



2019 COSMOS DISTINGUISHED LECTURE SERIES

Dr. Celia W. Goulding is a Professor of Molecular Biology and Biochemistry & Pharmaceutical Sciences. An expert physical organic chemist, she seeks to understand how bacteria function, particularly *Mycobacterium tuberculosis*; which causes tuberculosis, or TB. She has gained new insight



into systems that help TB bacteria survive in those infected by obtaining iron from their blood. Professor Goulding has also been investigating a recently discovered behavior in which bacteria compete with each other for resources, known as contact-dependent growth inhibition. Professor Goulding has identified many distinct proteins involved in the process.

Both discoveries could have bearing on future antibiotic development. She has recently been appointed the vice-chair of Molecular Biology and Biochemistry. **JULY 10, 2019**

Dr. Manoj Kaplinghat, Professor of Physics and Astronomy, has research interests that span the fields of astrophysics, cosmology, and particle physics. His main research goal is to understand the nature of energy that is driving the expansion of the Universe. Only 5% of this energy is due to particles that



make up the periodic table, and therefore much of his work focuses on the things that can't be seen: dark matter and dark energy. Among his numerous awards and accolades, the importance of his research is reflected in the number of citations his works have received: nearly 12,500. Professor Kaplinghat is a

proud first generation college graduate and plays a large role in mentoring and developing coursework for first generation undergraduate students at UCI.

July 24, 2019

Dr. Jennifer Prescher, Professor of Chemistry, is an expert on crafting novel chemical probes and noninvasive imaging technologies to interrogate cells in their native habitat. Her interdisciplinary research bridges both chemical and



biological techniques to create a toolbox that examines macroscopic cellular networks and behaviors. Dr. Prescher has achieved important milestones in imaging probe development and translating these tools into models of infection and cancer progression. Among her many accolades, she has received the UCI Distinguished Professor Award for Research, the ACS Women in Chemistry Rising

Star Award, an NSF Career Award, and is a Scialog Fellow. She graduated from UC Berkeley with a PhD in Chemistry in 2006, became a Susan G. Komen and Molecular Imaging Fellow at Stanford University, and joined the faculty at UCI in 2010. Find out more at:

<https://www.chem.uci.edu/~jpresche/research.html>

JULY 17, 2019

Dr. Arthur T. Benjamin is a professor of Mathematics at Harvey Mudd College. He specializes in combinatorics, a branch of mathematics concerning the study of finite or countable discrete structures. He has published over 90 academic papers, and the Princeton Review named him



among The Best 300 Professors, 2012. Professor Benjamin earned his Ph.D. in Mathematical Science from Johns Hopkins University and is the inventor of the renowned mathematics course in rapid mental calculation. He has appeared on numerous television programs throughout the years, including a notable performance on the Colbert Report and his profile has appeared in over 100

periodicals such as Scientific American, USA Today, and the New York Times. He has given several TED talks, which have been viewed 10 million times. Among his many teaching awards, the Mathematical Association of America awarded him with regional and national awards for distinguished teaching. **JULY 29, 2019**

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