Curriculum Vitae

Michael J. Rust

Assistant Professor University of Chicago
Department of Molecular Genetics and Cell Biology
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Education

2006–2010	Helen Hay Whitney Postdoctoral Fellow, Harvard University Prof. Erin O'Shea
2001–2006	Ph.D., Physics, Harvard University, Prof. Xiaowei Zhuang *Fluorescence Techniques for Single Virus Particle Tracking and Sub-Diffraction Limit Imaging*
1997–2001	B.S., Physics & Mathematics, Harvey Mudd College Profs. Thomas Donnelly & Francis Su

Appointments

2011–	Assistant Professor Department of Molecular Genetics and Cell Biology Department of Physics Institute for Genomics and Systems Biology The University of Chicago

Research Interests

- Molecular Systems Biology
- Quantitative Microscopy
- Circadian Clocks

Recent Honors and Professional Affiliations

2015	Scialog Fellow (Molecules Come to Life)
2014	Pew Scholar in the Biomedial Sciences
2011	Society for Research on Biological Rhythms, Member
2011	Pritzker Scholar
2010	CBC Junior Investigator Award
2009	Burroughs-Wellcome Career Award at the Scientific Interface
2008	Helen Hay Whitney Foundation Postdoctoral Fellowship

Patents

Xiaowei Zhuang, Wilfred Mark Bates, **Michael J. Rust**, "Sub-diffraction Image Resolution and Other Imaging Techniques", U.S. Patent Pending 12/012,524

Selected Research Articles (Google Scholar *h*-index: 15)

13. "Mixtures of opposing phosphorylations within hexamers precisely times feedback in the cyanobacterial circadian clock," J. Lin, J. Chew, U. Chockanathan, **M. J. Rust.** *Proc. Natl. Acad. Sci. USA*. **111**, E3937-E3945 (2014).

12. "Rhythms in energy storage control the ability of the cyanobacterial clock to reset," G. K. Pattanayak, C. Phong, **M. J. Rust.** *Curr. Biol.* **24,** 1934-1938 (2014).

11. "Robust and tunable circadian rhythms from differentially sensitive catalytic domains," C. Phong, J. S. Markson, C. Wilhoite, **M. J. Rust.** *Proc. Natl. Acad. Sci. USA*. **110**, 1124-1129 (2013).

10. "Light-driven changes in energy metabolism directly entrain the cyanobacterial circadian clock," **M. J. Rust**, S. Golden, E. K. O'Shea. *Science* **331**, 220-223 (2011).

9. "Dissecting the cell entry of dengue virus by single-particle tracking in live cells," H. M. van der Schaar, **M. J. Rust**, C. Chen, H. van der Ende-Metselaar, J. Wilschut, X. Zhuang, J. M. Smit. *PLoS Pathogens* **4** (12), e1000244 (2008).

8. "Ordered phosphorylation governs oscillation of a three-protein circadian clock," **M. J. Rust**, J. S. Markson, W. S. Lane, D. S. Fisher, E. K. O'Shea. *Science* **318**, 809-812 (2007).[†]

7. "Characterization of the early events in dengue virus cell entry by biochemical assays and single-virus tracking," H. M. van der Schaar, **M. J. Rust**, B. Waarts, H. van der Ende-Metselaar, R. J. Kuhn, J. Wilschut, X. Zhuang and J. M. Smit. *Journal of Virology*. **81**, 12019-12028 (2007).

6. "Imaging poliovirus entry in live cells," B. Brandenburg, L. Y. Lee, M. Lakadamyali, **M. J. Rust**, X. Zhuang and J. M. Hogle. *PLoS Biology* **5(7)**, 183-196 (2007).

5. "Sub-diffraction limit imaging by stochastic optical reconstruction microscopy (STORM)," **M. J. Rust**, M. Bates, X. Zhuang. *Nature Methods* **3**, 793-796 (2006).[‡]

4. "Ligands for clathrin-mediated endocytosis are differentially sorted into distinct populations of early endosomes," M. Lakadamyali, **M. J. Rust**, X. Zhuang. *Cell* **124**, 997-1009 (2006).

3. "Assembly of endocytic machinery around individual influenza viruses during viral entry," **M. J. Rust**, M. Lakadamyali, F. Zhang, X. Zhuang. *Nature Struct. Mol. Biol.* **11**, 567-573 (2004).

2. "Single-molecule enzymology of RNA: Essential functional groups impact catalysis from a distance," D. Rueda, G. Bokinsky, M. M. Rhodes, **M. J. Rust**, X. Zhuang, N. G. Walter, *Proc. Natl. Acad. Sci. USA*. **101**, 10066-10071 (2004).

1. "Visualizing infection of individual influenza viruses," M. Lakadamyali, **M. J. Rust,** H. P. Babcock, X. Zhuang, *Proc. Natl. Acad. Sci. USA*. **100**, 9280-9285 (2003).

† Listed as a *Science Signaling* Breakthrough of the Year in 2007.
‡ Listed in *Nature*'s Method of the Year in 2008.