-in & Read-out Specificity</i>	National Center for Advancing Translational Sciences/NIH

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Stacy Marie Fischer, MD	Apoyo Con Carino: Patient Navigation to Improve Palliative Care for Seriously Ill Latinos	National Institute of Nursing Research/NIH/DHHS
Sonia Flores, PhD	Genotypic and functional properties of HIV-1 Nef clinical isolates in PAH-HIV	National Heart, Lung, and Blood Institute/NIH/DHHS
Andrew P. Fontenot, MD	<i>RPPR for grant: Interactions of smoking, PD-1 and IL-10 in HIV-associated lung disease</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
Andrew P. Fontenot, MD	<i>T cell epitopes in sarcoidosis</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
Heide L. Ford, PHD	<i>Role of Eya3 in regulating the immune microenvironment to promote breast tumor progression</i>	National Cancer Institute/NIH/DHHS
Peter A. Forsberg, MD	<i>An open-label, multicenter, Phase I trial evaluating the safety and pharmacokinetics of escalating doses of BFCR4350A in patients with relapsed or refractory multiple myeloma.</i>	Genentech, Inc.
Guido K. W. Frank, MD	<i>Neural Effects of Negative Affect on Food Choices and Reward In Individuals with Binge Eating Episodes</i>	National Institute of Mental Health/NIH/DHHS
Karen Ann Frankel, PHD	<i>Integrated Mental Health "Just-In-Time" Services with the Special Supplemental Nutrition Program for Women, Infant, and Children in Colorado</i>	Caring for Colorado Foundation
Jacob Friedman, PhD	<i>Interrupting the Vicious Cycle of Obesity and Metabolic Syndrome</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHH
Satish Garg, MD, MBBS., DM	<i>Multi-Center, Randomized, Parallel, Adaptive, Controlled Trial in Adult and Pediatric Patients with Type 1 Diabetes Using Hybrid Closed Loop System and Control (CSII, MDI, and SAP) at Home</i>	Medtronic, Inc.

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Adit A. Ginde, MD, MPH	<i>CCC for NHLBI Prevention and Early Treatment of Acute Lung Injury PETAL Network (CLOVERS)</i>	Partners Healthcare
Monica Grafals, MD	<i>Use of Acthar in CKD stage V or ESRD patients in preparation for a kidney transplant</i>	Mallinckrodt, Inc.
Eva Grayck, MD	<i>SOD3 regulation of redox sensitive signaling in pulmonary vascular diseases</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
Saketh Ram Guntupalli, MD	<i>CANscript Clinical outcomes in a Real-world Setting (ANCERS)-2: A prospective, multicenter, observational study examining the clinical utility of CANscript in routine clinical practice</i>	MitraBiotech
Jonathan A. Gutman, MD	<i>A Randomized, Double-Blind, Placebo-Controlled Phase 3 Study of Itacitinib or Placebo in Combination With Corticosteroids for the Treatment of First-Line Acute Graft-Versus-Host Disease</i>	Incyte Corporation
Jonathan A. Gutman, MD	<i>A Phase IB, open label, multicenter trial of AB-110 in adults with hematologic malignancies undergoing cord blood transplantation.</i>	Angiocrine Bioscience, Inc
Kathryn Haskins, PhD	<i>Hybrid Peptides as Autoantigens for Diabetogenic CD4 T Cells</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Bradley Haverkos, MD	<i>A Phase 1b/2 Open-Label, Dose Escalation and Expansion Study of Orally Administered VRx-3996 and Valganciclovir in Subjects with Epstein-Barr Virus-Associated Lymphoid Malignancies</i>	Viracta Therapeutics, Inc
Teresa Lynn Hernandez, PhD	<i>Randomized Trial of Diet in GDM: Metabolic Consequences to Mother and Offspring</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
James O. Hill, PhD	<i>Colorado Nutrition Obesity Research Center</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Vernon Holers, MD	<i>Evolving Adaptive and Effector Mechanisms from Pre-RA Through Established Disease</i>	National Institute of Arthritis & Musculoskeletal and Skin Diseases/NIH/DHHS
Christian J. Hopfer, MD	<i>Genetics and Progression of Early-onset Substance Dependence and HIV Risk</i>	National Institute on Drug Abuse/NIH/DHHS
Christian J. Hopfer, MD	<i>Impact of Marijuana Legalization: Comparison of Two Longitudinal Twin Cohorts</i>	National Institute on Drug Abuse/NIH/DHHS
Lawrence E. Hunter, PhD	<i>Bio Text NLP</i>	National Library of Medicine/NIH/DHHS
Thomas H. Inge, MD	<i>Teen Longitudinal Assessment of Bariatric Surgery (Teen LABS) Research Project</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Antonio Jimeno, MD, PhD	<i>Development of an autologous humanized model of melanoma exploring human thymic education capacity</i>	National Cancer Institute/NIH/DHHS
Antonio Jimeno, MD, PhD	<i>669-00/ECHO-304 Ph 3 Randomized, Open-Label Phase Clinical Study to Evaluate the Efficacy and Safety of Pembrolizumab plus Epacadostat, Pembrolizumab Monotherapy, and the EXTREME Regimen as First line Treatment for Recurrent or Metastatic Head and Neck Squamous Cell Carcinoma (KEYNOTE-669/ECHO-304)</i>	Merck Sharp & Dohme Corp
David Jones, PhD	<i>600 MHz NMR console and cold probe</i>	National Institutes of Health
Manali K. Kamdar, MD	<i>A phase 1/2, open label, multi-centered study to assess the safety and tolerability of Durvalumab (Anti-PD-L1-Antibody) as monotherapy and in combination therapy in subjects with lymphoma or chronic lymphocytic leukemia.</i>	Celgene Corporation

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Manali K. Kamdar, MD	<i>A Phase Ib/II study evaluating the safety and efficacy of Obinutuzumab in combination with Idasanutlin and Venetoclax in patients with relapsed or refractory follicular lymphoma or diffuse large B-cell lymphoma.</i>	Genentech, Inc.
Manali K. Kamdar, MD	<i>A Phase 1, Open-Label, Multicentre Study to Assess the Safety Tolerability, Pharmacokinetics and Preliminary Antitumor Activity of Ascending Doses of AZD5991 in Subjects with Relapsed or Refractory Haematologic Malignancies.</i>	AstraZeneca AB
Madeleine Kane, MD, PhD	<i>Paul Calabresi Award In Clinical Oncology Research</i>	National Cancer Institute/NIH/DHHS
Allison Kempe, MD, MPH	<i>Centralized IIS-Based Reminder-Recall to Increase Influenza Vaccination Rates</i>	National Institute of Allergy and Infectious Diseases/NIH/DHHS
Jeffrey Scott Kieft, PhD	<i>Structure, function, and dynamics of viral RNAs and RNA-containing complexes</i>	National Institute of General Medical Sciences/NIH/DHHS
Benzi M. Kluger, MD	<i>Does Outpatient Palliative Care Improve Patient-Centered Outcomes in Parkinson's Disease?</i>	Patient Centered Outcomes Research Institute
Kyle E. Knierim, MD	<i>Opioid Use Disorder</i>	Colorado Department of Human Services
Jan P. Kraus, PhD	<i>SRA License Agreement CBS</i>	Orphan Technologies, Ltd.
Nancy F. Krebs, MD	<i>Predicting Health Outcomes of Mediterranean Diet via Metabolomics of Foods and Biospecimens</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Jean S. Kutner, MD	<i>Refinement and Expansion of the Palliative Care Research Cooperative Group (PCRC)</i>	Duke University

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Mamuka Kvaratskhelia, PhD	<i>Structural determinants for integrase pleiotropism in viral maturation.</i>	Scripps Research Institute
Bethany Matthews Kwan, PhD	<i>Comparing Patient-Centered Outcomes of Standardized vs Patient-Driven Diabetes Shared Medical Appointments</i>	Patient Centered Outcomes Research Institute
Elaine T. Lam, MD	<i>162300 Ph I/II Study of Pembrolizumab and Cabozantinib in Patients with Metastatic Renal Cell Carcinoma</i>	Merck Sharp & Dohme Corp
Ethan Lang, PhD	<i>Sequence analysis of hemotological traits in African Americans</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
Jennifer Stevens-Lapsley, PT, PhD	<i>Movement pattern biofeedback training after total knee arthroplasty</i>	National Institute on Aging/NIH/DHHS
Jennifer Stevens-Lapsley, PT, PhD	<i>Progressing Home Health Rehabilitation Paradigms for Older Adults</i>	National Institute of Nursing Research/NIH/DHHS
Maureen Leehey, MD	<i>228PD201</i>	Biogen Idec MA, Inc.
Myron J. Levin, MD	<i>International & Domestic, Pediatric & Maternal HIV Studies Coordinating Center</i>	Westat, Inc.
Myron J. Levin, MD	<i>Progress Report, Part D Women, Infants, Children, and Youth (WICY) Services, FY 2016</i>	Health Resources and Services Administration/DHHS
Karl Douglas Lewis, MD	<i>R3767-ONC-1613 Ph 1, Open-Label, Dose-Escalation and Cohort Expansion First-in-Human Study of the Safety, Tolerability, Activity and Pharmacokinetics of REGN3767 (anti-LAG-3 mAb) Administered Alone or in Combination with REGN2810 (anti-PD-1 mAb) in Patients with Advanced Malignancies</i>	Regeneron Pharmaceuticals, Inc.

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Christopher H. Lieu, MD	<i>WP29945 Open-label, Multi-center, dose escalation and expansion Ph IB study to evaluate the safety, pharmacokinetics, and therapeutic activity of RO6958688 in combination with atezolizumab in patients with locally advanced and/or meta-static CEA-positive solid tumors.</i>	Roche TCRC, Inc
Christopher H. Lieu, MD	MK-3475-651-00 Ph 1b Multi-cohort Study of the Combination of Pembrolizumab (MK-3475) plus Binimetinib alone or the Combination of Pembrolizumab plus Chemotherapy with or without Binimetinib in Participants with Metastatic Colorectal Cancer (KEYNOTE-651)	Merck Sharp & Dohme Corp
Andrew Han-Jeng Liu, MD	<i>Inner City Asthma Consortium 3 (ICAC3)</i>	University of Wisconsin/WI
Marshall Scott Carr Lucia, MD	<i>MAPP Research Network Tissue Analysis and Technology Core</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Wendy Macklin, PhD	<i>The role of mTOR signaling in oligodendrocyte differentiation and CNS myelination</i>	National Institute of Neurological Disorders and Stroke/NIH/DHHS
Tomer M. Mark, MD	<i>Phase 2, Randomized, Open-Label Study Comparing Daratumumab, Lenalidomide, Bortezomib, and Dexamethasone (D-RVd) Versus Lenalidomide, Bortezomib, and Dexamethasone (RVd) in Subjects With Newly Diagnosed Multiple Myeloma Eligible for High-Dose Chemotherapy and Autologous Stem Cell Transplantation</i>	Janssen Research and Development L.L.C

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Tomer M. Mark, MD	<i>A Phase 1, First-in-Human, Open-Label, Dose Escalation Study of JNJ-64407564, a Humanized GPRC5D x CD3 DuoBody® Antibody, in Subjects with Relapsed or Refractory Multiple Myeloma</i>	Janssen Research and Development L.L.C
Daniel D. Matlock, MD, MPH	<i>A Multicenter Trial of a Shared Decision Support Intervention for Patients offered implantable Cardioverter-Defibrillators: DECIDE – ICD Trial</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
Martin D. McCarter, MD	<i>161080 Pembrolizumab and All-Trans Retinoic Acid Combination Treatment of Stage IV Melanoma</i>	Merck Sharp & Dohme Corp
Timothy A. McKinsey, PhD	<i>Regulation of Chromatin Signaling in Heart Failure by BET Bromodomain Proteins</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
Edward L. Melanson, PhD	<i>The impact of estrogen status on the biological function of brown adipose tissue in women measured using quantitative PET/CT</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Luisa Mestroni, PhD	<i>Molecular Genetics, Pathogenesis and Protein Replacement Therapy in Arrhythmogenic Cardiomyopathy</i>	Foundation Leducq
James York Miller, MD	<i>Precision Chemoprevention of Lung Cancer</i>	V Foundation for Cancer Research, The
Shelley D. Miyamoto, MD	<i>Myocardial Effects of PDE5 Inhibition in Single Ventricle Heart Disease</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
Kerrie Moreau, PhD	<i>Cardiovascular Consequences of Hypogonadism in Men</i>	National Institute on Aging/NIH/DHHS
Maria Acena Nagel, MD	<i>The Molecular Pathogenesis of Varicella Zoster Virus Infection</i>	National Institute on Aging/NIH/DHHS
David A. Norris, MD	<i>Molecular Analysis, Modeling and Correction of Skin Diseases Core Center</i>	National Institute of Arthritis & Musculoskeletal and Skin Diseases/NIH/DHHS

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
David L. Olds, PhD	<i>Research and development services for nurse-family partnership-innovation.</i>	Nurse-Family Partnership National Service Office
Brent Elliott Palmer, PhD	<i>Diet/gut Microbiome Interaction Influence Inflammatory Disease in HIV Patients</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Eric M. Poeschla, MD	<i>Novel Approaches to Innate Immunity Against HIV-1 and Other Co-infection Viruses</i>	National Institute on Drug Abuse/NIH/DHHS
Huntington Potter, PhD	<i>A Pilot Randomized Double-Blind Placebo-Controlled Phase 2 Trial of the Safety & Efficacy of the Long-Term Use of GM-CSF (Leukine®) in the Treatment of Alzheimer's Disease</i>	Alzheimers Association
Huntington Potter, PhD	<i>Neuropathology and Immune Biomarker Discovery in a Rat Model of Alzheimer's Disease, TgF344-AD, with Single or Repetitive Traumatic Brain Injury</i>	Department of the Army
Martha C. Powell, PhD	<i>Long Term Care Survey Process Operational Support and Analysis</i>	Insight Policy Research
Neda Rasouli, MD	<i>Glycemia Reduction Approaches in Diabetes: A comparative effectiveness study (GRADE)</i>	George Washington University
Yosef Refaeli, PhD	<i>#5 in vivo analysis of protein expanded and/or virally transduced HSC/#6 Invitro expansion of antigen specific T-cells and in vivo analysis of effector functions.</i>	Taiga Biotechnologies, Inc.
Judith Regensteiner, PhD	<i>The Colorado Building Interdisciplinary Research Careers in Women's Health Program</i>	Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)/NIH/DHHS
Diego Restrepo, PhD	<i>Controlled neuronal firing in vivo using two photon spatially shaped optogenetics</i>	National Institute of Neurological Disorders and Stroke/NIH/DHHS

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Diego Restrepo, PhD	<i>Complex Odor Recognition of the Main Olfactory Bulb</i>	National Institute on Deafness and Other Communication Disorders/NIH/DHHS
Marian J. Rewers, MD, PhD	<i>Natural History of Pre-diabetic Autoimmunity (DAISY)</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Marian J. Rewers, MD, PhD	<i>Autoimmunity Screening for Kids (ASK)</i>	Juvenile Diabetes Foundation
Marian J. Rewers, MD, PhD	<i>Novel Pathways to Slow Progression from Islet Autoimmunity to Diabetes</i>	Leona M. And Harry B. Helmsley Charitable Trust
Marian J. Rewers, MD, PhD	<i>CLINICAL TRIAL, (Patient Care per unit F&A 26%) "and" PBMC USF TEDDY STUDY (Cost Reimbursable F&A 55.5%)</i>	University of South Florida
Angeles Ribera, PhD	<i>Rocky Mountain Neurological Disorders Core Center</i>	National Institute of Neurological Disorders and Stroke/NIH/DHHS
Desmond K. Runyan, DRPH	<i>CWTS</i>	Colorado Department of Human Services
Mario L. Santiago, PhD	<i>Role of Type I IFNs in Mucosal HIV-1 Immunity and Pathogenesis</i>	National Institute of Allergy and Infectious Diseases/NIH/DHHS
Eric Schmidt, MD	<i>Endothelial Glycocalyx Reconstitution During Sepsis</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
David A. Schwartz, MD	<i>Role of Genetics in Idiopathic Pulmonary Fibrosis (IPF)</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
David A. Schwartz, MD	<i>Mechanisms of Familial Pulmonary Fibrosis</i>	Vanderbilt University
David A. Schwartz, MD	<i>Functional Genetics in Idiopathic Pulmonary Fibrosis</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
David A. Schwartz, MD	<i>MUC5B, a novel therapeutic target for Idiopathic Pulmonary Fibrosis (IPF)</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
David A. Schwartz, MD	<i>Idiopathic Pulmonary Fibrosis, a disease initiated by mucociliary dysfunction</i>	Department of the Army

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Elena Shagisultanova, MD, PhD	<i>Phase Ib/II Open-Label Single Arm Study to Evaluate Safety and Efficacy of ONT-380 in Combination with Palbociclib and Letrozole in Patients with Hormone Receptor Positive and HER2-positive Meta-static Breast Cancer</i>	Pfizer ASPIRE Grant Program
Sunita Sharma, MD, MPH	<i>Micrnas and early life exposures in the developmental origin of asthma</i>	National Heart, Lung, and Blood Institute/NIH/DHHS
Richard A. Spritz, MD	<i>Developing 3D Craniofacial Morphometry Data and Tools to Transform Dysmorphology</i>	National Institute of Dental and Craniofacial Research/NIH/DHHS
Christopher J. Stille, MD, MPH	<i>Health System Research Network for Children and Youth with Special Health Care Needs (CYSHCNet)</i>	Health Resources and Services Administration/DHHS
Stanley J. Szeffler, MD	<i>Colorado Comprehensive School-Centered Asthma Programs (AsthmaCOMP)</i>	Colorado Department of Public Health and Environment/COLO
Dan Theodorescu, MD	<i>University of Colorado Cancer Center Support Grant</i>	National Cancer Institute/NIH/DHHS
Daniel Humberto Vela Duarte, MD	<i>Phase 2 Study of Allogeneic Umbilical Cord Blood Infusion for Adults with Ischemic Stroke - CoBIS 2</i>	Duke University
Livia A. Veress, MD	<i>Advanced Development of Al- tephlase as a Medical Countermeasure for Pulmonary Injury Associated with Sulfur Mustard Inhalation - Proof of Concept in a Swine Model</i>	Department of Health and Human Services
Victor M. Villalobos, MD, PhD	<i>15B-MC-JGDL Ph 1b (Open-Label) / Phase 2 (Randomized, Double-Blinded) Study Evaluating Gemcitabine and Docetaxel With or Without Olaratumab in the Treatment of Advanced Soft Tissue Sarcoma</i>	Lilly USA, LLC
Nicholas Walter, MD	<i>JPA Walter: Sputum Transcriptomic Expression Profiling in Study 31</i>	Denver Research Institute - VA Hospital

New Research Grants > \$500,000 Awarded 2017-2018

Name	Title	Funding Agency
Xiao-Jing Wang, PhD	<i>Identifying oral cancer stem cell properties affected by the micro-environment</i>	National Institute of Dental and Craniofacial Research/NIH/DHHS
Richard F. Weir, PhD	<i>Development of a Bidirectional Optogenetic Minimally Invasive Peripheral Nerve Interface with Single Axon Read-in & Read-out Specificity</i>	National Center for Advancing Translational Sciences/NIH
Stephanie R. Wesolowski, PhD	<i>Nutrient and insulin metabolic actions in IUGR fetal liver</i>	National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS
Carl W. White, MD	<i>Development of antidotes for toxic gases</i>	National Institute of Environmental Health Sciences/NIH/DHHS
Amanda Camp Wieland, MD	<i>A Phase 3, Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Safety and Efficacy of Selonsertib in Subjects with Compensated Cirrhosis due to Nonalcoholic Steatohepatitis (NASH)</i>	Gilead Sciences, Inc.
Liping Yu, MD	<i>Establish a Data Coordinating Center (DCC) for the Consortium for Identification of Environmental Triggers of Type 1 Diabetes</i>	University of South Florida
Liping Yu, MD	<i>NIDDK Type 1 Diabetes TrialNet Data Coordinating Cent</i>	University of South Florida
Yuwen Zhu, PhD	<i>CD112 Screen Project</i>	GlaxoSmithKline
Linda Kay Zittleman, MD, MSPH	<i>Implementing Technology and Medication Assisted Team Training and Treatment in Rural Colorado (IT MATTRs Colorado)</i>	Agency for Healthcare Research and Quality/DHHS

Office of Grants and Contracts

University of Colorado at Denver Awards by School

Award Trends - Fiscal Year to Date 2017 and 2018

Financial Services - Office of the Grants and Contracts
 University of Colorado Denver | Anschutz Medical Campus
 Award Trends - Fiscal Year 2017 and 2018
 Awards by School/Department

