Growing the Next Generation of Pediatric Researchers
Our Research Mission

**Improve** the health of children

**Focus on innovation** & the development of new strategies for maintaining health and preventing and curing diseases

**Exploit new discoveries** at all levels of biologic organization, from the molecule to international populations.

Our **bench-bedside-backyard approach** has profound impact on how health care professionals, health policy experts, and society approaches the health of our nation's children.
Outline for Today

• Overview of the opportunities for research development in the department of pediatrics from high school students ➔ Faculty

Growing the next generation of physician & translational scientists

Office of Education
Bridge to K
Office of Research Development
Pediatric Fellowship
Pediatric Residency
Building Communities
Preparing the skilled, creative and diverse pediatric researchers of tomorrow

- High School
- Undergraduate & Postbaccalaureate Education
- Pre-doctoral Training/Clinical Doctorate
- Post-doctoral Training/Clinical Fellowship
- Early Research Career Development
- Investigator Development & Mentoring
In its 2nd year, 30 UIM high school students

Students complete research projects and develop poster presentations

Weekly didactics and near peer mentor program with Stanford undergrad, grad, and medical students

Evaluation: significant increases in intent to pursue career in science and medicine

Currently have >500 in progress applications for summer 2022
Short-Term Research Experience Program from Underrepresented Persons (STEP-UP)

NIH R25 funded for 15 years

325 URM high school students from across the US

Research, didactics, & presentations

All matriculated into college

Evaluation: significant change in knowledge, confidence, and science identity

~95% majored and continued in science or medicine
Stanford Summer Community College Research Program

- In its 3rd year
- 25 URM community college students
- Research, didactics, and presentations
- Matriculated into 4-year universities
Pediatrics Residency Scholarly Concentrations
Since 2012

**Quality and Performance Improvement:** Lauren Destino, MD, Terry Platchek, MD, Nita Srinivas, MD

**Community Engagement & Advocacy (StAT):** Bonnie Halpern-Felsher, PhD, Lisa Chamberlain, MD, MPH, Janine Bruce, DrPH

**Basic & Translational Research:** Trung Pham, MD, PhD, Christin Kuo, MD, Anna Gloyn, DPhil

**Medical Education:** Becky Blankenburg, MD, MPH, Carrie Rassbach, MD, MA Ed, Lynne Huffman, MD, Sarah Hilgenberg, MD

**Clinical Research:** Alan Schroeder, MD, Henry Lee, MS, MD

**Global Health:** Clea Sarnquist, DrPH, Desiree LaBeaud, MD Jenny Kang, MPH, Rasika Behl, MPH
Pediatrics Residency Physician Scientist Training Program (PSTP)

<table>
<thead>
<tr>
<th>Physician Scientist Track</th>
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<tbody>
<tr>
<td><strong>PGY-3</strong></td>
</tr>
<tr>
<td>Siva Kasinathan 22290</td>
</tr>
<tr>
<td>Chioma Madubata 22321</td>
</tr>
<tr>
<td>Jennifer Sequoia 22219</td>
</tr>
<tr>
<td>Ben Solomon 22397</td>
</tr>
<tr>
<td>Eduardo Conte 22069</td>
</tr>
<tr>
<td>Katherine Konvins 22073</td>
</tr>
<tr>
<td>Stephen Trisano 22081</td>
</tr>
<tr>
<td>Amrutha Vellamilli 22082</td>
</tr>
<tr>
<td><strong>PGY-2</strong></td>
</tr>
<tr>
<td>Christopher Arakawa 12072</td>
</tr>
<tr>
<td>Matthew MacDougall 12143</td>
</tr>
<tr>
<td>Mark Ragheb 12196</td>
</tr>
<tr>
<td>Catherine Yao 12240</td>
</tr>
<tr>
<td><strong>PGY-1</strong></td>
</tr>
<tr>
<td>Eva Archer 22008</td>
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<tr>
<td>Hanna Krohtila 12127</td>
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</tbody>
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- Started in 2012
- 4 positions/year
- Applicants: MD/PhDs, MDs
- 49 MD/PhD residents recruited to Stanford Pediatrics Residency Programs over last 11 years (2010-2021)
- 97% pursued subspecialty training in 13 different subspecialties (85% at Stanford)
- 70% enter Academic Medicine as Physician-Scientists
  - 20% Medical Directors of Pharma/Industry
  - 10% Clinical careers
PSTP ABP-Approved Pathways

