

UC San Diego

Pulmonary & Critical Care
Medicine Fellowship

2021



Welcome to UC San Diego!



Agenda



- **CPC**
- **Fellowship Program Overview**
 - Vision for the PCCSM Division
 - Jess Mandel, MD
 - Clinical Experience
 - Education model
 - Research & Scholarship at UCSD
- **Interviews / Fellow Breakout Session**
- **Wrap-up**

UC San Diego Pulmonary & Critical Care Medicine Fellowship Program

Program Overview
2021



Fellowship Program Mission

Provide a well-rounded, individualized training experience that will prepare each fellow for a career in pulmonary, critical care & sleep medicine through excellence and expertise in the areas of:

- Clinical Experience
- Education
- Research



PULMONARY AND CRITICAL CARE MEDICINE FELLOWS 2021 – 2022

1st Year



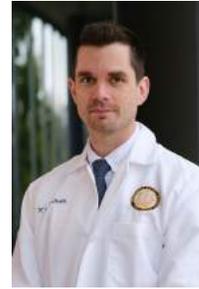
Anna Astashchanka



Aaron Birch



Alex Cypro



Rocky Fox



Nick Hogan



Alisha Kabadi

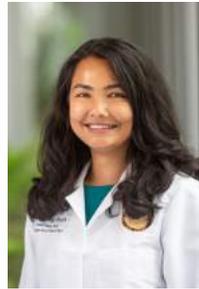


Nick Leverone

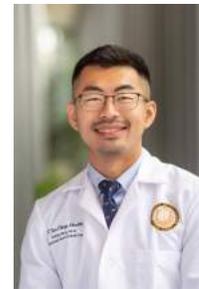


Alyssa Self

2nd Year



Brinda Desai



Allen Jiang



Kelsey Luoma



Eric Mlodzinski



Grant Senyei



Lauren Sullivan

3rd Year



Jacob Bailey



Laura Barnes



Daniel Bond



Sean DeWolf



Cameron McGuire



Alex Pearce



Michelle Zhang

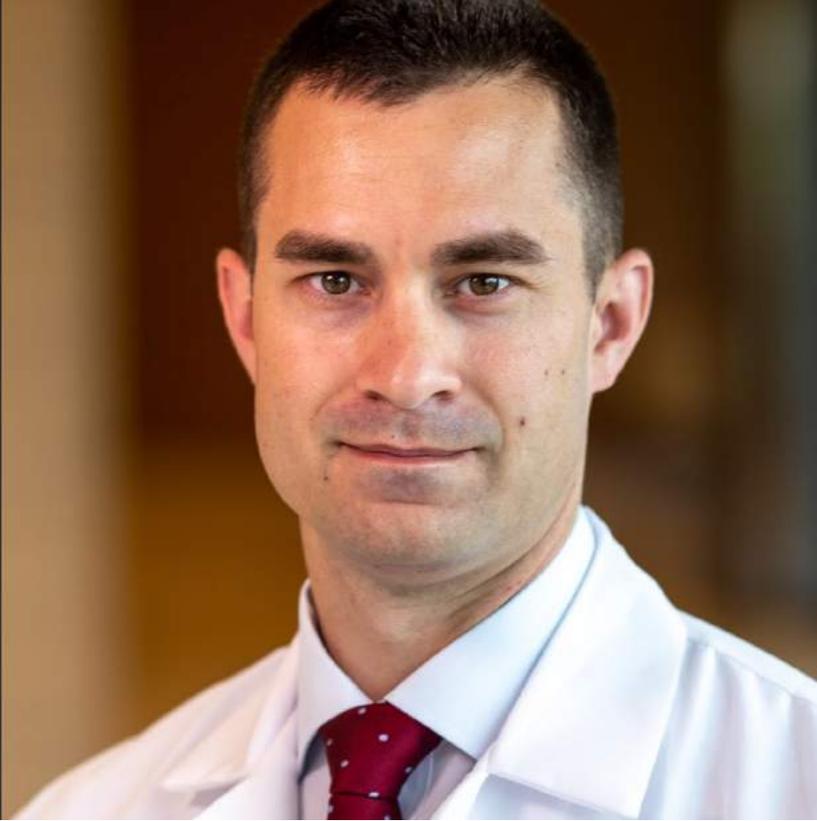
UC San Diego
SCHOOL OF MEDICINE



UCSD PCCM FELLOWSHIP PROGRAM LEADERSHIP

- Program Director:
Daniel Crouch, M.D.
- Associate Program Director:
Bernie Sunwoo, M.D.
- Program Administrator:
Judy Davis

