## *Christopher M. Hickey*

**Current Position:** Ph.D. student in the Department of Biochemistry at Dartmouth Medical School

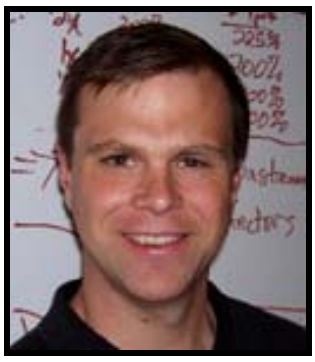
**Education:** B.S. in Nutritional Sciences (2002) from Cornell University

**Non-scientific Interests:** Travel; swimming; making my infant daughter, Maria, smile

I began my research career in the laboratory of Martha Stipanuk at Cornell where I studied the enzyme cysteine dioxygenase. While I was captivated by protein biochemistry in the lab, it was coursework with Jerry Feigenson that inspired my interest in lipids and biological membranes. I then spent two years as a technician studying *Mycobacterium tuberculosis* pathogenesis with Sabine Ehrt at Weill Cornell Medical College in New York. During that time, I delved into literature on intracellular pathogens, phagocytosis, and, eventually, the basic mechanisms of membrane trafficking.

For my graduate work, I chose to study membrane fusion in the laboratory of Bill Wickner because yeast vacuole fusion involves a fascinating interplay between proteins and lipids. Around the time I joined the lab, Bill's challenge to the group was to develop a reconstituted proteoliposome fusion reaction using purified vacuolar components. To facilitate this, I first created a strain that overproduces the heterohexameric HOPS complex and then developed methods to purify milligram quantities of the protein from this strain. We have subsequently used this purified HOPS, together with reconstituted proteoliposomes of various compositions, to study subreactions of yeast vacuole fusion.

## *Christopher Stroupe*



**Current Position:** Postdoctoral Associate in the Department of Biochemistry at Dartmouth Medical School

**Education:** Ph.D. in Molecular Biophysics and Biochemistry (2000) from Yale University

**Non-scientific Interests:** Cooking, backpacking, classical and jazz trumpet

As a graduate student in the laboratory of Axel Brunger, I used X-ray crystallography to solve the structure of the yeast exocytic Rab GTPase Sec4p. This work piqued my interest in learning, at the molecular level, how Rab GTPases and their downstream effectors mediate membrane docking and fusion. Next, I joined the laboratory of Bill Wickner for my postdoctoral studies. Bill's lab had developed a fantastic *in vitro* system for studying homotypic fusion of purified yeast vacuoles, and I took on the project of further purifying the vacuolar Rab GTPase Ypt7p and its effector, the HOPS/Class C Vps complex. In the study described in this issue of JBC, Chris Hickey and I teamed up to show that purified Ypt7p is required for HOPS- and SNARE-dependent fusion of proteoliposomes reconstituted from pure lipids and proteins—but only when direct HOPS-membrane interactions are abrogated via phosphorylation of the Vps41p subunit of HOPS by the casein kinase Yck3p. With Ypt7p and the HOPS complex now purified in active form, the stage is set for biochemical, biophysical, and structural studies that will elucidate the molecular mechanisms by which these central fusion catalysts act.

***Read Christopher Hickey and Dr. Stroupe's article entitled***: The Major Role of the Rab Ypt7p in Vacuole Fusion Is Supporting HOPS Membrane Association … http://www.jbc.org/cgi/content/full/284/24/16118