Integrated Research Pathway (11mos research in residency)

Accelerated Research Pathway (2mos research in residency)

R38 Research Pathway (18mos research in residency)

Physician-Scientists can participate in ANY scholarly concentration
PSTP Recruitment, Mentorship & Support

- PSTP Recruitment Committee
- Dedicated Physician-Scientist Resident Advisor (Zack Sellers, MD, PhD)
- Scholarship Oversight Committees
  - Through SC program, meet every 6 months
- Research Funding
  - Mary Leonard Physician-Scientist Track Research Grants ($10,000)
  - R38 Research Funding ($20,000)
  - Conference Travel Grants ($2,000)
- Fellowship & Beyond:
  - Ongoing support in applying for grants (PSDP, K38, F32, etc.) & Bridge2K Program
<table>
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<tr>
<th>Scholarship Round Robin</th>
<th>Rapid rotations with faculty to learn about different areas of research/scholarship</th>
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<td>Scholarship Academy</td>
<td>1-week intensive program to learn about scholarship, develop projects, and begin thinking about their MCHRI grant</td>
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<tr>
<td>Grant Writing Club</td>
<td>4-month program to help fellows and post-docs write MCHRI grants; mock reviews; help with revisions</td>
</tr>
<tr>
<td>Scholarship Club</td>
<td>~monthly meetings, focused on all-things scholarship and time to “workshop” projects</td>
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</tbody>
</table>
MCHRI’s Master’s Tuition Program

$65,000 to cover tuition and fees for a Master’s program
Support for those planning to pursue a career as a physician scientist, who will spend most of their time, doing NIH funded basic or clinical research related to maternal and child health.
Bridge to K

Early career physician scientists are funded for three years as an Instructor with 75% protected research time.

Monthly career development and peer support meetings.

 Incoming
Adrienne Long  Neha Joshi  Jonathan Reiss  Lea Steffes  Rebecca Dang  David Staudt

Alumni
William Goodyer NIH K08  Ken Sutha  Yair Bennett  Sharon Paige NIH K08  Elizabeth Burgener CFF Harry Shwachman Clinical Investigator Award  Zachary Sellers NIH K08  Bereketeab Haileselassie NIH K99/R00  Trung Pham NIH K08

Current
Jen Iklé NIH K12  Ananta Addala NIH K12  Gregory Goldstein  Sarah Dubner

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Cristina Alvira

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Biosciences Proposal Bootcamp: Structured peer and faculty feedback improves trainees’ proposals and grantsmanship self-efficacy

Crystal M. Botham1*, Shay Brawn2, Latishya Steele3, Cisco B. Barrón3, Sofie R. Kleppner4, Daniel Herschlag5

Consulting Specific Aims documents often answer these 4 key questions:

<table>
<thead>
<tr>
<th>What is the question important?</th>
<th>What is the overall goal?</th>
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</thead>
<tbody>
<tr>
<td>• Better justify – summarizing the importance of the proposal to the mission of the funding agency</td>
<td>• Better justify – relating to the mission of the funding agency</td>
</tr>
<tr>
<td>• Construct knowledge – bringing reviewers up to speed with relevant info</td>
<td>• Construct knowledge – filling the identified gap or need</td>
</tr>
<tr>
<td>• Gap in the knowledge (base or need) – framing what comes before the proposal</td>
<td>• Gap in the knowledge (base or need) – giving best fit prediction</td>
</tr>
<tr>
<td>What specifically will be done?</td>
<td>Pre-service steps – demonstrating feasibility or supporting proof-of-concept</td>
</tr>
<tr>
<td>• Aim 1: Steps – attention getting headlines</td>
<td>What is the expected payoff?</td>
</tr>
<tr>
<td>• Methods headlines – teasing to central hypothesis</td>
<td>• Risk in implementation – giving expected outcomes and expected advancement of the field</td>
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</tbody>
</table>

• Detailed description of proposer or method – accomplishing the aims’ objective

Crystal
Botham
### Congratulations 2021 Pediatric Scientist Development Program Fellows!