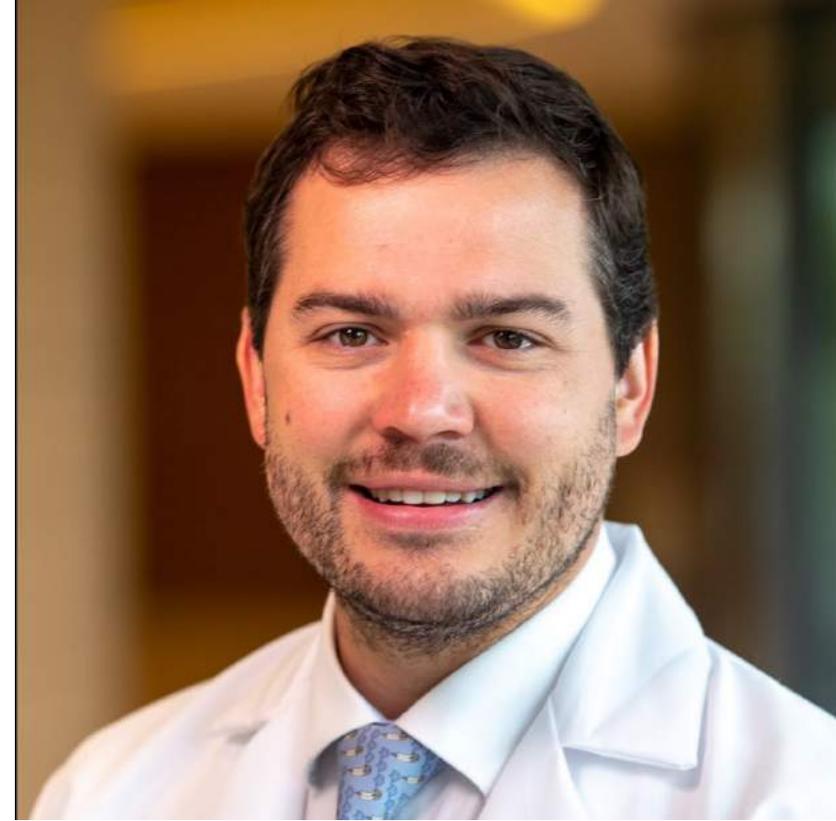




Dan Bond, M.D.



Alex Pearce, M.D.



Cameron McGuire, M.D.

2021-22 PCCM Chief
Fellows





UCSD PCCM FELLOWSHIP PROGRAM LEADERSHIP

Fellowship Research Council (FRC)

- Praveen Akuthota, M.D.
- Laura Crotty-Alexander, M.D.
- Mark Fuster, M.D.
- Mark Hepokoski, M.D.





UC SAN DIEGO
PULMONARY, CRITICAL CARE & SLEEP MEDICINE

Division Leadership

Jess Mandel, M.D.

Division Chief

Kim Kerr, M.D.

Vice Chief

Atul Malhotra, M.D.

Vice Chief of Research

Laura Crotty-Alexander, M.D.

VA Section Chief





ZEA BOROK, M.D.

*CHAIR OF THE DEPARTMENT OF
MEDICINE AT UC SAN DIEGO
SCHOOL OF MEDICINE*



Jess Mandel, M.D.

Kenneth M. Moser Professor of Medicine
Chief, Division of Pulmonary, Critical Care, and Sleep Medicine
Vice-Chair for Education, Department of Medicine



The UCSD Pulmonary Division

- UCSD School of Medicine launched in 1968 and quickly became a top institution
- The PCCM division, run by Dr. Ken Moser 1968-1997, has always been ranked among the nation's top
- "Participating in academic medicine and research is like being a member of a relay team engaged in a race of infinite length. Two forces keep one running through the often difficult terrain: the goal of improving health, and the privilege of passing the baton to many others who will seek that same goal."



Kenneth Moser, 68, Developer Of Method to Remove Lung Clots

By WOLFGANG SAXON

Dr. Kenneth Miles Moser, a lung specialist who devised an intricate procedure for the surgical removal of rare but deadly blood clots from the arteries of the lung, died on Monday at his home in San Diego. He was 68.

He suffered a brief illness, said the University of California at San Diego Medical Center, where Dr. Moser founded and directed the division of pulmonary and critical care.

Dr. Moser's expertise centered on pulmonary medicine and vascular disease in particular.

The technique he pioneered, called pulmonary thromboendarterectomy, made the San Diego Medical Center a destination for patients and lung specialists from around the world. Dr. Moser was not a surgeon himself.

He directed a staff of surgeons who performed the operation 855 times since 1970. He also developed some of the instruments used by the surgeons on his team.

