

1stGenYale Summer Bulldogs Report
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1stGenYale Connects Students with Yale Faculty and Non-Profit Sponsors for Summer Research Opportunities

"This program is the perfect solution for helping 1stgen Yalies find summer research opportunities. It solves so many of the problems 1stgen students face - confusion about how to access these opportunities, apprehension with reaching out to professors, the extremely hit or miss and intimidating nature of 'just researching labs,' finding funding, etc., etc. 1stgen students face these same problems when trying to find academic year opportunities. I'd absolutely love to see a program like this for that, too. I may even be interested in collaborating with 1stGenYale to make that happen if possible."

2021 Intern Dylan Campbell '23 sums up his internship with Marney White, PhD, MS, Professor, Social and Behavioral Sciences, Yale School of Public Health. Project: "Mental Health Promotion through Coursera: Evaluation of a Mental Health Interventions Administered through a Massive Open Online Course."

Executive Summary:

In response to the pandemic's abrupt disruption of summer internships in June 2020, we launched 1stGenYale Summer Bulldogs. Over the last two years, our program has placed 50 Yale students (68% stated first-generation and all of whom were financial aid recipients). For most students, it was their first individual research work with Yale faculty and non-profit sponsors. By creating this program, we hope to expand their horizons to future research, graduate work, and careers.

1stGenYale reached out to the Yale Center for the Study of Private Law (Yale Law School), Yale School of Management, Yale School of Medicine, Yale School of Public Health, and two non-profits, Yale Science and Engineering Association and STEMteachersNYC, to create new summer research internship positions for Yale College first-gen low-income students (FGLI).

2021 Program Overview:

Demonstrating proof of concept, 1stGenYale Summer Bulldogs, is a comprehensive program designed from the ground up, which helped FGLI students succeed by finding a summer research position and secure funding from the Yale Office of Career Strategy, and, if needed, from the Office of Fellowship Programs. 1stGenYale's primary work ran from January to June 2021 with additional check-ins with students and sponsors over the summer. We recruited 27 Yale faculty and two non-profit sponsors who offered high-impact STEM research eligible for \$4,000 awarded per student by Yale. In addition, we recruited and trained 20 alumni volunteers, hosted a virtual student workshop, and offered on-going support on a 1:1 basis.

Highlights:

- Our 50 students were funded by \$177,000, which includes \$24,000 in 2020 and an estimated \$108,000 in 2021 from the Office of Career Strategy's (OCS) Student Experience Award (SEA) and \$45,000 in 2021 grants from the Office of Fellowship Programs (OFP) and several residential college fellowships.
- Our program has grown from 1.5% in 2020 to 9% in 2021 of SEA-funded student interns, and from 3% in 2020 to 27% in 2021 of SEA-funded research projects.
- Alumni volunteers continue to support these students through webinars and individual conversations to help them make the most of their summer research experience and when they return to classes at Yale.

Building the Bridge: Increasing Access and Opportunity:

The Yale Office of Career Strategy offers students on financial aid a one-time \$4,000 award known as the Student Experience Award (SEA) (formerly Domestic Summer Award (DSA)) for 240 hours of summer research or other work. However, to qualify students must find their own research.

Here is the problem which we are trying to address: Many Yale College first-generation low-income students do not know how to identify and secure these types of opportunities, especially at Yale's graduate and professional schools where they have minimal contact. They do not have these connections, guidance from their homes, or exposure to build these kinds of networks. Responding to this need, 1stGenYale alumni volunteers wanted to find a way to increase access and connect these students with funded summer research working directly with Yale faculty members and non-profit sponsors.

Mayur Desai '94 MPH, '97 PhD, Associate Professor for Diversity, Equity, and Inclusion, YSPH, commented, "The partnership with 1stGenYale is consistent with YSPH's goal to build a pipeline of diverse students interested in public health. Hopefully, their summer research experience will inspire some of the students to pursue advanced degrees, including the 5-year BA-BS/MPH Program, and careers in public health. As the COVID-19 pandemic highlights, we need a diverse public health scholars and practitioners to address the myriad challenges of today and tomorrow."

Background:

As the pandemic escalated in June 2020, 1stGenYale alumni volunteers helped eligible Yale College students on financial aid find summer research funded by OCS's DSA award. Daniel Markovits, Yale Law School Guido Calabresi Professor of Law, and Yale Center for the Study of Private Law, reviewed 17 applications, conducted interviews, and selected six FGLI students who were funded by OCS's \$24,000 in DSA grants for the project, "Challenges of Education and Work in the Pandemic: How the Pandemic Affected Life and Ambition."

