Welcome to UC San Diego!
Agenda

• CPC

• Fellowship Program Overview
  o Vision for the PCCSM Division
    • Jess Mandel, MD
  o Clinical Experience
  o Education model
  o 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
UCSD PCCM
FELLOWSHIP PROGRAM LEADERSHIP

- Program Director: Daniel Crouch, M.D.
- Associate Program Director: Bernie Sunwoo, M.D.
- Program Administrator: Judy Davis
2021-22 PCCM Chief Fellows

Dan Bond, M.D.
Alex Pearce, M.D.
Cameron McGuire, M.D.
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.
ZEA BOROK, M.D.

CHAIR OF THE DEPARTMENT OF MEDICINE AT UC SAN DIEGO SCHOOL OF MEDICINE
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."
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
Cross-border Collaboration

Extensive work with safety net hospitals in Tijuana and Mexicali during COVID-19 pandemic
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**
  o Attending, Fellow, & NPs
  o Participate in initial patient evaluation through hospital stay for surgery
  o Outpatient PTE clinic
  o **Primary management of post-operative PTE patients in the ICU**
  o PTE NPs assist with care of non-ICU PTE patients
  o Pulmonary balloon angioplasty

• **Pulmonary Arterial Hypertension**
  o **Primary manager of pulmonary arterial hypertension patients.**
  o Pulmonary arterial hypertension clinic
  o Right heart catheterizations
  o Patients on IV pulmonary vasodilator therapy
Lung Transplant Service
Jacobs Medical Center

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

Fellow + attending team
- Transplant Pharmacist

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.
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
• 2\textsuperscript{nd} & 3\textsuperscript{rd} 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**
  o *Traditional IM resident coverage model*
  o Fellow has manager/educator role
  o ICU Consults
  o 12-hour shifts
  o In-house attending coverage overnight

• **Hillcrest Pulmonary Consult/Bronchoscopy**
  o Interventional Pulmonary
  o Pulmonary consults
  o ICU bronchoscopies
  o 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
  o Traditional IM resident coverage model
  o Share house staff with cardiology service
  o Fellow has manager/educator role
  o Read PFTs
  o Home call at night
  o OR Airway Management opportunity

• VA Consults/Bronchoscopy
  o Pulmonary Consults
  o Procedures (Outpatient & inpatient)
  o Lead weekly tumor board
  o Manage pulmonary nodule list
  o Outpatient visits and calls
Continuity Clinic

• Alternate Continuity Clinic site weekly

• UCSD Continuity Clinic
  o Assigned to 1 of 2 UCSD sites:
    o Hillcrest MOS Clinic
    o 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
  o Medical School
  o IM Residency Program
  o Fellowship

• Many awards in clinical education
  o Faculty
  o 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.

NEW!! Pilot Course August 2021!
Includes all Internal Medicine subspecialty fellowships
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:
  o World expertise in Bioengineering, Physiology, Immunology, Vascular Biology, Microbiology, Oncology, etc...
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)
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) per 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...

<table>
<thead>
<tr>
<th>Grants</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Praveen Akuthota</td>
<td>asthma, eosinophil biology</td>
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<tr>
<td>Laura Corty Alexander</td>
<td>e-cigarettes, asthma</td>
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<tr>
<td>Ellen Breen</td>
<td>smoke, pulm hypertension</td>
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<tr>
<td>Maxim Blazenov</td>
<td>computational neuroscience</td>
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<tr>
<td>Tony Cotanzaro</td>
<td>Tuberculosis</td>
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<tr>
<td>Doug Conrad</td>
<td>CF</td>
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<tr>
<td>Chantal Darquenne</td>
<td>Imaging, modeling</td>
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<tr>
<td>Mark Fuster</td>
<td>lung cancer, glycobiology</td>
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<tr>
<td>Mark Hephokoski</td>
<td>lung renal interactions, sepsis</td>
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<tr>
<td>Mike Hogan</td>
<td>muscle biology</td>
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<tr>
<td>Sue Hopkins</td>
<td>V/Q, prone positioning</td>
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<tr>
<td>Biren Kamdar</td>
<td>ICU delirium</td>
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<tr>
<td>Willis Li</td>
<td>carcinogenesis</td>
</tr>
<tr>
<td>Atul Malhotra</td>
<td>sleep apnea</td>
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<tr>
<td>Omar Mesarwi</td>
<td>sleep apnea</td>
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<tr>
<td>Brandon Nokes</td>
<td>Sleep Research Society Foundation, ASPIRE</td>
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<tr>
<td>Jeremy Orr</td>
<td>sleep control of breathing</td>
</tr>
<tr>
<td>Robert Owens</td>
<td>ICU delirium, sleep apnea</td>
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<tr>
<td>Frank Powell</td>
<td>mechanics, gas exchange, imaging</td>
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<tr>
<td>Kim Prisk</td>
<td>global health, TB, sepsis</td>
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<tr>
<td>Tim Rodwell</td>
<td>sleep</td>
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<tr>
<td>Chris Schmickl</td>
<td>genetics, high altitude</td>
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<tr>
<td>Tatum Simonson</td>
<td>asthma, lung cancer</td>
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<tr>
<td>Pandurangan Vijayanand</td>
<td>pHTN</td>
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<tr>
<td>Jason Yuan</td>
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</tr>
</tbody>
</table>

**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
### Following Fellowship Graduation

#### Class of 2020 and 2021 PCCM Fellowship Program Graduates

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