

Blending science and policy



An overview of the Science Policy Fellows Program, plus how it influenced the inaugural fellows

By Sarah Pfladderer | GPS News

Hermes Taylor-Weiner perhaps explains the purpose of the [Science Policy Fellows Program](#) best. In brief, it allowed him to look at his research through a lens other than his lab goggles.



“As a basic scientist, it is easy to lose sight of the bigger picture,” he said. “The Science Policy Fellows Program gave me the opportunity to see how the technologies I work with on the bench top are affecting people today.”

Taylor-Weiner, who in June earned a Ph.D. in bioengineering from UC San Diego Jacobs School of Engineering (JSOE), was one of two doctoral candidates to complete the inaugural program. Negin Nazarian, who also in June earned a Ph.D. in mechanical and aerospace engineering, is the other.

Open to graduate students from UC San Diego's JSOE, Scripps Institution of Oceanography (SIO) and the School of Medicine (SOM), the Science Policy Fellows Program pairs such students with professors at the School of Global Policy and Strategy (GPS). The faculty adviser aids them to explore the policy implications of their scientific research throughout an academic year.

The program itself was created with the university's strategic plan top of mind, said GPS Assistant Dean Wendy Hunter Barker, program administrator.

"It calls on us to work across disciplines to produce the highest quality research and best possible applications of that research," Hunter Barker said of the strategic plan. "The Science Policy Fellows Program does just that. This program builds ties across campus. Every tie created could potentially yield a future collaborator that could lead to the discovery of the next breakthrough or important advance."

In many respects, this year's fellows are proof of that.

The inaugural projects

While Taylor-Weiner's Ph.D. research centered on stem cell differentiation, his Science Policy Fellows project put a policy twist on that by examining unregulated stem cell clinics that sell unapproved treatments in the U.S.

Working alongside GPS Professor Joshua Graff Zivin, the program allowed him to not only look at his research differently but also draw new results from it.

"I was surprised to learn how prevalent unregulated stem cell clinics are in the U.S.," Taylor-Weiner said. "Many stem cell scientists think stem cell tourism is a problem mostly in other countries with less regulatory oversight. The reality is that the U.S. has more stem cell tourism clinics than any other country in the world."

And better yet, those results put him on path to be published in the New England Journal of Medicine. The article evaluates the legal justifications stem cell clinics use for avoiding U.S. Food and Drug Administration regulations and proposes new policies for protecting patients.

Furthermore, Taylor-Weiner said the program also had a part in inspiring him to

apply to the American Association for the Advancement of Science's Science & Technology Policy Fellowship after his completion of a post-doc in Stockholm.

Nazarian added a layer of policy to her Ph.D. research on urban climates by evaluating how waterfront construction plans in San Diego could impact the climate through heat trapping and air pollution.

Under the mentorship of GPS Professor David Victor, she built a working computer model of airflow and heat effects of downtown San Diego, applying that to the citywide effects of proposed development projects along the bay front where new buildings might block the sea breeze.

Albeit challenging at times, Nazarian said the fellowship provided her a new appreciation for the policy relevance of her research.

Looking ahead to next year

"After giving a talk at GPS, I realized the results from my scientific research are mostly of interest to a very small community and don't necessarily get translated to the practice," Nazarian said. "On the other hand, in the policy side, what is applied to consider the environmental effects of urban design has very limited scientific background."

For Victor, this was his immediate draw to the program as a faculty adviser.

"A program that links students with technical backgrounds to experts on public policy is aligned with what the world really needs to address its most pressing problem," he said. "What really solves problems is integration across diagnosis, solutions and policy design."

UC San Diego is well positioned for that, he added, given its depth in science, technology, engineering and mathematics through JSOE, SIO, SOM and other parts of campus.

"It is easy to forget this truly interdisciplinary training is very risky for students because most careers, especially in academia, are organized around making marginal progress within a discipline," Victor said. "What we are teaching in the Science Policy Fellows Program is how to make bigger progress on real problems by working across disciplines."

To that end, and to continue riding its first-year wave of success, Hunter Barker said of 2015-2016 applicants: “They need to be innovative and ambitious. Ph.D. research is extremely labor intensive, and this program asks candidates to go beyond their already established scope of work.”

Speaking from personal experience, Taylor-Weiner offered some closing advice to applicants.

“Your research does not have to be directly applicable to policy to participate in the program,” he said. “Be creative in how you use your expertise in your research area to inform a discussion affecting people today.”

The tentative application deadline for next year’s program is Sept. 1. Selected fellows also receive a \$1,000 grant.

For more information on the Science Policy Fellows Program, including the application process, please contact [Wendy Hunter Barker](#).