School/College/Chancellor's Office	Department/Division/Center	FY 2017			FY 2018			% of FY 17 Funding
		Direct Cost	Indirect Cost	Total Cost	Direct Cost	Indirect Cost	Total Cost	
Academic and Student Affairs (Denver)		1,482,569	244,278	1,726,847	1,107,184	159,215	1,266,399	73%
Library (Anschutz)		166,917	61,869	228,786	4,000	0	4,000	2%
Library (Denver)		10,960	2,849	13,809	13,286	0	13,286	96%
Central Services Administration (Anschutz)		506,260	0	506,260	0	0	0	
CSA Centers and Institutes (Anschutz)	Center on Aging	665,587	107,272	772,859	1,946,961	620,700	2,567,661	332%
	Health Affairs Health Care Ethics (AHEC)	778,491	25,129	803,620	1,068,852	37,867	1,106,719	138%
	Colorado Clinical Translational Sciences Institute	6,379,207	984,373	7,363,580	7,857,525	2,257,155	10,114,680	137%
	Marcus Brain Institute	358,835	35,890	394,725	5,095,705	509,570	5,605,275	1420%
	Colorado Center for Personalized Medicine (NEW FY 18)	0			1,709,683	493,248	2,202,931	
	Total CSA Centers and Institutes (Anschutz)	8,182,120	1,152,664	9,334,784	17,678,726	3,918,540	21,597,266	122%
Central Services Administration (Denver)		254,259	20,341	274,600	0	0	0	
College of Architecture and Planning		1,141,228	47,358	1,188,586	837,206	55,229	892,435	75%
College of Arts and Media		199,415	107,230	306,645	0	0	0	
College of Engineering and Applied Sciences		4,002,667	1,094,223	5,096,890	3,166,545	726,443	3,892,989	76%
College of Liberal Arts and Sciences		5,863,957	1,959,834	7,823,791	3,774,798	1,117,351	4,892,149	63%
College of Nursing		5,241,000	1,040,406	6,281,406	4,915,486	990,525	5,906,012	94%
The Business School		7,948	4,411	12,359	218,310	121,162	339,472	2747%
The Graduate School		340,918	103,505	444,423	434,197	109,446	543,643	122%
School of Dentistry		2,520,756	853,123	3,373,879	4,229,209	1,613,916	5,843,125	173%
School of Education and Human Development		4,382,721	679,701	5,062,422	4,569,247	621,482	5,190,729	103%
School of Medicine	Anesthesiology	5,019,285	1,107,464	6,126,749	3,065,257	1,202,036	4,267,293	70%
	Biochem/Biophy/Molecular Genetics	6,184,645	2,266,156	8,450,801	5,016,758	2,125,737	7,142,495	84%
	Cell and Developmental Bio	3,834,550	1,161,165	4,995,715	5,400,148	2,023,692	7,423,840	149%
	Dermatology	3,194,453	799,405	3,993,859	3,043,940	1,249,547	4,293,487	108%
	Emergency Medicine	3,720,722	793,402	4,514,125	2,647,385	847,179	3,494,565	77%
	Family Medicine	2,748,679	294,249	3,042,928	2,679,384	191,125	2,870,509	94%
	Immunology Microbiology	9,992,054	3,773,740	13,765,794	7,325,514	2,865,614	10,191,128	74%
	Medicine	82,839,282	25,111,289	107,950,568	102,294,278	33,578,716	135,872,995	126%
	Neurology	16,607,209	5,420,040	22,027,249	11,590,319	2,989,308	14,579,624	66%
	Neurosurgery	2,319,015	231,198	2,550,213	2,061,426	114,071	2,175,496	85%
	Obstetrics and Gynecology	7,211,225	1,908,648	9,119,873	4,958,613	1,841,755	6,800,368	75%
	Ophthalmology	2,291,773	583,017	2,874,789	2,154,036	855,471	3,009,508	105%
	Orthopedics	2,863,827	412,110	3,275,937	2,922,170	414,544	3,336,714	102%
	Otolaryngology	2,229,988	631,540	2,861,529	1,832,418	511,118	2,343,536	82%
	Pathology	3,837,920	1,531,170	5,369,090	3,630,630	1,411,144	5,041,774	94%
	Pediatrics	63,383,413	11,544,580	74,927,994	57,368,524	11,082,730	68,451,253	91%
	Pharmacology	8,297,928	2,815,717	11,113,645	8,619,436	3,293,352	11,912,788	107%
	Physiology/Biophysics	4,365,075	1,833,002	6,198,077	3,615,795	1,677,244	5,293,039	85%
	Psychiatry	5,621,546	1,423,667	7,045,212	10,267,718	2,056,709	12,324,427	170%
	Radiation Oncology	503,746	31,228	534,974	632,791	243,306	876,097	164%
	Radiology	2,108,132	386,268	2,494,400	852,126	285,355	1,137,480	46%
	Rehabilitation Medicine	3,299,129	914,713	4,213,842	5,192,580	1,087,946	6,280,526	149%
	Surgery	8,588,853	3,283,009	11,871,861	7,572,997	2,922,053	10,495,051	88%
	Total School of Medicine	251,262,449	68,258,778	319,521,224	254,744,243	74,869,752	329,613,991	103%
SOM Institutes and Centers	Barbara Davis Center	16,813,758	5,364,893	22,178,652	15,168,881	4,619,348	19,788,229	89%
	Cancer Center	36,103,969	9,035,019	45,138,986	37,011,758	10,776,273	47,788,030	106%
	Center for Children's Surgery	9,256	5,138	14,394	0	0	0	
	Center of Bioengineering	5,524,609	1,172,290	6,696,899	3,906,672	1,055,837	4,962,509	74%
	Colorado Health Outcomes	12,926,840	2,873,782	15,800,622	17,465,737	3,022,638	20,488,375	130%
	Depression Center	99,412	33,226	132,638	131,007	23,869	154,876	117%
	Health and Wellness Center	1,862,232	779,933	2,642,165	1,646,168	990,982	2,637,150	100%
	Linda Crnic Institute	249,048	64,752	313,800	50,000	27,750	77,750	25%
	Webb-Waring Center	57,697	4,616	62,313	415,991	176,792	592,784	951%
	Total SOM Institutes and Centers	73,646,821	19,333,649	92,980,469	75,796,214	20,693,489	96,489,703	104%
	Total SOM Department/Centers	324,909,270	87,592,427	412,501,693	330,540,457	95,563,240	426,103,694	103%
School of Pharmacy		11,817,775	4,844,829	16,662,604	8,991,062	3,469,211	12,460,273	75%
School of Public Affairs		1,273,323	308,871	1,582,194	1,098,808	260,883	1,359,691	86%
School of Public Health		35,487,371	8,298,008	43,785,381	36,594,053	8,151,319	44,745,372	102%
	Total	407,791,434	108,415,928	516,207,362	418,172,574	116,877,984	535,050,558	104%

	FY 2017			FY 2018		
	Direct Cost	Indirect Cost	Total Cost	Direct Cost	Indirect Cost	Total Cost
Denver Campus	18,611,099	4,464,686	23,075,785	15,597,513	3,207,325	18,804,839
Anschutz Medical Campus	389,180,335	103,951,242	493,131,577	402,575,081	113,670,638	516,245,696
	407,791,434	108,415,928	516,207,362	418,172,574	116,877,984	535,050,535

The Office of the Dean proudly presents the
2018-2019 Dean's Distinguished Seminar Series

All seminars are held from 4:00-5:00 pm on the Anschutz Medical Campus, in Research 1 North building, Hensel Phelps West Auditorium, with a reception for the guest and attendees immediately following in the first-floor atrium outside the lecture hall. Lecture topics are announced a few weeks prior to each seminar.

Tuesday, September 11, 2018

Susan M. Rosenberg, PhD

Ben F. Love Chair in Cancer Research
Professor, Molecular & Human Genetics
Baylor College of Medicine

Tuesday, February 12, 2019

Charles N. Rotimi, PhD

Chief & Senior Investigator
On Genomics and Global Health
National Human Genome Research Institute
National Institutes of Health

Tuesday, October 9, 2018

Leslie B. Vosshall, PhD

Robin Chemers Neustein Professor
Head Laboratory of Neurogenetics and Behavior
Investigator, Howard Hughes Medical Institute
The Rockefeller University

Tuesday, March 12, 2019

Jean Bennett, MD, PhD

F.M. Kirby Professor of Ophthalmology
Perelman School of Medicine
University of Pennsylvania

Tuesday, November 13, 2018

Jeffrey Drazen, MD

Editor-in-Chief
The New England Journal of Medicine
Distinguished Parker B. Francis
Professor of Medicine
Harvard Medical School

Tuesday, April 9, 2019

Amato Giaccia, PhD

Jack, Lulu and Sam Willson Professor
Radiation Oncology – Radiation and Cancer
Biology
Professor (By courtesy), Obstetrics & Gynecology,
Professor, (By courtesy) Surgery –
Plastic & Reconstructive Surgery
Stanford University School of Medicine

Tuesday, January 8, 2019

Richard Gallo, MD, PhD

Distinguished Professor and Founding Chair
Department of Dermatology
University of California, San Diego

Tuesday, May 14, 2019

Michael Schwartz, MD

Robert H. Williams Endowed Chair in Medicine
Professor of Medicine - Division of Metabolism,
Endocrinology and Nutrition
University of Washington



School of Medicine

UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS



Centers, Institutes and Programs

The University of Colorado School of Medicine is home to numerous centers, institutes, and programs. They range in categories from diabetes to cancer to surgical innovation. Also covered are women's health research and health outcomes. On the following pages, you can read a more detailed description of many of the centers and institutes.

For a complete list, go to www.medschool.ucdenver.edu and click on the Department/Center/Institute link.

Adult and Child Consortium for Health Outcomes Research and Delivery Science

The Adult and Child Consortium for Health Outcomes Research and Delivery Science (ACCORDS) encompasses T3-T4 research across the life spectrum for the Anschutz Medical Campus, with infrastructure support provided by the Dean's Office of the School of Medicine (SOM) and Children's Hospital Colorado (CHC). The program was first established in 1998 as Colorado Health Outcomes (COHO), but was renamed and became fully collaborative in 2014 with **Allison Kempe, MD, MPH**, as the Center Director. The new name highlights the focus on the entire life spectrum as well as on "delivery science," encompassing comparative effectiveness, patient-centered outcomes, and implementation and dissemination research.

ACCORDS functions as both an actual and virtual program, with a group of investigators from multiple disciplines who have their primary offices on-site and a much larger group affiliating with ACCORDS personnel, programs and cores while maintaining off-site research homes. Currently, 50 investigators, 21 biostatisticians/analysts, 34 research assistants, four instructors, three post-docs and nine administrative personnel have office space with ACCORDS. For FY 2018, 29 grants were awarded totaling \$17,434,248 reflecting a 39% success rate for federal grants. Overall 76 grants were submitted totaling \$79,705,848. ACCORDS currently has 152 active funded projects. More than 100 additional investigators interface with the program, primarily for consultation or to attend educational offerings. Collaborating investigators represent all School of Medicine departments, as well as the Colorado School of Public Health, the Skaggs School of Pharmacy and Pharmaceutical Sciences, and the College of Nursing. In addition to these internal partners, ACCORDS also has strong research affiliations with the Colorado Clinical & Translational Sciences Institute, Denver Health, Kaiser Permanente, Veterans Affairs, and the Colorado Departments of Public Health and Environment and Health Care Policy and Financing. ACCORDS serves as an incubator for research ideas, fosters interdisciplinary collaboration, as well as the development of focused areas of research of national prominence.

The mission of ACCORDS is to improve health, both locally and nationally, by supporting state-of-the-art outcomes and community translational research to guide clinical practice and health policy.

The objectives of ACCORDS are to:

- Increase competitiveness of the SOM/CHC for funding from multiple research and education or training program sponsors, especially Patient-Centered Outcomes Research Institute, Agency for Healthcare Research and Quality and the National Institutes of Health
- Strengthen affiliations with key external partners including Denver Health, Veterans Affairs, Kaiser Permanente and Colorado Department of Public Health and Environment to increase access to populations and collaborators necessary for certain grants
- Improve faculty development for both senior and junior faculty interested in outcomes and delivery research by providing an interdisciplinary home for developing research, a mentored training ground and substantial educational activities
- Improve the ability of the SOM/CHC to recruit both senior and junior faculty interested in health outcomes, health services research, dissemination and implementation science, comparative effectiveness and patient centered outcomes research
- Achieve greater national visibility of the SOM/CHC as leaders in the areas of outcomes, dissemination/implementation and comparative effectiveness research and training

ACCORDS is organized into the following programmatic areas: (1) Research; (2) Implementation and Dissemination Science; (3) Education; (4) Research Training; (5) Practice Transformation; and (6) Community Engagement and Outreach.

ACCORDS also has methodological cores in qualitative science, practice-based research networks, biostatistics and analysis, patient-centered decisions/shared decision-making and health informatics/mobile health. These cores provide support to the programmatic areas and consultative support to investigators. A major focus of these cores is to provide support for the development of new projects and grant proposals.

<http://www.ucdenver.edu/academics/colleges/medicalschool/programs/ACCORDS/Pages/welcome.aspx>

CU Anschutz Health and Wellness Center

The CU **Anschutz Health and Wellness Center** was officially established within the School of Medicine and opened in April 2012 with the vision to create a world empowered by wellness. This world-class facility is a hub of innovation and collaboration for top researchers and practitioners in the fields of wellness, nutrition, weight loss, fitness, and behavior change. The center's industry-leading team creates programming using cutting-edge, science-based research as a foundation, to help transform the lives of individuals and communities in the Denver area and beyond. The center's experts also lead programs, in partnership with schools, worksites, and community organizations throughout Colorado. The building, which is certified by the U.S. Green Building Council for Leadership in Energy & Environmental Design, houses:

- A state-of-the-art fitness center offering the most advanced equipment, results-based programming, personal training services, group exercise, and motivational support for more than 3,900 members from campus and the surrounding community. The fitness center runs a supervised exercise program which is physician-referred and designed to assist with chronic disease management and post-rehab needs. More information about the fitness center can be found at <http://anschutzwellness.com/fitness-performance/>
- A wellness clinic offering results-oriented weight loss and wellness services such as personalized physician-supervised wellness assessments, expert nutritional advising, psychological consultations, body composition testing, and mind-body treatments. Several other campus clinics housed within the wellness clinic complete a full range of care and services available to the public. One of the main tenants is the Marcus Institute for Brain Health, which provides specialty care for military veterans and retired athletes struggling with mild to moderate traumatic brain injuries (including concussion) and changes in psychological health. More information about the wellness clinic can be found at <http://anschutzwellness.com/wellness-services/offerings/>

A full spectrum of weight loss programs:

- **Weight Loss 4 Life** includes both a half-day workshop and ongoing support giving participants the foundational tools, support and accountability needed to sustain weight loss long term.
- **State of Slim** includes an emphasis on mindset transformation and improving metabolism by following structured diet & increasing activity.
- **My New Weigh** is a registered dietician-led program for those needing significant weight loss and/or medical reasons for weight loss and includes meal replacements using a Health One product with an emphasis on behavior change and highly structured meal plan for quicker weight loss.

Metabolic and demonstration kitchens offering research facilities and community cooking classes.

The CU Anschutz Health and Wellness Center collaborates with many groups on campus including the CU Cancer Center, offering a research-based exercise program for cancer patients to support recovery called BefitBewell. Also, advanced reproductive medicine offering WIFI (Wellness Interdisciplinary Fertility Initiative) in the wellness clinic.

Funding for the center comes from a variety of sources, including federal and state government agencies, nonprofit organizations, commercial industries, and fees for services and membership. It also includes the following research groups:

The Obesity and Cardiovascular Disease Training Grant (funded by NIH/NHLBI T32HL116276) is an interdepartmental training program which provides research training in areas of focus that hypertension, diabetes, obstructive sleep apnea, and asthma, congestive heart failure (CHF), coronary heart disease (CHD), cerebrovascular disease, and sudden death. The intent of our training program is novel, broad-based and comprehensive, including basic, clinical, and population science opportunities on how obesity relates to cardiovascular disease of focused training are also focused on the treatment and prevention of obesity.

Clinical Trials Division, which conducts industry-sponsored research with a focus on nutrition. Areas of study include weight loss, weight maintenance, metabolic syndrome, and diabetes. The division specializes in behavioral approaches to weight loss, delivered through group classes and/or one-on-one counseling.

Look AHEAD (Action for Health in Diabetes; funded by NIH/NIDDK grant U01 DK057151) was recently re-funded through 2021. Look AHEAD is a multicenter, randomized clinical trial to examine the effects of a lifestyle intervention designed to achieve and maintain long-term weight loss.

The **Colorado Nutrition Obesity Research Center (NORC)** (funded by NIH/NIDDK grant P30 DK048520), was recently re-funded through 2020. The NORC has had an important impact with the University of Colorado School of Medicine by successfully fostering collaboration among members of its research base, promoting interdisciplinary research, and fostering development of young investigators. NORC researchers continue to be successful in attracting funding and in publishing research results. The NORC maintains a research base, which is comprised of more than 115 researchers and principal investigators who use one of our core laboratories (Clinical Intervention and Translation; Energy Balance Assessment; Molecular; and Cellular Analytic).

Barbara Davis Center for Diabetes

The Barbara Davis Center for Diabetes (BDC) is one of the largest centers in the world specializing in type 1 diabetes research and care for children and adults. Clinicians, clinical researchers, and basic biomedical scientists work at the BDC to find the most effective treatment, prevention, and cure for type 1 diabetes.

Clinical Care

The center clinics provide state-of-the-art care for over 7,000 children and adults with diabetes. Barbara Davis Center clinics offer extensive education and support for patients and their families as well as specialized programs such as the Pregnancy and Diabetes Clinic, the Hispanic/Latino Diabetes Care Program, and a model telemedicine program serving residents in Wyoming and remote parts of Colorado.

Research

BDC research goals include investigation of the causes of type 1 diabetes (T1D), the early detection of autoimmunity, prevention and early intervention. BDC clinical faculty members are developing new strategies and treatments for improved outcomes of care including prevention strategies for complications of both type 1 and type 2 diabetes. Investigators of the BDC were awarded \$16.8 million in direct cost competitive funding and published over 150 peer reviewed papers in the past year.

Highlights:

Clinical Research: BDC investigators continue to increase the body of knowledge around the identification, cause, treatment, and outcomes of T1D. Recent contributions include:

- BDC clinical trial cited by Food & Drug Administration (FDA) in their approval of the first hybrid closed-loop system designed to automate insulin dosing
- Diabetic ketoacidosis (DKA) at diagnosis predicts poor diabetes control
- SGLT adjunctive therapy improves outcomes in T1D patients
- Vitamin D levels and respiratory infections predict islet autoimmunity
- Ultrasound of pancreatic blood flow predicts T1D
- Autoimmunity Screening for Kids (ASK) study finds 1% of children in Denver have early T1D and 2% have undiagnosed celiac disease

Basic Science: BDC investigators contributed to several high-profile studies that focused on the pancreatic islet in T1D. Contributions include:

- The identification of mutated insulin peptides as a target for autoantibodies (Kappler)
- The importance of islet-derived T cells in the disease process (Nakayama, Michels, Gottlieb)
- The evidence of beta cell heterogeneity (Benninger) and plasticity (Sussel)
- Cell - Stem Cell cited paper as one of three landmark papers in the last 10 years of stem cell biology (Russ)
- Leadership: BDC investigators sit on planning and leadership committees for organizations including the American Diabetes Association, the American Heart Association, and the T1D Exchange Clinic Registry.

Service Centers

The BDC Research Division provides cytometry and islet preparation services for local clientele. The Molecular Biology Service center provides basic molecular biology support, DNA sequencing, cell line authentication and mycoplasma testing. The Autoantibody/HLA Service Center performs studies that include assays for islet autoantibodies and markers of other autoimmune disorders, including celiac and Addison's disease. This laboratory serves as the core laboratory for numerous national and international trials for the prevention of type 1 diabetes.

Education

The BDC provides an outstanding training environment for developing physician-scientists, clinicians, and basic science researchers. Faculty members provide laboratory and clinical research training opportunities for young investigators from around the world including participants in the highly successful T32 Pediatric Endocrinology Fellowship Training Program and K12 Pediatric Endocrinologist Career Development Program. The annual Keystone Conference remains the center's flagship in the area of continuing medical education (CME) in Management of Diabetes, regularly selling out with over 600 participants. The Barbara Davis Center is led by **Marian Rewers, MD, PhD**, Executive Director; **Robert Slover, MD**, Director of Pediatric Diabetes Division; **Satish Garg, MD**, Director of Adult Diabetes Division; and **Lori Sussel, PhD**, Director of Basic and Translational Research Division. Website: www.barbaradaviscenter.org

Center for Bioengineering

The Center for Bioengineering and the Department of Bioengineering represent the research and academic components of the bioengineering program at the University of Colorado Denver | Anschutz Medical Campus. Built from the ground up to fully integrate engineering, basic science, and clinical aspects, the bioengineering program has generated double-digit annual growth in numbers of students and research expenditures since its founding in 2010. The graduate program enrolls approximately 80 master's and PhD students, and 135 students enrolled in our undergraduate program in fall 2018. The Department of Bioengineering employs nine tenure-track faculty and 25 non-tenure track teaching faculty and staff. Total research expenditures in the Center for Bioengineering exceeded \$6.8M in FY 2018 and research projects include use of cardiac cells to repair congenital heart defects, the study of ventilator-induced lung injury in pediatric patients, projects in disability and aging, and a project in neuro-optics in prosthetics. The Bioscience 2 building near the Anschutz Medical Campus is the primary location for our academic programs, along with classroom space held on the downtown campus. Research in the Center for Bioengineering is carried out in research space held in Bioscience 2, Research 1 and 2, and the Barbara Davis Center on the Anschutz Medical Campus, also by our Assistive Technology Program on the downtown campus.

Robin Shandas, PhD, is the Director of the Center for Bioengineering and also the Department of Bioengineering Chair. Faculty membership is representative of the diverse and translational research projects that bridge engineering and medicine and our program collaborates with more than 75 faculty. The Center for Bioengineering has active research collaborations with the Colorado Translational Research Imaging Center, the neuroscience program, Children's Hospital Colorado Heart Institute, Children's Hospital Colorado Breathing Institute, Children's Hospital Colorado Gait Lab, Children's Hospital Colorado Cardio Vascular Pulmonary Research Lab, the Barbara Davis Center for Diabetes, the VA medical center, and also collaborates with several industry partners including Medtronic, Securisyn, EndoShape, and Sharklet.

Center for Children’s Surgery

The Center for Children’s Surgery (CCS) was created within the School of Medicine (SOM) in 2011 to develop a robust children’s surgical practice. The CCS administrative leadership includes **Duncan Wilcox, MBBS, MD**, Director and Surgeon-in Chief at Children’s Hospital Colorado, **Ryan White, MHA**, Director of Finance and Administration, **Michael Handler, MD, FACS, FAAP**, Associate Surgeon-in-Chief, and **Thomas Inge, MD, PhD**, Associate Surgeon-in-Chief for Research. The CCS is comprised of the following pediatric divisions/sections: Adolescent and Pediatric Gynecology, Pediatric Cardiothoracic Surgery, Pediatric Neurosurgery, Pediatric Ophthalmology, Pediatric Orthopedics, Pediatric Otolaryngology, Pediatric Surgery, Pediatric Plastic Surgery, Pediatric Urology, Pediatric Transplant Surgery and Pediatric Dermatology.

Duncan Wilcox, MBBS, MD will oversee the goals of the CCS in 2018-2019, which are centered around research, teaching, clinical programs, and advocacy of CCS members in order to strengthen the School of Medicine, University of Colorado, and Children’s Hospital Colorado as an academic medical center of national and international preeminence.

Those goals include fostering alignment between faculty that provide surgical care to children with a robust clinical practice in pediatrics, furthering the development of an academic environment in collaboration with cognate surgical departments in the School of Medicine that supports the training of fellows, residents, and students, promoting the expansion of programs that include both bench and translational research, continuing programs that embrace child advocacy and supporting and preserving the strengths and necessary structures of the School of Medicine.

The CCS continues to develop infrastructure to support clinical programs, basic and translation research, and the educational missions. Part of this includes the Center for Research in Outcomes for Children’s Surgery (ROCS), launched in February 2017 as a sub-section of the CCS. ROCS is led by Lisa M. McLeod, MD, MSCE, Assistant Professor in the Department of Pediatrics, Section of Hospital Medicine. Since McLeod’s appointment, publications by CCS faculty increased from 9 publications per month in 2016 to nearly 30 publications per month in the first quarter of 2018. The CCS members have successfully obtained over \$29 million in grant awards for pediatric surgical research. As part of our quality and safety program, the CCS currently supports the Pediatric National Surgical Quality Improvement Program and the Trauma Quality Improvement Program through the American College of Surgeons.

Center for Dependency, Addiction and Rehabilitation

One in 12 Coloradans have an alcohol or drug related disorder and over half of those individuals have a co-occurring psychiatric illness. Only 10% receive treatment, and only a fraction of that 10% receive medically based services. The Center for Dependency, Addiction and Rehabilitation (CeDAR) provides comprehensive and compassionate care to help these individuals conquer addiction and kick-start a lifetime of good health and wellness. All patients at CeDAR benefit from a multidisciplinary approach that includes team members from addiction medicine, addiction psychiatry, nursing, counseling, psychology, spirituality, nutrition, fitness, recovery support and the family program. Specific CeDAR services include alcohol and drug detoxification and withdrawal management treatment, residential rehabilitative treatment, a consultation-liaison service for the UCHealth University of Colorado Hospital, intensive outpatient programs, other outpatient groups, addiction psychiatry, and addiction medicine outpatient clinics. Our services are provided in a trauma-informed manner and include both gender-specific and trauma-integrated care. Specialized addiction services are available for professionals in safety-sensitive positions (e.g. health care workers and pilots), other professionals, and athletes.

