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Brian Paegel, Ph.D.

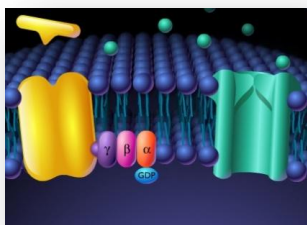
Department of Molecular Therapeutics

Dr. Paegel studies the controlled synthesis and engineering of phospholipid vesicles and emulsions, microfluidic circuit design, and directed evolution of membrane-associated transporters, pores, and receptors.

Students interning in this laboratory will learn:

- 1) Bacterial cloning, DNA isolation and purification, restriction analysis and sequencing
- 2) PCR, gel electrophoresis and imaging
- 3) Bioconjugation chemistry and accompanying analytical methodology (MALDI-TOF, HPLC, PAGE)
- 4) In vitro protein expression, purification and enzymology

In addition to scientific skills, intern will be responsible for laboratory organization and maintenance--dishwashing, organizing and maintaining consumables, etc. There is also the opportunity to obtain advanced training in Microfluidic Design and Fabrication, Lipid Biochemistry, Confocal Microscopy, Protein Engineering and LC-MS/MS analysis.



Links:

[http://www.scripps.edu/florida/research/faculty.php?rec\\_id=11207](http://www.scripps.edu/florida/research/faculty.php?rec_id=11207)

[http://www.scripps.edu/florida/chem/paegel/Paegel\\_Group\\_Site/Paegel\\_Group.html](http://www.scripps.edu/florida/chem/paegel/Paegel_Group_Site/Paegel_Group.html)

[http://www.scripps.edu/florida/chem/paegel/Paegel\\_Group\\_Site/Projects.html](http://www.scripps.edu/florida/chem/paegel/Paegel_Group_Site/Projects.html)



## Jennifer Busby, Ph.D. Proteomics Lab

The Proteomics Laboratory at Scripps Florida provides proteomics services and expertise to scientific collaborators at Scripps Research facilities in both Florida and California, universities within the state of Florida, and other educational institutions. This lab uses cutting-edge mass spectrometry technology to identify proteins, map modifications that occur after translation, and do relative quantification experiments with a variety of sample types. This lab is responsible for advancing the use of mass spectrometry and high performance liquid chromatography in the study and analysis of proteins.

Intern duties would include biochemical reactions and cleanup including HPLC, PCR and cleanup of PCR products and molecular cloning using plasmid DNA and E. Coli. Other tasks, as assigned will include washing glassware, inventory and making buffers and solvents.

### Proteomics:

the study of genetics which refers to all proteins expressed by a genome; proteomics involves the identification of proteins in the body and the determination of their role in physiological and [pathophysiological](#) functions.



### Links:

[http://www.scripps.edu/florida/research/faculty.php?rec\\_id=11715](http://www.scripps.edu/florida/research/faculty.php?rec_id=11715)

[http://www.scripps.edu/newsandviews/e\\_20090316/csi.html](http://www.scripps.edu/newsandviews/e_20090316/csi.html)



William Ja, Ph.D.

## Department of Metabolism and Aging

The Ja lab uses *Drosophila* (fruit fly) as a genetic model to study aging and disease. The Ja lab uses behavioral, biochemical, and genetic approaches to identify and characterize genes in the fruit fly, *Drosophila melanogaster*, that are involved in aging and disease. Potential interns should be self-motivated with good social, management, and organizational skills. Responsibilities will include preparation of reagents and fly media, maintaining fly stocks, and performing behavioral and lifespan measurements of adult flies. Bench work may include standard molecular biology procedures such as DNA and RNA extraction, PCR, RT-PCR, cloning, and immunohistology.

More detailed descriptions of our research can be found here:

[http://www.scripps.edu/florida/research/faculty.php?rec\\_id=61930](http://www.scripps.edu/florida/research/faculty.php?rec_id=61930)

<http://www.sciencedaily.com/releases/2007/06/070608093844.htm>

<http://www.nature.com/nchembio/journal/v3/n7/full/nchembio0707-371.html>