Professor Markovits remarked, "It was a great pleasure to work with this outstanding group of Yale College students. They made important contributions to my research; and, separately, their perspectives added to my thinking." 2020 Inaugural Intern Cam Do '22, followed with: "I am so grateful to have had this summer research experience with Professor Markovits. I got to know a law professor, do research for the first time, and bonded with fellow first-gen low-income students. Coming from a low-income background, this was a world I never thought I could enter. I am thankful to the 1stGenYale alumni who helped make this happen for me. This experience changed my life."

During 2021, as the pandemic continued and had a significant impact on many students, it was most severe for those FGLI Yale College students on financial aid who needed internships and summer jobs. Based on the success of this initiative with Professor Markovits, we expanded our outreach and added research projects from leading faculty from the Yale School of Management, Yale School of Medicine, Yale School of Public Health, and professionals from two non-profits: Yale Science & Engineering Association and STEMteachersNYC. At the request of OCS, we included funding by OFP for those students who already used their DSA or needed additional financial support.

2021 Intern Yuliia Zhukovets '23, who worked with Heather Tookes, PhD, Professor of Finance, and Matthew Spiegel, PhD, Professor of Finance and Director of Graduate Studies, Yale School of Management, on "Business Restrictions and COVID Fatalities," shared her experience by saying, "During the summer I studied the COVID-19 restrictions imposed on businesses in New Hampshire, New Jersey, and New Mexico. I really enjoyed working on this project and it was incredibly interesting to see how the decisions about restrictions fluctuated with the change of seasons, increase or decrease in cases and the roll out of vaccine. I am very excited to see where the project will go in the next year and I am incredibly grateful to 1stGenYale for all the help with securing this opportunity!"

2021 Statistics:

- 65 FGLI undergraduates on financial aid applied for 51 total research projects placing 44 interns.
- 78 summer research offers made, 44 accepted and hired (34 - YSPH, 1 - YSM, 4 - YSOM, 5 - non-profits).
- This is a seven-fold increase from 6 students in the 2020 to 44 students in 2021.
- 51 research projects submitted by faculty and non-profit sponsors.
- 25 sponsoring professors (with co-faculty and post-docs).
- 3 non-profit sponsors.
- 23 Yale alumni volunteers.
- 38 interview sessions with 112 individual interviews conducted over 4 weeks.
- Estimated \$108,000 awarded in OCS SEA, plus \$45,000 in assorted fellowship awards from OFP in the 2021 program, totaling \$153,000 in 2021.
- Our program has grown from 1.5% in 2020 to 9% in 2021 of SEA-funded student interns, and from 3% in 2020 to 27% in 2021 of SEA-funded research projects.
- In summary: For 2020 and 2021, we placed 45 FGLI students with Yale faculty in summer research funded by approximately \$116,000 in SEA and \$40,000 from OFP. (This does not include five students in non-profit organizations.)

Resources and Operations:

To make this program work effectively, Yale alumni volunteers offered to be the "back-office" for Yale faculty and non-profit sponsors. We served as their hiring office and handled the entire administrative process, which allowed faculty and project sponsors to focus on student selection. We established a comprehensive job platform, promoted their research projects to students, collected student application information and shared it with interested faculty, who then selected students to interview.

We set up alumni volunteer interviewing teams for each faculty member, who made the final selection of interns. 1stGenYale handled all email correspondence with the students and faculty, including offers and declines to students. All students who wanted a summer research

placement received one. To automate this process, Barb Protacio '81 created a dedicated site on 1stGenYale's [Revêlo](#) and a Google drive database.

The Summer Bulldogs program gives alumni a unique opportunity to connect directly with current students, faculty, non-profit professionals, and fellow alumni. Yale alumni volunteer Ryan Davis, GSAS '18 MS, added, "The creativity and drive that comes out of this group never ceases to amaze me, and I hope you all know, even as an alumnus, how much these programs help and mean to me and other first generation Yalies."

2021 Summer Research Projects:

Over 45 research opportunities were presented by Yale faculty included AIDS, biostatistics, communication, cancer, chronic disease, COVID-19, computer analysis, data collection, education, educational equity, environmental and global health, epidemiology, genome-wide assays, gentrification impact, grant writing, healthcare, information systems, machine learning, media analysis, nutrition, online mental health programming, mental health, modeling, public health, social & behavioral sciences, STEM teaching strategies, suicide prevention, and trauma. Non-profit sponsors had projects in documenting the history of STEM at Yale, website design, branding materials, and evaluation of STEM high school programs.

