



Iris Vanessa Hood

Graduate Institution: University of California-Berkeley

Graduate Discipline: Molecular and Cell Biology

Hometown: Yachats, OR

Relevant SC Research: Biological and Environmental Research

Research Interest:

The mechanism of helicase loading remains an outstanding question in biology, and elucidating this process in *E. coli* will provide insight into helicase loading in all bacteria. In *E. coli*, the initiation of DNA replication requires loading of two DnaB helicases onto a single replication origin. My research aims to investigate the role of the initiator (DnaA) and helicase loader (DnaC) proteins in promoting bacterial replicative helicase loading. Effective bioremediation and biofuel production, often accomplished through bacterial fermentation, require robustly growing bacteria that need to efficiently replicate their DNA. My proposed research will answer fundamental questions necessary for understanding DNA replicative helicase loading, leading to improvements in environmental protection such as bioremediation and biofuels production.

About Me:

As a PhD candidate in Molecular and Cell Biology at UC Berkeley, I am working in the laboratory of Prof. James M. Berger. I enjoy volunteering for Community in the Classroom, a science program for elementary school students in the Bay Area, and mentoring motivated undergraduate students in the Berger lab. Prior to my studies at UC Berkeley, I worked with Prof. Kenneth E. Prehoda as an undergraduate at the

University of Oregon. I studied regulation of the *D. melanogaster* tumor suppressor protein, Discs-Large. My research efforts greatly benefited from the outstanding mentorship of both Prof. Prehoda and Dr. Jana Marcette (Prehoda Lab), and has been published in the journal *Biochemistry*.

Publications: Marcette J, Hood IV, et al. (2009) "Allosteric Control of Regulated Scaffolding in Membrane-Associated Guanylate Kinases" *Biochemistry* 42:10014-9. Hood IV, Costa A, and Berger JM. (2013) "DNA Replication Initiation and Replisome Assembly" *Annual Review of Biochemistry* 82. In preparation.

Awards: 2010 National Science Foundation (NSF) Fellowship (declined), 2009 NSF Honorable Mention, 2008 Biochemistry Achievement Award, Hynix Semiconductor Science & Technology for Women & Minorities Scholarship, Robert W. & Bernice Ingalls Staton Scholarship, NELA Take Aim Scholarship, Cancer Federation Scholarship, 2007 University of Oregon SPUR Scholar, painting exhibitions in the 7th Annual Biophysics & the 2010 CLAM Art Shows, 2005 SensoPath Tech. Intern, & LCC Chem Club President.



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