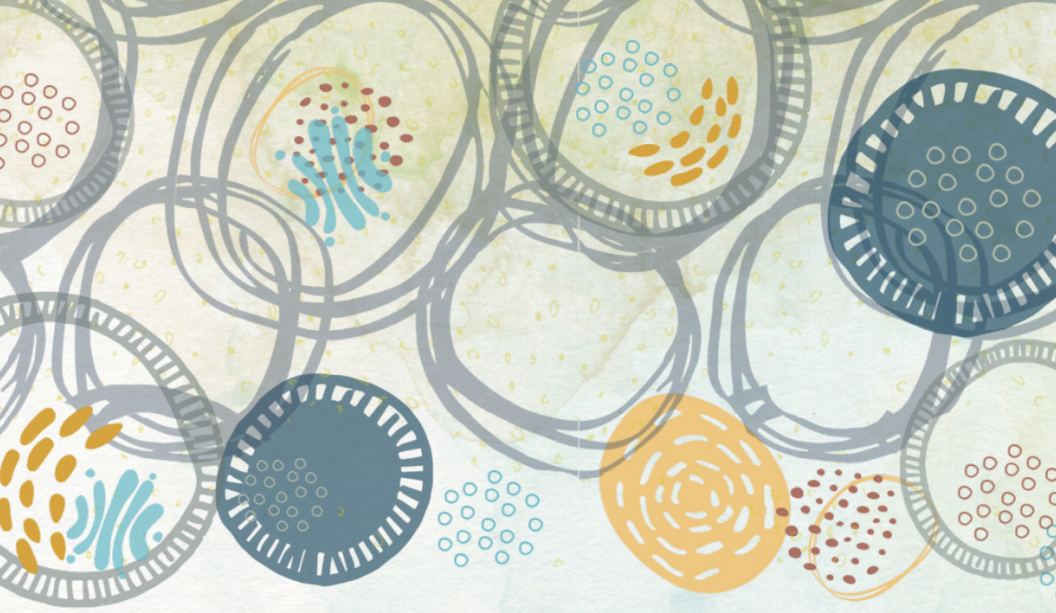




Life in Flux: The Science of **Autophagy**

2026 Dartmouth
Symposium for the Life Sciences

October 6, 2026
Hanover Inn, Hanover, NH





Symposium Schedule

8:00 AM

Registration & Continental Breakfast

8:50 AM

Welcome and Brief Introductions
Santiago Schnell, PhD
Provost, Dartmouth College

Session 1: Molecular Mechanisms of Autophagy Initiation

9:00 AM

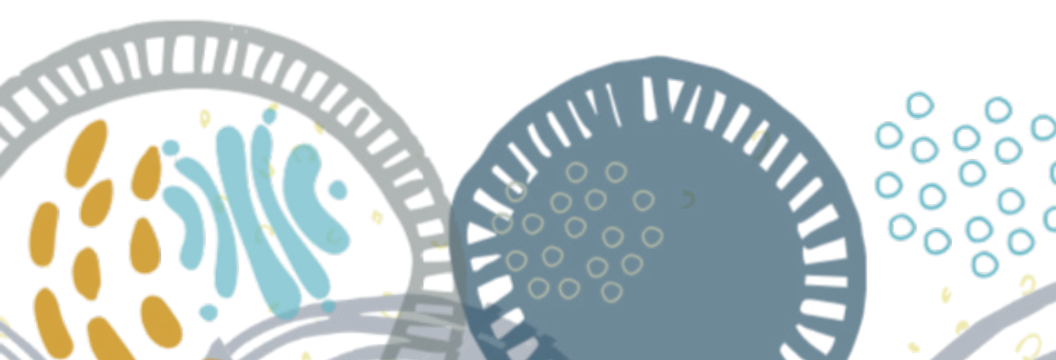
Unraveling the molecular details of autophagy
initiation
Sharon A. Tooze, PhD

9:45 AM

Membrane recruitment during selective autophagy
initiation
Michael J. Ragusa, PhD

10:30 AM

Break





Session 2: Bringing Autophagy into Focus: Structure and Prediction

10:45 AM

Autophagy through the lens of structural biology
James H. Hurley, PhD

11:30 AM

Autophagy through a computational lens:
predicting molecular interactions
Christopher Shoemaker, PhD

12:15 PM

Lunch
Graduate Studies Resource Fair
Set up posters for afternoon poster session

Session 3: Autophagy in Cellular Physiology and Disease

1:30 PM

Autophagy, organelle clearance and disease
Eric H. Baehrecke, PhD

2:15 PM

Dynamics of autophagy in neurons
Erika Holzbaur, PhD

3:00 PM

Reception
Graduate Studies Resource Tables
Poster Session



Symposium Speakers



Eric H. Baehrecke, PhD

Professor and Our Danny Cancer Fund Chair in Biomedical Research, UMass Chan Medical School

Eric Baehrecke obtained his Ph.D. from the University of Wisconsin – Madison, and was a Howard Hughes Medical Institute Fellow of the Life Sciences Research Foundation at the University of Utah during his postdoctoral studies. He was a faculty member of the University of Maryland from 1995-2007, and is currently Professor in the Department of

Molecular, Cell and Cancer Biology at UMass Chan Medical School. His team studies the regulation and function of autophagy during development and disease.



