Pediatrics Internship Program at Stanford (PIPS) - Summary 2021

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PIPS Program Overview

• Developed in partnership with SPAARC & OPE
• 5-week program for high school students from diverse backgrounds
• Goals of the program:
  • increasing interest in biological sciences and medicine in high school students
  • helping students to understand how scientific research is performed
  • increasing diversity of students and researchers in the sciences
• Students spend 20 hours per week in the program:
  • 15 hours on a research project
  • 5 hours in curriculum sessions
PIPS Student Summary

111 students applied to the program → 62 students passed round 1 scoring → 31 students accepted offer → 31 students offered admission
Student Demographics

- 72% female
- 85% UIM by race/ethnicity, first generation, low income
- 38% rising juniors, 62% rising seniors
- 79% from public high schools
Faculty Labs Involved *(55 total members)*

Ananta Addala  
Ritu Asija  
Janine Bruce  
Danny Chou  
Tim Cornell  
Kara Davis  
Chuck Gawad  
Anna Gloyn  
Desiree LaBeaud  
Henry Lee  
David Lewis  
Bonnie Maldonado  
Betsy Mellins  
Matt Porteus  
David Stevenson  
Dennis Wall
PIPS Curriculum

- 5 weeks, 6 hours per week
  - Research = 8 hours
  - Field of Science & Medicine = 7 hours
  - College Prep = 4 hours
  - Near Peer Mentor Sessions = 5 hours
  - Other (orientation, poster session) = 4 hours

- Final poster session – all students presented poster on their research to our faculty and staff
PIPS Curriculum
Session Speakers

- Manuel Amieva
- Jonji Barber
- Crystal Botham
- Jesus Cepeiro
- Dean Flesher
- Baraka Floyd
- Shabnam Gaskari
- Iris Gibbs
- Bereketeab Haileselassie
- Bonnie Halpern-Felsher
- Saraswati Kache
- Lauren Lempert
- Mary Leonard
- Bonnie Maldonado
- Raul Montiel-Esparza
- Kathleen Mykytiuk
- Anisha Patel
- Patricia Perez
- Melanie Ramirez
- Karen Ransom
- Sushma Reddy
- Deanna Rosia
- Monica Ruiz
- Kathy Sakamoto
- Christopher Stave
- Ken Sutha
- George Tidmarsh
- Cedric Wilson
- Jessie Wong
- Lahia Yemane
Near Peer Mentors

- 24 Near Peer Mentors
  - 12 Stanford undergraduate students
  - 4 Stanford graduate students
  - 7 Stanford medical students
  - 1 Stanford staff/pre-med

- Format:
  - 2-3 NPMs + 3-4 PIPS students

- 1-hour session/week for 5 weeks

- Topics discussed include:
  - Imposter syndrome
  - Learning to adapt
  - Pathways into college and STEM/medicine
  - Addressing challenges in the research process
PIPS Student Surveys

Entrance & Exit 2021
Career Interest Questionnaire

Part 1 – Interest
1. I would like to have a career in science and/or medicine.
2. My family is interested in the science courses I take.
3. I would enjoy a career in science and/or medicine.
4. My family has encouraged me to study science and/or medicine.

Part 2 – Intent
1. I will make it into a good college and major in an area needed for a career in science and/or medicine.
2. I will graduate with a college degree in a major needed for a career in science and/or medicine.
3. I will have a successful professional career and make substantial scientific contributions.
4. I will get a job in a science or medicine related area.
5. Some day when I tell others about my career, they will respect me for doing scientific work.

Part 3 – Importance
1. A career in science would enable me to work with others in meaningful ways.
2. Scientists make a meaningful difference in the world.
3. Having a career in science would be challenging.
Career Interest Questionnaire

Scale: 1 = Strongly disagree to 5 = Strongly agree; * = p<.001
Career Interest Questionnaire

Scale: 1 = Strongly disagree to 5 = Strongly agree; * = p<.001

[Bar chart showing comparison between entrance and exit for different groups]

- All: 52.17 (Entrance), 55.9 (Exit)
- UIM (Race/Ethnicity): 52.21 (Entrance), 56.36 (Exit)
- Low Income: 51 (Entrance), 56.3 (Exit)
- First Gen: 52.44 (Entrance), 55.5 (Exit)
- Rising Seniors: 51.11 (Entrance), 55.11 (Exit)

Significance levels:
- +3.72*
- +4.14*
- +5.42*
- +3.06*
- +4.00*
Research Knowledge

