Program in Sensory Physiology & Behavior Internship:  
**Cephalopod Skin Structure**

**Project Supervisor:**
Dr. Roger Hanlon, Dr. Alan Kuzirian, Dr. Lydia Mäthger, and associated lab members.

**Primary Objective:**
Adaptive coloration is the hallmark of cephalopod mollusks. The Hanlon and Kuzirian Labs explore the functional morphology of cephalopod skin. The skin has three camouflage components – chromatophores (pigment containing organs), iridophores (iridescent structural reflectors), and leucophores (white light diffusing cells). Interns assist with sample preparation, histology, immunocytochemistry, and various microscopy techniques to elucidate the functional morphology of these structures. Some cells are also kept in culture.

Daily duties include:
- Tissue dissection
- Cell culture
- Microtomy
- Histology
- Immunocytochemistry
- Microscopy (bright field, epifluorescent, confocal, SEM, TEM)

**Skills Required:**
- Patience
- Accurate record keeping skills and attention to detail
- Comfortable handling both live and dead animals; previous animal care experience beneficial
- Proficiency using Microsoft Excel, Powerpoint, and Word
- Experience with microscopy, histology and immunocytochemistry would be helpful
- Cell culture experience certainly a plus

**Time Commitment:**
- Full time (40hrs/week) for one semester, or as required for academic credit.

**Relevant Literature:**
Mäthger, L.M., Shashar, N. and Hanlon, R.T. 2009. Do cephalopods communicate using polarized light reflections from their skin? Journal of Experimental Biology 212: 2133-2140. (Featured Commentary) [PDF](#)
