

# Caltech

Graduate Student Orientation  
2021 Faculty Panel

## John Dabiri

*Professor of Aerospace and Mechanical Engineering*



Professor Dabiri received his B.S.E. *summa cum laude* in Mechanical and Aerospace Engineering from Princeton University (2001); his M.S. in Aeronautics from Caltech (2003); and his Ph.D. in Bioengineering with a minor in Aeronautics from Caltech (2005). He was a Professor of Aeronautics and Bioengineering at Caltech from 2005 to 2015, during which time he also served as Director of the Center for Bioinspired Wind Energy, Chair of the Faculty, and Dean of Students. From 2015 to 2019 he served as a Professor of Civil and Environmental Engineering and of Mechanical Engineering at Stanford University, where he was recognized with the Eugene L. Grant Award for Excellence in Teaching. His research focuses on unsteady fluid mechanics and flow physics, with particular emphasis on topics relevant to biology, energy, and the environment. Current interests include biological fluid dynamics in the ocean, next-generation wind energy, and development of new experimental methods. Dabiri is a MacArthur Fellow and Fellow of the American Physical Society.

<https://dabirilab.com/dabiri>

## Mansi Kasliwal

*Assistant Professor of Astronomy*



Professor Kasliwal received her B.S. from Cornell in 2001 and received her Ph.D. from the California Institute of Technology in 2011. She was a Hubble Fellow and Carnegie-Princeton Postdoctoral Fellow at Carnegie Institution for Science from 2011-2015. The Kasliwal research group discovers and characterizes cosmic fireworks i.e. brilliant flashes of light that tell us about the lifecycle of stars and where elements are synthesized. She collaborates with astronomers worldwide to panchromatically characterize the discoveries across the electromagnetic spectrum. Professor Kasliwal's group enthusiastically pursue a multi-messenger quest to identify electromagnetic counterparts to gravitational wave events.

<https://sites.astro.caltech.edu/~mansi/>

## Richard Murray

*Professor of Control and Dynamical System and Bioengineering, Biology and Biological Engineering Division Chair*



Professor Murray obtained a B.S. from California Institute of Technology in 1985 and his PhD in 1990 from the California Institute of Technology. The Murray group's research is in the application of feedback and control to networked systems, with applications in biology and autonomy. Current projects include work on biomolecular feedback systems, novel architectures for control systems, and networked control systems.

<https://murray.cds.caltech.edu>

## Heather Knutson

*Professor of Planetary Science*



Professor Knutson obtained a B.S. in physics from Johns Hopkins University in 2004, graduating with both departmental and university honors. While still an undergraduate, she worked part-time as an intern at the Space Telescope Science Institute; it was ultimately these summers (mostly spent in a basement lab with a soldering iron in hand) that convinced her to try a career in astronomy. She graduated with a Ph.D. in astronomy from Harvard University in 2009, where she did her thesis work, titled “Portraits of Distant Worlds: Characterizing the Atmospheres of Extrasolar Planets,” with Prof. David Charbonneau. She then spent two years as a Miller Postdoctoral Fellow in the Department of Astronomy at the University of California, Berkeley. The Knutson group uses a combination of space and ground based telescopes to characterize the properties of planets orbiting nearby stars.

<https://www.heatherknutson.org/>

## Matthew Shum

*Professor of Economics*



Professor Shum received his B.A. in from Columbia University in 1992 and his Ph.D. from Stanford University in 1998. His research lies at the intersection of industrial organization, econometrics, and applied microeconomics. He is trying to understand how rational consumer behavior actually is in the field, whether equilibrium models of rational decision making are appropriate for firms, and how optimal real-life firms behave.

<http://www.its.caltech.edu/~mshum/>

## Kimberly See

*Assistant Professor of Chemistry*



Professor See received her B.S. in Chemistry from the Colorado School of Mines in 2009 where she worked with Drs. John Turner and Todd Deutsch at the National Renewable Energy Laboratory on photoelectrochemical water splitting. Following a year at the University of Colorado working with Prof. Gordana Dukovic on zinc oxide nanoparticle synthesis and a year in industry at NuSil Technology working on high refractive index silicones, she went to the University of California, Santa Barbara for her Ph.D. She worked with Profs. Ram Seshadri and Galen Stucky on next-generation batteries and received her Ph.D. in 2014. Professor See was awarded the St. Elmo Brady Future Faculty Postdoctoral Fellowship at the University of Illinois at Urbana-Champaign and worked with Prof. Andrew Gewirth in the Department of Chemistry until the fall of 2017. Her postdoctoral work focused on the solvation structure of active cations in electrolyte solutions in Li-S and Mg batteries. The See group is interested in exploring next-generation electrochemical energy storage systems using a bottom-up approach.

<https://www.seegroup.caltech.edu/>