He was a professor of medicine and director of the Pulmonary Specialized Center of Research at the university. His research focused on

such matters as pulmonary and cardiac physiology, blood coagulation and the nature and treatment of clots that develop in blood vessels.

He proposed the pulmonary thromboendarterectomy procedure in 1961 while on the staff of Georgetown University Hospital in Washington when there was no surgical treatment for lung clots. It is a highly complex and delicate operation that can last for more than eight hours, but its success made the clotting condition curable and death from it less of a threat.

Kenneth Moser, a Baltimore native, graduated from Haverford College and Johns Hopkins University Medical School. He taught at Georgetown and headed the pulmonary division at its University Hospital before moving to San Diego in 1968.

Dr. Moser is survived by his wife, Sara; three daughters, Dr. Kathleen Moser, of Poway, Calif., Diana Moser, of San Diego, and Margot Richters, of Rockville, Md.; a son, Gregory, also of San Diego; a sister, Joan Goeringer, of Bethesda, Md.; a brother, Robert, of Chama, N.M.; and six grandchildren.

What Are Our Goals for the Fellows?

- Build an outstanding foundation of PCCM clinical knowledge and skills
- Establish a sophisticated scientific orientation and the necessary skills for scholarly success
- Do the above:
 - in a kind, professional, and rewarding environment with world-class colleagues
 - In a quantity and of a quality sufficient to launch your career on a very high trajectory in the direction of your choice





Extensive work with safety net hospitals in Tijuana and Mexicali during COVID-19 pandemic

Cross-border Collaboration





Equity, Diversity, and Inclusion

Raise the collective consciousness of the members of the UCSD PCCSM Division regarding topics of equity, diversity and inclusion, by developing tools to achieve that goal and fostering an environment where diversity can thrive and individuals are treated fairly.

PCCSM Committee on EDI Committee on Equity, Diversity, and Inclusion

Co-Chairs: Dr. Laura Crotty-Alexander & Dr. Angela Wang

- Curriculum development
- Organizational involvement
 - San Diego Lung Ladies
 - Anti-Racism Task Force
- Institutional involvement
 - Jacob Bailey – Health Equity & Holistic Review
 - Brinda Desai – Equity in basic science
- Community/International involvement, serving the underserved: Tijuana General
 - U/S education
 - Possible future ICU involvement
- Health disparities research
 - Asthma, sleep, ICU resource allocation, etc.



Clinical Experience

Year One

- ~10 months core clinical rotations
- Pulmonary Physiology
- Airway-OR rotation
- Career Development
- Continuity Clinic
- 4 weeks vacation

Year Two

- ~8 months core clinical rotations
- NCCM & ACCM Rotations
- Sleep & Outpatient pulmonary
- Airway-OR rotation
- Elective time
- Career Development
- Continuity Clinic
- 4 weeks vacation

Year Three

- **1-year Research**
- Continuity Clinic
- 4 weeks vacation

- ***Rotate through 3 main hospitals***

- **Pulmonary rotations**
 - ~ 5 months/year (1st & 2nd year)
- **Critical Care rotations**
 - ~ 5 months/year (1st & 2nd year)

- **Research**
 - 1-year (3rd year)



Clinical Experience

Sample 1st year schedule

- **Inpatient rotations**

- **Critical Care**

- Jacobs ICU (6 weeks days, 4 weeks nights)
- Hillcrest ICU
- VA ICU

- **Pulmonary**

- Lung Transplant Service
- Jacobs pulmonary/CF consults
- VA Consults
- Hillcrest pulmonary consults

- **Combined Pulmonary & Critical Care**

- Pulmonary vascular service
- Anesthesia – OR Airway Rotation (2 weeks)

- **Outpatient**

- Continuity Clinic (weekly)
- Pulmonary physiology (2 weeks)

- **Career Development**

- 4 weeks

- **Vacation**

- 4 weeks



UCSD

Jacobs Medical Center

- **Jacobs Medical Center (2016)**

- 245 beds
- 36 ICU beds
 - Medical, Surgical, & Neuro ICU
 - ECMO
- Oncology/BMT
- Women & Infants Hospital

- **Sulpizio Cardiovascular Center (2011)**

- 54 beds
- 12 bed ICU
 - Pulmonary Vascular, Heart/Lung transplant, LVAD/RVAD, ECMO
- 15 bed CCU

- **Thornton Hospital (1993)**

- 119 beds
 - Cystic Fibrosis
- 12 bed ICU



Jacobs ICU Service

Jacobs Medical Center

- **12-hour shifts**
- ***Fellows primary managers of ICU***
 - Take first call, write notes, admit patients, etc.
 - Code Blue Team Leader
 - Do all procedures and airways
 - Nurse led rounds