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution 1</th>
<th>Institution 2</th>
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</thead>
<tbody>
<tr>
<td>Aaron Bodansky, MD</td>
<td>University of California, San Francisco</td>
<td>Stanford University</td>
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<tr>
<td>Xavier Gaeta, MD, PhD</td>
<td>Stanford University</td>
<td></td>
</tr>
<tr>
<td>Logan Grimes, MD</td>
<td>Children's Hospital of Philadelphia</td>
<td></td>
</tr>
<tr>
<td>Taylor LaFlam, MD, PhD</td>
<td>University of California, San Francisco</td>
<td>Indiana University</td>
</tr>
<tr>
<td>Amalia Lehmann, MD</td>
<td>Cystic Fibrosis Foundation Scholar</td>
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<tr>
<td>Melody Lun, MD, PhD</td>
<td>University of California, San Francisco</td>
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<tr>
<td>Rameshwar Rao, MD, PhD</td>
<td>Stanford University</td>
<td></td>
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<tr>
<td>Ali Reza Rais Sadati, MD, PhD</td>
<td>Stanford University</td>
<td>Burroughs Wellcome Fund Scholar</td>
</tr>
<tr>
<td>Jessica Ruiz, MD</td>
<td>Boston Children's Hospital</td>
<td>Cystic Fibrosis Foundation Scholar</td>
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</table>
Postdocs

• Comprehensive website with resources for postdocs and PIs
• Guidance on Mapping Your Postdoc Journey
• Grant Writing Club & Mock Grant Reviews
• Career Workshops
• Inspiring Speaker Series
• Individual mentoring and support for postdocs and PIs
Grant Writing Training

Tackling Your F32
- Starts in Sept.
- Sub-specialty fellows & Postdocs
- Individual guidance, peer review, & expert feedback

Tackling Your K Award
- Starts in April
- Postdocs & Instructors
- Individual guidance, peer review, & expert feedback

Orit Rapaport

[QR Code]
Peds Research Operations Group

Gary Shaw  Anna Gloyn  Linh Dinh  Mary Chen  John Whitin  Crystal Botham  Michael Propst

Career & Professional Mentorship  Research Administration  Research Personnel Support  Research Development / Grant Writing  Research at All Career Stages

Equipment & Space  Data & Information Systems  Translational Medicine & Clinical Research  Compliance  Research Community
New Peds Lab Space Committee

Chair
Ann Arvin

Co-Chair
Julian Sage

Anna Gloyn
Daniel Bernstein
David Cornfield
Mark Kay
John Whitin
Mike Propst
Connecting to Research Resources

MCHRI

- CRSO (Clinical Research Support Office)
  - [Profiles of team members]

- Services (CRCs, D3, grants, QSU, etc.)
  - [Profiles of team members]

- CER (community-engaged research) New!
  - [Profiles of team members]

- SoM (SADR, CTSA/Spectrum)
  - [Profiles of team members]

TBH
Pre-Award Issues

We heard:

- Support is uneven across faculty
- Junior or new to Stanford faculty need more support
- Admin support needs training
- RPM response delay or mismanagement
- Unclear roles & responsibilities (RMG, PI, Admin)
New Pre-Award expert joined OPRD in Jan. 2022

- Partner with RAs to provide pre-award support to junior faculty (60%)
- Manage complex proposals with Justin Crest (20%)
- Create a community of practice for peer mentorship and training (20%)

Welcome Sarah!
Research Administrator’s Community of Practice

- Includes both Pre- & Post- Award research administrators
- Planning 6+ events annually
  - Networking, NIH Biosketch, Other Support, Meet & Greet with RMG, etc.
- Creating virtual connections through new email list & Slack channel

PCRAFT
- Linh Dinh
- Lexi Amundsen
- Irene Aranya
- Lana Tat

Office of Pediatric Research Development
- Crystal Botham
- Sarah Yeats Patrick

Division Managers
- Mariana Penrose
- Michelle Matsumoto
- Haily Moon

Researchers
- Ashlee Velilla
- Xiaoxia Yao

Planning Committee

Not Pictured:
- Nancy Greguras
- Wilkening
- Rachael Thomas
Research Administrator’s Pre-Award Guidebook

- Partnership with Research Management Group (RMG)
- Guides research administrator through the complexities of pre-award at Stanford
- Standard Operating Procedures, Roles & Responsibilities, etc. clearly outlined