Scale: 1 = Strongly disagree to 5 = Strongly agree; * = p < .001

- I understand the different types of research: Entrance 3.17, Exit 4.66, +1.49*
- I am able to formulate a research question: Entrance 3.28, Exit 4.9, +1.62*
- I know how to summarize a research project orally: Entrance 3.07, Exit 4.86, +1.79*
- I know how to create a scientific research poster: Entrance 2.52, Exit 4.97, +2.45*
College Processes

Scale: 1 = Strongly disagree to 5 = Strongly agree; * = p<.001

- I know the deadlines for the various steps in the college admission process: Entrance 3.59, Exit 4.69, +1.10*
- I know how to select colleges that are likely to accept me: Entrance 3.48, Exit 4.48, +1.00*
- I know how to complete a college application: Entrance 3.17, Exit 4.52, +1.35*
- I know how to apply for financial aid from colleges: Entrance 2.59, Exit 4.31, +1.72*
Health Careers & Mentors

Scale: 1 = Strongly disagree to 5 = Strongly agree; * = p<.001

- I know the difference between a PhD and an MD.
  - Entrance: 3.48
  - Exit: 4.79
  - Increase: +1.31*

- I know the differences between a physician and other health care providers.
  - Entrance: 3.76
  - Exit: 4.83
  - Increase: +1.07*

- I feel comfortable contacting science and health professionals for career advice.
  - Entrance: 3.66
  - Exit: 4.66
  - Increase: +1.00*

- I know a doctor and/or researcher who looks like me or is from a similar background as me.
  - Entrance: 3.03
  - Exit: 4.21
  - Increase: +1.12*

- I have mentors in medicine and/or science.
  - Entrance: 3.24
  - Exit: 4.93
  - Increase: +1.69*
Curriculum & Research

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<th>Median</th>
<th>Std Dev</th>
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<td>College Prep Sessions</td>
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<td>5.00</td>
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<tr>
<td>Field of Science &amp; Medicine</td>
<td>4.83</td>
<td>5.00</td>
<td>.38</td>
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Please rate your level of satisfaction with your research experience:

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<td>5.00</td>
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Most Impactful Part of PIPS

“The most impactful part of PIPS was getting to meet so many amazing people. The career panels were so inspiring, my peers, my mentors, the admin team my lab--meeting all these people inspired me to pursue research/science/medicine and hearing their stories showed that things are possible. I am so glad I made these connections and I definitely hope to stay in touch with everyone. I really appreciate the guidance and the welcoming community.”

“Everything this program provided has made my path to the medical field more clear and I think the most impactful aspect was being surrounded by medical professionals with a similar background as me. As someone who is of low-income, hearing the stories of my mentors experiencing what I am now is encouraging as I've seen they are now pursuing what I want for my own future.”

“Seeing people that look like me in high positions, women of color with large titles and contributions is a new thing to see for me, but it was so so inspiring.”
Most Impactful Part of PIPS

“The most impactful part was that I felt myself growing as a learner. I noticed the more positive ways that I faced my mistakes during my research, in which I feel I have grown to be more resilient and accepting of my mistakes.”

“The most impactful part of PIPS was getting experience with research. I learned how fun research is and how it's not intimidating or boring. I also got to work closely with people who have the same interest as me such as my near peer mentors, doctors and my fellow peers. I learned so much about different topics and I got to feel like a professional, working on a research project with a doctor. PIPS was very impactful for me, it made me open a door to interests I never thought I had.”
Student Tracking

- We will continue to track students after completing the PIPS program on college acceptance, etc.

- Plan to engage PIPS alumni as Near Peer Mentors for the program and part of curriculum sessions
PIPS Alumni Spotlight

Jasleen Sihota has been accepted into Stanford University's Class of 2026

Jasleen participated in PIPS under mentorship from Ananta Addala

Her group's final poster presentation was on Youth Obesity Increased During COVID-19
PIPS Support Team

Allison Guerin  
Director of Education

Ingrid Garnica  
Education Coordinator

Margaret Murphy  
Postdoc & Student Services Manager

Melanie Ramirez  
OCHE Program Manager

Sarina Tom  
Education Operations Manager
Call for Faculty Applications is Open!

- We are looking for faculty to volunteer to serve as mentors for PIPS students in summer 2022
- Opportunity to contribute to structural change in the Department and to reduce barriers for marginalized students
- Goal to accept another cohort of 30 students for 2022
- In Person internship (pending University guidance)
- Sign Up Form