- **ICU Consults**

- **Day Team Structure**

- 2 PCCM Attendings
- 2 PCCM Fellows
- Full time ICU NPs
- Other housestaff
 - EM Resident rotation (Upper levels)
 - IM/Visiting Residents (Upper level)
 - Medical Students



- **Jacobs ICU Night Fellow (JNF)**

- In-house night coverage (Fellow & Attending)
- Cover ICU, pulmonary vascular, & lung transplant services
- Do all procedures and airways
- ~ 4 weeks of nights in 1st and 2nd years



Pulmonary Vascular Medicine

Jacobs Medical Center

- **Pulmonary Thromboendarterectomy (PTE) Program**

- Attending, Fellow, & NPs
- Participate in initial patient evaluation through hospital stay for surgery
- Outpatient PTE clinic
- **Primary management of post-operative PTE patients in the ICU**
- PTE NPs assist with care of non-ICU PTE patients
- Pulmonary balloon angioplasty

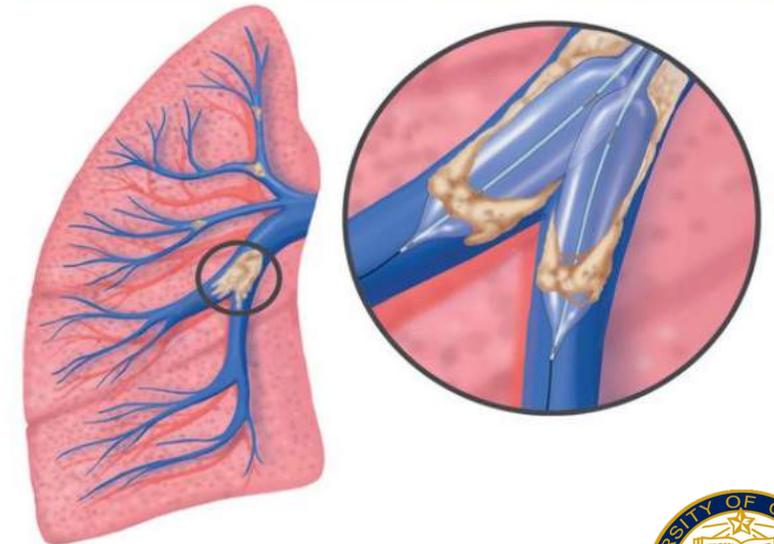


- **Pulmonary Arterial Hypertension**

- **Primary manager of pulmonary arterial hypertension patients.**
- Pulmonary arterial hypertension clinic
- Right heart catheterizations
- Patients on IV pulmonary vasodilator therapy



Balloon Pulmonary Angioplasty



Lung Transplant Service

Jacobs Medical Center



After more than 50 days on advanced life support, a multi-disciplinary team at UC San Diego Health helps patient who contracted COVID-19 become candidate for a successful double lung transplant – the region's first.

Fellow + attending team

- Transplant Pharmacist

Lung Transplant Service

- Post-lung transplant patients
- Some pre-lung transplant patients
- Participation in Transplant selection meeting
- Primary/Consult service



Pulmonary Consult Service

Jacobs Medical Center

- **Fellow + attending team**
 - Rotating residents & medical students
- **Consult service**
- **Cystic Fibrosis**
 - Adult Cystic Fibrosis patients
 - Consult service
- **Procedure Service**
 - Bronchoscopy
 - Thoracentesis
 - Chest tubes
 - EBUS
- **Prominent immunocompromised patient population**



Interventional Pulmonary Service

Jacobs Medical Center

- **Fellow, Attending, NP team**
- **2nd & 3rd year fellows**
- **Inpatient consult service**
- **Outpatient service**
- **Operating Room Experience**

Airway Disease

- Flexible Bronchoscopy
- EBUS
- Navigational bronchoscopy
- Cryobiopsy
- Rigid bronchoscopy
 - Airway stents
 - Endobronchial valves
- Percutaneous tracheostomy
- Robotic Bronchoscopy Program

Pleural Disease

- Thoracentesis
- Chest tubes
- Indwelling pleural catheters
- Pleuroscopy



UCSD Medical Center

Hillcrest Hospital

- **386 bed facility (1972)**
 - 13 bed Medical ICU beds
 - 20 bed Surgical ICU
 - 8 bed Burn ICU
- **Tertiary referrals**
 - **Interventional pulmonary**
 - HIV medicine
 - Hyperbaric center
 - Cirrhotic population
 - Homeless population
 - Large immigrant population
- **Regional Trauma / Burn Center**
- **“County Hospital” equivalent**



