

2021 AIP Helleman Fellows to Study Intercellular Communication, History of String Theory, Dark Matter

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WASHINGTON, August 5, 2021 -- The American Institute of Physics' Center for History of Physics selects one graduate student and two postdoctoral scholars as the recipients of the 2021 AIP Robert H.G. Helleman Memorial Fellowships. The fellowships are made possible by a gift from Robert H.G. Helleman to establish an endowment for supporting young physicists with Dutch citizenship in their pursuit of research activities in physics in the United States.

Robert van Leeuwen will receive a four-month Graduate Research Fellowship, with \$12,000 of support, and Pepijn Moerman and Jaco de Swart will each receive a one-year AIP Robert H.G. Helleman Memorial Postdoctoral Fellowship, with \$70,000 of support.

With a background in theoretical physics, van Leeuwen, a graduate student at the University of Amsterdam, is currently studying the history of string theory. He will spend his four-month fellowship at Princeton University interviewing key string theorists about the subject's history and the challenges faced in balancing abstract mathematics with physical realities.

"History of physics still is quite a modest field with limited grant opportunities, and I am very thankful that the American Institute of Physics decided to award me a fellowship," he said. "Historically, there have been strong ties between U.S. and Dutch high energy physics, and I am excited to continue in this tradition. Undoubtedly, the fellowship will be of great value for my thesis results, and I hope it will be the first of many more exchanges to come."

Moerman, a postdoctoral fellow at Johns Hopkins University, will dedicate his fellowship to studying how physical principles affect the organization of biological microparticles to help understand how cells communicate. He echoed van Leeuwen's sentiments on the importance of the fellowship in reinforcing the relationships between physicists in the two countries.

"In starting this fund, Helleman has facilitated the development of international collaborations that will strengthen the ties between Dutch and American physicists," he said.

De Swart will be spending his time as a Helleman fellow at the Massachusetts Institute of Technology examining the history of dark matter research and the origins of the connection between particle physics and cosmology. This is an extension on his prior work on dark matter and the norms, practices, and theories that led to the current knowledge of cosmology.

"How can we understand the origins of our cosmological theories? What do these origins teach us about the norms and practices that are involved in producing knowledge of the universe? And how can these theories help understand current-day cosmological conundrums?" he said. "Guided by such questions, and through engaging with both historians and physicists, I want to bring about a dialogue between physicists and the history of their field."

The fellowships will enable van Leeuwen, Moerman, and de Swart -- the first set of Helleman fellows -- to explore these questions at the intersection of science, philosophy, and history.

Applications for future fellowships will be accepted annually and winners announced each May. For information about eligibility, application, and criteria, visit the [AIP Robert H.G. Helleman Memorial Fellowships website](#).

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