Benefits to Yale - Increased Equity, Access, and Inclusion for FGLI Students:

This program increased equity, access, and inclusion at Yale for first-generation low-income students by inviting them to apply for STEM research opportunities with Yale faculty. This is important because most FGLI students often do not have STEM role models in their families or communities, or access to these positions. This direct "hands-on" experience may lead to more first-generation students pursuing graduate school, STEM careers, and entering the pipeline for future faculty!

Shyam Sunder, James L. Frank Professor at the Yale School of Management and Professor in the Department of Economics, summed it up best: "I enthusiastically welcome and support this new initiative developed by Yale alumni volunteers who want to help Yale's first-generation low-income students succeed and give them an opportunity to expand their horizons by working on research projects with Yale faculty. Watering the roots of the diversity tree appears to be the best long-term approach with promise of success in academic leadership. 1stGenYale is doing just that now, to get the flowers in due course. Thank you." (2021 Project - "Information Processing in Large Worlds.")

Benefits to Yale Faculty and Non-Profit Sponsors:

By serving as their "back office," this program helped Yale faculty find summer research interns without setting up their own "recruiting office and jobs bank." While faculty and sponsors made their own decisions for intern interviews and selection, 1stGenYale alumni volunteers streamlined the process by handling all administrative paperwork, answered student questions, made sure that the students completed their funding applications, and managed other aspects of the process.

Yale faculty, especially those in the professional schools, and non-profit sponsors can now find highly qualified interns, who have a guaranteed stipend if they are eligible for the Yale OCS SEA and other possible funding from OFP. These sponsors benefit from the diverse perspectives that FGLI students bring to their research topics and organizational missions. Moreover, faculty whose work focused on underserved populations valued the personal contributions made by their summer interns. These students were enthusiastic, hard workers and grateful to have this summer research experience.

Elissa Levy '09, President of the non-profit, Yale Science and Engineering Association (YSEA), and several summer interns shared their experiences in a video testimonial. [1stGenYaleSummer Bulldogs - YSEA 2021.](#)



In addition, these summer research projects present a wonderful opportunity for these Deans and faculty to showcase their professional schools to current Yale students for continued work during the school year and possible applications to graduate school.

Zeyan Liew, PhD, MPH, Assistant Professor, Department of Environmental Health Sciences, Yale School of Public Health, Yale Center for Perinatal, Pediatric and Environmental Epidemiology (CPPEE), commented, "Our student intern has been doing well in our data collection project, and if possible, we hope to continue having her work with us in a paid position through the next academic year." (2020 Project - "Environmental Risk Factors in Child Development").

These summer projects offered comprehensive scientific research which was critical to the faculty member's evidenced-based qualitative and quantitative work and contributed to the students' development of quantitative analytical skills, data management, systemic literature reviews, manuscript development, and project team work.

2021 Interns Demi Lee '24 and Fikir Mekonnen '24 ("Implementing Suicide Prevention in Rural Nepal") and Laura Palacio Londono '23 ("The Impacts of Chronic Stress on Maternal Depression in Rural Pakistan") interned with Ashley K. Hagaman, PhD, MPH, Assistant Professor, Department of Social and Behavioral Sciences, Yale School of Public Health, Global Health in 2021. Professor Hagaman wrote of the experience:

"They all have all been phenomenal to work with. Each of them was very eager, diligent, and focused on contributing to our projects. Laura conducted an entire quantitative analysis with amazing independence – she taught herself coding in STATA, learned how to conduct literature reviews, and how to adjust...various statistical and data concerns when modeling some complicated data...Demi and Fikir helped on...a suicide prevention research study we are launching in Nepal...stakeholder interviews with Nepal mental health experts...summarizing those findings...designing a fantastic power point presentation...curating resources for our lab... best practices for conducting and supporting trauma informed research, assembling crisis and mental health resources...conducting literature reviews." Professor Hagaman ended with, "I hope they all will continue to work with our lab in the future."

Post 2021 Program Survey Data Reflects Strong Yale Faculty Support:

- 99.7% (with 93% strongly agree) recommend establishing 1stGenYale Summer Bulldogs research opportunities to other faculty members and nonprofit sponsors.

- 100% (80% strongly agree) thought that participation in the 1stGenYale Summer Bulldogs research program was a positive experience.
- 100% (80% strongly agree) 1stGenYale alumni volunteers provided the support to post internship opening, interview and select intern(s).
- 97% (84% strongly agree) are interested in sponsoring 1stGenYale Summer Bulldogs research opportunities next year.