Hillcrest Hospital

Core Rotations



- **Hillcrest Medical ICU**

- *Traditional IM resident coverage model*
- Fellow has manager/educator role
- ICU Consults
- 12-hour shifts
- In-house attending coverage overnight

- **Hillcrest Pulmonary Consult/Bronchoscopy**

- Interventional Pulmonary
- Pulmonary consults
- ICU bronchoscopies
- Chest Tumor Board





VA San Diego Healthcare System

- 336 bed facility
 - 18 bed ICU
 - 14 bed Direct Observation Unit (Step-down unit)
- Weekly tumor board
 - Pulmonary fellow run conference
- Complex disease management
- Spinal Cord Injury Unit
- Large referral base
 - (South of L.A. & West of Las Vegas)



VA Medical Center

Core Rotations

- **VA ICU**

- *Traditional IM resident coverage model*
- Share house staff with cardiology service
- Fellow has manager/educator role
- Read PFTs
- Home call at night
- OR Airway Management opportunity

- **VA Consults/Bronchoscopy**

- Pulmonary Consults
- Procedures (Outpatient & inpatient)
- **Lead weekly tumor board**
- Manage pulmonary nodule list
- Outpatient visits and calls



Continuity Clinic

- Alternate Continuity Clinic site weekly
- **UCSD Continuity Clinic**
 - Assigned to 1 of 2 UCSD sites:
 - Hillcrest MOS Clinic
 - Chancellors Park Clinic (La Jolla)



- **VA Continuity Clinic**



No continuity clinic during night float or Jacobs ICU (UCSD clinic).



Elective Rotations

- **Cystic Fibrosis**
- **Interventional Pulmonary**
- **Lung Transplantation**
- **Pulmonary Vascular Disease**
- **Sleep Medicine (2 weeks 1st/2nd year)**
- **Thoracic Oncology**
- **Pulmonary Function Testing/Physiology**
- **Pulmonary Rehab**
- Mycobacterial Pulmonary Infections
- Neuromuscular disease
- Asthma/vasculitis
- **Research**
- **Introduction to Anesthesiology**
- Thoracic Radiology
- Burn ICU Service
- **Anesthesia Critical Care Service**
- **Neuro Critical Care Service**
- **Critical Care Ultrasound**
- Trauma ICU
- Medicine Subspecialties
 - ID, Nephrology, Palliative care, Advanced heart failure
- Telemedicine



Education

- Educational conferences
- Clinical teaching
- Fellow as the teacher
- Opportunities for scholarship
- Additional educational & training programs



Conferences

- Wednesday afternoon Conference (1-4pm)
 - **Fellow Pulmonary, Critical Care & Sleep Curriculum**
 - **PCCM Clinical Conference 1**
 - Pulmonary Case Conference/Journal Club
 - Critical Care Case Conference/Journal Club
 - Quality Improvement/M&M Conference
 - Radiology Conference
 - **PCCM Clinical Conference 2**
 - Applied Physiology
 - Research/Career Development Conference
 - U/S Conference
- **VA Case Conference**
- **Interstitial Lung Disease Conference** (PCCM/Radiology/Pathology)
 - **UCSD** – Twice monthly
 - **VA** - Monthly
- **Combined Critical Care Conference**
 - PCCM/ACCM/EM - monthly
- **Pulmonary Grand Rounds**





Additional Conference Opportunities

Specialty Conferences (optional)

- Sleep Medicine Seminar
- PE Conference
- Lung Transplant Conference
- Physiology Conference

- Multi-disciplinary Conferences
 - CTEPH, Lung Transplant, Cystic Fibrosis

Other optional conference opportunities

- ACCM & NCCM Journal Clubs
- Department of Medicine Grand Rounds
- Internal Medicine Conferences
 - Morning report, M&M, afternoon conference