Erika Holzbaur, PhD

William Maul Measey Professor of Physiology University of Pennsylvania Perelman School of Medicine

Erika L. F. Holzbaur is the William Maul Measey Professor of Physiology at the University of Pennsylvania Perelman School of Medicine. She received her B.S. with High Honors in Chemistry and History from the College of William and Mary and her PhD in Biochemistry from Penn State. Holzbaur joined the faculty at Penn in 1992, where she is now holds an endowed

professorship in the Department of Physiology. The Holzbaur lab studies the dynamics of organelle trafficking in neurons. Organelles including mitochondria, autophagosomes, and lysosomes are actively transported over distances of a meter or more along the axons and dendrites of neurons; defects in this trafficking are causative for both neurodevelopmental and neurodegenerative disease. The lab also investigates cellular mechanisms required to maintain neuronal homeostasis, focusing on the dynamics of autophagy and mitophagy. Defects in these pathways lead to the accumulation of dysfunctional organelles and aggregated proteins, and are implicated in both Parkinson's disease and ALS. Dr. Holzbaur has received a Porter Fellowship, the NINDS Javits Award, the Stanley N. Cohen Biomedical Research Award, the Jane M. Glick Graduate Student Teaching Award, the Sandra K. Masur Senior Leadership Award, and is a Lifetime Fellow and past President of the American Society for Cell Biology. More than 40 postdocs and students have trained in her lab, many now running research labs at top universities in the US and internationally.



Jim Hurley, PhD

**Professor of Molecular and Cell Biology,
University of California, Berkeley**

James ("Jim") Hurley is a professor in the Department of Molecular and Cell Biology at the University of California, Berkeley. He was born in Moscow (the city in Idaho, USA, not Russia), graduated in Physics from San Francisco State University, and obtained his Ph.D. in Biophysics from the University of California, San Francisco. He was a senior investigator in the intramural program of the

National Institutes of Health from 1992-2013, and joined the faculty of the University of California, Berkeley in 2013. He has been elected to the U.S. National Academy of Sciences and the American Academy of Arts and Sciences. Dr. Hurley uses structural biology, biophysics, biochemistry, and cell biology approaches to understand the structure and function of the endolysosomal and autophagy pathways in health and disease. He is known for his work on the structure and mechanism of the ESCRT membrane scission machinery, coated vesicle and endosome biogenesis, lipid transporters and second messenger systems, lysosomal signaling and lysosome biogenesis, and the autophagy core complexes.



Michael J. Ragusa, PhD

**Associate Professor, Chemistry
Department, Dartmouth College**

Mike received his PhD in Molecular Biology, Cell Biology and Biochemistry from Brown University in 2010. During his PhD studies, Mike worked in the laboratory of Dr. Wolfgang Peti where he studied how protein phosphatases achieve substrate specificity using structural and biochemical approaches. Mike joined the laboratory of Dr. James Hurley at the National Institute of Diabetes and

Digestive and Kidney Diseases (NIDDK) in Bethesda, Maryland for his postdoctoral research. In Dr. Hurley's laboratory, Mike studied the mechanisms by which non-selective autophagy is initiated in the yeast *Saccharomyces cerevisiae*. Since joining Dartmouth in 2014, Mike's research group has been investigating the mechanisms by which selective autophagy is initiated with a focus on mitochondrial autophagy (mitophagy) in *S. cerevisiae*. The Ragusa Laboratory uses a range of techniques to study selective autophagy initiation including structural biology, biochemistry and cellular biology.



