STARS II Information Session

8/22/23

Sandy Chang, MD/PhD
Associate Dean
Science and QR Education

Professor, Lab Med, Pathology, MBB
STARS II

• Paid independent research (10 hrs/week) entire junior and senior years

• One-on-one guidance from a graduate mentor matched to student’s research area

• Interactions with faculty advisors

• Professional development workshops

• Students receive funding to attend one national/international conference per year to showcase their research

• Social activities

• Students must already be in a Yale lab to be eligible to apply
Class of 2022-2023 STARS II students

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juniors &amp; Seniors</td>
<td>38%</td>
</tr>
<tr>
<td>Female</td>
<td>68%</td>
</tr>
<tr>
<td>Male</td>
<td>32%</td>
</tr>
<tr>
<td>URM</td>
<td>76%</td>
</tr>
<tr>
<td>FGLI</td>
<td>66%</td>
</tr>
<tr>
<td>Financial Aid</td>
<td>100%</td>
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</tbody>
</table>
Class of 2023 STARS II student destinations

Laiba Akhtar: studying Russian in Kazakhstan and then apply to medical school

Faiad Alam: finishing the Yale 5-year MPH program and then applying to medical school

Julia Balch: pursuing a PhD in Molecular Biology at Princeton University

Jay Baptista: pursuing a PhD in Physics at Stanford University

Danielle Castro: pursuing a MPH at Cambridge University on a Paul Mellon Fellowship and then applying to medical school

Cecilia Chak: pursuing a language study program in Japan on a Parker Hwang Fellowship from Yale, then applying to medical school

Peter Choi: taking a gap year and then applying to medical school

Sally Jiang: pursuing a PhD in Astrophysics at Columbia University

Katerina Kargioti: pursuing a PhD in Electrical Engineering at UT Austin

Lynne Kim: taking a gap year and then applying to medical school
Class of 2023 STARS II student destinations

Miriam Kopyto: will be a research assistant in neuropsychiatry at the Broad Institute of Harvard and MIT and then applying to medical school.

Kunsel Kunsel: studying Buddhism in Nepal, eventually opening a school to teach STEM to Nepalese children.

Maxine Mackie: will be a scribe/medical assistant at a dermatology clinic and also applying to medical school.

Jaida Morgan: research fellow at the National Institute of Aging and also applying to medical school.

Joshua Nguyen: working in Product Development at AstraZeneca and then applying to medical school.

Yu Jun Shen: developing drone helicopters at Rotor Inc.
Programming: Mentor Feedback

97% of students were certain that they interacted with their mentor (n= 36 out of 37 responses)

94% of students indicated that their graduate mentor had sufficient time to help them with their needs (n=31 out of 33 responses)

When asked "How were your interactions with your graduate mentor?" students responded as follows:

- 100% of students mentioned positive interactions with their mentors
- ~40% of students expressed that their mentor guided them in the lab as well as helped them with career decisions and professional development
- ~33% of students expressed that their mentor was helpful and supportive
STARS II 2022-2023: Quality of the workshops/activities

**Programming: Quality of Activities**

Students were asked to rate the quality of STARS II workshops overall and on the individual-level.

### Individual

Table 7. Students' ratings of STARS II workshops

<table>
<thead>
<tr>
<th>Area</th>
<th>Poor</th>
<th>Average</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPT 2022 Individual 1:1 meetings with STARS II Graduate Coordinators</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>APR 2023: Peer to Peer Practice Presentations</td>
<td>0</td>
<td>4</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>Peer to Peer Practice Presentations</td>
<td>0</td>
<td>3</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>Informal lunch meetings with Dean Chang</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>DEC 2022: 1:1 Research in progress meetings with graduate coordinator</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>MAR 2023: Presentation and Public Speaking Workshop (tiptricks, practice)</td>
<td>1</td>
<td>2</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>FEB 2023: Workshop: How to write a personal statement and how to write CV</td>
<td>0</td>
<td>5</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>FEB 2023: Boba Socials</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>STARS II symposium: talk or poster preparation with your STARS II mentor</td>
<td>0</td>
<td>2</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>JAN 2023: Applying to med school/MD/PHD info session</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>NOV 2022: Juniors 1:1 meetings with Dean Chang</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>NOV 2022: Applying to graduate school info session</td>
<td>0</td>
<td>3</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>OCT 2022: Juniors 1:1 Zoom virtual lab visit with grad coordinator + research mentor</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>SEPT 2022: Dr. Alexa Bezperon 1:1 meetings with juniors</td>
<td>0</td>
<td>1</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>OCT 2022: Lab Bootcamp 101</td>
<td>0</td>
<td>6</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>DEC 2022: STARS: alumni coffee chat – Working in Biotech</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

n= 4 to 32 responses

### Overall

Figure 6. Students' ratings of STARS II workshops

- 97% of students attended at least one STARS II workshop (n= 35 out of 36 responses)
- STARS II Program elements that rated very highly include “informal lunch meetings with Dean Chang”, “Boba socials”, and “Individual 1:1 meetings with STARS II Graduate Coordinators”
- A STARS II Program element that rated low was the “Lab Bootcamp 101”
## Programming: Most Beneficial

Students were asked to identify the most beneficial components of the STARS II program

Table 8. Aspects of STARS programming students found most beneficial

<table>
<thead>
<tr>
<th>Theme</th>
<th>N</th>
<th>Example quote(s)</th>
</tr>
</thead>
</table>
| Professional development and career path preparation | 12 |  "I also learned a lot about career options after college and how to speak effectively about my research."