CeDAR’s leadership includes Executive Director **Gary Kushner, MA, LPC, CACIII**, Senior Medical Director **Jonathan Ritvo, MD**, Medical Director **Laura Martin, MD**, Director of Clinical Quality **Harlan Austin, PhD**, Director of Operations **Joshua Voigt MEd, LPC, CACIII**, Clinical Program Manager of Residential Services **Theresa “Trese” Moore BSN, RN, CARN**, Clinical Program Manager of Outpatient Services **Darah Meyer, LCSW**, Senior Chaplain **Leta Herrington, DMin, MDiv, LPC**, and **Susan Dearing-Bond, CFRE**, Director of Development and Professional Relations.

CeDAR's alliance and integration with the UCHealth University of Colorado Hospital helps distinguish its program as one of the nation's best. We are also a nationally distinguished addiction treatment center due to our emphasis on training the next generation of addiction care providers. CeDAR is a training site for Medical Students (University of Colorado and out-of-state programs), residents (family medicine, internal medicine, psychiatry), fellows (addiction psychiatry, addiction medicine, child and adolescent psychiatry, psychosomatic medicine), psychology undergraduate and graduate candidates, chaplain candidates, counseling students, and nursing students. We have become nationally distinguished through our publication of original research articles in peer-reviewed journals, the solicitation of our staff for national educational events, our program consultation, and our contributions to authoritative texts.

Division Faculty, Staff, and Trainees

CeDAR has 1.8 FTE addiction medicine faculty, 3.9 FTE addiction psychiatry faculty, 2.0 FTE psychology faculty, 2.0 FTE certified nurse specialists, 13 FTE counselors, 8.8 FTE registered nurses, 2.8 FTE chaplains, 3.0 FTE recovery coaches and 0.5 FTE exercise physiologists. In total, UCHealth University of Colorado Hospital has 118 staff assigned to CeDAR that also include management and administrative staff, behavioral health technicians, certified nurse assistants, admissions representatives, food services, and environmental services.

Clinical Programs

- **Addiction Treatment Services**
 - ⇒ Initial Assessment and Detoxification: 10 beds.
 - ⇒ High Intensity Residential 30 day Program: 40 beds (371 patients in 2017).
 - ⇒ Medium Intensity Residential 60 day Program (Residential Extended Care): 28 beds (74 patients in 2017).
 - ⇒ Outpatient Programs (12 week Intensive Outpatient Program and other Outpatient Services on Anschutz Medical Campus and Boulder Campus): (173 patients in 2017).

- **Services for Families**
 - ⇒ Family Week (5-day intensive family education and support groups).
 - ⇒ Training Programs

- **Medical Students.** Rotate through most of our clinical services, typically 12 per year.
- **General Psychiatry, Internal Medicine, Family Medicine Residents.** Rotate through our residential, outpatient services, integrated and consultation-liaison services, typically 12 per year.
- **Addiction Psychiatry Fellows.** Rotate through our residential and consultation-liaison services, typically 2 per year.
- **Addiction Medicine Fellowship.** Rotate through our residential, outpatient services, integrated and consultation-liaison services, typically 2 per year. This fellowship is run by CeDAR and supported through UCHealth and the Department of Family Medicine
- **Psychology Training.** Rotate through our residential services, including 3 pre-doctoral interns as a part of their APA accredited internship. (1: major rotation 2: minor rotation). Also provided addiction didactic trainings for the entire internship cohort. Funded through CeDAR.
- **Chaplain Residency.** One year major rotation for specialized addiction training on our residential service
- **Other professionals trained at CeDAR include nurses, social workers, licensed professional counselors, and addiction counselors.**

Research and Scholarship

- CeDAR supports faculty research, quality improvement, program evaluation, and scholarship.
- Integrated Assessment and Outcomes Tracking Initiative to increase the number of patients who remain involved with addiction treatment throughout the course of their illness and lives.

Community Outreach and Advocacy

- Speakers Bureau of subject matter experts for local and national training opportunities, prevention efforts in schools, other public speaking opportunities, education of press and education of legislators on a local and national basis.
- Free use of CeDAR facilities provided to 12 Step and other mutual support groups for hosting recovery related meetings.

Center for NeuroScience

The mission of the Center for NeuroScience (CNS) is the growth of basic and translational neuroscience research by establishing solid interactive basic, bioengineering, and clinical research bases within an environment that fosters interdisciplinary neuroscience research. Since August 15, 2017 the CNS has been led by **Sukumar Vijayaraghavan, PhD**, and Associate Directors **Jeffrey Bennett, MD/PhD**, **Angie Ribera, PhD**, **Ken Tyler, MD**.

The Center for NeuroScience and its faculty are committed to raising community awareness of ongoing clinical and basic neuroscience projects and clinical trials at the School of Medicine through community and student activities as well as invited speakers. Currently the center has 250 members, spanning four schools and 18 departments across both basic and clinical sciences.

The center continues to support pilot research grants with individual and team research awards in both basic science and translational research, through a coordinated effort with the Colorado Clinical and Translational Sciences Institute. CNS also coordinates several campus cores as part the renewal of the Rocky Mountain Neurological Disorders Core grant through an NINDS P30. The grant focused on cores providing investigators with powerful transformative tools that allow them to incorporate cutting-edge approaches into their neuroscience research programs. These cores include: Optogenetics and Neural Engineering, Nanoscopy, and Behavioral and In Vivo Neurophysiology. For more information on the CNS, please visit our website: www.medschool.ucdenver.edu/CNS

Center for Surgical Innovation

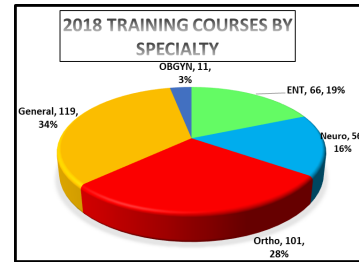
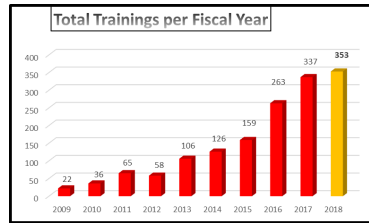
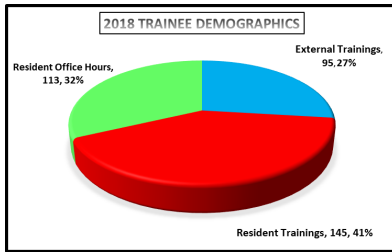
The Center for Surgical Innovation (CSI)'s mission is to provide cutting-edge surgical training courses aimed to train medical affiliates in the latest surgical techniques and technology locally, regionally, nationally, and globally, and to study surgical and procedural educational methods to advance how surgical procedures are learned and taught.

CSI was created in 2007 and is supported and overseen by five surgical departments on the University of Colorado Anschutz Medical Campus. The participating departments are surgery, neurosurgery, orthopedics, obstetrics/gynecology, and otolaryngology.

The CSI leadership team is **Thomas Robinson, MD**, Medical Director; **Sarah Massena, MBA**, Business Director; **Peter Mouser, MS**, Lab Manager; and **Sharon Durlak**, Lab Coordinator, **Jesse Durlak**, Lab Support Tech and **Bryce Jones**, Lab Support Tech.

We are excited to announce that CSI is building a new lab with double the amount of space in the new Bioscience 3 building. We will move in October 2018.

CSI is located in Bioscience Park Center, 12635 E. Montview Blvd., Suite 170, and has a surgical lab, a dedicated auditorium, and conference rooms. For more information, please visit our website at www.ucdenver.edu/csi



Colorado Sickle Cell Treatment and Research Center

The Colorado Sickle Cell Treatment and Research Center, established over 40 years ago, is the region's primary source of specialty expertise and facilitation of comprehensive specialty care for children and adults living with hemoglobinopathies. Basic, clinical, and health services research conducted by the center and its collaborators serves to elucidate the pathophysiology of sickle cell disease, develop and implement treatments and systems of care that prevent or minimize complications and that prolong and improve the quality of life, are supported by funding from the National Institutes of Health and other federal agencies, industry, and foundations. The center holds a long-standing contract with the Colorado Department of Public Health and Environment to coordinate short-term follow-up of newborn screening (NBS) for sickle cell disease and center staff continue to assist the Department of Public Health and Environment Laboratory as it expands its NBS testing services. Direct patient care is also provided by our Director **Kathryn Hassell, MD**, for adults at UHealth University of Colorado Hospital and by Associate Director **Rachelle Nuss, MD**, for pediatric patients at Children's Hospital Colorado (CHCO). New funding was awarded to the Center for FY 2019 from state Medicaid surplus funds to support sickle cell providers as they continue their dedicated work with this underserved population. Implementation of a transition program targets 12- to 26-year-olds to facilitate self-advocacy and health system navigation skills as youth move from pediatric- to adult-oriented healthcare. Leveraging this expertise, center staff are contributing to the development of an institutional transition program for all patients at CHCO. A major ongoing activity is the organization of a "state plan" for sickle cell disease, with support and funding from the Pacific Sickle Cell Regional Collaborative, part of a national HRSA program. This entails enhancing communication between and education for providers across Colorado, facilitating collaboration between healthcare systems and insurers, and disseminating care guidelines, major research advances and awareness of available resources to all stakeholders including patients and their families. An expanded website will encompass this information and serve as a statewide resource and point of contact. For more information about the Center, please visit: <http://medschool.ucdenver.edu/sicklecell> and www.sicklecellcareco.org

Center for Women's Health Research



The Center for Women's Health Research (CWHR) is committed to understanding and improving women's health and the health of their families. The CWHR was founded in 2004 to address the gap in research and funding specifically addressing women's health. The center's founders are Judy Regensteiner, PhD, JoAnn Lindenfeld, MD, and Lorna Moore, PhD. Today, the Center is directed by **Judy Regensteiner**, and associate directors are **Wendy Kohrt, PhD**, and **Jane Reusch, MD**. Anne Libby, PhD, is a senior faculty member, and Amy Huebschmann, MD, is the lead scientist for community outreach and education.

The CWHR mission has 3 components:

1. **Research:** To perform cutting-edge research in women's health and sex differences across the lifespan, with a focus on cardiovascular disease, diabetes, and the intersection of mental health with these diseases.

Researchers are foundational to our vision of transforming women's health. The CWHR has developed a strong reputation for success in assisting young researchers build their careers and acquire external funding. Since 2006, we have awarded over \$1.3 million in seed grants to 58 researchers.

2. **Mentoring:** To mentor and train the next generation of researchers to build careers in women's health and sex difference research.

In addition to a strong understanding of scientific thinking and methods, researchers must also develop leadership and management skills. When awarded a CWHR seed grant, our young scientists receive critical funding and intensive mentoring, academic and career development trainings, and a community of support. This past year, we offered trainings on promotions, managing personnel, telling the story in your science, financial management, and harnessing the power of Twitter for career development.

3. **Education:** to educate the public and health care providers so that our research findings are translated into improved care.

The CWHR is actively engaged in the community, raising awareness of and support for women's health and sex-differences research. Our Community Advisory Board has been key to our success, helping us to raise over \$14 million in philanthropic giving since 2004. We also work with groups on campus and in the community to provide educational outreach. This past year, we held over 25 events and reached 2,000+ people. Highlighted below are some of our program offerings.

- **Let's Talk:** In partnership with UCHealth, the CWHR organizes this lecture-based community education lecture series that bridges research to care. By providing evidence-based information, attendees are able to make more informed health care decisions for themselves and their families. In 2017-2018, we hosted five programs on topics ranging from heart health to cancer and implicit bias. We also hosted our annual Girls' Career Day for high-school aged girls.
- **Women's Health Research Day:** This annual event features a nationally recognized keynote speaker and a poster session for campus researchers. In 2017, our keynote speaker was Molly Carnes, MD, a leader in implicit bias research.
- **Women's Health Symposium:** 2018 marked the 16th year of this annual half-day CME-accredited training. Medical professionals learned the most recent evidence-based guidelines and treatments relevant to women's health and sex differences on topics including type 2 diabetes health counseling, nutrition in pregnancy, postmenopausal osteoporosis, and telepsychiatry.
- **Community & Business Partnerships:** The CWHR partners with community organizations and companies to provide education and healthcare resources. From offering women's health screenings at the Center for African American Health Fair to presenting to seniors at the Academy of Lifelong Learners, we serve a wide spectrum of the community. We also have an ongoing partnership with the Denver FACES for the Future Program, a multi-year healthcare internship and leadership development program for Manual High School students, as well as a quarterly speaker series for the employees of Arrow Electronics.

The CWHR partners with groups and programs on campus including Women in Medicine & Science, the Building Interdisciplinary Research Careers in Women's Health (BIRCWH) grant, and the Doris Duke Foundation's Fund to Retain Clinical Scientists. In partnership with the Office of Diversity and Inclusion, the CWHR co-sponsors networking and development events for female professors on the Anschutz Medical Campus.

The CWHR works closely with internationally known leaders in women's health who are part of the CWHR's Scientific Council. Current members include Nanette Wenger, MD (Emory); Yoel Sadovsky, MD, (Magee-Womens Research Institute); Bill Haskell, PhD (Stanford); Jill Goldstein, PhD (Harvard); Noel Bairey Merz, MD (Cedars-Sinai); Anne Peters, MD (USC); and Ginger Graham, MBA.

To learn more about our work or join our mailing list, visit www.cwhr.org

Colorado Sickle Cell Treatment and Research Center

The Colorado Sickle Cell Treatment and Research Center, established over 40 years ago, is the region's primary source of specialty expertise and facilitation of comprehensive specialty care for children and adults living with hemoglobinopathies. Basic, clinical, and health services research conducted by the center and its collaborators serves to elucidate the pathophysiology of sickle cell disease, develop and implement treatments and systems of care that prevent or minimize complications and that prolong and improve the quality of life, are supported by funding from the National Institutes of Health and other federal agencies, industry, and foundations. The center holds a long-standing contract with the Colorado Department of Public Health and Environment to coordinate short-term follow-up of newborn screening (NBS) for sickle cell disease and center staff continue to assist the Department of Public Health and Environment Laboratory as it expands its NBS testing services. Direct patient care is also provided by our Director **Kathryn Hassell, MD**, for adults at UHealth University of Colorado Hospital and by Associate Director **Rachelle Nuss, MD**, for pediatric patients at Children's Hospital Colorado (CHCO). New funding was awarded to the Center for FY 2019 from state Medicaid surplus funds to support sickle cell providers as they continue their dedicated work with this underserved population. Implementation of a transition program targets 12- to 26-year-olds to facilitate self-advocacy and health system navigation skills as youth move from pediatric- to adult-oriented healthcare. Leveraging this expertise, center staff are contributing to the development of an institutional transition program for all patients at CHCO. A major ongoing activity is the organization of a "state plan" for sickle cell disease, with support and funding from the Pacific Sickle Cell Regional Collaborative, part of a national HRSA program. This entails enhancing communication between and education for providers across Colorado, facilitating collaboration between healthcare systems and insurers, and disseminating care guidelines, major research advances and awareness of available resources to all stakeholders including patients and their families. An expanded website will encompass this information and serve as a statewide resource and point of contact. For more information about the Center, please visit: <http://medschool.ucdenver.edu/sicklecell> and www.sicklecellcareco.org

Denver Institute for Psychoanalysis

The story of psychoanalysis in Denver goes back to 1923 when the Colorado Psychopathic Hospital was built for the study and treatment of patients with mental illness and for clinical teaching. The Denver Institute for Psychoanalysis was granted provisional status by the American Psychoanalytic Association (APsA) in 1969 and was recognized as an approved provider of psychoanalytic education in 1972.

Psychoanalytic thinking began with Freud's theorizing. Since these beginnings, the field has been informed and expanded by challenges from work in developmental psychology, neuropsychology, and psychopharmacology. Psychoanalysis is now in an era of richly debated theoretical ideas about the origins of adaptive and maladaptive human functioning. Psychoanalytic understanding of development and the theory of psychopathology provide a basis for making informed choices about treatment goals and techniques. In the face of modern-day pressures for quick and cost-efficient methods for ameliorating emotional suffering, the psychoanalytically educated clinician is well equipped to make effective clinical interventions.

Mission: The Denver Institute for Psychoanalysis is a community of psychoanalysts whose goals are to provide education in psychoanalytic thinking and treatment techniques, to advance scholarship and research, and to encourage application of psychoanalytic knowledge to related fields of study.

Programs:

- Library - The Institute maintains a library which is a resource for mental health professionals wishing to access both old and new information and research in the field of psychoanalysis.
- Mentorship Program - An elective psychoanalytic mentorship program is available for psychiatric residents and child fellows. Similar programs are being developed for graduate students in other disciplines.
- Post-Graduate Programs
- Psychoanalytic Program (Adult and/or Child & Adolescent) – Post-graduate programs with a goal of the development of clinical skills necessary for analytic effectiveness as well as promote psychoanalytic scholarship and research. This experience is broadened and conceptualized through seminars, supervised clinical work, and a personal training analysis. Course work includes topics in development, theory, technique, and case conference.

- Psychoanalytic Referral Service - Provides evaluation, treatment, or referral to prospective patients (adults, children, and adolescents) who cannot afford private fees. The Psychoanalytic Referral Service is one source of analytic cases for candidates under supervision.
- ⇒ Psychotherapy Training Program (PTP) – The two-year post-graduate program is designed to improve clinical skills and to demonstrate the usefulness of applying contemporary psychoanalytic thinking to a wide range of clinical, teaching, and consultative situations. In addition to a comprehensive review of theory and development, the students learn the technical application of these principles to a wide spectrum of disorders. Course work includes topics in development, theory, technique, and case conference.
- Research - Because psychoanalytically oriented treatments are uniquely organized around listening to individual patients, a different sort of data can be collected and used to further our understanding of emotional difficulties. This body of research and knowledge has contributed not only to the development of psychoanalysis and psychoanalytic psychotherapy, but also to the development of many other psychological treatments
- Teaching and Supervising residents of the department of psychiatry at the University of Colorado School of Medicine. Our faculty are also active in teaching with students in social work and psychology at Denver University.

Since 1972, the Institute has graduated 85 individuals in Adult Psychoanalysis, 12 individuals in Child & Adolescent Psychoanalysis as well as 85 individuals in the Adult Psychodynamic Psychotherapies Program, and 13 individuals in the Child & Adolescent Psychodynamic Psychotherapies Program.

Executive Committee (June 2016- July 2019)

Director **Barbara Redinger, PhD**
 Associate Director **Stacey Fry, PsyD**
 Treasurer **Mark Wolny, LCSW**
 Secretary **Leslie Jordan, PhD**

Board of Directors

Chair **Neil Rosen, PsyD** (2017-2020)
 Vice Chair **David Stevens, PhD** (2018-2021)
 Secretary **Ronnie Shaw, APRN** (2017-2020)
 Member **Jennifer Kennedy MD** (2018-2021)
 Member **Mary Ann Levy, MD** (2018-2021)
 Member **Mike Moran, MD** (2017-2020)
 Member **Cal Narcisi, MD** (2018-2021)

Website: www.denverpsychoanalytic.org

Email: office@denverpsychoanalytic.org

Phone: (303) 724-2666

Helen and Arthur E. Johnson Depression Center

The mission of the Helen and Arthur E. Johnson Depression Center (JDC) is to improve the lives of people with depression, and mood and related disorders through clinical excellence, innovative research, community programs, and education (www.coloradodepressioncenter.org). The three primary goals of the JDC are to: 1) Promote mental health as key to healthy living for all Coloradans, 2) Develop, provide, and disseminate effective care for people with depression and bipolar disorder, and 3) Eliminate barriers to quality care and healthy communities.

The JDC, in partnership with the Cohen Veterans Network, opened the Steven A. Cohen Military Family Clinic at the University of Colorado Anschutz Medical Campus (www.coloradodepressioncenter.org/mfc) in April 2018. The Cohen Clinic provides short-term, evidence-based outpatient mental health care and case management services to military veterans and their extended families. Services are available regardless of discharge status, role, combat experiences, or ability to pay. The clinic is in Greenwood Village and serves the entire state with telehealth care.

Clinical Excellence. The JDC clinical social workers, psychologists, psychiatrists, and psychiatric nurse practitioners are all members of the School of Medicine faculty and provide a range of outpatient mental health services with depression, bipolar disorder, anxiety, and attention disorder as the most common concerns treated. The JDC provided 8,489 patient visits during the past fiscal year. Telehealth services have expanded to integrative health practices in Denver and throughout Colorado, and to Alaska. A new program to provide needed psychiatric services to Eagle County, Colorado, was initiated in late summer, 2017. This program will serve as a model for providing services to other mountain communities with mental health provider shortages. The Cohen Clinic has provided 487 clinical services and 40 case management services since its grand opening in April 2018.

Innovative Research. JDC faculty served as principal investigator or collaborator on more than ten research projects during the fiscal year and led or co-authored over 30 academic publications. As a charter member of the National Network of Depression Centers (NNDC), the JDC partners with world-renowned academics and clinicians to better understand and treat mood disorders including the Mood Outcomes Program, which is a patient registry of mood, anxiety, and suicidality ratings. The JDC continues to evaluate the benefits of integrated care delivery systems and provides nation-wide leadership by disseminating integrative care best practices.

Community Programs and Education. The JDC's community programs are designed to extend our reach into communities and organizations across the region to educate about suicide prevention, reduce stigma surrounding mental health, increase help-seeking behaviors, and view mental health as an essential component to overall health. The JDC Community Programs Manager provided 127 free trainings and educational events to 3,786 people across the state during the past fiscal year, for a total of 243 free trainings and 6,716 people trained since the position was established in September 2016. The JDC added a new program called Working Minds, which provides suicide prevention training tailored to workplace settings. JDC faculty have also led community events in topics such as mindfulness, teen anxiety, deciphering teen behavior, school anxiety, resiliency, and social media and suicide. The Cohen Clinic also provides services beyond the clinic walls and has hosted or attended over 150 outreach events and connected with over 5,000 military

Volunteerism: The JDC has an active and engaged community-based board of directors. Two examples of board engagement include the education and events committee, and the luncheon committee. The 2017 JDC Luncheon featured Andrew Solomon, PhD, whose 2006 op-ed piece in the New York Times inspired the creation of the NNDC and JDC. The luncheon was attended by 630 people and raised over \$450,000 to support the JDC's operational goals. veterans and their families during these events.

LEADERSHIP TEAM:

Marshall Thomas, MD, Executive Director
Matt Mishkind, PhD, Deputy Director
Christopher Schneck, MD, Medical Director
Michael Jones, MBA, Director of Finance and Administration
Jay Shore, MD, Director of Telemedicine
Emily Reaser, Director of Development
Alex Weber, MA, Community Programs Manager
Heather Mulvihill, MS, MA, LPC, Board of Directors Chair
Gillian Kaag, PhD, Cohen Clinic Director

Hemophilia and Thrombosis Center

The University of Colorado Hemophilia and Thrombosis Center (HTC) is one of 142 centers for the comprehensive treatment of bleeding and clotting disorders recognized by the U.S. Department Health and Human Services, Maternal Child Health Bureau. Serving nearly 2,000 pediatric and adult patients, the HTC is home to the CU Hemophilia Clinic; pediatric stroke program; women's bleeding outpatient clinic and neonatal outpatient clinic. The center operates its outpatient clinics on the Anschutz Medical Campus in collaboration with Children's Hospital Colorado and UHealth University of Colorado Hospital. In addition, the HTC conducts remote clinics in Southern Colorado, Western Colorado, and Montana. The self-sustaining center boasts clinics for bleeding and clotting disorders; hemorrhagic stroke, ischemic stroke, or fetal brain injury; and, gynecological bleeding. The HTC also manages an in-house pharmacy, research support group, and research laboratory facilities.