Christopher Shoemaker, PhD

Associate Professor, Biochemistry and Cell Biology, Geisel School of Medicine

Dr. Chris Shoemaker received his undergraduate degree from Miami University (Ohio) before earning his PhD in 2011 from Johns Hopkins University, where he trained under Dr. Rachel Green studying ribosome quality control. He then pursued postdoctoral research with Dr. Vlad Denic at Harvard, turning his focus to autophagy. In 2018, he established the Shoemaker Lab at Dartmouth, where his team ap-

plies functional genomics, biochemical reconstitution, and quantitative microscopy to investigate how cells rid themselves of unwanted structures. The lab's central focus is autophagy. When functioning properly, autophagy clears out damaged organelles, toxic protein aggregates, and other potentially harmful debris. When it breaks down, those structures accumulate, driving a range of serious diseases including neurodegeneration, cancer, cardiovascular disease, and age-related decline. Dr. Shoemaker's work aims to illuminate the molecular mechanisms of autophagy, with the ultimate goal of understanding how its dysfunction contributes to disease and how it might be therapeutically targeted.



Sharon A. Tooze, PhD

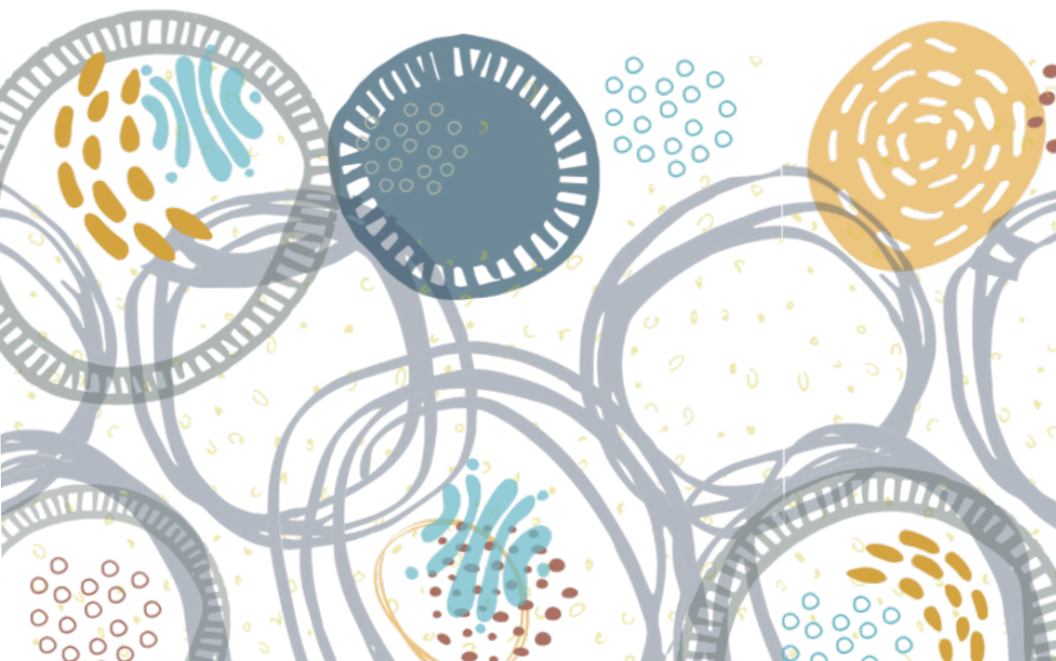
Principal Group Leader, Molecular Cell Biology of Autophagy Laboratory, The Francis Crick Institute

Sharon Tooze is a molecular cell biologist whose research has contributed major advances in understanding how intracellular organelles are formed and acquire specific functions to maintain cell health. Sharon trained at the European Molecular Biology Laboratories in Heidelberg, Germany where she received her PhD under the guidance of

Prof. Graham Warren and completed her post-doctoral work with Prof. Wieland Huttner. At EMBL she investigated the role of the secretory pathway in protein sorting and trafficking to understand how the cell creates functional intracellular organelles. During her post-doctoral work she uncovered the mechanisms by which nascent neuroendocrine secretory granules are formed and released from the trans-Golgi network in a distinct pathway working in parallel to constitutive secretion.

Independently, at the London Research Institute, and now at the Francis Crick Institute, Sharon continued to work on organelle formation requiring distinct signals and protein machinery and focused her research interest on autophagy and the biogenesis of autophagosomes. Sharon's lab identified and investigates the function of several key mammalian autophagy proteins (ULK1, ATG13, ATG9A, WIPI2) and her work continues to contribute to the current understanding of autophagy at the molecular cell biology level, focused on biochemistry and structural approaches. Her current work on the early stages of autophagosome formation, and focus on ATG9A, ULK1, and WIPI2, has elucidated mechanisms involved in membrane expansion, phagophore composition, and the recruitment and function of the ATG8 protein family.

Sharon is a Principal Group leader at the Francis Crick Institute, and is core funded by the Francis Crick Institute, and an ERC advanced grant. Sharon is an EMBO member, a Fellow of the Academy of Medical Sciences, and Fellow of the European Academy of Sciences.



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