HEMATOLOGY | ONCOLOGY FELLOWSHIP

INNOVATIVE TRAINING IN CANCER RESEARCH AND CLINICAL CARE

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WELCOME

Thank you for exploring the University of Colorado Hematology/Medical Oncology Fellowship, our program offers the environment and educational resources necessary to help each trainee reach their goals and thrive in their career path. With diverse backgrounds, wide ranging interests, and a passion for educating young hematologists and oncologists, our faculty help to shape our fellows into inquisitive scientists, compassionate skilled physicians, and outstanding teachers. As you learn more about what our program has to offer, we hope you become excited and inspired by the cutting edge advancements in cancer research taking place at the University of Colorado.

Daniel W. Bowles, MD
Program Director
Associate Professor

Brandon McMahon, MD
Associate Program Director
Associate Professor
GOALS

The Hematology/Oncology Fellowship at the University of Colorado Anschutz Medical Campus is designed to train leaders in academic and clinical hematology and oncology. As outstanding clinicians and educators these physicians will participate in research that will move medical science and patient care forward. The rotations are designed to provide trainees with exposure to the breadth of diagnoses within the fields of hematology and oncology, allowing them progressive responsibility in diagnostic and therapeutic plans as their knowledge increases. With careful supervision, trainees will become experts in the procedures unique to these specialties.

To assure life-long learning, trainees will be expected to demonstrate expertise in evidence-based practice based on critical appraisal of the medical literature. All trainees will participate in research, either basic science or clinical. Personal mentorship will reinforce the highest of ethical and professional standards in both the clinical and research setting. Competency-based assessment will insure that trainees leaving our program are prepared for independent, productive careers in their chosen area of expertise.

MISSION

Our mission is to develop the future world-leaders in academic cancer medicine. We aim to accomplish this mission by attracting and educating trainees from diverse medical schools, residencies, and backgrounds who demonstrate outstanding academic, scholarly, and humanistic skills. Furthermore, we will provide individualized training designed to maximize the potential of each fellow to become a leader in research, patient care, service, and the health community. We aim to equip trainees with relevant tools and strategies to promote success in their roles as lifelong learners and teachers.
OBJECTIVES

The University of Colorado Hematology/Oncology Fellowship Program aims to provide an excellent foundation in the clinical practice of medical oncology and hematology based on a comprehensive understanding of hematological and oncologic principles and treatment techniques. Additionally our program provides the opportunity to participate in unique training tracks, including the Clinical Investigator Research Track, the Laboratory Based Research Track, the Clinical Excellence and Quality Improvement Track, or the Bone Marrow Transplantation Track.

You will discover that our fellowship fosters a multidisciplinary approach to cancer and blood-disease care through participation in disease site-oriented training with experienced specialists in hematology, medical oncology, surgical oncology, pathology, radiation oncology, and radiology. We strive to introduce our fellows to collaborative clinical and research opportunities through interaction with our closely associated affiliates; the University of Colorado Hospital, University of Colorado Cancer Center, Rocky Mountain Regional Veterans Affairs Medical Center, and Denver Health Medical Center.

CURRICULUM

YEAR ONE is focused on intense clinical training in both hematology and oncology and is largely an inpatient-based experience on hematology and oncology consult services. Trainees divide their time in three-month blocks at the University of Colorado Hospital (UCH), Denver Health, and the VA. UCH blocks are divided into solid tumor oncology, benign hematology, and malignant hematology. Fellows learn the science of the diagnosis and treatment of hematologic and oncologic diseases, the art of consultation, and the skills necessary to care for patients with these problems. This inpatient training is complemented by a weekly outpatient continuity clinic and subspecialty clinic experiences. Elective time during the first year allows for additional exposure to disease-specific subspecialty clinics and the opportunity to work with leading faculty in areas of solid tumor oncology, hematologic
malignancies, benign hematology, and radiation oncology.