Led by **Marilyn Manco-Johnson, MD**, the Center has been on the forefront of development of the comprehensive care model and the prophylactic use of factor replacement products that has transformed the lives of patients with bleeding disorders. Since its inception, the improvement of clinical outcomes has been the focus of all Center activity. HTC Patient care is delivered by multi-disciplinary physician-led teams, which include:

- Hematologists (doctors who specialize in blood)
- Neurologists
- Orthopedists (doctors who specialize in bones, joints, and muscles)
- Psychiatrists (doctors who specialize in rehabilitation and a return to function)
- Physical therapists
- Nurses
- Social workers and other mental health professionals
- Clinical pharmacists
- Lab medical technologists and pathologists
- Other specialists are available by referral, (e.g., dentist, nutritionist, genetic counselor)

With a staff of 68 full- and part-time professionals, including both clinical and research physicians, the HTC actively pursues research into bleeding and clotting disorders. Center researchers conduct clinical trials research on new treatment options in collaboration with international pharmaceutical companies. Clinical researchers collaborate with HTCs around the world. During the past year, the center has been actively involved in clinical trials for ground breaking new treatments, including gene therapies, which hold the promise of dramatically improving the quality of life for patients while reducing the overall costs of treatment.

For more information please visit medschool.ucdenver.edu/htc.

JFK Partners

Since 1964, JFK Partners' mission has been to promote the independence, inclusion, contribution, health, and well-being of people with developmental disabilities and their families through consumer, community, and university partnerships. Central to the mission is a commitment to family and person-centered, community-based, culturally competent programs and services. This mission is operationalized through interdisciplinary education and training, consultation, technical assistance, direct service, research, program development, policy analysis, and advocacy. JFK Partners includes faculty and trainees in the disciplines of audiology, developmental behavioral pediatrics, family, nursing, nutrition, occupational therapy, physical therapy, psychology, public health, speech-language, spiritual care, self-advocacy, and parents of children with intellectual/developmental disabilities. **Sandra Friedman, MD, MPH**, assumed leadership of the interdisciplinary program in July 2015, directing the merger of JFK Partners with Section of Developmental Pediatrics. The merger included the integration of diagnostic assessment and treatment services with those of Developmental Pediatrics at Children's Hospital Colorado. As a life-span program, JFK Partners continues to serve adults at the Anschutz Medical Campus.

JFK Partners' programs are supported by federal training and research grants, clinical income, and contracts, as well as annual funding from the State of Colorado. In 2017-18, project funding totaled \$4,154,952, with 74% from federal sources, 11% state sources, and 15% contracts, fee for service or foundations. Two core grants, consisting of 32% of funding in 2017-18, include the competitively awarded Administration on Intellectual and Developmental Disabilities, University Center for Excellence in Developmental Disabilities (UCEDD), and the Maternal and Child Health Bureau, Leadership Education in Neurodevelopmental Disabilities (LEND) programs.

Accomplishments for 2017-18 include:

- ⇒ Preservice Training - 21 long-term trainees/fellows were trained in a comprehensive curriculum of coursework, clinical, and other practicum experiences in the disciplines of audiology, family, nutrition, medicine, occupational therapy, physical therapy, psychology, public health, speech language pathology, and self-advocacy. A supplemental AIDD award in 2017-18 enabled JFK Partners to recruit, from among the 21, five trainees/fellows from diverse backgrounds to participate as Diversity Fellows. Diversity Fellows received additional mentoring and interdisciplinary guidance in the implementation of a systems change capstone project. In addition, 116 medium-term trainees/fellows participated in coursework, clinical practica, and other supervised projects. There also were 909 short-term trainees who participated in classes and clinical experiences, including expert lectures by JFK Partners faculty in 38 courses in other programs.
- ⇒ Continuing Education and Community Training included 62 events or webinars for 3,340 total participants.
- ⇒ Clinical Services - JFK Partners clinic and consultation service for individuals and/or their families included: a) 72-multi-disciplinary team evaluations; b) 15 single discipline evaluations; c) 28 individuals received cognitive, behavioral, social skills, and adaptive behavior intervention; d) 109 young children, each of whom received multiple home visits; and, e) 40 individuals (children and parents) received school consultations and various other interventions. In addition, Developmental Pediatrics at Children's Hospital Colorado had over 6,000 patient visits in 2017.
- ⇒ Community Collaboration - Faculty reported a total of 66 consultation and technical assistance activities, with 1,669 participants.
- ⇒ Research included 17 active projects that have research (or demonstration) as the primary purpose, as well as additional exploratory investigations for which funding is being sought.
- ⇒ Dissemination - JFK Partners' faculty and staff authored 79 products, consisting of 32 refereed journal articles, 32 conference posters and presentations, 2 book chapters, 1 electronic/web-based products, 4 brochures/fact sheets, and assorted other products.

For information about these and other JFK Partners projects please visit www.jfkpartners.org.

Kempe Center for the Prevention and Treatment of Child Abuse and Neglect

Founded in 1972 by C. Henry Kempe, MD, the Kempe Center is the world's oldest center promoting understanding, knowledge, and best practices to prevent and treat child abuse and neglect. Our mission is to improve the care and well-being of all children by strengthening families, communities, and the systems that support them. We believe that abuse and neglect are preventable, that children are resilient, and that supportive care can bring health and hope. Our expertise is sought locally, nationally and internationally. In addition to continuing the important work under our four CARE pillars – Clinical Care, Advocacy, Research and Education – we are part of a game-changing paradigm shift in the way we think about, talk about, and treat child abuse and neglect as a public health crisis. The faculty and staff at Kempe number about 70 professionals.

Between Kempe's medical and mental health clinical teams, we directly provided clinical care to children across Colorado as well as out-of-state children from Alaska, Wyoming, and Montana. Our child protection multi-disciplinary team provides medical evaluations and care for children with suspected physical and sexual abuse, injuries, sexual assault, failure to thrive, and neglect. The team participates in local and state child fatality review, and it provides expert consultation to law enforcement, child welfare agencies, and courts across the Rocky Mountain region. The 5280 Magazine has recognized three of our doctors, Antonia Chiesa, MD, Andrew Sirotnak, MD, and Kathi Wells, MD, as among Denver's top doctors.

The Kempe Center's IMHOFF Clinic is our mental health service which provides behavioral health assessments and treatment for children and families who are dealing with the mental health consequences of child abuse or neglect. The clinic serves children and families who have experienced difficult life events, such as physical abuse, sexual abuse, neglect, or other traumatic losses. Children may need help with emotion regulation, coping skills, and rebuilding trust. Our staff members have the experience and training to meet these challenges and restore hope to children and their families.

We educate CU medical students, graduate students, pediatric residents, and post-doctoral fellows as well as practicing physicians, social workers, and mental health professionals. Kempe has also developed and maintains the Colorado Child Welfare Training System for all new child protection workers in the state. Our training programs take place in Denver, across the state, and across the nation. Under the direction of Kasey Matz, MSW, the State of Colorado recently renewed the contract for this program for five more years. Under the direction of Sirotnak and the Child Protection Team, Kempe and Children's Hospital Colorado support an accredited three-year ACGME and ABP fellowship program to board-certified or board-eligible pediatricians that has just been re-accredited.

The Center is a national leader in research on child maltreatment. Kempe researchers developed the Fostering Healthy Futures® (FHF) program as a positive youth development program for preadolescent youth, ages 9 to 11, with a history of placement in out-of-home care. The program uses a combination of screening assessments, individual mentoring, and group-based skills training to promote healthy development. The U.S. Administration on Children, Youth & Families (ACYF) and the California Evidence-Based Clearinghouse for Child Welfare have both designated FHF as an "evidence-based program."

Kempe faculty are helping multiple states evaluate their child welfare systems. This work includes the No Place Like Home project evaluating Family Group Decision Making (FGDM) in South Dakota, Texas, and Colorado; the Found, Engaged and Connected project evaluating FGDM in Minnesota; the Enhanced Family Conferencing Initiative evaluating family meetings in New York City; and the Colorado Community Response project evaluating a prevention program for families at risk of child welfare involvement in 31 Colorado counties.

Prevention is one of our primary goals. The Kempe Center has developed a major prevention initiative, using the SafeCare® 20 week parent support program, for the State of Colorado, which is now in place in 41 counties. SafeCare Colorado® is an evidence-based, in-home parent-support program for families with children ages 0-5 years that provides caregivers with skills to address home safety, parenting and children's health needs. Our version is the first to be developed and tested as primary prevention of neglect.

International research activities focus on the development of national data systems, in epidemiological research, and, in collaboration with Cardiff University in Wales, the development of systematic reviews. John Fluke, PhD, has been a consultant in the development of the national child abuse registry and data systems for the Kingdom of Saudi Arabia and Canada. Kempe has a memorandum of understanding with Cardiff University in Wales to collaborate in systematic reviews and is developing an agreement with the Haruv Institute in Jerusalem to support both exchanges of faculty and students as well as joint sponsorship of a new child maltreatment journal to be published by Springer in the fall of 2018, *The International Journal on Child Maltreatment: Research, Policy and Practice*. Three survey tools (The ICAST instruments) for parents, children, and young adults were developed at Kempe to help conduct population research in the epidemiology of child abuse are or have been used in more than 40 countries and have had more than 30 publications including national surveys in Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the Republic of Georgia, Greece, Korea, Macedonia, Romania, Saudi Arabia, and Turkey. Kempe is an institutional partner of the International Society for the Prevention of Child Abuse and Neglect and executive director Runyan has served as a Councilor on the Executive Council of the past 12 years. Runyan will serve as the Scientific Chair for the ISPCAN International Congress in Prague in September 2018. Another Kempe faculty member, John Fluke, PhD, has just been elected as a new ISPCAN Councilor for a six-year term and has been the organizer of ISPCAN's International Working Group on Child Abuse and Neglect Data.

Desmond Runyan, MD, DrPH Jack and Viki Thompson Professor of Pediatrics, University of Colorado School of Medicine Executive Director, The Kempe Center

Andrew Sirotnak, MD Professor and Vice Chair for Faculty Affairs Department of Pediatrics, University of Colorado School of Medicine Director, Child Protection Team, The Kempe Center & Children's Hospital Colorado

Mary Gangel, Communications Director, The Kempe Center
Website: www.kempecenter.org



LINDA CRNIC INSTITUTE FOR DOWN SYNDROME™



We are on a mission to improve the lives of people with Down syndrome.

We use state-of-the-art, transformational research platforms to decipher the unique biology and disease spectrum of people with Down syndrome (DS).

Our ultimate goal is to enable Precision Medicine approaches to improve health outcomes in DS, including the development of new diagnostic and therapeutic tools.



4 Intramural faculty labs

32 Intramural scientists

34 Extramural faculty labs

150 Extramural scientists

65 Unique active projects

18 Departments represented



\$6M
Funding received
From sponsored projects



\$32M
Gifts received
From external donors



Each year, we award grants to qualified University of Colorado investigators from a variety of fields who want to apply their expertise to advance our understanding of DS.

These **Grand Challenge Grants** are renewable \$50,000-per-milestone awards meant to support extramural investigators until they can obtain independent funding for their DS research.

In FY2018, we awarded CU faculty grants for **6** projects, adding to our tally of **64** unique awards, which funded **\$5.3M** of DS research since the program's inception in 2013.

Altogether, the Crnic Institute's intramural and extramural programs constitute the **Crnic Supergroup**, the largest geographical cluster of DS researchers in the world.

The Crnic Institute is also home to the most comprehensive cohort study of people with DS, the **Human Trisome Project**. Launched in 2016, this project fuels a multi-dimensional biobank, enabling large pan-omics studies of DS in a way that has never before been possible.



475
Participants



12,000+
Samples in biobank



14
Projects



3
Publications

Marcus Institute for Brain Health

The **Marcus Institute for Brain Health (MIBH)** was created in 2017 with a transformational gift from The Marcus Foundation. The institute provides specialty care for military veterans and retired elite athletes struggling with mild to moderate traumatic brain injuries (including concussion) and associated changes in psychological health.

MIBH provides innovative, interdisciplinary care through a one-week diagnostic evaluation involving neurology, imaging, sleep medicine, physical therapy, speech and language pathology, neuropsychology, and other disciplines. This is usually followed by a three-week intensive outpatient program where these disciplines work with alternative therapies such as creative arts, canine, yoga, mindfulness, and others to create a personalized, holistic healing experience.

MIBH is led by **James P. Kelly, MD**, Executive Director, **Michael Hartford**, Chief of Staff, **Suzanne Lesage, MD**, Clinical Director, **Wendi Pevler**, Director of Finance and Administration, and **Spencer Milo**, Director of Veteran Relations. MIBH has its own staff of clinicians and therapists and is augmented by faculty from multiple schools on the Anschutz Medical Campus.

The MIBH team is honored to be serving America's Veterans by building a TBI Center of Excellence where we are working hard to

- Provide state-of-the-art therapies and assist in the transition to civilian life;
- Investigate new and better ways to identify and treat TBI and its associated psychological health conditions;
- Advocate for better reimbursement for the care Veterans deserve; and
- Teach a new generation how to be world-class TBI care providers.

Additional information regarding the Marcus Institute for Brain Health can be found online at <http://www.ucdenver.edu/anschutz/patientcare/marcusinstitute/Pages/marcusinstitute.aspx>.

Movement Disorders Center

The mission of the Movement Disorders Center (MDC) is to be an internationally recognized center for excellence in movement disorders research, education, clinical care, and community outreach. The MDC is a national and regional leader in the education of movement disorders professionals and has been at the forefront of movement disorders research. We conducted the first and largest clinical trial of stem cells as a treatment for Parkinson's disease, developed the leading voice therapy for Parkinson's disease, and played a key role in the initial description of Fragile X Tremor Ataxia Syndrome.

We have a strong research portfolio of more than 20 research projects across the breadth of movement disorders that includes investigator initiated trials in dystonia, Parkinson's disease, Huntington's disease as well as collaborative national trials of new treatments in movement disorders.

In the past two years, we have trained four fellows in specialty movement disorders. These fellows have intensive clinical exposure and training in their first year followed by an optional research-based second year. Our faculty mentored fellows apply for research grants and pilot grant funding to begin their research careers. One such successful mentor relationship recently led to a \$75,000 foundation grant from the Dystonia Medical Research Foundation for a young trainee that has focused his field of expertise.

The MDC is Colorado and the Rocky Mountain Region's leader in providing quality clinical care to thousands of patients with movement disorders. We serve as a tertiary referral center for complex patients and those in need of advanced treatment options for their conditions. Outreach clinics are staffed by our providers at Lone Tree, Boulder, and Lowry for the convenience of our patient population.

We are highly involved in our community providing patient advocacy, patient and peer education. This year, the MDC faculty gave over 45 local and regional presentations to patients, caregivers, and providers. In the fall of 2017, the MDC hosted our annual Parkinson Disease Symposium with 225 participants in attendance. During the following spring, the center hosted its first annual Huntington Disease Symposium with 70 attendees.

The MDC membership is comprised of basic and clinician scientists as well as practitioners in allied fields. Over the past year, the Movement Disorders Center membership has grown to 55 members, drawn from the University of Colorado campuses, Colorado State University, and the community. Members are invited to give presentations yearly to foster research ideas and collaboration.

This year, our philanthropic efforts raised \$214,000 and we were able to award two pilot grants and three Colorado Clinical and Translational Sciences Institute grants to young researchers for their movement disorders-related research. Our awardees presented at the MDC annual Research Retreat with twelve movement disorders-related presentations from basic and clinician scientists across many disciplines.

MDC 2017 Grants

- Kristin Mitrovich, MD: “Perceived palliative care needs of Huntington’s disease patients.”
- Stephanie Garcia, Post-doctoral candidate: “Enhancing butyrate production by the microbiome may stop progression of Parkinson’s disease.”
- Emily Bates, PhD: “A Microtubule-based Mechanism for Movement Disorders.”
- Wenbo Zhou, PhD: “Stopping Parkinson’s Disease with Drugs: Is There Anything Better Than Phenylbutyrate?”
- Nidia Quillinan, PhD: “A Novel Mouse Model of Cerebellar Stroke to Investigate Recovery of Motor Impairments in Anterior Versus Posterior Infarct.”

Movement Disorders Center Leaders, include:

Lauren Seeberger, MD, FAAN, Associate Professor of Neurology, Movement Disorders Center Director

Maureen Leehey, MD, FAAN, Professor of Neurology, Movement Disorders Center Philanthropy Leader

Brian Berman, MD, MS, Associate Professor of Neurology, Movement Disorders Center Research Leader

Olga Klepitskaya, MD, FAAN, Associate Professor of Neurology, Movement Disorders Center Functional Surgery Leader

Drew Kern, MD, MS, Assistant Professor of Neurology, Movement Disorders Center Clinic Leader

Nicole Leith, MS, Movement Disorders Center Coordinator & Marketing Specialist, Movement Disorders Center Outreach Leader

Perinatal Research Center

The Perinatal Research Center (PRC) at the University of Colorado Anschutz Medical Campus has been for many years one of the leading centers, nationally and internationally, for research in perinatal biology and medicine, including studies of maternal, placental, and fetal physiology. The PRC was built with funds from the National Institutes of Health’s National Center for Research Resources and matching funds from the University of Colorado. Research at the PRC is funded by NIH grants and the Section of Neonatology in the Department of Pediatrics. Research at the PRC involves reproductive and developmental physiology, biochemistry, and molecular biology. Primary aims of the research are to better understand processes involved in fetal growth and development and the mechanisms that regulate such growth and development under normal and pathological conditions. **William Hay, MD**, an internationally recognized leader in fetal physiology, is the scientific director of the PRC. Hay has been NIH-funded for his entire career, and is the PI for NIH-NICHD T32 Training Program in Perinatal Medicine and Biology.

Of note, Paul J. Rozance, MD, one of several senior investigators at the PRC, has been honored this year as the first recipient of the Frederick C. Battaglia Endowed Chair in Neonatology.

Rocky Mountain Alzheimer’s Disease Center

At the Rocky Mountain Alzheimer’s Disease Center (RMADC), we are providing both standard and innovative clinical care to our patients while advancing research into effective early diagnostics, preventions, treatments, and, ultimately, cures for Alzheimer’s disease and other neurodegenerative diseases and conditions. In the Memory Disorders Clinic of the RMADC, we assess and care for aging patients with late-onset Alzheimer’s disease, younger patients with early-onset Alzheimer’s disease, patients with non-memory Alzheimer’s disease, and patients with related dementias, thus serving as a premier, comprehensive Alzheimer’s disease center.

Our state-of-the-art center continues to grow, helping even more patients, uncovering innovative solutions to Alzheimer's disease, and supporting clinical, translational, preclinical, and basic science research aimed at improving the diagnosis, treatment, and prevention of Alzheimer's disease and related dementias, including in people with Down syndrome.

The Director of the RMADC, **Huntington Potter, PhD**, is Professor and Vice Chair for Basic Research in Neurology, Director of the Alzheimer's Disease Program for the Linda Crnic Institute for Down Syndrome, and was recently named Kurt N. and Edith von Kaulla Memorial Professor of Neurology. **Brianne Bettcher, PhD**, is the Director of Neuropsychology Research for the RMADC and has spearheaded a large observational study, called "Bio-AD," which is focused on aging, both typical and non-memory Alzheimer's disease, and Alzheimer's disease in people with Down syndrome. **Jonathan Woodcock, MD**, Associate Professor of Neurology and Psychiatry, leads the RMADC Memory Disorders Clinic. **Christopher M. Filley, MD**, Professor of Neurology, is Chief of the Division of Behavioral Neurology. Integral to both the RMADC clinical care and research are Professor of Neurology **Victoria Pelak, MD**, Assistant Professors of Neurology **Samantha Holden, MD**, **Brice McConnell, MD**, and **Peter Pressman, MD**, and our Neurology Fellow **Justin Otis, MD**. These clinicians are joined by a team of laboratory researchers, including faculty, postdocs, graduate students, and research assistants.

Over the last year, members of the RMADC received funding from the National Institutes of Health, the American Academy of Neurology, the Colorado Clinical and Translational Sciences Institute (CCTSI), the Michael J. Fox Foundation, the BrightFocus Foundation, and the Department of Neurology for innovative studies of Alzheimer's disease, Parkinson's disease, and other neurodegenerative diseases. In addition, the RMADC has received over \$1 million in philanthropic gifts and pledges, and \$500,000 from the State of Colorado.

Members of the RMADC have given over 60 presentations to scientific, medical, and lay audiences, and several extensive reports on our research have appeared in the media, including several special reports on local news channels.

The RMADC has continued its clinical trial to assess the safety and efficacy of Leukine as a treatment for Alzheimer's disease and recently reported encouraging interim results of safety and efficacy for our pilot Phase II trial of Leukine in mild-to-moderate Alzheimer's disease subjects at the Alzheimer's Association International Conference in Chicago. The longer efficacy trial for Leukine will begin soon.



Julbert Caneus will be first graduate student affiliated with the RMADC to be awarded a PhD. Julbert studies chromosomes in Down syndrome, Alzheimer's disease, and FTD.

The RMADC is participating in the multi-site Biogen-sponsored EMERGE trial to evaluate the efficacy and safety of the drug aducanumab in subjects with mild cognitive impairment or mild Alzheimer's disease. The RMADC has completed its work on the multi-site IDEAS (Imaging Dementia—Evidence for Amyloid Scanning) study. Importantly, in the past two and a half years, we have enrolled over 120 individuals in our ongoing, prospective longitudinal study, called Bio-AD, which is following aging- and Alzheimer's disease-related changes in a large cohort that will eventually include up to 400 aging adults and will offer new insights into the causes and progression of Alzheimer's disease and related dementias, and will inform the development of novel therapies.

Members of the RMADC are also screening a collection of drugs that have been previously tested in phase I-III clinical trials for other indications, and thus have known safety profiles, for their ability to inhibit critical steps in the Alzheimer's disease pathogenic pathway, in preparation for preclinical animal studies, and if those are successful, for human trials.

The University of Colorado Department of Neurology was designated a Lewy Body Dementia Research Center of Excellence (RCOE), which will be directed by RMADC members Victoria Pelak, MD, and Samantha Holden, MD.

The RMADC Memory Disorders Clinic, which currently sees more than 3,000 patients/year, will relocate from the Anschutz Outpatient Pavilion to its new Stapleton campus location in late August 2018. This move will further enhance patient care by providing easier access, increased capacity, and on-site neuropsychologists for neurocognitive testing.

Rocky Mountain Taste and Smell Center

The Rocky Mountain Taste and Smell Center includes scientists from multiple disciplines who work together on studies of the chemical senses including taste and smell, and on chemical irritation of the oral and respiratory passageways. The overall goal of the center is to facilitate research by providing communal resources and by bringing together productive investigators in the chemical senses and allied senses of hearing and balance. The center, under the leadership of **Diego Restrepo, PhD**, and **Thomas Finger, PhD**, embraces work from 17 laboratories spread across five departments of the School of Medicine along with investigators from the School of Dental Medicine and the University of Denver. While the center provides direct support for infrastructure and multi-user research facilities, the underlying research is supported by more than 25 research and training grants from the National Institutes of Health totaling more than \$5 million. Investigation of disorders of the senses of taste and smell is enhanced by cooperation and collaboration with the Sinus Clinic of UHealth University of Colorado Hospital and the Department of Otolaryngology.