Yale School of Public Health Leslie Curry, PhD, MPH, and Erika Linnander, MPH, MBA, Director, Yale Global Health Leadership Initiative, worked with several interns this summer on GHLI Leadership Development: "Supporting Delivery of GHLI's Executive Education Programs for Healthcare Professionals" and shares their [project summary media clip](#):



Benefits to Yale College Students on Financial Aid:

For students on financial aid, this is an opportunity to do direct scientific research, often for the first time, with a faculty member or non-profit sponsor. This opportunity provides a window into professional schools and professions as they worked with professionals they might not meet during their four years as an undergraduate.

Working with YLS, YSOM, YSPH, and YSM faculty, these students developed new skills and knowledge which can be applied in future academic course work and career explorations. They can also add their quantitative and qualitative scientific research skills to their resumes and graduate school applications. Students also benefit from continued faculty mentorship. Finally, this program expands the career pipeline into professional and graduate schools. This experience also increases their value in the labor market.

Dr. Annie Harper '10 PhD, Associate Research Scientist in Psychiatry, Program for Recovery and Community Health, Department of Psychiatry, Yale School of Medicine was impressed by 2021 Intern Josh Beale '23: "He was a phenomenal intern. He helped us with our project, a community-based research project into debt experiences of low-income people, such that we were able to move much more quickly and get much more done over the summer than we had expected. Working with Josh helped me understand the benefits of having a summer undergraduate intern, particularly someone who understands first-hand some of life's challenges. I won't hesitate in the future to seek more first-gen interns to work with."

Post 2021 Program Survey Data Reflects Strong Yale College Student Intern Support:

- 100% (94% strongly agree) would recommend 1stGenYale Summer Bulldogs research opportunities to other eligible students.
- 100% (87% strongly agree) felt that their project sponsor was helpful and supportive.

- 100% (75% strongly agree) felt that the 1stGenYale alumni volunteers were helpful in providing support and answering questions during the recruiting, interviewing, and selection process.

Over this past summer, many students shared their enthusiasm and appreciation with us. 2021 Intern Luke Couch '23, who worked with Anne Wyllie, PhD, Associate Research Scientist, Epidemiology of Microbial Diseases, Yale School of Public Health, Public Health Modeling Unit on "Molecular Methods for Serotype Determination of Streptococcus Pneumoniae," commented, "I am grateful to have been able to gain valuable work experience in a lab setting, especially since such opportunities have been limited to me until now. The people I worked with were amazing. They were very welcoming to me and helped me get my footing at the lab. They were also very friendly and took me under their wings until I had learned enough to begin working on my own."

Thanks:

1stGenYale could not have launched the inaugural 2020 and expanded 2021 1stGenYale Summer Bulldogs without the support of Yale College Dean Marvin Chun, PhD, YSM; Mayur Desai, '94 MPH, '97 PhD, Associate Professor of Epidemiology, Associate Dean for Diversity, Equity, and Inclusion, YSPH; all the faculty and non-profit sponsors; OCS's Robyn Acampora, Director of Strategic Initiatives and Public Service Careers, who oversees the SEA program; and Rebekah Westphal, Director, OFP, Assistant Dean of Yale College. We are grateful for their believing in us as we created this program for Yale.

Conclusion:

Over the past two years, 1stGenYale alumni volunteers have placed 50 FGLI students, held over 112 interviews, funded by over \$177,000 from OCS and OFP, and engaged 23 alumni volunteers. Funded summer research positions included educational equity, public health, economics, social & behavioral sciences with faculty from Yale schools and hope to expand the number in the future. We look forward to again bridging the way for FGLI students to find valuable summer experiences in 2022.

Dean Sten Vermund, MD, PhD, Yale School of Public Health, summarized, "We are so honored and pleased that Yale alumni created, crafted, and managed this program. What a great legacy for our university to have alumni who care enough about their alma mater to nurture summer research opportunities for these Yale College students. What a terrific contribution to create and launch this program." (Dean Vermund highlighted his own work with a student intern by saying, "Minji Park '22 had a can-do attitude and helped get a 1467-page program project grant out to the NIH, quite an achievement!" Project: "Competitive Application for a Center for AIDS Research to the NIH.")

Appendix:

1stGenYale Summer Bulldogs Video Recordings:

- Pre-Summer Research Workshop, May 27, 2021: <https://youtu.be/MaZufZ1sjgo>
- Conversation with 1stGenYale Student Research Interns, October 21, 2020: <https://youtu.be/sHmFoWys0H0>