Summer Education Series

Didactics

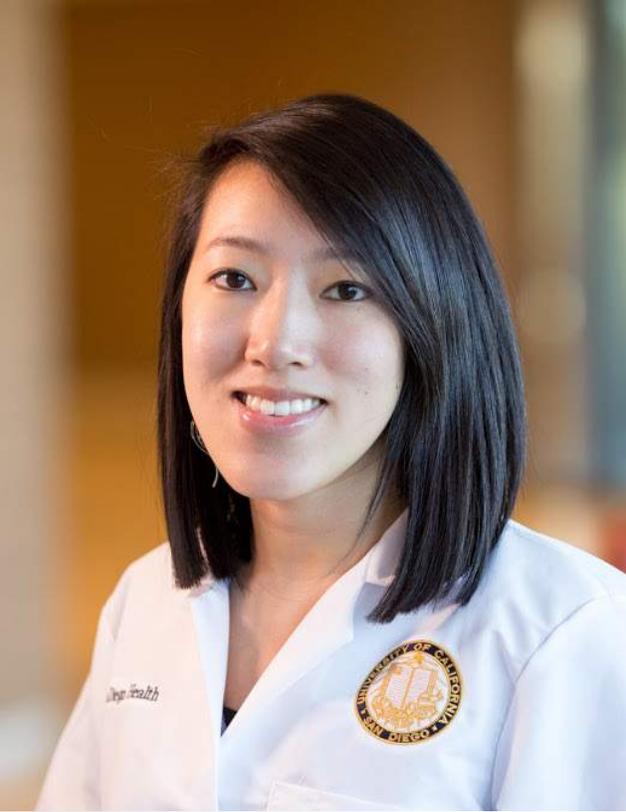
- Intro to chest imaging
- Respiratory failure
- ICU infections and Sepsis
- Hemodynamics
- ILD basics
- Cystic Fibrosis
- Lung Transplant
- COPD/Asthma
- PH and PTE
- Respiratory Physiology (PFTs/CPET)
- Noninvasive ventilation
- Intro to Sleep



Simulation

- PCCM Procedures
- Airway Management
- Mechanical Ventilation
- Critical Care Ultrasound
- Bronchoscopy
- ART (Code Blue) Training





PCCM Clinical Education

- Many faculty members involved in medical education
 - Medical School
 - IM Residency Program
 - Fellowship
- Many awards in clinical education
 - Faculty
 - Fellows
- Medical Education Grand Rounds (Quarterly)
- Opportunities to get more involved



Fellow As Clinician Educator (FACE) Course

Didactic course:

- Weekly summer didactic course during which fellows learn core concepts in teaching and medical education

Experiential learning:

- Fellows complete 2-3 teaching activities between September and June. Each teaching experience will be observed and evaluated by a classmate, who will provide constructive feedback.
- Fellows are strongly encouraged to complete a medical education scholarly project during this time.



Includes all Internal Medicine subspecialty fellowships

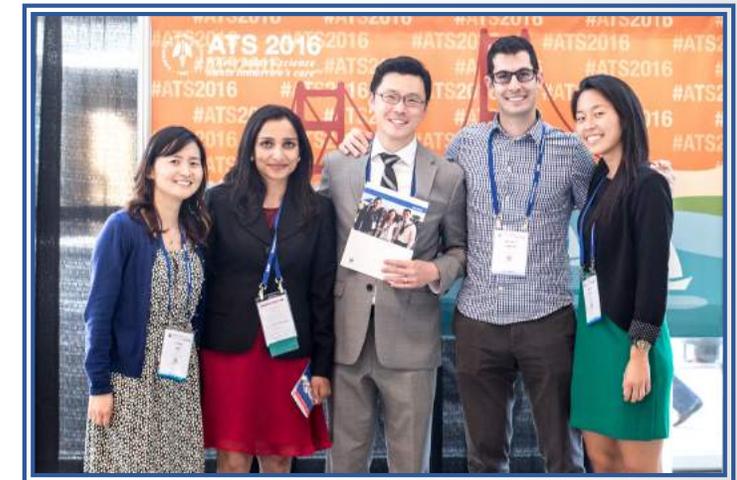
NEW!! Pilot Course August 2021!



Scholarship &
Research

Scholarship in Fellowship

- **Scholarship is fully supported and highly encouraged**
- **Career Development** during 1st and 2nd years
 - Time to establish research project & mentor
- **Career Development/Research Retreats**
 - Fall & Spring
- **Elective time**
- Minimum 1-year **protected research time** during 3rd year





PCCM Fellowship & the Research Environment

- Strong program with Clinical & Translational Research Growth
- Considerable time spent with trainees to identify mentors/career guidance.
- Strong ties to outside divisions:
 - World expertise in Bioengineering, Physiology, Immunology, Vascular Biology, Microbiology, Oncology, etc...