University of Colorado Cancer Center

The University of Colorado Cancer Center (UCCC) is the only National Cancer Institute (NCI)-designated comprehensive cancer center in Colorado and has the distinction of also being a consortium cancer center. Nearly all researchers who participate in cancer-related basic, translational, clinical, population, and behavioral research in Colorado are UCCC members. This statewide inclusiveness of cancer researchers and academic institutions provides a scientific breadth and depth that strengthens the UCCC's comprehensive cancer research and clinical care activities. The UCCC stands as a unique organization and resource in Colorado and surrounding region in cancer research, clinical care, prevention, and outreach.

The **Vision** of the UCCC is to prevent and cure cancer while being a global model for patient care delivery, interdisciplinary research, and training.

The **Mission** of the UCCC is to discover, develop and deliver breakthroughs in cancer science that reduce incidence, improve cancer outcomes, and increase the quality of life for survivors and their caregivers through integration of basic, translational, clinical, and population research and training.

The UCCC's history begins with the award of an NCI Cancer Center Support Grant in 1987, resulting in a clinical cancer center designation. The UCCC achieved comprehensive status in 1997, and a formal consortium designation was conferred in 2005. The consortium comprises six organizations that include three academic institutions, and three affiliated hospitals. The institutions bring notable research strengths and diverse clinical populations that provide the tools and materials for the pursuit of the UCCC vision and mission.

In 2013, the UCCC was elected as a Member of the National Comprehensive Cancer Network (NCCN) and went from unranked to a top 50 cancer center over the past 6 years according to *U.S. News and World Report*. In February 2015, the UCCC joined the Oncology Research Information Exchange Network (ORIEN), a research partnership among top U.S. cancer centers that is designed to facilitate discoveries in precision medicine by CU scientists. In 2016, the UCCC leadership, working closely with institutional legislative officials, persuaded the Colorado General Assembly to provide an annual allocation of approximately \$1.7M in Tobacco Master Settlement funds to the AMC to support cancer research.

Richard Schulick, MD MBA, was appointed Director of the UCCC July 1, 2018. He is the third Director to lead the center in its 30-year history. Schulick is a nationally recognized surgeon specializing in hepatopancreatobiliary and gastrointestinal malignancies and the use of immunotherapy to eliminate tumor burden. He earned his MD and MBA from Johns Hopkins University and was recruited to the CU School of Medicine in 2012 to serve as the Chair of the Department of Surgery. He is the author of more than 300 articles, book chapters, and other publications and the principal investigator on multiple studies and clinical trials, including a study targeting CD112, a protein involved in the body's ability to fight cancer. With Barish Edil, MD, Dr. Schulick pioneered the use of the laparoscopic Whipple at CU, one of the most advanced minimally invasive techniques in surgery of the pancreas.

Key Goals for this next era are

- Become a top 10 cancer center
- Develop top programs in
 - ⇒ Tumor immunology;
 - ⇒ Sarcoma research;
 - ⇒ Basic cancer mechanisms;
 - ⇒ Cancer epidemiology; and
 - ⇒ Pediatric oncology
- Extend community engagement activities to impact cancer prevention, treatment, and control options for all Coloradoans

Cancer Center Senior Leadership	
Director	Richard Schulick, MD, MBA
Deputy Directors	James DeGregori, PhD
	Cathy Bradley, PhD
Associate Directors:	
Basic Research	Heide Ford, PhD
Clinical Research	Karyn Goodman, MD
Clinical Services	W. Thomas Purcell, MD, MBA
Population Science Research	Cathy Bradley, PhD
Education	John Tentler, PhD
International Programs	Fred Hirsch, MD, PhD
Administration & Finance	Vacant

The center fosters cancer-focused research, in part through the creation of formal scientific research programs. A program comprises the activities of a group of investigators who share common scientific interests and goals and participate in competitively funded research. Programs are highly interactive and lead to exchange of information, experimental techniques, and ideas that enhance the individual productivity of scientists and often result in collaborations and joint publications. Ultimately, the success of a program is measured by scientific excellence and the emergence of productive collaborations.

Over the next few months and with the encouragement of the NCI, the UCCC will revise its programs to better reflect the direction of cancer research and foster greater synergies across investigators in different disciplines. The new structure will consist of four programs, rather than six, all of which will be organized around mechanistic themes in cancer research. With the implementation of the revised structure, the UCCC will introduce several new Program Leaders to foster continued excellence and cross-fertilization among UCCC members.

Cancer Center Program Leadership

Basic Sciences	
Molecular & Cellular Oncology	Joaquin Espinosa, PhD, Tin Tin Su, PhD*
Translational and Clinical Sciences	
Tumor-Host Interactions	Jennifer Richer, PhD*, Michael Verneris, MD*
Developmental Therapeutics	Lia Gore, MD, Dan Gustafson, PhD, Antonio Jimeno, MD, PhD
Population Health	
Cancer Prevention and Control	Myles Cockburn, PhD, Rajesh Agarwal, PhD

*New leader.

Cancer Center Consortium Organization (NCI-Defined)

Academic Institutions

University of Colorado Denver (CU Denver)
 University of Colorado Boulder (CU Boulder)
 Colorado State University (CSU)

Affiliated Hospitals

UHealth University of Colorado Hospital (UCH)
 Children’s Hospital Colorado (CHCO)
 Veterans Affairs medical center (VAMC)

Facts

Membership

229 CCSG members
 40 Mentored members
 67% of members are in the School of Medicine (SOM)

Research Portfolio

679 cancer related publications
 \$75.6M direct costs in annual cancer-relevant sponsored research
 funding \$50.2M held by members in the SOM

Clinical Portfolio

1,704 accruals to all types of human subject protocols
 786 accruals to intervention treatment protocols

Distinguishing Characteristics

Only NCI designated Comprehensive Cancer Center in Colorado
 NCCN member, one of 27 elite cancer centers
 ORIEN Personalized Medicine Network member
 Includes nearly all academic NCI-funded cancer researchers in the State of Colorado.
 Includes UHealth University of Colorado Hospital, which is ranked among the top 50 hospitals in the US for cancer
 Includes the 9th ranked pediatric cancer program in the US (Children’s Hospital Colorado 2018-19 USNWR rankings)
 Includes the second-ranked veterinary school with the top animal cancer center in the nation (CSU Flint Animal Cancer Center)

Major Accomplishments 2017-2018

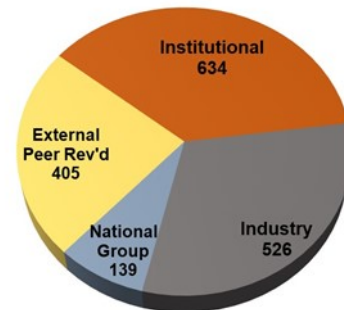
- New Director (R. Schulick) appointed to lead the Cancer Center
- Significant new investment by UHealth University of Colorado Hospital and the CU School of Medicine in the Cancer Center to propel the center to new heights
- Submission of a renewal application for a SPORE in Lung Cancer grant (P50CA058187) in May 2018
- Recruitment of E. Schenk, an early career investigator focused on how myeloid cells alter the lung microenvironment to favor the development and growth of cancer
- Additional recruitments are in progress

Cancer Center Members’ Cancer-Relevant Research \$s by Sponsor Type*

Sponsor	Direct Cost \$s
Cancer Center Support Grant	2,611,299
NCI	16,781,953
Other NIH	17,326,151
Other Peer-Reviewed	5,506,161
Industry	18,047,829
Other Non-Peer Reviewed	15,262,455
Grand Total	75,535,848

*As reported to the NCI Dec. 2017

FY2018 Clinical Trial Accruals by Study Source (N=1704)



Recruitment of Eduardo Davila, PhD, a renowned cancer immunologist who will play a critical role in the “bench-to bedside and back” immunology research leveraging the strengths of the institution: the human immunology and immunotherapy initiative (HI3), excellent basic science, vigorous clinical trials including numerous first-in-human immunological agents from pharma/biotech, biomanufacturing capabilities, and recent recruitments in CAR T-cells.

- 28 new and renewal NCI and other cancer-specific sponsored awards since July 2017 including:
 - ⇒ The successful renewal of a T32 in translational research of lung, head & neck cancers (2T32CA174648-06 / XJ Wang).
 - ⇒ The funding of a P20 to support the development of the African Center for the Advancement of Research Excellence, a collaboration between UCD (T. Campbell) and University of Zimbabwe (M. Borok) (1P20CA210677-01A1).
 - ⇒ A new cooperative agreement U01 award for Validating and Targeting USP35 for Anticancer Drug Development (1U01CA222958-01A1/C Liu).
 - ⇒ A MERIT (R37) award granted to D Cittelly in recognition of her research expertise in defining how estrogens modulate the brain niche and promotes metastatic colonization in young women at high risk for brain metastasis (1R37CA227984-01).
 - ⇒ A K08 awarded to A Lee-Sherick titled “Targeting MerTK as an Immunotherapeutic Strategy in Acute Myeloid Leukemia” (1K08CA222699-01).
 - ⇒ A K08 awarded to D Sherbenou titled “Targeting Cancer Initiating Cells in Multiple Myeloma” (1K08CA222704-01A1).
 - ⇒ Nine new and renewal NCI R01s (P Ernst, J Espinosa, H Ford, M Ghosh, A Jimeno, C Jordan, K Luger, R Schweppe, Y Miao); four new NCI R03’s (E Eisenmesser, D Reinhold, A Thorburn, F Yang); two new NCI R21 (J Arch, J DeGregori); and two new NCI F99 (M Oliphant, H Zhou).
 - ⇒ An ACS funded research grant to Y Zhu for “Targeting the CD112R Pathway for Cancer Immunotherapy” (RSG-17-106-01-LIB).
 - ⇒ A DOD award to L Heasley for “Identifying TME-Derived Pathways for Co-Targeting with FGFR1 in Mesothelioma” (W81XWH-17-1-0344).
 - ⇒ A 2018 AACR-Johnson & Johnson Lung Cancer Innovation Science Grant award titled “Microenvironment-mediated Clonal Evolution and Risk of Lung Adenocarcinoma” (18-90-52-DEGR / J DeGregori).
 - ⇒ A Leukemia & Lymphoma Society SCOR award titled “Therapeutic Targeting of AML Stem Cells” (award notice pending / C Jordan).
 - ⇒ An S10 award to improve the 600 MHz NMR under the institutional Structural Biology Shared Resource (D Jones / 1S10OD025020-01).
- Increased funding for Investigator-Initiated Trials (IITs) resulting in 13 trials funded with 191 total accruals to date. Accruals represent a 130% increase over last year.
- Numerous impactful publications out of 679 total cancer-focused publications since July 2017, including:
 - ⇒ D. Pollyea (Heme) and colleagues tested a new therapy for acute myeloid leukemia (AML), combining the Bcl2 inhibitor Venetoclax with hypomethylating agent therapy, demonstrating that the therapy is well-tolerated and (preliminarily) highly effective (61% complete remission) – a potential landmark advance for the treatment of AML (*Lancet Oncol* 19: 216-228, 2018; PMID: 29339097).
 - ⇒ D. Xue (CCB) and colleagues at CU Boulder use nematodes to identify a key role for the cathepsin B protease in radiation-induced effects on unexposed tissues, an important consideration for radiation therapies (*Nature* 547:458-462, 2017; PMC5892829).
 - ⇒ In this multi-disciplinary study, UCCC Members D. Ghosh (CPC), J. Costello (DT), R. Kedl (DT), J. Slansky (CCB), R. Zhao (MO), and H. Ford (CCB) and colleagues uncovered an important role for Eya3 phosphatase mediated upregulation of the immune suppressive PD-L1 protein in tumor-associated immune suppression, providing a new target for reversing immune protection of cancers (*J Clin Invest* 128: 2535-2550, 2018; PMC5983346).

⇒ In a study highlighting health disparities in the U.S., UCCC Members B. Jones (DT), Y Vinogradskiy (LHN), W Purcell (DT), S. Karam (LHN), B. Kavanagh (DT), S. Guntupalli (DT), and C Fisher (CPC) and colleagues showed that patients with no health insurance or with Medicaid were more likely to die within 30 days of surgery (*Am J Clin Oncol* 41: 476-484, 2018; PMID: 27281264).

⇒ R. Agarwal (CPC), C. Agarwal (CPC), K. Raina (CPC) and colleagues demonstrate that the angiogenesis inhibitor Nintend-anib blocks the growth of prostate cancer cells, including in mouse models, revealing a potential new therapeutic strategy (*Sci Rep* 8:9540, 2018; PMC6014981).

⇒ A trial led by Lia Gore (Heme/DT) demonstrated that dasatinib is a safe, effective treatment of pediatric chronic myeloid leukemia in chronic phase in children, with good safety profiles (*J Clin Oncol* 36: 1330-1338, 2018; PMC5929218).

⇒ UCCC Members AC Tan (DT), D Pollyea (Heme), C Smith (Heme) and C Jordan (Heme) show how AML leukemia stem cells co-opt AMPK/FIS1-mediated mitophagy as a means to maintain stem cell fate, revealing a new target in AML to help eliminate the “seeds” that maintain the leukemia (*Cell Stem Cell*, Epub ahead of print, 2018; PMID: 29910151).

⇒ H. Li (LHN) and colleagues demonstrated how T-regulatory cells and T-effector cells in the tumor microenvironment, variably controlled by the tumor, can dictate the efficacy of therapies targeting PD-1/PD-L1, revealing potential explanations for why these therapies only work in a fraction of cancer patients (*Cancer Immunol Res* 5: 767-777, 2017; PMC5787226).

⇒ A study from the lab of J Richer (MO) demonstrate the ability of AR-targeted therapies to enhance the efficacy of chemotherapy in breast cancers by reversing cancer stem cell properties, anchorage independence and invasiveness (*Cancer Res* 77: 3455-3466, 2017; PMC5505342).





Page 87: Bottom left photo courtesy of [@pipesw](#); bottom right photo courtesy of [@auroragov](#), posted on [@cuanschutz](#) Instagram.



Vice Chancellor for Health Affairs

Colorado Area Health Education Center

The mission of the Colorado Area Health Education Center (AHEC) is to improve quality and accessibility of healthcare throughout the State of Colorado. We seek to increase the quantity and diversity of the healthcare workforce providing care in rural and underserved communities. We respond to the needs of Coloradans who seek to live and long and healthy life.

Colorado AHEC is jointly funded by a federal grant from the Health Resources and Services Administration (HRSA) and the Vice Chancellor for Health Affairs. Colorado AHEC is currently celebrating its 40th year of continuous operation.

Colorado AHEC received new 5-year funding from HRSA in 2017. HRSA directs us to concentrate on these areas of need:

Diversity: Increase the potential for secondary, college, and health profession students from underrepresented populations, educationally disadvantaged, and rural backgrounds to successfully pursue a health profession career with an emphasis in public health;

Distribution: Increase the potential for health profession students in medicine, dentistry, nursing, pharmacy, public health, and allied health to practice in a rural or urban underserved community by immersing them in rural or underserved community experiences through community-based education training programs, field placements, and interprofessional education and training; provide access to evidenced-based health information, accredited high quality continuing education programs and support for health professionals serving in rural and medically underserved areas in Colorado; and

Practice Transformation: Facilitate and support practice transformation of Colorado's healthcare system by promoting a patient-centered approach, addressing social determinants of health through a team-based, data-centered approach with a focus on improving quality and community health outcomes in rural and medically underserved areas.

Colorado's AHEC system is composed of a program office located on the Anschutz Medical Campus and six regional offices (Centennial, Central, San Luis Valley, Southeastern Colorado, Southwestern Colorado and Western Colorado). The six regional AHECs receive oversight from the program office who partners with the School of Medicine, School of Dental Medicine, College of Nursing and Skaggs School of Pharmacy and Pharmaceutical Sciences, as well as the School of Medicine's Physical Therapy and Child Health Associate/Physician Assistant programs to meet the objectives of the HRSA grant.

Colorado AHEC Program Office Leadership:

Mark Deutchman, MD, is a Professor in the Department of Family Medicine in the School of Medicine, Director of the Rural Track for the School of Medicine, Director for Colorado AHEC and Associate Dean for Rural Health. His work emphasis is on preparation for rural practice, which is a main mission for the Colorado AHEC Program.

Cynthia Armstrong PT, DPT, CHT, holds a dual appointment with the SOM Physical Therapy program (0.5 FTE) as a Senior Instructor and the Colorado AHEC Program office (0.5 FTE) as an Associate Director. Armstrong oversees housing for health professions students on the CU Anschutz campus who are completing rural rotations. She provides interprofessional training, coordination and oversight for health screenings at the National Western Stock Show and the Colorado State Fair. In addition, she coordinates the biannual interprofessional ECER (Engaging Communities in Education and Research) rural health conference and is Co-PI for the Discover Health/ Descubre La Salud NIH SEPA grant.

Matthew Hess joined AHEC in February 2017 as the Grant Development and Marketing Coordinator and is now an Associate Director for Colorado AHEC. Matt has been an educator for his entire career. He oversees AHEC's pipeline programs including the AHEC Careers Exploration Program designed to provide rural and underserved students with a chance to learn more about the many careers available in healthcare and the paths to these careers. He is overseeing the launch of AHEC Scholars a new HRSA program connecting students in health careers programs around the state in an effort to build skills in team based healthcare. Additionally, he oversees programs such as the cadaver experience and our annual advisors day that bring students and career counselors to this campus.

Willa Buswell has more than sixteen years of experience in office administration and management, budget oversight and reconciliation, grant administration, and community programs. She has been the Administrator of the Colorado AHEC Program office since August 2013. Prior to that, she was the administrator of the CU School of Medicine, Office of Admissions for eleven years and administered all aspects of the application process from pipeline programs through matriculation.

AHEC Accomplishments during 2017-18:

- ⇒ Provided funding for the six regional AHEC offices across Colorado to run programming. This programming reached participants from at least 49 counties, totaled 11,177 contact hours or nearly 466 days and reached nearly 70,000 Coloradans in underserved and rural communities.
- ⇒ Provided 20,740 nights of housing for health professions students serving clinical rotations away from the Anschutz Medical Campus.
- ⇒ Provided 20,740 nights of housing for health professions students serving clinical rotations away from the Anschutz Medical Campus.
- ⇒ Conducted training events for 55 Colorado faculty and pre-health advisors who advise over 30,300 high school, two-year and four-year college students.
- ⇒ Conducted interprofessional community engagement events including free health screenings at the National Western Stock Show, for over 900 adults and children. In addition, and for the first time, Colorado AHEC provided health information and free health screenings for over 300 adults and children at the Colorado State Fair in Pueblo.
- ⇒ The AHEC Career Exploration Program (ACEP), supported by a grant from the Daniels Fund, provided a free yearlong opportunity for 137 Colorado high-school students with representation from all six AHEC regions. The students and their parents participated in at least seven of eight two-hour monthly meetings during the 2017-2018 school year. Fifty-three of these students from across Colorado attended a free week-long summer camp in July 2018. Students were housed on the CU Boulder campus and participate in activities held at CU Boulder & Anschutz campuses for hands-on experiences associated with health careers. In addition, current health profession students, representing a variety of health professions, volunteered as mentors. This was a very successful and unique experience for these high-school students who received a solid introduction to a variety of health professions.
- ⇒ The Cadaver Experience provided a memorable opportunity for over 600 high school and community college students. It also provides teaching experience for students in the Masters of Modern Human Anatomy program.
- ⇒ The Discover Health/Descubre la Salud program, in its 6th year of an NIH SEPA grant, continued its traveling interactive bilingual library exhibit reaching communities in Sterling, Evans, Aurora and Pueblo. This program's community outreach focuses on bilingual English/Spanish education for adults and children with emphasis on obesity, diabetes and cardiovascular disease. It is focused on strengthening partnerships between the regional AHEC offices and the local libraries to provide health education to rural and underserved communities in Colorado.
- ⇒ The AHEC Program office continued to provide support and grant management for the Urban Underserved Track. The track provides students with the skills and support needed to become healthcare providers who are committed to work in urban underserved communities.
- ⇒ AHEC maintains many collaborative relationships with other organizations and programs whose goals complement the AHEC mission. These include:
 - ECHO Colorado, which develops clinical learning communities to share knowledge across distances and disciplines.
 - Colorado Health Extension System (CHES), which coordinates and facilitates practice transformation activities across Colorado.
 - Colorado consortium for Prescription Drug Abuse Prevention.

Looking ahead to 2018-19

In addition to the activities summarized above, during the 2018-19 year, AHEC will launch the AHEC Scholars Program. This new program is specified by our HRSA grant. It is designed to reach career-ready health workforce students across the state with both didactic and clinical experiences to help them prepare to work in the healthcare system of the future.

The curriculum includes:

- Interprofessional Education
- Behavioral Health Integration
- Social Determinants of Health

- Cultural Competency
- Practice Transformation and
- Current/Emerging Issues in Healthcare

Our six regional AHEC offices are partnering with community colleges and other training programs across the state to bring this curriculum to about 100 students per year.

The biannual ECER (Engaging Communities in Education and Research) Conference is returning to the beautiful Breckenridge Beaver Run Conference Center in September of 2018. This interprofessional conference brings together 500 providers and community members from across Colorado for a weekend of continuing education and research. This year, in addition to faculty and preceptors invited by the Schools on the Anschutz Medical Campus, AHEC will welcome the Colorado Rural Health Connectors, EvidenceNow Southwest as well as SNOCAP, CCTSI and PACT in addition to colleagues associated with Rocky Vista University, Red Rocks Community College PA program and Regis University who are committed to supporting rural health initiatives.

For additional information, please visit the AHEC website:

<http://www.ucdenver.edu/life/services/ahec/Pages/index.aspx>

Center for Bioethics and Humanities

The University of Colorado Center for Bioethics and Humanities (CBH) offers an array of ethics, humanities, arts, and health law programs that are integral parts of the academic life and work on the Anschutz Medical Campus (AMC) and that form important bridges to University and community-based programs across the state.

- Education and training: CBH faculty are involved in teaching students in all professional schools and allied health programs on the AMC and in undergraduate and graduate programs on the Denver, Boulder, and Colorado Springs campuses.
- Clinical service: the clinical ethics consultation programs of the two campus hospitals are integral aspects of care for patients seen on our campus and also provide critical support to affiliated hospitals and others across the state.
- Research and scholarship: CBH faculty focus on innovations in interprofessional ethics and humanities education, exploring the ethical implications of advances in genomics and personalized medicine, using safety and quality methods to improve clinical ethics case consultation, developing novel health humanities curricula, and engaging the community to address ethical issues in health care. Under Eric Campbell, PhD, research director hired in 2018, CBH will be expanding research operations in coming years, bringing on additional faculty to conduct empirical health ethics and health humanities research.
- Community outreach: the intellectual and creative work of the CBH extends well beyond the University to health care professionals and citizens locally, regionally, and nationwide.