  "Having the ability to be exposed to career paths I did not know existed or were possible for me has been life-changing." |
| Financial support                    | 10 |  "I think it was super helpful that I was able to fully immerse myself in research and be compensated for it so that I did not have to worry about financial losses" |
| Mentorship                           | 11 |  "Access to a range of mentors with different expertise."                                                                                                                                                         |
| Community                            |  8 |  "A few of the classmates I met through the program became my very good friends! They make everything feel less stressful and make me push myself more in a healthy way."            |

  "I enjoy having a community of people also doing research on campus to discuss work and experiences with." |
| Workshops                             |  7 |  "The pathway workshops for grad school and med school were very helpful for me, as it helped me think about my future career choices and what I had to do to achieve them in a clear manner without being too overwhelming."

| Opportunities to present             |  7 |  "The poster and presentation requirements really did help me gain more insight into my research and raise my confidence by pushing me outside of my comfort zone." |
| Research experience                  |  3 |  "Showing me more aspects of doing research, including presenting and writing"                                                                                                                                  |

n=31 responses
Programing: Least Beneficial

Students were asked to identify the least beneficial components of the STARS II program

Workshops. Students noted that some workshop content was redundant with topics covered in the lab or their previous experience. Several students mentioned that the workshop subjects were not applicable to them (either at that current time or in general, n=9).

Scheduling. Students mentioned that at times program scheduling was inconvenient, overlapping with research time, other obligations, and mealtimes (n=6).

Narrow disciplinary emphasis. A few students mentioned that workshop subjects were pre-med or biology specific and were not applicable to all students (n=2).

n= 20 responses
Future Intentions: Benefits of STARS II and Future Plans

Students were asked to rate the degree to which they agree or disagree with several statements concerning future intentions and career choices.

Table 9. Students’ perceptions of benefits of STARS II and future plans

<table>
<thead>
<tr>
<th>Area</th>
<th>Somewhat disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I believe STARS II will be beneficial to my future academic experience at Yale.</td>
<td>3%</td>
<td>19%</td>
<td>78%</td>
</tr>
<tr>
<td>I believe this program will be beneficial to my future career.</td>
<td>0%</td>
<td>16%</td>
<td>84%</td>
</tr>
<tr>
<td>I intend to enroll in advanced STEM classes.</td>
<td>0%</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>I intend to complete a STEM major.</td>
<td>0%</td>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td>In the future, I intend to enroll in a science related graduate program.</td>
<td>8%</td>
<td>16%</td>
<td>76%</td>
</tr>
<tr>
<td>My future career will involve collecting, analyzing, and reporting scientific data.</td>
<td>3%</td>
<td>32%</td>
<td>65%</td>
</tr>
<tr>
<td>In the future, I would like to be a research scientist.</td>
<td>24%</td>
<td>32%</td>
<td>43%</td>
</tr>
</tbody>
</table>

• Most students believe that STARS II will be beneficial to their future academic experience at Yale (97%) and in their career (100%)
• Most students intend to enroll in advanced STEM classes and complete a STEM major
• Students varied in their next academic and career steps with 75% expressing interest in becoming a research scientist, but 97% intending to work with scientific data

Figure 7. Students’ perceptions of benefits of STARS II and future plans (response count)

n = 37 responses
STARS II Peer Mentor Expectations

• 6-8 students per Graduate Mentor

• Advice on future STEM careers

• Meeting mentees individually for 1hr at least twice per semester over a meal

• Make sure your mentees’ research is on track
  • Synergy with immediate mentor
  • Meeting PI on regular basis
  • Presenting regularly at lab meetings
  • Possibility of presenting research at national meetings
  • Publication?

• Group social activities (boba, insomnia cookies, etc). $100 per mentor per semester to spend on mentees.

• Make sure your mentees attend STARS II workshops (take attendance)
STARS II Mentee Expectations

• Mentees with meet individually with mentor at designated times

• Mentees will attend group activities hosted by Graduate Mentors

• Mentees will meet with Dr. Belperron and Dean Chang once per semester.

• Mentees must submit research progress reports ON TIME

• Mentees must attend STARS II workshops
  Only one absence with good excuse permitted

• Mentees that do not attend workshops/meet with mentors/submit reports on time will be given ONE warning by me. Repeat offenders will be dismissed from the program.
Successful STARS II candidates

• URM/FGLI student on financial aid with previous research experience

• Student should be in a basic science lab or will be in a lab by Oct 1, 2023

• CV

• Transcript

• Research statement

• 2 letters of recommendation, one from your current research mentor

• Good grades are Not mandatory! We are looking for future scientists, so a passion for science matters.
Fall 2023 STARS II Application Timeline

- Aug 22: STARS II info session
- September 22: STARS II deadline: 3PM. Make sure you get your letters in on time!
- October 1: Welcome party for new students
  - STARS II workshops resume
Questions?