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<th>JULY</th>
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<td>DH</td>
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DH........DENVER HEALTH HEMATOLOGY AND ONCOLOGY CONSULTS  
BMT........BONE MARROW TRANSPLANT & HEME MALIGNANCY SERVICE  
HEME......UNIVERSITY HOSPITAL BENIGN HEMATOLOGY CONSULTS  
VA.........VA HEMATOLOGY AND ONCOLOGY CONSULTS  
ONC........UNIVERSITY HOSPITAL SOLID TUMOR CONSULTS

YEARS TWO comprises of training according to the selected track for each fellow in addition to additional clinical and research training for all fellows. Those fellows anticipating a career in academic clinical research will team with a mentor to grow their clinical research skills in the clinical research track. Fellows who desire a laboratory-based career will enter the lab research track and focus on developing the skills needed for an independent lab career. Fellows interested in a career in clinical practice will focus on clinical training through the clinical excellence and quality improvement track. Required clinical time in the second year includes one month each of benign hematology consults, medical oncology consults, and bone marrow transplant unit at UCH. Clinical research and laboratory-based research opportunities are plentiful, and fellows are required to participate.

YEARS THREE is devoted to completion of the research training for those in the research tracks and to broadening the clinical experience of those in the clinical track.

CLINICAL EXPERIENCE

Outpatient clinical experience during the first year involves a weekly general oncology and hematology clinic at either the VA or Denver Health to allow fellows continuity and autonomy with a panel of patients. A second weekly clinic during the first year varies according to rotation site with an additional general oncology and hematology clinic during the VA block, a breast cancer clinic during the Denver Health block, and University subspecialty
clinic time during the two blocks at UCH, selected according to interests and educational goals. Clinic experience during the remaining fellowship training years involves at least one weekly continuity clinic and additional subspecialty clinics coordinated according to the fellow’s training track and area of interest.

**EDUCATION**

In addition to bedside teaching on inpatient services and in clinics, three hours per week are dedicated to educational conferences for fellows. Conferences include didactic presentations from experts on various hematology and oncology topics as well as journal club, grand rounds, and morbidity and mortality discussions presented by the fellows. Discussions of interesting patient cases during this conference time provide an open format to explore challenging clinical issues with faculty and other fellows.

Since 2016 the Fellowship has offered one second year fellow the opportunity to earn a fully funded Master of Science in Clinical Sciences to enhance their research career. Through didactic course work and a mentored research project, fellows will gain a strong foundation in computational and statistical tools, clinical epidemiology, clinical research study design, health services and outcomes research, and biomedical ethics.

**BENEFITS**

The following benefits are available to residents and fellows through UNIVERSITY OF COLORADO SCHOOL OF MEDICINE GME:

- CU GME Health Plan
- CU GME Dental Plan
- Vision Plan
- Paid Leave
- Long Term Disability
- Life Insurance
- Retirement Savings Plan
- Flexible Spending Accounts
- Professional Liability Coverage
- Workers Compensation
- Benefits for Exiting Residents
- Financial Wellness Services
COLORADO FAST FACTS

- Colorado is one of the **TOP TEN** fastest growing states!
- Boulder, CO was #1 on the US News and World Report list of best places to live in the USA!
  - Colorado Springs ranked 6th and Denver ranked 14th
- Denver has the most **MICROBREWERIES** per capita!
- Colorado is home to **54** 14,000 ft. mountain peaks!
- Colorado is the nation’s second-most highly educated state, **51%** of residents have a bachelor’s degree or higher.

According to the CDC, Colorado is the **SLIMMEST & FITTEST** state in America!

- The **TOP SKI RESORTS** in the nation are just under a two-hour drive from Denver including Vail, Beaver Creek, Breckenridge, Keystone and Copper Mountain.
- Denver is home to many professional sports teams including the Colorado Rockies, Denver Broncos, Colorado Avalanche, and Denver Nuggets!