Matthew Wynia, MD, MPH, FACP, has been Director of the Center since July 2015. Wynia is a national leader in health care ethics, having served as the head of the Institute for Ethics at the American Medical Association, President of the American Society for Bioethics and Humanities, Chair of the Ethics Section of the American Public Health Association and Chair of the Ethics Committee at the Society for General Internal Medicine, among other elected and appointed positions. He is also recognized for his work in patient safety and quality after developing the AMA's Center for Patient Safety and he has served on National Academy of Medicine groups addressing team-based care, transdisciplinary professionalism, catastrophic disaster response, the use of public health methods in "countering violent extremism," and evidence-based practices in public health emergency response. Wynia's research uses health services research methods to explore ethical issues in health care and public health policy. His training is in internal medicine, infectious diseases, public health, and health services research. He also serves as a co-lead of the Stakeholder Engagement core for the School of Medicine's Data Science to Patient Value (D2V) initiative, which is a \$20 million program to bring CU to the forefront of using big data to improve the value of care delivered to patients with complex medical problems.

Therese Jones, PhD, is the Associate Director of the CBH and leads our educational and training programs.

She is an Associate Professor in the Department of Medicine, Director of the Arts and Humanities in Healthcare Program, Editor of the *Journal of Medical Humanities* and, in 2015, she published a landmark textbook for those who teach health humanities, *The Health Humanities Reader* (Rutgers University Press). She teaches both required and elective humanities courses for health profession students and for undergraduate students who are enrolled in the Health Humanities Minor, a collaborative curriculum between the Anschutz Medical Campus and the CU Denver campus. She also serves as the lead on the development of our new 15-credit hour Graduate Certificate in Health Humanities and Ethics, which enrolled its inaugural class of 20 students in the fall 2017. Other leaders in the Center's education and training work include **Daniel Goldberg, JD, PhD** and **Mark Bauer, PhD**. Goldberg currently leads the Values & Ethics domain in the campus-wide Interprofessional Education & Development Course and is the Associate Director for Mentored Scholarly Activity in the Bioethics, Arts, Humanities & Education domain. He also maintains an active research agenda in public health ethics, law/policy, and the history of medicine, and was the 2015-2016 Helfand Fellow at the New York Academy of Medicine. Bauer co-leads the development of the Center's Graduate Certificate in Health Humanities and Ethics and is a Research Assistant Professor in the Philosophy Department at University of Colorado Denver. He teaches courses in logic, informal reasoning, symbolic logic, and scientific inference as well as advanced courses in Philosophy of Science, Philosophy of Language, and Philosophy of Mind.

Jackie Glover, PhD, is a Professor in the Department of Pediatrics and leads the Center's work on clinical ethics case consultation. She serves as an ethics consultant for both the UHealth University of Colorado Hospital and Children's Hospital Colorado and creates shared educational, outreach and research programs across the two hospitals and throughout their respective hospital networks. She is also Director of the Humanities, Ethics and Professionalism thread in the School of Medicine, which integrates bioethics and humanities content throughout the four years of the medical school curriculum. Other leaders of the Center's clinical ethics work include **Heather Fitzgerald, MS, RN**, who is a Clinical Nurse Ethicist, co-chair of the Children's Hospital Colorado Ethics Committee, and Director of the hospital's Ethics Liaisons. She is again co-chairing the National Nursing Ethics Conference at UCLA and she has been appointed to the Advisory Board for ANA's Center for Ethics and Human Rights. **Brian Jackson, MD, MA** is a critical care physician and co-chair of the Children's Hospital Colorado Ethics Committee. He was also a member of the question bank writing committee for the newly developed ethics consultation certification test of the American Society for Bioethics and Humanities. He and Glover will be teaching the first Clinical Ethics elective as part of the HHE certificate program starting in the fall of 2018. **Dan Reirdan, MD**, is an adolescent medicine physician who serves as a lead ethics consultant at Children's Hospital Colorado. **Megan Prescott, LCSW**, is a social worker with Palliative Care and also a lead consultant at UHealth University of Colorado Hospital. **Kristin Furfari, MD** is a hospitalist physician who is also a clinical ethics lead consultant at UHealth University of Colorado Hospital. She and Glover are interim Co-Medical Directors of the Ethics Consultation Service. Furfari also is an Associate Director for medical student preceptorships as part of the Foundations in Doctoring course. In 2018, **Anne Dondapati-Allen, MDiv, PhD** was brought on as the fourth lead consultant in the ethics consultation service at UCH. She is staff chaplain who does extensive work with staff resiliency.

Eric Campbell, PhD is a Professor of Medicine and Director of Research at the CBH. Campbell joined the faculty April 2018. In his role as Director of Research, Campbell is responsible for building the research infrastructure of the CBH. This includes hiring new faculty, creating post-doctoral program for empirical researchers in bioethics and the health humanities, launching pilot grant program and creating a culture of research excellence in CBH. In addition, Campbell maintains an active research program focused on empirical bioethics research at the intersection of health policy and bioethics.

Marilyn Coors, PhD, is Associate Professor in the Department of Psychiatry. Her work focuses on research and teaching on advances in genetics and the implications of providing care in an emerging era of precision medicine. She directs the Clinical Research Ethics Core for the Colorado Clinical and Translational Sciences Institute. She also serves as a member of the Stakeholder Engagement core for the School of Medicine's Data Science to Patient Value (D2V) initiative.

The CBH maintains an Academic Leadership Council, with one representative from each of the health professional schools on the Anschutz Medical Campus appointed at 0.2 FTE to help lead CBH programs. These individuals serve a liaison role for their respective programs, ensuring the relevance and reach of CBH activities across all campus programs, and they lead CBH initiatives in their particular areas of interest and expertise. Current members of the CBH Academic Leadership Council are Catherine Campisi, MSN, RN, PMHNP-BC (College of Nursing), Inge Wefes, PhD (Graduate School), Elizabeth Shick, DDS, MPH (School of Dental Medicine), Morgan Elmore, DO (School of Medicine) and Carol Runyon, MPH, PhD (Colorado School of Public Health). The Skaggs School of Pharmacy and Pharmaceutical Sciences position is currently vacant and a search is underway.

Finally, the center produces programs to serve and engage key local, state and national communities.

- The CBH Art Gallery hosted five major exhibitions in 2017-18 including over 50 Rembrandt etchings from the Collection of Tobia and Morton Mower, work by artist Mia Brownell: *Plate to Platelets and Other Things That Travel and Bind*, a collaboration with the US Holocaust Memorial Museum to host the *Deadly Medicine: Creating the Master Race* exhibit in conjunction with our Holocaust Genocide and Contemporary Bioethics Program, which received 4,500 visitors in two months and offered free tours to the public by trained docents, and *The Art of Healing by Arturo Garcia* in collaboration with the CU Department of Surgery explores surgical intervention and the will to survive. *Scott Chamberlin: A Body of Work Sculptures & Drawings* moves our gallery exhibits into the three dimensional realm to round out the year.
- In 2018, the CBH published the 11th volume of *The Human Touch*, an annual edited volume of literature and visual arts on the human aspects of health and healthcare from the local community.
- Under the leadership of Jackie Glover, PhD, and Jean Abbott, MD, MPH, our faculty offer education and training programs to individuals and ethics committees at hospitals and other care delivery organizations around the state.
- Under the leadership of Heather Fitzgerald, MS, RN, and Jean Abbott, MD, MPH, the center teams with the Colorado Healthcare Ethics Forum (CHEF) to offer an annual two-day clinical ethics education program for area clinicians and ethics committee members.
- The CBH produces an annual event commemorating the involvement of health professionals in the Holocaust and other genocides, the William S. Silvers-endowed *Holocaust Genocide and Contemporary Bioethics* program. The spring 2018 program was produced in partnership with the United States Holocaust Memorial Museum and featured keynote speaker Senior Holocaust Historian Patricia Heberer-Rice, PhD, from the United States Holocaust Memorial Museum and the *Deadly Medicine: Creating the Master Race* special traveling exhibit on loan from the United States Holocaust Memorial Museum. The 2018 program, *Echoes of the Holocaust: Cultivating Compassion in 21st Century Healers* incorporated new content on the experiences and health issues faced by contemporary refugees in the local community and brought presentations to all 4 CU campuses, including two public evening events produced in collaboration with many local philanthropic and educational organizations. 2018 program funding was supported by title sponsor the MB Glassman Foundation, with additional support from Jewish Colorado, the Maimonides Institute for Medicine, Ethics and the Holocaust, and the US Holocaust Memorial Museum.
- The Center has adapted the *Hard Call* live event and podcast series (released in the summer of 2017) into a variety of interactive outreach talks which have been adapted for health professions and community audiences to explore some of the toughest decisions people are forced to make about their health. In its first year, the *Hard Call* podcasts have received over 8,000 listens nationally as well as internationally and are available in iTunes, Google Play and other major podcast hosting platforms. Selective *Hard Call* episodes have also been adapted into educational modules to be used in CU ethics curricula across the CU campuses.
- CBH faculty collaborated with the CU Law School, the Aspen Center for Social Values, the U.S. Department of Veterans Affairs Center for Ethics in Healthcare, and Centura to produce the second annual *Aspen Ethical Leadership Program* in September 2017, and executive leadership retreat which brought together leaders from hospitals, health plans, and other healthcare-focused companies and institutions. Participants spent three days in intimate discussions about Measuring and Improving Health Care Quality, Ethics and Integrity within Legal and Regulatory Compliance, and Private and Public Values in Population Health.

www.coloradobioethics.org

Center for Interprofessional Practice and Education

As the complexity of health care has grown, the demand for new, crosscutting interprofessional competencies from health care professionals has become increasingly recognized. The University of Colorado Anschutz Medical Campus is distinguished nationally for its investment, commitment and innovation in Interprofessional Education (IPE).

Vision: Transform health professionals and health care through nationally and internationally recognized interprofessional education and practice.

Mission: Prepare health professionals for interprofessional, collaborative practice through innovative education and scholarship.

The CU Center for Interprofessional Practice and Education (CU CIPE) develops, administers, and evaluates the longitudinal interprofessional education curriculum for all health professions students on the Anschutz Medical Campus (AMC). The program brings students for all health professions schools on the AMC together to learn and practice skills during their preclinical and clinical training. Our curriculum consists of several components: early exploratory opportunities, classroom team based learning, simulation experiences, and advanced practicum experiences at clinical sites. After participating in our program as part of their health professions training, AMC graduates will be competent to participate as members of a collaborative interprofessional workforce.

From 1995 to 2013, the AMC ran an interprofessional ethics course, bringing together students from all the health professions. This effort was expanded to include competencies in teamwork and collaboration from 2010-2013 through Josiah Macy Jr. Foundation and Colorado Health Foundation funding. At the termination of the grant, the program was reorganized and led by Founding IPE Director, Mark Earnest, MD, PhD, and an IPE Council with designees from each degree-granting school or program on campus. Members of the inaugural council in 2014 included: Wendy Madigosky MD, MSPH (School of Medicine), Kari Franson PharmD, PhD (Skaggs School of Pharmacy and Pharmaceutical Sciences), Diane Brunson RDH, MPH (School of Dental Medicine), Amy Nordon-Craft PT, DSc (Physical Therapy Program), Amy Barton PhD, RN, FAAN (College of Nursing), Darcy Solanyk MS, PA-C (Physician Assistant Program) and Jackie Glover PhD (Center for Bioethics and Humanities).

Leadership

Director

Suzanne Brandenburg, MD, School of Medicine

IPE Assistant Directors

Amy Akerman, MS, PA-C, Physician Assistant Program

Kari Franson, PharmD, PhD, BCPP, Skaggs School of Pharmacy

Scott Harpin, PhD, MPH, RN, College of Nursing

Wendy Madigosky, MD, MSPH, School of Medicine

Amy Nordon-Craft, PT, DSc, Physical Therapy Program

Lindsey Yates, DDS, MPH, School of Dental Medicine

IPE Program Representatives

Daniel Goldberg, JD, PhD, Center for Bioethics and Humanities

Ann-Michael Holland, CAA, Anesthesiologist Assistant Program

Interprofessional Education & Development (IPED) Course Director

Wendy Madigosky, MD, MSPH, School of Medicine

Interprofessional Clinical Transformations (CT) – IPE Simulation Director

Elshimaa Basha, MPH, CHSE, Center for Advancing Professional Excellence

Interprofessional Clinical Integrations (CI) – Open Campus & Interprofessional Practice Director

Eric Gilliam, PharmD, BCPS, Skaggs School of Pharmacy

Interprofessional Instructional Designer

Michelle Colarelli, BA, School of Medicine

Interprofessional Education Program Components



The Program consists of three curricular components:

- Students' first exposure to IPE is through our Interprofessional Open Campus Program (IOCP), which is part of Interprofessional Clinical Integrations (CI). The overall goal of CI is to provide relevant immersion experiences focused on learning and caring for patients in interprofessional teams. These experiences occur in multiple settings including community based organizations, hospitals, clinics, dental clinics, home visits, transitions in care, and palliative care. There are two types of CI experiences; early exploratory interprofessional opportunities via the IOCP and advanced clinical practicums where students interact with patients and interprofessional colleagues in authentic health care settings.
- Interprofessional Education and Development (IPED), an introductory course developed by the IPE Council, was launched in 2014 and involves first- and second-year students (over 1,500 students) from seven health professions in a 16-week, team-based learning experience. Students work together in the classroom setting using Team Based Learning (TBL) over two semesters (eight sessions in the Spring Year 1 and 8 sessions in the Fall Year 2). Three competency domains are addressed meeting national accreditation standards and participating school requirements: Teamwork & Collaboration, Ethics & Values, and Quality & Safety.
- As part of their Interprofessional Clinical Transformations (CT) experience, students spend a half-day in the AMC's Center for Advancing Professional Excellence (CAPE) simulation center. Students practice teamwork and collaboration skills, identify and discuss ethical and patient safety issues, and engage patients and family members to deliver patient-centered care during four hours of video-monitored interprofessional team simulations. Scenarios include acute care, outpatient, and home visit settings.

Faculty Involvement

Dozens of full time and many volunteer faculty members contribute to building and implementing these innovative programs, demonstrating the AMC's deep commitment to prepare a health care workforce ready to collaborate, practice and lead in an increasingly complex health care environment.

Key Program Accomplishments 2017-2018

The CU Center for Interprofessional Practice and Education reached over 2,000 students in 2017-18 and focused on expanding impact and increasing engagement. Initiatives in support of these efforts include:

Successful launch of the Interprofessional Open Campus Program (IOCP) during students' first semester at Anschutz Medical Campus. IOCP is a required activity for students to engage in professional development that reinforces the importance of interprofessional collaboration. The theme for 2017-18 IOCP was mental health. Students selected programming of interest from a menu of options.

- Students chose from over 20 program offerings
- 17 partner organizations from across the AMC provided programming
- 733 first-year health professions students participated

The IOCP was highly rated; 93% of students would recommend the programming to their peers, and approximately 2/3 of students felt the programming contributed to their development as a collaborative health care professional.

Successful pilot of a common interprofessional clinical evaluation tool

- The Interprofessional Professionalism Assessment (IPA) was designed and validated by the Interprofessional Professionalism Collaborative (IPC) sponsored by 12 health professional organizations. CU CIPE received approval by the IPC to modify and adopt the IPA tool for use at the Anschutz Medical Campus.

⇒ The CU CIPE clinical assessment features

- 9 items measuring 4 domains of teaming aligned with the Interprofessional Education Collaborative (IPEC) competencies and individual accreditation standards for each AMC health profession school or program
- 1 longitudinal assessment item measuring student perceived growth and development as a contributing member of a interprofessional team across all CU CIPE curricular components

⇒ The collaborative has conducted extensive validity testing in the development of IPA items, specifically looking at assessment use by profession and appropriateness of design.

- In our pilot, 406 students were evaluated across four health professions programs (Medicine, Nursing, Pharmacy, and Physical Therapy). Local IPA Validation data is as follows:
 - ⇒ Quantitative Data
 - 58 practitioners (28% of evaluators) from 9 different professions completed a 6 item survey evaluating the design, use, and meaningfulness of the assessment tool.
 - 55 individuals (95%) agreed or strongly agreed with survey items indicating acceptable tool design and understanding of student assessment items.
 - ⇒ Qualitative Data
 - Focus groups held at one large pilot site from four professions reported understanding of the tool design, content, and assessment strategy. Practitioners stated the tool was easy to use and applicable to their clinical context (e.g. 20 hours of observation of student)
- IPA Impact
 - ⇒ Assessment strategy featured in a national webinar sponsored by Interprofessional Education Collaborative (IPEC) and American Association of Colleges of Nursing (AACN) in Sept 2017, with more than 600 registrants.
 - ⇒ This data was used to demonstrate student team-readiness and achievement of the interprofessional focused accreditation standards during programmatic reaccreditation for the School of Pharmacy and will be used to address the new Interprofessional standards for the Doctor of Physical Therapy Program.

Interprofessional Education focused Federally Qualified Health Center in Aurora, Colorado
 CU CIPE is a key stakeholder and participant in the development of an Interprofessional Education focused Federally Qualified Health Center via a partnership between the University of Colorado Anschutz Medical Campus and two local FQHC systems, Salud and Metro Community Provider Network.

For additional information on the CU Center for Interprofessional Practice and Education (CU CIPE), please see our website: <http://www.ucdenver.edu/anschutz/education/IPE/Pages/Default.aspx>

Center on Aging

The multi-disciplinary Center on Aging (CoA) at the Anschutz Medical Campus was established in 1993 through an agreement between the Vice Chancellor for Health Affairs, the deans of the schools on the Anschutz Medical Campus and the leadership of the UHealth University of Colorado Hospital. The mission of the CoA is to promote improved health for older adults through the establishment and continuation of high-quality and innovative clinical programs; the education of community professionals in geriatrics and gerontology; an emphasis on multidisciplinary team care and activity; and the promotion of collaborative trans-disciplinary efforts in basic, clinical, and health services research that span the university community. The CoA has been directed by **Robert Schwartz, MD**, since 2000. In addition to the director, the CoA is guided by an Executive Committee representative of aging research across campus including: Department of Emergency Medicine, **Marian Betz, MD, MPH**; Department of Family Medicine, **Jodi Holtrop, PhD**; College of Nursing, **Catherine Jankowski, PhD, FACS**; Division of Geriatric Medicine, **Wendy Kohrt, PhD**; Skaggs School of Pharmacy and Pharmaceutical Sciences, **Sunny Linnebur, PharmD**; Division of Geriatric Medicine, **Daniel Matlock, MD**; VA Geriatric Research, Education, and Clinical Center (GRECC), **Kathryn Nearing, PhD**; Denver Veteran's Affairs Medical Center Department of Surgery, **Thomas Robinson, MD**; and the Colorado School of Public Health Department of Epidemiology, **Janet Snell-Bergeon, MPH, PhD**.

Faculty development and trainee mentorship play a large role in the center, which has played a central role in developing an outstanding pipeline of junior investigators interested in aging-related academic research careers. The CoA is the home for a very successful Institutional T32 grant focusing on the “applied physiology of aging,” now in its 17th year. As part of the renewal the T32 includes a plan for a T-Shaped Team-Oriented Training Program, which with the support of the Department of Medicine will be applied to all training programs within the department to foster investigator relations. The CoA has also been the home to the Hartford Center of Excellence in Geriatric Medicine since 1998. While this entire Hartford Foundation program ended in 2016, the Chancellor, Dean of the School of Medicine and Chair of the Department of Medicine, continue their \$150,000 match to support the career development of post-doctoral fellows and junior faculty involved in aging-related work. This group of supported investigators has accounted for more than 160 non-Hartford extramural grants and over \$80 million in direct cost support to the University of Colorado Anschutz Medical Campus. Our institution and its junior faculty are national leaders in receiving career development awards in the field of aging including ten Beeson Career Development Scholars as well as multiple other aging-related K awards.

Most recently The CoA has been focusing on engagement and outreach, acting as a founding member of the Colorado Consortium on Aging Research and Education (**CoCARE**) and co-hosting the State of Aging summit bringing together 106 participants from approximately 85 organizations across all sectors focusing on older adults including government, non-profit, for profit, and academic institutions. The CoA has also been integral in planning the 16th Annual Rocky Mountain Geriatrics Conference together with the Eastern Colorado Geriatric Research Education and Clinical Center (**GRECC**). The GRECC is led by **Robert Schwartz, MD**, (Director), **Wendy Kohrt, PhD**, (Associate Director for Research), and **Skotti Church, MD** (Director for Education).

Aging-related research grants presently managed through the CoA include: 1) Integrative Physiology of Aging T32 (R Schwartz, PI); 2) Specialized Center of Research (W Kohrt, PI); 3) Molecular Transducers of Physical Activity (U01; W Kohrt PI); 4) Hip Fractures in Older Women (Multi-centered R01, R Schwartz, Site PI, score 13); 5) The Colorado Health Foundation grant for Advance Care Planning (H Lum, PI); 6) Nextfifty Foundation grant for Implementation and Dissemination of an Advance Care Planning Volunteer Certification Program for LGBT Individuals (H Lum, Co-PI; C Candrian, Co-PI); 7) Vascular mechanisms for the effects of ovarian suppression on cognitive function (K23; K Hildreth, PI); 8) Boettcher Foundation grant for Biomarkers and phenotype of BM-progenitor derived adipocytes in humans (K Gavin, PI); and 8) Time restricted feeding and metabolic rhythms in humans (K01; C. Rynders, PI).

Colorado Center for Personalized Medicine

Colorado Center for Personalized Medicine is a multi-institutional collaboration that links extensive electronic medical record data to ‘omics’ information to promote the development of tools and knowledge in biomedical informatics in order to expand prognostic and diagnostic capacity using molecular diagnostics. The initial focus is on fueling research on developing predictive, personalized, preventative and participatory medicine that can integrate into our existing health care delivery system through defining risk, identifying new treatments and improving drug efficacy. These efforts serve the center’s overarching goal to integrate these discoveries into our routine health care to improve the lives of our patients.

Center accomplishments this past year

- Completed a strategic plan for the center
- Expanded recruitment into the CCPM Biobank from the metro-Denver region to UHealth north/south
- Commenced genetic testing on the first 30,000 biobank participants and piloted return of incidental findings to 10 participants
- Held our first annual CCPM Retreat
- Further developed the CCPM/BIPM and biobank websites
- Drafted a 5 year budget for CCPM
- Began design plan phase of new building (anticipated move-in 2021)
- Hired an Associate Director for Clinical Operations

Plans for the coming year

- Completion of five-year business plan proposal
- 2nd annual CCPM retreat
- Continued development of clinical operations and an increase in the consent rate of UHealth patients via MyHealthConnection

Key Components of the Center

Molecular Diagnostics - Overview: Develop local and regional clinical genetic-testing expertise such that the majority of genetic tests requested by our providers for our patients are done through CCPM-supported laboratories.