Altman Clinical & Translational
Research Institute



Mentorship



- Faculty with broad collaboration within/outside Division
- Strong emphasis on establishing a mentor for clinician-scientist growth
- Faculty Advisor and co-fellow peer mentorship
- Periodic review of progress: Advisor and Committee review
- Preceptorship and research growth: Data, papers, Postdoc Research Fellowships, CDAs, Ks ...
- Career Development is a life-long process (i.e. Life-long Mentors)



The Research Environment

Department of Medicine & PCCSM at UCSD

August 18, 2021 | By Michelle Franklin

SHARE      

UC San Diego Breaks Record with \$1.54B in Research Funding

For 12th consecutive year, UC San Diego earns over \$1B in funding



- In addition to **CLINICAL GROWTH... RESEARCH GROWTH**
- Campus ranks 7th in Nation in sponsored research:
 - One of Nation's 10 largest science centers in engineering & medicine
- UCSD DOM > \$200M Research Funding
- VA Research Funding – VASDHS among highest-funded in nation
- Additional PCCSM training support – T32 Training Grant
 - Mechanism shared between PCCSM and Division of Physiology

“4th year Fellow”

- T32 Training Grant
- Science-driven trainees, extended training
- Funding: Endowments
 - Additional salary for some clinical effort

Professional/ Academic growth
(i.e. NOT a “perpetual fellow” salary)



Brandon Nokes, MD

2020 ATS Aspire Fellow in Sleep Research

PCCM Clinical/Research Education

Advanced Clinical Training & Degree Programs

- **Clinical Research Enhancement through Supplemental Training (CREST)**
 - Track I: individual classes
 - Track II: Advanced Certificate in Clinical Research (20 units)
 - Averages 2-3 classes(4-6 units)/quarter for 12 months
- **Master in Public Health (MPH)**
 - Through UCSD or San Diego State University
- **Master in Advanced Studies (MAS)**
 - CREST credits can be transferred to MAS Degree
- **Funding:**
 - Merit Scholarships, Postdoctoral Fellowship support, Division Support



PCCSM Extramural Funds

In addition to numerous foundation, private, & other funding sources...

Grants

Praveen Akuthota	UG1 (PrecISE)
Laura Crotty Alexander	R01s, VA MERIT, TRDRP, SPARC
Ellen Breen	TRDRP
Maxim Bhasenov	R01s
Tony Catanzaro	R01s
Doug Conrad	COPDgene, CF Center
Chantal Darquenne	R21, U01
Mark Fuster	VA Merit
Mark Hepokoski	VA CDA2
Mike Hogan	R01
Sue Hopkins	R01
Biren Kamdar	K76
Willis Li	R01
Atul Malhotra	R01 x 4, T32, K24
Omar Mesarwi	K08, ASMF
Brandon Nokes	Sleep Research Society Foundation, ASPIRE
Jeremy Orr	ATS, K23, NRSA
Robert Owens	R01, R21
Frank Powell	R01, T32
Kim Prisk	R01
Tim Rodwell	R01s
Chris Schmickl	ATS, ASPIRE
Tatum Simonson	R01
Pandurangan Vijayanand	R01s
Jason Yuan	R35

Science

asthma, eosinophil biology
 e-cigarettes, asthma
 smoke, pulm hypertension
 computational neuroscience
 Tuberculosis
 CF
 imaging, modeling
 lung cancer, glycobiology
 lung renal interactions, sepsis
 muscle biology
 V/Q, prone positioning
 ICU delirium
 carcinogenesis
 sleep apnea
 sleep apnea
 control of breathing
 ICU delirium, sleep apnea
 control of breathing
 mechanics, gas exchange, imaging
 global health, TB, sepsis
 sleep
 genetics, high altitude
 asthma, lung cancer
 pHTN

Industry... (Examples)

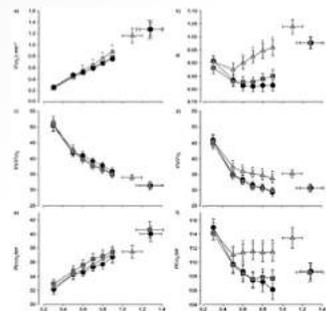
P. Akuthota	GSK
K. Kerr	Bayer
N. Kim	multiple
T. Morris	Bayer, Philips
T. Fernandes	Actelion
D. Poch	multiple
A. Malhotra	multiple
D. Conrad	multiple
P. Montgrain	ResMed
W. ElMaraachli	multiple



Cystic Fibrosis



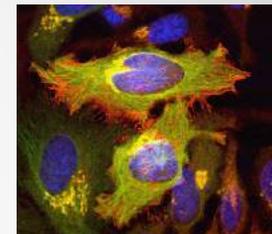
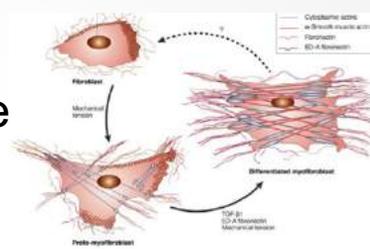
Applied Physiology