UNIVERSITY OF COLORADO CANCER CENTER

**THE UNIVERSITY OF COLORADO CANCER CENTER** is Colorado’s only National Cancer Institute-designated Consortium Comprehensive Cancer Center (NCI-CCC). The center is a consortium of three state universities, including the University of Colorado Boulder, University of Colorado Denver, Colorado State University, and six institutions: University of Colorado Health, a network comprised of University of Colorado Hospital, Poudre...
Valley Hospital, Medical Center of the Rockies and Memorial Hospital; Children’s Hospital Colorado; Denver Health, Clinical Excellence and Quality Improvement Track, Kaiser Permanente Colorado, and National Jewish Health.

University of Colorado Hospital (UCH) is the primary adult teaching hospital and is also where the majority of CU Cancer Center clinical care is delivered and clinical research is conducted. Both UCH and the CU Cancer Center have been nationally recognized for outstanding research, patient care, adult specialties, and overall performance on several occasions. A few examples include:

<table>
<thead>
<tr>
<th>Year</th>
<th>Recognition</th>
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<tbody>
<tr>
<td>2021</td>
<td>#1 Regionally Ranked Hospital in Colorado</td>
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<tr>
<td>2021</td>
<td>#1 Regionally Ranked Hospital in Denver</td>
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<tr>
<td>2021</td>
<td>8 Nationally Ranked Adult Specialties</td>
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<tr>
<td>2021</td>
<td>High Performing in 3 Adult Specialties</td>
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<tr>
<td>2021</td>
<td>High Performing in 15 Procedures/Conditions</td>
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<tr>
<td>2020</td>
<td>#1 Regional Rank in Colorado</td>
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<tr>
<td>2020</td>
<td>#1 Regional Rank in Denver</td>
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<tr>
<td>2020</td>
<td>9 Nationally Ranked Adult Specialties Including Cancer</td>
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In 2013 the University of Colorado Cancer Center was elected as a member of the National Comprehensive Cancer Network (NCCN) and over the past six years has gone from unranked to a top 50 cancer center. In February 2015 the CU Cancer Center joined the Oncology Research Information Exchange Network (ORIEN), a unique research partnership among top U.S. cancer centers that is designed to facilitate discoveries in precision medicine by CU scientists.

The University of Colorado Cancer Center is committed to transforming cancer research and practice in the state of Colorado by creating an integrated interdisciplinary nexus of clinicians and scientists across our statewide consortium that can leverage, synergize, marshal, and focus resources and expertise to discover new ways to prevent and treat cancer.
CANCER CENTER FACTS AND FIGURES

271 Full & Mentored Members

1,960 Clinical Trial Accruals

668 Cancer Publications

$7.42M Annual Cancer Research Funding

17,180 New Patients

$17.7M Annual NCI Research Funding

>170,000 Annual Visits

$178M Investment in Cancer Research Since 2005

6 SITES
- University of Colorado Hospital
- University of Colorado Denver | Anschutz
- University of Colorado Boulder
- VA Eastern CO Health Care System
- Colorado State University
- Children’s Hospital Colorado

4 SCIENTIFIC PROGRAMS
- Cancer Prevention and Control
- Developmental Therapeutics
- Molecular and Cellular Oncology
- Tumor Host Interactions

13 SHARED RESOURCES
- Animal Imaging
- Biostatistics and Bioinformatics
- Drug Discovery and Development
- Cell Technologies
- Flow Cytometry
- Functional Genomics
- Genomics
- Mass Spectrometry
- Human Immune Monitoring
- Pharmacology
- Population Health Sciences
- Structural Biology
- Pathology
DIVISION OF MEDICAL ONCOLOGY

Through innovative collaborations both within the division and institution, and with other institutions globally our faculty have become nationally and internationally recognized for their work in cancer research. In addition to vigorous clinical trials activity and industry collaborations, the Division of Medical Oncology has seen a 62% increase in peer-reviewed funding over the past fiscal year.

Our research and patient care programs are listed below, for a complete listing of all Medical Oncology Faculty and Research Labs please visit our RESEARCH PAGE.