Accomplishments over the past year

- Fusion NGS assay launched January 1, 2017
- Increasing core panel from 26 to 67 genes
- Markedly increased testing volume
- Expanded test menu resulted in increased clinical trial enrollment
- Hired heritable disease Section Director Kristy Crooks, PhD
- 4 assays to date: *HFE*, *F5*, *F2*, *MUC5B*
- Launched *CFTR* for carrier screening and diagnosis
- Exome-based panel validations underway
- Initiated multi-institution consortium to leverage group purchasing power and collaboration
- Reagents for >2600 genes received
- Launched 67-gene solid tumor assay
- Working with UHealth clinical laboratory to identify priorities for validation

Plans for the coming year:

- Migrate to larger oncology panel (>200 genes)
- Incorporate tumor mutation burden and MSI into NGS testing
- Launch exome-based gene panels
- Continue test development according to send-out priorities

Biobank - Overview: Generate omics data to advance research, discovery and clinical implementation

Accomplishments over the past year

- CLIA certification obtained
- Launched electronic consenting via MHC 9/11/17
- Site visit to Vanderbilt, Partners, and Mt. Sinai
- IRB broad research consent
- Bioethics Boot Camp
- Biobank sample processing to date:
- 21,000 samples received
- 12,000 accessioned
- 11,000 DNA extracted
- 9,000 genotyped
- 11 confirmed ACMG incidental findings
- Abstracts presented at ACMG & ISBER national conferences
- Successfully submitted first round of proficiency testing to CAP; results expected in late summer
- Launched pilot for return of incidental findings of 1st ~10 patients

Plans for the coming year:

- Complete genotyping on 1st 30K samples
- Validate version 2 of the genotyping array
- Explore additional extraction technologies
- Begin distribution of DNA for research use
- CAP accreditation
- Hire a lab manager and additional lab technical staff

Health Data Compass – Overview: Health Data Compass is a shared, multi-institutional resource of integrated data and analytic services designed to transform data-driven processes in clinical research, operational excellence, molecular discovery, and precision medicine. We achieve this by maintaining a comprehensive, scalable, data integration and management system, implementing priority use cases, providing analytic teams and services, and fostering forward-thinking approaches to technological solutions.

Accomplishments over the past year:

- Fully deployed on Google Cloud Platform
- 6M combined patients from UHealth, CHCO, CU Med
- UHealth Cancer Registry, public health data sources, etc.
- CCPM Biobank variant integration underway
- 300 data requests completed
- Suite of operational dashboards developed and in use
- Deployed data science environment for UHealth CARE Innovations
- Deployed interactive data marts for customers
- On-boarded dozens of new users to TriNetX
- Implemented two-day turnaround process for TriNetX à MRN reidentification data requests
- Nearing completion of beta rollout of Eureka (HIPAA compliant virtual machines for data science)

Plans for the coming year:

- Launch Compass publicity campaign
- Bring Eureka into production with fully-defined processes and staffing
- Develop preapproved deidentified and LDS datasets
- Move emphasis toward automatable, predefined output models
- Free-text clinical note deidentification and targeted term extraction
- Full automate all daily ETL processes, including tests for ETL integrity, data quality, and REDCap loads

Translational Informatics and Computational Resource (TICR) - Overview: Multidisciplinary, robust computing resource to foster omics-based researching using dimensionality data, development and implementation of computational methods and tools for sequence analysis and systems biology.

Accomplishments over the past year:

- Developed automated mechanism to perform downstream QC on MEGA genotyping panel, and deliver product back to investigators
- Implemented a Service Center with ~30 users (~15% capacity)
- Generated MEGA chip data processing pipeline
- Provided multiple IT services including data transfer and backup
- Hosted annual mini-symposium: 'The Power of Informatics to Advance Health' (4/18/18)
- Finalized Rosalind HPC backup solution onto the Google cloud

- Implemented demo environment, Wilkins, to help with HPC recruitment and education
- Held first intro to HPC and Linux boot camp (6/15/18)
- Dynamic version of BC|PIPE released 6/14/18 with PGx support and digital signing for Biobank director in place
- >4,000 genotyped Biobank samples successfully loaded into BC|PIPE
- Successful test HL7 message sent to EPIC for return of results

Plans for the coming year:

- Expand user base to 60% HPC capacity (~120 users)
- Work with CCPM faculty to develop computational methods for Biobank data
- Integrate genotype calls with Compass
- Help launch Return of Results for first gene-drug pair
- Work with Compass to test the feasibility of Rosalind 2.0 HPC on the cloud

BIPM Division - Overview: Recruit faculty and staff to develop personalized medicine research and care across our campuses and health systems.

Accomplishments over the past year:

- Recruitment of 1 primary faculty (including one clinician who is primary to BIPM) and 5 secondary faculty (for a total of 13 primary faculty and 21 secondary faculty)
- Submitted a proposal for the establishment of a master's degree program in Personalized Medicine which will begin in Fall 2019 once approved
- NIH Grant Submissions = \$55,991,075 (n=40)
- Foundation Grant Submissions=\$173,725 (n=3)
- New Awards Received = \$6,210,172
- (n=26, 25 NIH; 1 CU Internal)
- Hosted a Mendel course with UCLA
- Commenced our visiting speaker series and hosted 4 visiting speakers over the past year

Plans for the coming year:

- Recruitment of additional faculty
 - Currently in the pipeline:**
 - ⇒2 research scientist candidates
 - ⇒1 clinician educator candidate
 - ⇒1 clinical geneticist
 - ⇒1 interdisciplinary candidate recruit with Cardiology
 - ⇒1 co-recruit with Cardiology (underway)
- Marketing and recruitment of students for master's program

Clinical Operations:

Accomplishments over the past year:

- Hired an Associate Director for Clinical Operations-Jan Lowery, PhD
- Hired a clinical operations liaison (IT) to work with UCH/CCPM-Emily Hearst
- Returned incidental findings to 10 patients
- Piloting return of results for first drug gene pair
- 65,000 participants consented
- 27,000 blood samples collected
- North/South presentations to SMG, Leadership Forum complete
- Provider presentations to North/South/Metro JOCs underway
- Engaged Patient Family Advisory Committees across UHealth; presentations underway
- Biobank newsletter complete; distribution July 2018; website development underway

Plans for the coming year:

- Enrollment
 - ⇒Target: 37,500 consents; 16,500 samples
 - ⇒Stretch goal: 80K consents; 37K samples (current biobank capacity-goal is to expand to 100k samples per year)
 - ⇒Expand enrollment N/S via MHC
 - ⇒Targeted enrollment (e.g. behavioral health, transplant, ED, Ca Center)
- Education: develop provider, staff & patient educational materials
- Patient engagement: Formalize partnership with PFACs
- Marketing: Implement plan with UHealth
- Patient outreach: newsletters 2x/year, website
- Evaluation: develop/implement evaluation plan
- Stephen Wicks, PhD to do the Laboratory, Genetics & Genomics Fellowship
- Establishment of virtual Personalized Medicine Clinic-staffed with clinician educators, genetic counselors and physician fellows

Colorado Clinical and Translational Sciences Institute

The Colorado Clinical & Translational Sciences Institute (CCTSI) is a collaboration between University of Colorado Anschutz Medical Campus, CU Denver, University of Colorado Boulder, Colorado State University, six affiliated hospitals and health care organizations as well as multiple community organizations with a goal of accelerating the translation of research discoveries into improved patient care and public health. The CCTSI partner health care institutions include UHealth University of Colorado Hospital, Children's Hospital Colorado, National Jewish Health, Denver Health and Hospitals, Denver Veterans Affairs medical center, Kaiser Permanente Colorado, and the private sector.

The CCTSI is a National Institutes of Health (NIH/NCATS)-funded research institute at CU Anschutz. It is part of the national consortium of 58 CTSA institutional hubs throughout the United States and is one of the largest federal research grants awarded to the state of Colorado. The CCTSI also receives considerable institutional support from CU Anschutz, CU Boulder, CSU and the affiliated hospitals. The CCTSI has nearly 5,000 individual members who benefit from its services, funding sources, and programs. The CCTSI functions through 14 major programs, each with multiple cores, including: 1) Informatics, 2) Community Engagement and Research, 3) Collaboration and Team Science, 4) Workforce Development, 5) TL1 Training Core, 6) KL2 Institutional Career Development program, 7) Pilot Translational Studies, 8) Regulatory Knowledge and Support, 9) Biostatistics, Epidemiology and Research Design, 10) Participant and Clinical Interactions, 11) Integrating Special Populations, 12) Trial Innovation Network Hub Liaison Team, 13) Innovation Ecosystem, and 14) Early Life Exposures Program. The vision of the CCTSI is to accelerate and catalyze the translation of innovative science into improved health and patient care.

To reach this vision, the mission of the CCTSI is to:

- Catalyze and enhance scientific discovery, innovation, dissemination, and translation across the lifespan
- Educate and sustain a resilient, innovative, and diverse translational science workforce
- Promote and ensure an efficient, safe, collaborative, and integrated research environment
- Engage stakeholders and communities across the entire translational spectrum

Some of the goals of the CCTSI are to

- Develop, educate and sustain a diverse translational science workforce to ensure the highest research innovation, quality, and safety.
- Create a translational research environment in which team science and collaboration both locally and nationally are facilitated, supported, and valued.
- Engage local and national communities and stakeholders in all phases of the translational research process.
- Create novel methodologies and resources to support and integrate research in special populations, including children, the elderly, the underserved and those with rare diseases.



A rigorous tracking, assessment and evaluation program with a formal quality and process improvement component ensures the best use of resources while protecting the safety of research study participants. These programs are centralized at the CU Anschutz Medical Campus.

Since 2008, the CCTSI has

- Established new infrastructure and improved resources and services for investigators.
- Tripled the number of training and education programs supporting the lifespan of an investigational career.
- Administratively centralized and expanded the breadth of clinical research capacity and expertise.
- Established system-wide research informatics capabilities.
- Promoted team science and encouraged interdisciplinary research through pilot grant programs, educational opportunities, and technology cores.
- Established an extensive community engagement program, from small towns to the inner city, from professors to farmers.
- Streamlined processes and reduced the regulatory burden for investigators.
- Partnered with the CU Cancer Center, Office of Regulatory Compliance and the Finance Office to implement critical new institutional software systems: 1) OnCore as a clinical research management system, 2) iLab Solutions as a core facilities management system, and Health Data COMPASS as an enterprise Data Warehouse.
- Created an academic home for clinical and translational scientists and trainees.

The CCTSI was recently funded by NIH for the period 2018-2023 to support the full range of T0.5 through T4 translational research in a disease-agnostic manner across the breadth of the life cycle. Through the exciting partnership with CSU, which is recognized for its world-class school of veterinary medicine and other programs, the CCTSI has expanded the spectrum of translational research to include T0.5 research, translating promising pre-clinical discoveries into naturally occurring animal models (companion to domestic animals) of human disease.

The CCTSI implemented two information systems for the institution's research community: 1) "Colorado Profiles," a search engine and networking tool for biomedical researchers at CU and affiliates, which receives over 20,000 monthly page views; and 2) REDCap (Research Electronic Data Capture) which is a secure, HIPAA-compliant web-based application designed for research data collection, storage and transfer. [Over the past year, REDCap has supported more than 4,000 active users with more than 8,000 projects.](#)

The CCTSI provides resources and services including five Clinical and Translational Research Centers (CTRCs), which facilitate and support more than 470 projects led by 235 principal investigators; two Clinical Trials Offices; Biostatistics, Epidemiology and Research Design (BERD); Research Bioethics Consultation services and assistance; informatics and database support; funding opportunities; and a vast array of educational and career development programs for clinical and translational investigators and their staff at all affiliated institutions.

CTRCs offer incomparable clinical research facilities, research nursing support, specimen and biopsy processing, bionutrition expertise, specialized laboratory assays, vascular ultrasound testing, exercise testing facilities and other services to facilitate the conduct of patient-oriented research. Education programs include the Clinical Sciences PhD and master’s graduate program, KL2 research scholar program and TL1 pre-doctoral and post-doctoral training program, Clinical Faculty Scholars Program, CO-Mentor training program, K-to-R transition program, Pre-K assistance program, and the Leadership for Innovative Team Science (LITeS) program. A robust pilot grants program and new methods development funding program are popular CCTSI programs that have assisted numerous investigators in obtaining follow-on funding.

Spectrum of Translational Research



The Partnership for Academicians and Communities in Translation (PACT) was created by the CCTSI to transform the way communities and researchers work together to design and conduct research by building bridges between health research, clinical practice and community health initiatives to improve the health of the people of Colorado and the Rocky Mountain region. The PACT encompasses more than 20 Colorado communities, 940 physician practices, and 28 hospitals throughout the region. The PACT encompasses more than 20 Colorado communities, 940 physician practices, and 28 hospitals throughout the region. The new Early Life Exposures Research Program facilitates research during pregnancy, infancy and childhood and emphasizes life-cycle research involving fetal and childhood precursors of adult disease. The Innovation Ecosystem provides early training in market evaluation (Innovation-Corps program [I-Corps]) and support for commercialization for promising ideas and products. Our Research Studio Program organizes a customized team of experts to provide feedback and new ideas to investigators on a variety of topics chosen by the investigator.

The CCTSI is led by **Ronald J. Sokol, MD**, principal investigator and Director of the CCTSI, and a team of very talented Associate Directors and Administrative Staff. Main offices are located on the third floor of the Leprino Building at the Anschutz Medical Campus. Check out the website for further information and opportunities: www.ucdenver.edu/research/CCTSI.

Medical Alumni Association

SENIOR LEADERSHIP

Jan Kief, MD (Class of 1982)

President, Medical Alumni Association

Linda Williams, MD (Class of 1984)

Vice President, Medical Alumni Association

Dennis Battock, MD (Class of 1964)

Secretary/Treasurer, Medical Alumni Association

Wagner Schorr, MD (Class of 1963)

Immediate Past President, Medical Alumni Association

Vanessa McDougall

Assistant Director, Alumni Relations and Advancement
CU School of Medicine

DESCRIPTION OF MISSION AND PROGRAM

The CU Medical Alumni Association's mission is to advance and influence the interest of our alma mater, to support current students on their journey to becoming physicians, and to provide programs and opportunities for alumni to connect with each other and the CU School of Medicine. We accomplish this shared vision by achieving the following goals:

- Supporting the school and extending its name and reputation as an institution dedicated to the highest standards in educating physicians and other medical professionals;
- Developing and implementing networking opportunities among alumni and students that will be mutually beneficial;
- Promoting activities and programs designed to elevate the support and awareness for the school;
- Engaging in activities promoting the art and science of medicine;
- Encouraging the highest ethical standards within the education and practice of medical care;
- Participating in resource development activities that support, advance, or enhance the quality of student services, curriculum, and infrastructure of the school;
- Supporting a diverse, inclusive academic setting; and
- Serving as steadfast ambassadors for the School of Medicine as well as its students, faculty, staff, and fellow alumni.

CONTACT INFORMATION

Office of Alumni Relations

Mail Stop A080

13001 E. 17th Place

Aurora, CO 80045

Phone: 303-724-2518

Email: healthalumni@ucdenver.edu

Online: medschool.ucdenver.edu/alumni

ACCOMPLISHMENTS OF THE PAST YEAR

- We welcomed 184 first year medical students and presented each of them with a new stethoscope branded with the Medical Alumni Association seal.
- In partnership with the Office of Student Life, we provided free breakfasts to current medical students.
- HOST (Help Our Students Travel) program, alumni from across the United States provided travel and housing accommodations to fourth year medical students as they interviewed with some of the country's best residency programs.
- 1,512 alumni participated at School of Medicine Alumni events including *A Night at the Opera*, Deans Circle Event, Alumni Celebration and Reunion.
- Over \$400,000 was secured to support programs directly benefiting our student population—the Stethoscope Sponsorship Program, the Medical Alumni Association Scholarship Fund and other named scholarships.
- More than 2,800 medical alumni contributed to various programs at CU.

The University of Colorado School of Medicine honored four alumni—outstanding physicians for their delivery of health care, pioneering research, and service to their country and communities—at its Silver and Gold ceremony on May 24.

Linda Williams, MD '84 (*Silver & Gold Award*)

Wagner Schorr, MD '63 (*Distinguished Service Award*)

George Lopez, MD '73 (*Distinguished Achievement Award*)

M. Robert Yakely, MD, Residency '69-'73 (*Humanitarian Award*)

Student Mental Health

Rachel Davis, MD, Medical Director
Juan DeJesus, MD, Associate Medical Director

Mission:

Student Mental Health (SMH) on the Anschutz Medical Campus exists to facilitate evaluation and treatment of mental health issues in students of the Anschutz Medical Campus. By minimizing barriers to care, the center aims to reach as many students as possible. The faculty at SMH specialize in treating the issues students encounter and strive to provide them with optimal mental health treatment.

SMH was established in 2009 in the Department of Psychiatry and has expanded over the past nine years to meet the needs of the students on campus. In 2015, a second SMH clinic site was opened via collaboration with the College of Nursing in the campus health center. This has allowed SMH to increase provider availability and ease of access by offering walk-in appointments, after-hours appointments, and same-day appointments.

SMH accepts many insurance plans through CU Medicine. When utilizing on-campus care, students with the student-sponsored insurance have access to an unlimited number of visits with zero copay for covered diagnoses. Services offered at SMH include:

- Diagnostic evaluation
- Medication management
- Psychotherapy
- Psychoeducational testing
- Group therapy

SMH collaborates with a network of community providers and refers to this network if preferred by the student, if covered by certain insurance plans, and as needed due to provider expertise.

Students present with various concerns including (but are not limited to):

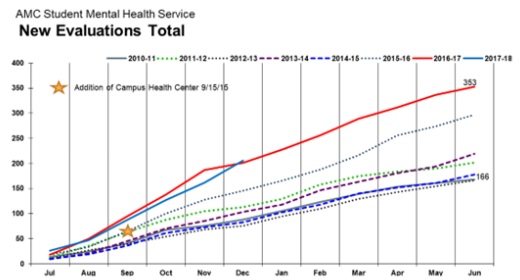
- acute stress management, test and performance anxiety, LGBTQIA issues, relationship difficulties, time management, ADHD, anxiety, depression, bipolar disorder, psychotic illnesses, substance use disorders, eating disorders, obsessive-compulsive disorder (OCD), post-traumatic stress disorder, personality disorders, and domestic violence.

SMH offers several ongoing and brief groups including a cognitive behavioral therapy group for students with OCD, a skills-based ADHD group, a psychodynamic psychotherapy group, and periodic mindfulness meditation groups. SMH faculty train and support a group of student peer counselors who lead weekly support groups on campus.

SMH faculty collaborate with other faculty and departments on campus to provide education, outreach, and other events aimed at reducing stigma and providing education about mental health issues.

Student Mental Health Building 500 (Department of Psychiatry)

Services: Behavioral/mental health care
Hours: Mental health providers are available Monday and Tuesday 8 a.m.-8 p.m. and Wednesday through Friday 8 a.m.-5 p.m.
Appts.: Schedule appointments at 303-724-4716.
Location: Building 500, 17th Avenue and Aurora Court, 2nd floor, #E2343
Website: www.medschool.ucdenver.edu/amcstudentmentalhealth



Current Providers and Staff

Rachel Davis, MD, Medical Director
Juan DeJesus, MD, Associate Medical Director
Debbie Carter, MD
Noa Heiman, PhD
Kortney Mason, MA, Clinic Coordinator
Robert Rosenthal, PsyD
Janice Shire, APNP, CNS
Julie Wolfe, MD

Student Mental Health at campus health center (College of Nursing)

Services: Behavioral/mental health care and physical health care
Hours: Mental health providers are available Monday through Friday 9 a.m.-6 p.m.; walk-in hours have been specifically dedicated for student mental health care during hours of greater demand, Monday through Friday 3 p.m.-4 p.m.
Appts.: Schedule appointments at 303-724-6242
Location: Anschutz Health and Wellness Center, Montview and Racine, 2nd floor
Website: www.ucdenver.edu/anschutz/campushealth

Current Providers

Lori-Ann Landry, LCSW
Ko-Niitsu, PhD, APN, PMHNP-BC

*24/7 crisis coverage is provided by the Department of Psychiatry faculty, fellows, and resident call system and the Metro Nurseline (CHC). Students may also access urgent assistance by calling the Colorado Crisis Services.

Recent Projects and Accomplishments:

- Addition of same-day and evening hours
- Addition of laboratory services at SMH Building 500
- Continuation of outreach project with the medical school which resulted in increased utilization of SMH services by 100% over the past two years
- Provided faculty mentorship and funding for Students Advocating for Mental Health, a student group which has hosted three student anti-stigma panels here on the AMC
- Provided faculty mentorship for this year's Stress Fest
- Project with the Division of Internal Medicine to offer "opt-out" appointments for all internal medicine interns

Plans for 2018-2019 Academic Year

- Collaboration with the Denver Health Longitudinal Curriculum to offer prescheduled (optional) appointments for each student who will be granted a "required" mental health day
- Medical Student Mental Health research study: will invite medical students to participate in mental health rating scales and matriculation and at the end of each year.
- Initiation of telehealth services for health professional students rotating within Colorado.



Photo courtesy of [@kledoscopeyes](#) (posted on [@cuanschultz](#) Instagram)



**Graduate School Programs Partnered
with the School of Medicine**

Biomedical Sciences and Biotechnology

The Professional Science Master's Program in Biomedical Sciences and Biotechnology (BSBT) at the University of Colorado Denver | Anschutz Medical Campus is an interdisciplinary and cross-campus program that provides strong training in the biomedical sciences as well as in technical and business aspects of biotechnology, including regulatory affairs, intellectual property, project management, and entrepreneurship. The two-year program (38 credits) builds a solid foundation for graduates to be competitive in the biotechnology workforce or to move on to research (PhD) or medical training.

Biomedical Sciences Umbrella (BMSC)

The Biomedical Sciences Program (BSP) was formed at the University of Colorado Anschutz Medical Campus in 1997. The BSP serves as an umbrella program, providing incoming students with the ability to rotate with faculty across numerous disciplines and graduate programs. This provides significant flexibility for students to choose from different research areas in which to pursue their graduate degrees. Since 2017, **Kristin Artinger, PhD**, has been the director of BSP, and has an established executive committee of faculty members representing multiple programs, to help advise students through their first year. Students who matriculate in the BSP will perform coursework and laboratory rotations in their first year. For rotations, students can choose to rotate in the labs of any of the over 160 faculty in the program. Upon successful completion of the first year of graduate school, the students will then join their laboratory of choice, as well as one of the 11 different graduate programs housed at the University of Colorado Anschutz Medical Campus. It is our goal in the BSP to expose incoming graduate students to a variety of biomedical science related disciplines, train students to evaluate scientific literature, think critically, develop testable hypotheses, and guide them in their search for a biomedical discipline in which to perform thesis research.

Cancer Biology (CANB)

The interdepartmental program leading to the PhD in Cancer Biology emerged in 2006 as a result of re-organization the Department of Pathology's graduate program in Experimental Pathology. The program has been under the direction of **Mary E. Reyl-land, PhD**, since 2010 and combines training in the basic biomedical sciences with opportunities to apply clinical and translational research to studies on human cancer. The Cancer Biology Program is committed to educating PhD students in the fundamentals of modern biomedical research, but differs from more traditional programs in that it also provides opportunities for students to learn about clinical and translational aspects of cancer biology. We believe that understanding cancer from multiple perspectives will better prepare our students to compete in a biomedical research environment increasingly focused on translational applications of basic research. The goal of the Cancer Biology Program is to attract outstanding students with the highest potential and to stimulate in them the independent and creative scientific thinking necessary to develop future leaders in the multifaceted field of cancer research. The program's highly accomplished training faculty includes over 40 basic and clinical scientists drawn from various fields of biomedical and clinical sciences. Areas of emphasis include lung, breast, head and neck, prostate, bladder and blood cancer. Our curriculum is rigorous, yet flexible, and provides opportunities for advanced study in cellular and molecular oncology, as well as the translational medical sciences. The University of Colorado Anschutz Medical Campus is home to an NIH-designated Comprehensive Cancer Center, an acknowledgment of its role as a leader in both clinical cancer treatment and basic cancer research. Our research community brings together scientists with diverse research approaches to focus on the problem of cancer. Graduate students are a vital part of this community and as a program we strive to build a vibrant and supportive learning environment. The program facilitates multiple events to build this community including journal clubs, a seminar series, poster sessions and an annual retreat in the Rocky Mountains.

