Chemical Machinery of the Cell

**Goal:** to catalyze breakthroughs in fundamental understanding of chemical processes which underlie the workings of intact living cells that will lead to a new era of advancement in cell biology.

**Team Awards 2018**

*Finding Mitochondrial Memory*
Abhishek Chatterjee, chemistry, Boston College  
Gulcin Pekkurnaz, neurobiology, University of California, San Diego  
Juan Perilla, chemistry, University of Delaware  
Funded by the Gordon and Betty Moore Foundation.

*What does “self” look like?*
Kamil Godula, chemistry, University of California, San Diego  
Jennifer Heemstra, chemistry, Emory University  
Abhishek Singharoy, molecular sciences, Arizona State University  
Funded by the Gordon and Betty Moore Foundation.

*A plant cell-based platform to target human proteostasis diseases*
Kathryn Haas, chemistry, Saint Mary’s College  
Alice Soragni, biochemistry, University of California, Los Angeles  
Jing-Ke Weng, biology, Massachusetts Institute of Technology  
Funded by the Gordon and Betty Moore Foundation.

*Breaking the central dogma: reverse translation of the proteome*
Christian Kaiser, biology, Johns Hopkins University  
David Limmer, chemistry, University of California, Berkeley  
Rebecca Voorhees, biology, California Institute of Technology  
Funded by the Gordon and Betty Moore Foundation.

*Optical Mind Reading*
Markita del Carpio Landry, chemical and biomolecular engineering, University of California, Berkeley  
Gulcin Pekkurnaz, neurobiology, University of California, San Diego  
Jennifer Prescher, chemistry, University of California, Irvine  
Funded by the Gordon and Betty Moore Foundation.
Synthetic Organelle Biology: Engineering Photosynthetic Animal Cells
Markita del Carpio Landry, chemical and biomolecular engineering, University of California, Berkeley
Jing-Ke Weng, biology, Massachusetts Institute of Technology
Joshua Widhalm, horticulture, Purdue University
Funded by Research Corporation.

Identifying and detecting diseases prior to physical presentation of symptoms
Laura Sanchez, pharmaceutical sciences, University of Illinois, Chicago
Judith Su, optical sciences and biomedical engineering, University of Arizona
Funded by the Flinn Foundation and Research Corporation.

Understanding Biological Systems Using Resonator-Mediated Single-Molecule Raman Detection and Spectroscopy
Judith Su, optical sciences and biomedical engineering, University of Arizona
Lu Wei, chemistry, California Institute of Technology
Funded by the Gordon and Betty Moore Foundation.