- Breast Cancer Program
- Cutaneous Cancer Program
- Developmental Therapeutics
- Immunotherapy Program
- Sarcoma Program
- Gastrointestinal Cancer Program
- Genetic Counseling
- Genitourinary Cancer Program
- Head and Neck Cancer Program
- Lung Cancer Program

DIVISION OF HEMATOLOGY

The Division of Hematology at the University of Colorado boasts the largest collection of blood disease experts in the Rockies. In 2020 we had 2,460 new diagnoses or referrals, 157 blood and marrow transplants, 27 patients with CAR T-Cells, 712 new patients involved in research, and 82 patients on Clinical Trials.

Our researchers are recognized for their outstanding and compassionate care and are on the cutting edge of research and treatments in blood cancers and our division is top 10 in the US and best in the rocky mountain region for stem cell transplant outcomes.

Our research and patient care programs include the Blood Cancer & BMT Program and the General Hematology Program. For additional program information and a complete listing of all General Hematology and Blood Cancer & BMT Program Faculty please visit our WEBSITE.
One of the objectives of the Hematology/Oncology Fellowship at the University of Colorado is to introduce collaborative clinical and research opportunities through interaction with our closely associated affiliates, The Rocky Mountain Regional Veterans Affairs Medical Center (RMR VAMC) and Denver Health Medical Center (DH).

The Denver Health Medical Center has been serving the Denver community for 158 years and as Colorado’s primary safety-net institution, has provided billions of dollars in uncompensated care. Denver Health serves as a model for other safety net institutions across the nation. Please see below for a complete listing of Hematology/Oncology Faculty at Denver Health Medical Center.

<table>
<thead>
<tr>
<th>FACULTY</th>
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<tbody>
<tr>
<td>Sonia Okuyama, MD</td>
<td>Associate Professor of Medicine</td>
</tr>
<tr>
<td>Michael McLaughlin, MD</td>
<td>Associate Professor of Medicine</td>
</tr>
<tr>
<td>Sandhya Sharma, MD</td>
<td>Assistant Professor of Medicine</td>
</tr>
<tr>
<td>Heather West, MD</td>
<td>Assistant Professor of Medicine</td>
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The Rocky Mountain Regional Veterans Affairs Medical Center recently opened the doors to its new state of the art campus of approximately 1.2 million square feet on 31 acres. Through a unique combination of medical center-based and local community-focused medicine, the RMR VAMC has been able to provide innovative and leading-edge care to veterans through the region. Please see below for a complete listing of Hematology/Oncology Faculty at the RMR VAMC.

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<thead>
<tr>
<th>FACULTY</th>
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<tr>
<td>Catherine Klein, MD</td>
<td>Professor of Medicine</td>
</tr>
<tr>
<td>Daniel Bowles, MD</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>Maria Amaya, MD, PhD</td>
<td>Instructor</td>
</tr>
<tr>
<td>Christopher Geiger, MD</td>
<td>Assistant Professor of Medicine</td>
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<tr>
<td>Jessica McDermott, MD</td>
<td>Assistant Professor of Medicine</td>
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<tr>
<td>Christiane Thienelt, MD</td>
<td>Associate Professor of Medicine</td>
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WHERE ARE THEY NOW

Over the last five years roughly 50% of fellows have gone on to have a career in academics and 50% have gone into community practice, often affiliated with academic centers.

CLASS OF 2021
- Faculty | University of Colorado
- Academic Community Practice | Hawaii
- Community Practice | Colorado
- Community Practice | Colorado

CLASS OF 2020
- Community Practice | Colorado
- Academic Community Practice | Pennsylvania
- Faculty | University of Colorado School of Medicine/Rocky Mountain Regional VAMC
- Faculty | University of Colorado School of Medicine

CLASS OF 2019
- Community Practice | Idaho
- Community Practice | North Carolina
- Community Practice | New York
- Community Practice | Utah

CLASS OF 2018
- Faculty | University of Colorado School of Medicine
- Faculty | University of Colorado School of Medicine
- Faculty | Virginia Commonwealth University
- Community Practice | New Mexico

CLASS OF 2017
- Community Practice | Georgia
- Community Practice | Oregon
- Faculty | University of California; San Francisco