Cell Biology, Stem Cells and Development (CSDV)

The Graduate Program in Cell Biology, Stem Cells and Development (CSD) was created in 2007 as an interdepartmental and interdisciplinary training program, engaging students and faculty from more than 10 basic science and clinical departments and numerous members of the Gates Center for Regenerative Medicine. The CSD program provides graduate training for doctoral students in hypothesis-driven experimental approaches and cutting-edge technology to allow students to pursue important questions at the juncture between the fields of cell, developmental, and stem cell biology.

CSD students and faculty have common interests in understanding how cells function and signal in development, regeneration and disease. This common curiosity promotes extensive collaboration and interaction among labs, and creates a fantastic intellectual environment. Our students consistently say that the prime reason for selecting the CSD program is the collaborative and open nature of interactions among members of the Program. The program currently comprises an interactive group of 33 students and over 50 training faculty, which is sufficiently small to provide a close-knit, supportive yet rigorous, training environment, while large enough to provide a scientifically varied set of labs and mentors with which to interact. In the past year, CSD students published 10 scientific publications, presented their work at numerous national and international scientific conferences and organized several scientific outreach activities for middle and high school students.

Clinical Science (CLSC)

The Clinical Science Graduate Program (CLSC) is the primary degree-granting program for advanced training in clinical-translational research for the University of Colorado Denver and for the Colorado Clinical and Translational Sciences Institute (CCTSI). The overall goal of the University of Colorado Denver | Anschutz Medical Campus Graduate Program in Clinical Science (CLSC) is to train nationally competitive clinician/clinical translational scientists by providing a formal, structured, and rigorous educational program in the clinical and translational sciences. The Clinical Science Graduate Program was designed in response to the demand for well-qualified clinical researchers in academia and industry. The critical need for individuals capable of conducting rigorous, credible and relevant patient-based research within stringent ethical and regulatory guidelines, and translating the evidence for community application, is expected to continue to grow. The Clinical Science program was one of the first clinical science training programs to be offered in the country and received a NIH K30 award to operate the program starting in 1999. The program offers both doctoral and master's programs. For doctoral students, there is a selected emphasis of study in one of the following three areas: Clinical Investigation and Outcomes, Health Information Technology, or Health Services Research. These three areas of clinical science represent general directions of study for translational research activities in the evolving health care environment. The Health Services PhD is a collaborative program with the Colorado School of Public Health. Our training programs are designed to be multi-disciplinary and achieve proficiency in the areas of clinical science and translation, and include courses in biostatistics, clinical epidemiology, clinical studies design, critical appraisal, ethics and responsible conduct of research, team science, and grant writing. In addition, formal mentoring with interdisciplinary clinical and translational faculty complements the rigorous training. The Clinical Science Program has over 80 students and approximately 140 faculty members involved in the teaching, career development and mentoring of our students. Our students and faculty are diverse and multi-disciplinary. Our environment is conducive to supporting team science approaches to address the complexity of conducting rigorous and responsive science to meet societal needs and priorities. Currently, over 70% of CLSC alumni hold grant support, of which about 45% is NIH funding, and have published over 1,000 peer-review manuscripts in journals such as Pediatrics, JAMA, Circulation, and Cancer. To learn more about the Clinical Science Program visit: <http://www.ucdenver.edu/research/CCTSI/education-training/clsc/Pages/default.aspx>

Computational Bioscience (CPBS)

The Computational Bioscience Program of the University of Colorado Denver, located on the Anschutz Medical Campus is dedicated to training computational biologists who aspire to achieve excellence in research, education, and service, and who will apply the skills they learn toward improving human health and deepening our understanding of the living world. The Computational Bioscience program provides graduate students with the foundation for a lifetime of continual learning.

CPBS creates professions prepared to conduct novel interdisciplinary research in the fields of translational bioinformatics, clinical research informatics, and computational molecular biology. Graduates have the expertise to join faculty programs in bioinformatics, medicine, or computer science, or to assume high-level research positions in government or industry.

Our curriculum integrates training with computation and biomedical sciences with student research and teaching activities that grow increasingly independent through the course of the program. Our students begin supervised research immediately, collaborating with top scientists, working with the latest high-throughput instruments on critical biomedical problems. Research training spans computational aspects of basic translational and clinical sciences in a wide variety of disciplines and disease areas.

Genetic Counseling (GENC)

The Master of Science Program in Genetic Counseling integrates extensive coursework in human clinical and laboratory genetics and genomics, psychosocial and counseling theory, research and ethical, legal, social and professional practice issues with over 1,000 hours of direct, supervised clinical training with patients in pediatric, reproductive, oncology, metabolic, adult, and specialty genetics clinics. During the second year, students complete a scholarly mentored capstone project addressing a current clinical practice, laboratory, educational, policy or service delivery issue in genetic counseling. The program is fully accredited by the Accreditation Council for Genetic Counseling (ACGC) and its graduates are eligible to sit for the national certification exam administered by the American Board of Genetic Counseling (ABGC). Program alumni play a critical, expanding role in the healthcare system and are at the forefront of precision genomic medicine initiatives. The Bureau of Labor Statistics identifies genetic counseling as one of the fastest-growing healthcare fields. Alumni practice in hospitals, academic and private genetics centers, clinical research programs, diagnostic laboratories, biotechnology companies, public health departments, and patient advocacy organizations. As members of multidisciplinary health care teams, genetic counselors provide scientific expertise, education, risk assessment, non-directive support for decision making and psychosocial needs, and community resources for individuals and families so that they can understand and appropriately utilize genetic information and testing to promote informed health care choices. Laboratory-based genetic counselors serve as professional liaisons to hospital systems, individual health care providers and their patients. They help providers and patients understand new testing modalities and appropriate testing options, conduct utilization management review to promote cost-effective use of genetic testing, and provide individualized results interpretation. Many program alumni are faculty at their institutions, promoting genomic literacy as educators of trainees, other healthcare professionals and the public, and conducting clinical and translational research. Others facilitate support and advocacy groups for genetic conditions, engage in health care policy development regarding genetic services, and provide consulting to biotechnology and other industries.

Human Medical Genetics and Genomics (HMGG)

The Human Medical Genetics and Genomics Graduate Program at the University of Colorado School of Medicine provides training to graduate students interested in a field of research that has seen an unprecedented explosion of data, knowledge and innovative technologies. DNA sequencing of genomes of humans and other species, discovery of genes and variations that underlie development and disease, and rapid application of these discoveries to medical practice is revolutionizing medicine by precise diagnostic tests, targeted treatments, and even disease prevention. It is anticipated that “personalized” or “precision” medicine will thereby dramatically improve human health, longevity, and quality of life. Founded in 1997, the Human Medical Genetics and Genomics PhD program teaches our students modern genetics and genomics theory and methodology, critical reading and assessment of the literature, formulation and testing of research hypotheses, advanced experimental techniques, bioinformatic and statistical analysis of genomic and other “omics” data and interpretation of results to answer key scientific questions. Our faculty includes over 50 laboratory scientists and clinicians, providing an exceptionally interactive and collaborative environment that enables quick translation of the latest genetic and genomic discoveries from the bench to the bedside. Our goal is to provide a nurturing yet rigorous training environment in which our students can thrive intellectually and be scientifically productive under the guidance of a supportive and highly collaborative faculty. As a result, our students have presented their research at national and international scientific conferences, published their research in highly respected scientific journals and have received awards and grants from both institutional and external funding agencies. Our PhD students have also been highly successful in their subsequent careers, including in academia, industry, teaching as well as non-traditional settings like forensics and regulatory affairs.

Immunology (IMMU)

The Graduate Program in Immunology at the University of Colorado Denver was formed in 1989 as an interdepartmental immunology training program and whose success was a factor motivating the establishment of the Department of Immunology within the School of Medicine in 1993. While the majority of the immunology training faculty are members of the Department of Immunology and Microbiology within the School of Medicine at the University of Colorado, faculty trainers come from an additional 12 departments and divisions within the School of Medicine as well as National Jewish Health and the Barbara Davis Center for Diabetes. **Raul Torres, PhD**, has been the Director of the Graduate Program in Immunology since 2006 and **Ross Kedl, PhD**, has served as Associate Director since 2010. Colorado has a rich history of seminal discoveries in immunology and a primary mission of our nationally recognized graduate program in immunology is to educate and train the next generation of top immunologists to direct competitive independent research programs.

However, in appreciation that not all of our graduates wish to develop the skills to lead academic or industry research programs, we further strive to provide the immunological expertise to our graduates to inform areas of public health, science policy, and education. To accomplish this, we offer our program students rigorous didactic courses in immunology and related fields and foster intellectual development and experimental competence via faculty evaluation throughout their didactic and experimental studies and at multiple levels. As many of our major current national and global health issues result from immunological-based diseases, our graduate program further is committed to educating and exposing our basic science doctoral students to translational science approaches and clinical settings to further enrich the immunology student graduate experience in a practical and meaningful manner.

Integrated Physiology (IPHY)

The Integrated Physiology graduate program offers multidisciplinary PhD training in biomedical systems biology. Students have opportunities to study how cells, organ systems, and organisms regulate complex physiological functions, with emphasis on cardiac and vascular biology, molecular nutrition and metabolism, reproductive biology and single cell systems.

Medical Scientist Training (MSTP)

The Medical Scientist Training Program is a multidisciplinary, inter-institutional MD/PhD dual degree training program educating students in clinical medicine and biomedical research. Its mission is to provide students with the breadth and depth of training necessary to excel as a physician scientist. Post-baccalaureate students are recruited from a national pool of ~450 applicants, and those selected have proven exceptional talents in research science, a curiosity to solve mechanisms of disease, a drive for discovery, a well-thought-out motivation to pursue a career in medicine, and exceptional leadership. The program was formed in 1983, and in 1992 it received MSTP status by successfully competing for NIH T32 funding (currently ~\$795K/year to support 16 trainees per year). The program has strong leaders and mentors, with **Arthur Gutierrez-Hartmann, MD**, directing the MSTP since 1994 and selected for numerous local and national mentor awards, and national leadership roles in MD/PhD and graduate education, and **Angie Ribera, PhD**, serving as the Associate Director, and providing individualized guidance to each student via regular meetings and interactions. The program has been competitively reviewed and funded by NIH for each of the past four cycles. The Medical Scientist Training Program has been a campus and national leader in recruiting students underrepresented in medicine, and has received Diversity Awards from CU and commendations from NIGMS, highlighting the Colorado MSTP on their Diversity website. There are over 150 faculty mentors for students to choose from in 17 different PhD Programs at the Anschutz Medical Campus, National Jewish and the CU Boulder campus. There are currently 69 students in the program: 9 in the first year (MSI), 9 in the second year (MSII), 38 in the PhD research years, and 13 in the Medical School Clinical years (MSIII and MSIV). Since 1983, 191 students have matriculated in the program. Graduates of the MSTP obtain residencies at the nation's elite programs, with ~75% of those completing all training now in academic medicine, government (NIH or CDC), or industry, including starting up their own biotech companies. Importantly, we have an increasing number of MSTP graduates who are now faculty at the Anschutz Medical Campus, with hopes of recruiting more alums "back home." The Colorado MSTP and its leaders have been key in establishing the National Association of MD/PhD Directors and Administrators, the MD/PhD Section of the AAMC GREAT Group, and the Annual National MD/PhD Student Conference. Finally, we have taken the initiative to bring together, via social and academic venues, all MD/PhDs on the AMC campus, across all stages of training, from student to faculty status, to establish an interactive, supportive cadre of physician-scientists, in order to optimize career success for this group. Additional details of the Medical Scientist Training Program can be found at: www.ucdenver.edu/mstp.

Microbiology (MICB)

The Graduate Program in Microbiology at the University of Colorado Anschutz Medical Campus is a PhD granting education and training program designed to prepare students for outstanding careers in science. Through rigorous didactic courses and mentored experimental studies, the program trains students in diverse areas of microbiology including molecular pathogenesis of viral, bacterial, and parasitic diseases and the role of the microbiome in human health and disease. Our program strives to provide students with the scientific expertise to become leaders in competitive independent research programs, science education, science policy, and industry. Although based within the Department of Immunology and Microbiology, the program faculty includes members of the Departments of Medicine, Neurology, Pediatrics and Biochemistry and Molecular Genetics.

Tem Morrison, PhD, serves as the Program Director and is supported by committees comprised of faculty and student representatives to facilitate advising, admissions and recruitment, evaluations and promotion, and student enrichment and governance. The research interests of the faculty that participate in the Graduate Program in Microbiology are diverse and include molecular mechanisms of infectious disease pathogenesis, effects of the microbiome on human health and disease, innate and adaptive immune responses to infection, pathogen immune invasion strategies, products and metabolites associated with infectious disease outcomes, regulation of gene expression of both host and pathogen, and identification of potential vaccines and therapeutics to prevent or mitigate infectious diseases. With recent appreciation for emerging infections, human risk factors for infectious diseases, and the complexity of the microbiome, the topics of microbiology and pathogenesis of infectious disease are important fields in biomedical research.

Modern Human Anatomy (ANAT)

The Master of Science in Modern Human Anatomy (MSMHA) at the University of Colorado Anschutz Medical Campus is a two-year master's degree program introduced by the Department of Cell and Developmental Biology in the spring of 2012. Under the leadership of the Executive Director, **Thomas Finger, PhD**, the program will host a total of 54 students in fall 2018. The Master of Science in Modern Human Anatomy (MSMHA) Program at the University of Colorado Anschutz Medical Campus is innovative and unique, bridging an established anatomy/developmental biology curriculum with the foundations of digital imaging technologies now in use in medical care, biomedical research, medical illustration, and teaching. This program blends modern and classical approaches to anatomical study, with a goal of producing a new generation of anatomical professionals prepared for diverse careers. The program emphasizes an individualized, flexible approach to professional growth and career development through a student-designed Capstone Project. Extensions of the virtual 3-D human body are at the forefront of diagnostic imaging and surgical interventions that are increasingly commonplace in the medical setting. Virtual human anatomy and advanced imaging technology have also become a platform for the development of new instructional venues as well as the design of simulators and protocols for advanced procedural training. This two-year program will prepare graduates to work in a broad spectrum of educational and biomedical sub-specialties where creativity and innovation abound and knowledge of human anatomy is highly valued. The Master of Science in Modern Human Anatomy provides this graduate level training and teaching experience in the physical and virtual anatomical sciences through human cadaver dissection, neuroanatomy, histology and embryology; all addressed from a modern perspective stressing quantitative imaging, modeling, informatics and clinical applications. The curriculum is translational in integrating computer and engineering technologies into the domains of anatomy and developmental biology through a project oriented curriculum.

In the 2017-2018 academic year, 15 students traveled to nine regional, national, and international conferences, delivering six platform presentations and 36 poster presentations.

Molecular Biology (MOLB)

The Molecular Biology Program at the University of Colorado Anschutz Medical Campus is dedicated to providing rigorous training to its students in a supportive environment. The Molecular Biology faculty are members of 11 different departments who are applying the techniques of molecular biology to answer questions in diverse areas at the forefront of modern biology and medicine. The program offers a unique opportunity to study a wide variety of research areas in a student-centered environment. Molecular biology, the science of how living organisms function at the molecular and cellular level, has spear-headed the recent revolution in our understanding of human disease and led to the birth of the biotechnology industry. The goal of the Molecular Biology Program at CU Anschutz Medical Campus is simple: to equip students for careers at the cutting edge of biological research. The faculty is committed to providing students with the training they need to carry out the highest quality research using state-of-the-art techniques. The teaching philosophy here is to instill the theoretical knowledge and practical experience that enables our students to identify important questions in science, to design experiments that address those questions and to critically evaluate results. Special emphasis is placed on learning to communicate research results to others effectively by participating as featured speakers in the program's excellent seminar series. We believe that training students to become scientists prepares them for careers in many areas. Previous graduates of the program are now working in academic, government, and industrial biotechnology research, teaching, and public policy positions. Molecular Biology Program faculty include members of the Departments of Biochemistry and Molecular Genetics, Cell and Developmental Biology, Medicine, Immunology and Microbiology, Pathology, Pharmacology, Pharmacy, Pediatrics, Craniofacial Biology, Rheumatology, and Obstetrics/Gynecology and include internationally recognized experts in bioinformatics, cancer, cell biology, development, gene expression, genomics, microbiology, molecular structure, and virology.

Their diverse interests provide students with a choice of areas in which to pursue their thesis research. An annual retreat to the Rocky Mountains encourages interaction between students and faculty and also familiarizes the students with the research goals and progress of each faculty member. The Molecular Biology Program has been recognized as a Center of Excellence at the CU Anschutz Medical Campus, and was honored to receive a ~\$2M private endowment, the Victor and Earleen Bolie Scholarship Fund, to support student education, research and training. Along with this funding opportunity, the program continues to be funded by a highly competitive NIH pre-doctoral T32 training grant, currently in year 19. Our students also benefit on their own having recently been awarded HHMI pre-doctoral fellowships, along with NSF Graduate Research Fellowships. The program, along with the University, continues in its efforts to increase the number of minority, disabled, and disadvantaged students, with the goal of training them to become important contributors to the biomedical research field and their communities.

Neuroscience (NRSC)

The Neuroscience Program (NSP) was formed in the late 1980s as a PhD graduate training program within the Graduate School, based at that time within the School of Medicine at the University of Colorado. The CU Board of Regents awarded the NSP PhD granting status in 1992. The current NSP Director is **Sukumar Vijayaraghavan, PhD**. The Neuroscience PhD Training Program at the University of Colorado Anschutz Medical Campus provides multidisciplinary training covering the breadth of neurobiology, from neuronal gene regulation to the development, structure, and function of the nervous system. Students receive training in cellular and molecular neurobiology, neural development, neuropharmacology, and biochemistry, as well as hands-on training in a variety of state-of-the-art laboratory techniques. Since 2001, the program has been the recipient of the prestigious Jointly Sponsored Predoctoral Training Program in Neuroscience. This is sponsored by 9 NIH institutes and there are only 28 such awards across the nation. The program's goal is to provide a broad and solid foundation of understanding in neuroscience, and to train critical thinkers who identify important problems, generate experimentally testable hypotheses, and who draw significant conclusions from the results of their ongoing research in a specific area of neuroscience. Students completing the requirements for the Neuroscience PhD will be independent investigators prepared to make important contributions to research and to the education of future generations of neuroscientists. The program is closely allied with other departments at the Anschutz Medical Campus, giving students the opportunity to interact and learn from researchers and teachers of many backgrounds. NSP is also a component of the Center for Neuroscience (CNS), which brings together researchers, physicians, and community members with a common interest in neuroscience to collaborate and share valuable resources.

Pharmacology (PHCL)

The Department of Pharmacology and the Pharmacology PhD Training Program each have a long and well-established history of training biomedical sciences PhD students, medical students, and post-doctoral fellows in the School of Medicine. The NIH funded Pharmacology pre-doctoral Training Grant (T32) is one of the longest standing grants of its type in existence. Students enter the Training Program either directly, or alternatively, via the Biomedical Sciences (umbrella) program, or the Medical Scientist Training Program (MSTP). The Pharmacology Training Program is truly interdisciplinary and interdepartmental with faculty members having primary appointments in a number of departments including Pharmacology, Medicine, Psychiatry, Physiology, Pediatrics, and Biochemistry & Molecular Genetics. Training Program faculty are nationally and internationally renowned in the areas of neuroscience, cancer biology, cardiovascular biology, signal transduction, structural biology, and bioinformatics. One of the key defining features of the Pharmacology Program training faculty is the highly collaborative and interdisciplinary approach to their work. Laboratories, singularly or in collaboration, frequently use multiple parallel approaches including molecular biology, structural biology, genomics, and informatics and cutting-edge methodologies employing high powered imaging techniques including optogenetics. Another defining feature of the program is the focus on personalized medicine and translating fundamental benchtop discoveries to clinical practice.

Rehabilitation Science (RHSC)

Rehabilitation Science is translational field of study that integrates knowledge from the basic and clinical sciences to improve our understanding of human movement, physical function, and disability across the lifespan. Students receive individual mentorship from nationally recognized rehabilitation scientists in state-of-the-art research facilities, with a customized curriculum to meet the unique interests of each student.

Breadth of knowledge is acquired through foundational coursework in research design, biostatistics, and rehabilitation science, whereas depth of knowledge is gained through elective coursework in one of five areas of specialization: applied cellular physiology, exercise and cardiopulmonary physiology, motor control, biomechanics, and lifespan studies. This approach prepares students to become independent research scientists who integrate knowledge from multiple perspectives ranging from the molecular to the systems level to solve complex problems of physical disablement that will advance clinical practice in the field of physical rehabilitation.

Structural Biology and Biochemistry (STBB)

The Structural Biology and Biochemistry Program is interdisciplinary, involving all aspects of biomedical research, particularly in the area of macromolecular structure/function, biophysics, lipidomics, and proteomics. It aims to provide students with specialized skills and a solid foundation in biomedical, biophysical, and structural sciences through course work and research training. To support the research needs of faculty and students of the Structural Biology and Biochemistry Program, the program makes use of six well-developed core facilities, each specializing in an important facet of biomedical research and essential for the advancement of research and training in Structural Biology and Biochemistry. These five core facilities consist of Nuclear Magnetic Resonance spectroscopy (NMR), X-ray crystallography, Mass spectrometry/proteomics, Biophysics, and Peptide/protein chemistry, and the new CryoEM. These facilities are readily accessible to faculty, graduate students, postdoctoral fellows and other research staff, and are supported independently of the Graduate Program. The focus and interdisciplinary nature of the Program in Structural Biology and Biochemistry positively influences many other instructional and research programs at the CU School of Medicine. The program's educational components support the research in many of the laboratories that require knowledge of the highly technical and specialized structural biology research tools, and this enhances the overall effectiveness and quality of the research and overall research productivity of the campus.

2017-2018 Deceased Faculty

Richard Deitrich, PhD
Professor Emeritus
Pharmacology

James Maller, PhD
Professor Emeritus
Pharmacology

John Strain, MD
Professor of Radiology
Chief of Pediatric Radiology Services
Children's Hospital Colorado

Theodore Eickhoff, MD
Professor Emeritus
Medicine

Michael Manco-Johnson, MD
Professor Emeritus
Radiology

Richard Traystman, PhD
Vice Chancellor for Research
Distinguished Professor

Sidney Glassman, PhD, MA
Assistant Clinical Professor
Psychiatry

Van Manh, MD
Sr. Instructor
Psychiatry

Patti Thureen, MD
Professor
Pediatrics

Kathryn Hobbs, MD
Associate Clinical Professor
Medicine

Erich Marchand, MD
Assistant Professor
Neurosurgery, Denver Health

John Voetelink, CRNA
Instructor
Anesthesiology

Jack Humphrey, DO
Assistant Professor
Anesthesiology

Larry G. Seidl, MD
Professor of Medicine
Former Chief of Staff,
Denver VA Medical Center

Jeff Wagener, MD
Professor Emeritus
Pediatrics

Donald. W. King, MD
Professor
Pathology

James Weisfeld-Adams, MD
Assistant Professor
Pediatrics

Our condolences to the families and friends of our former colleagues.