Sepsis



Interstitial Lung Disease



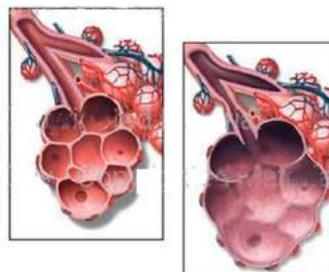
ARDS



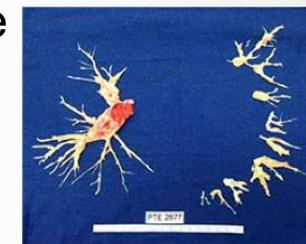
Lung Transplantation

Molecular Tracking & Imaging

COPD

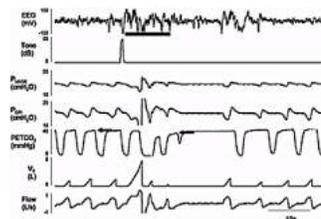


Thromboembolic Disease



Critical Care Outcomes

Sleep & Respiration



PCCSM Research

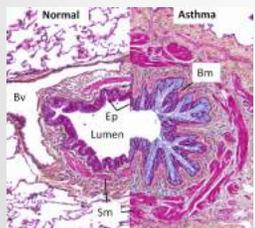
Clinical Education



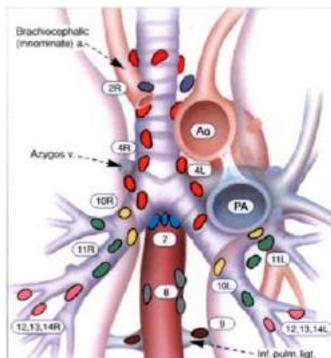
Pulmonary Hypertension

Resuscitation Medicine

Asthma



Tuberculosis & Chronic Lung Infections



Interventional Pulmonary

Lung Cancer



Informatics & Health Outcomes



Following Fellowship Graduation

Class of 2020 and 2021 PCCM Fellowship Program Graduates

Mona Alotaibi, MD	UCSD Faculty - Pulmonary vascular
Jeff Barry, MD	UCSD Faculty – PCCM/Asthma
Amy Bellinghausen, MD	UCSD Faculty – PCCM/Post-ICU care
Ian Joel, MD	Ventura, CA Private Practice
Mazen Odish, MD	UCSD Faculty – PCCM/ECMO
Chris Amann, MD	Navy EM-Critical Care: LA County ER/UCSD CC
Abdur Husain, MD	Baylor Scott & White Faculty; Dallas, TX
Jenny Yang, MD	UCSD Faculty – PCCM/Pulmonary vascular/BPA
Erica Lin, MD	UCSD/VA Faculty – PCCM/Medical Education
Sagar Patel, MD	UCSD Faculty - PCCM
Ken Chen, MD	UCSD Faculty – PCCM/Neuromuscular disease
Brandon Nokes, MD	UCSD 4 th year T32 Fellow
Abhishek Gadre, MD	San Diego, CA Private Practice
Darrell Nettlow, MD	Keesler Air Force Base, Biloxi, MS - PCCM



Benefits

- Housing Stipend
- Meal money
- Education stipend
- Conference stipend
- Moonlighting opportunities
 - Internal & External



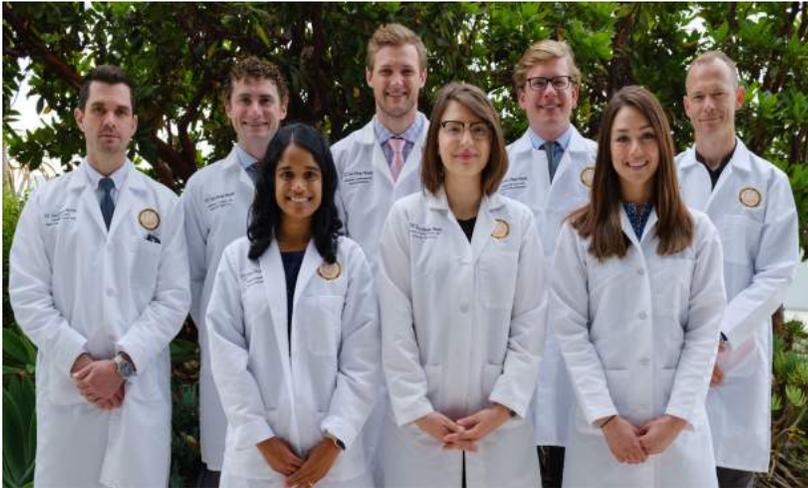


Fellowship Program Mission

Provide a well-rounded, individualized training experience that will prepare each fellow for a career in pulmonary, critical care & sleep medicine through excellence and expertise in the areas of:

- Clinical Experience
- Education
- Research





Thank you
& best of
luck!!

UC San Diego
Pulmonary & Critical Care
Medicine Fellowship