RMG Collaborators:

Sarah Yeats
Patrick
Kathleen Thompson
Margie Corbett
Holly Osborne
Research Community Building.....
Peer Scholarship Communities

A scholarship community with peers in an area of interest

Bimonthly meetings with a Senior Scholarly Mentor to discuss ongoing research

Larger educational meetings with all scholarship communities

Global Health
Medical Education
Clinical Research
Quality Improvement
Community Engagement

Henry Lee
Peds Basic Science Research Club

Catch up on the latest basic science research happening here in the Department of Pediatrics from our very own researchers. Meet colleagues, network and improve your visibility!

4th Tuesdays of the month @ 4-5PM

Want to nominate someone to present or volunteer yourself?
Email me ➔ agloyn@stanford.edu

Tuesday, March 29, 2022
4 - 5 PM

Trung Pham, MD, PhD
Instructor
Pediatrics - Infectious Diseases

Macrophage-mediated Tissue Immunity and Homeostasis During Persistent Bacterial Infection

SCAN ME
Lunch with your Peds Lab Colleagues

March 17th 2022
1.0-2.0pm
1701 Page Mill Road

Research Park Campus

Your local hosts are Zack Sellers & Danny Chou

March 30th 2022
12.30-1.30pm
LKSC Lawn

Main Campus

Your local hosts are Casey Gifford & Kara Davis

Special Guest
Mary Leonard

SCAN ME
Building a Peds Multi-omics Community

Chuck Gawad

Kara Davis

Casey Gifford
Elizabeth Egan
Christin Kuo
Kara Davis

Peds -Omics Interest Group
stanford-ohej.slack.com
Peds Computational Biology Club

Bioinformatics, Multi-omics, Single Cell Omics, Machine Learning, AI, Neural Networks, Systems Biology, Statistical Genetics, Functional Genomics

3rd Monday of the Month
alternating between Campus & Research Park
with guest speakers & hosts
Kicks off on March 21st 3.30-4.30pm
followed by Happy Hour
Location
BMI, Rm 1021

Happy Hour
What basic science research goes on in the department of Peds?
Work in Progress

- More visible presence for Pediatrics **basic science labs**
- Identification of **research themes** across the department
- Identification of common **research approaches**
- Improved **communication** for lab-based personnel
<table>
<thead>
<tr>
<th>Office of Pediatric Research Development</th>
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<tr>
<td><strong>Lead research growth</strong></td>
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<tr>
<td><strong>Train scientists</strong></td>
</tr>
<tr>
<td><strong>Catalyze teams</strong></td>
</tr>
<tr>
<td><strong>Innovate and refine processes</strong></td>
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Crystal Botham, PhD  Orit Rapaport, PhD  Justin Crest, PhD  Sarah Yeats Patrick, MA
Cultivate individuals and teams with the clinical and leadership skills necessary to deliver care and meet the needs of children’s health in the 21st century.

Develop individuals’ research skills that empower them to be leaders and innovators in scholarship that advances children’s health.

Foster a positive learning culture that values diversity, inclusivity, and equity and encourages reflection, respectful discourse, and an authentic appreciation of differences.

Promote a learning community that supports wellbeing through institutional and individual practices.
13TH ANNUAL
PEDIATRICS RESEARCH RETREAT

Faculty Speakers

Alyce Adams, PhD, MPP
Epidemiology, Population Health, and by courtesy Pediatric Endocrinology
Stanford School of Medicine

Bereketeab Haileselassie, MD
Pediatric Critical Care Medicine
Stanford School of Medicine

Maya Mathur, PhD, MS
Pediatrics, Biomedical Informatics, and by courtesy Epidemiology and Population Health
Stanford School of Medicine

Daphne Martschenko, PhD, MPhil
Biomedical Ethics
Stanford School of Medicine

Marva Moxie-Mills, MD
Nephrology
Children’s National

Priya Prahalad, MD
Pediatric Endocrinology
Stanford School of Medicine

Fraser Wright, PhD
Stem Cell Transplantation & Regeneration
Stanford School of Medicine

Visit our website at http://pediatrics.stanford.edu/research-retreat

April 29, 2022
8:00am to 3:00pm
Li Ka Shing Center

Event registration opens in March!