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HHMI Appoints David Asai As Undergraduate Science Education Program Director

David Asai, an accomplished science educator and researcher at Harvey Mudd College, has been named director of the undergraduate science education program at the Howard Hughes Medical Institute (HHMI).

In his new position, Asai will oversee an annual portfolio of over \$50 million in initiatives that are reinvigorating life science education at research universities and liberal arts colleges, as well as engaging the nation's leading scientists in teaching.

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— David Asai

We support innovative programs that bring the content, excitement, and relevance of science to students and David has shown that he can deliver exactly this sort of program, said Peter Bruns, vice president for grants and special programs. At HHMI, he will nurture these transformative programs in colleges and universities across the nation.

A cell biologist, Asai knows first hand the impact HHMI grants can have at both a major research university and a liberal arts college: he served as an HHMI program director at both Purdue University in West Lafayette, Ind., and at Harvey Mudd in Claremont, Calif.

Out here in the trenches, HHMI has a huge reputation because of the science that it stands for, said Asai, who will start his new job in August. They don't only support the people who are about to get Nobel prizes, but also those who may in 20 years be Nobel laureates. That is certainly an appealing aspect of this exciting new opportunity.

As HHMI's new director of undergraduate programs, Asai hopes that his college and university colleagues will take on big questions: How is science

best taught across disciplines? How can students be best prepared to learn about science? How can the ranks of scientists be diversified? How can faculty members become better teachers?

Asai believes that experiments in education represent the best way to find answers. HHMI grants cause the institutions to really commit to trying something new. It really is a quid pro quo. You want this grant? You've got to do something different.

Asai, who grew up in Hawaii, got hooked on science through a National Science Foundation summer research program for high school students, similar to programs funded by HHMI funds at schools across the U.S. He moved to a campus on another island, lived in a dorm, worked with a graduate student, debated problems with his fellow scientists, and worked late into the night in the lab. It was just a great experience. My mentor showed me this whole lifestyle of science, Asai said.

Asai was so fired up about science that he started doing research as a freshman at Stanford University. Helped by supportive mentors along the way, he continued through graduate school at the California Institute of Technology and a postdoctoral fellowship at the University of California, Santa Barbara. His research has focused on understanding the structure of dynein, a molecular motor that is responsible for many activities within cells.

It wasn't until Asai was already on the faculty at Purdue that he first began thinking about science education. He had volunteered to teach a large, introductory biology class with a colleague, but his extensive scientific training hadn't equipped him to face a sea of sophomores. A lot of us who are asked to teach were never trained to do that, Asai said. In fact, his only training for speaking in front of an audience was high school debate.

After 19 years at Purdue, Asai was recruited to Harvey Mudd, where he has served as the Stuart Mudd Professor and biology department chair for the last 5 years, teaching and continuing his research with a lab full of students called the Asailum Inmates. In contrast to Purdue, he notes, where innovative teaching was valued, but research came first, At Harvey Mudd, we are not driven by getting the next research grant. What we are driven by is the students in our labs and in our classes, Asai said. It is possible to aspire to excellence in research and still put students first.

Now Asai is taking on a new challenge at HHMI, where he hopes to focus on identifying better measures of success in science education. It's not more difficult than science, it's just a different type of challenge, Asai said. You hear it, you see it in the students, but how do you measure it?

He also wants to find better ways to share what works with other undergraduate educators, whether through publications or web sites or meetings. American education has been just incredible in terms of being the engine for innovation and discovery, Asai said. But times are changing and our challenge is to develop strategies that will sustain our abilities to stimulate creativity in the environment of the 21st Century.