

Seeing is Believing: Peering into Cellular Behaviors on a Microscopic Level



Jennifer Prescher

Assistant Professor, Chemistry, Molecular Biology & Biochemistry, Pharmaceutical Sciences

CURRENT RESEARCH

New methods to 'see' biology in action are changing how we think about human health and disease

Optical imaging tools have revolutionized our understanding of living systems by enabling researchers to "peer" into tissues and cells and visualize biological features in real time. While powerful, these probes have been largely confined to monitoring cellular behaviors on a microscopic level. Visualizing cellular interactions and functions across larger spatial scales--including those involved in cell migration to distant tissues, immune function, and other biological processes--remains a daunting task. Dr. Jennifer Prescher, of the University of California, Irvine is developing general toolsets to image such macroscopic cellular networks and behaviors. Her work allows for the development of new chemical tools and noninvasive imaging strategies that address the void of being able to see biological features in real time and therefore inspires new discoveries in a broad spectrum of fields.

Dr. Prescher's young lab, having only been in development for four years, has already achieved important milestones related to imaging probe development, including constructing new tools and performing preclinical analyses. Dr. Prescher and her group are currently translating many of the image probe tools into models of infection and cancer progression. While Dr. Prescher's background is rooted in the molecular underpinnings of big biological systems, it takes a team that is blended in order to design and implement effective imaging tools. Her multidisciplinary team, which bridges the biological, chemical, and physical sciences in addition to engineering, is composed of graduate students, postdocs, and undergraduates. Her collaborations across the country and with other scientists at the University of California, Irvine,...

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AFFILIATION



University of California, Irvine

EDUCATION

- Postdoc in Cancer Imaging 2010, Stanford University
- Ph.D. in Chemistry/Chemical Biology 2006, University of California, Berkeley
- B.S. in Chemistry 2001, University of Wisconsin-La Crosse

AWARDS

- Cottrell Scholar, 2014-present
- Kavli Fellow, 2014-present
- Dean's Honoree for Distinguished Teaching (UCI), 2014
- Outstanding Contributions to Undergraduate Education Award (UCI), 2014
- Hellman Family Foundation Fellowship, 2013

RESEARCH AREAS

Life Science, Oncology / Cancer, Oncology / Cancer

FUNDING REQUEST

Your contributions will support the continued research of Dr. Jennifer Prescher, of the University of California, Irvine, as she develops new ways to see, at the microscopic level, biological features in real time. Your donations will support the necessary \$250K per year required for personnel, imaging costs, and reagent expenses. In choosing to support her research, you will play a role in developing technologies that will explain the biological processes that affect our health.