Summer Course at FHL
June 9 – July 12, 2008 (Session A; 5 weeks); Biology 533 (9 credits)

Biomechanics

Instructors:
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Dr. Mark W. Denny, Hopkins Marine Station, Stanford University
Dr. John M. Gosline, Department of Zoology, University of British Columbia

This course uses an engineering perspective to evaluate the mechanical design of marine organisms. We will broadly study the mechanics of "fluids and solids" in order to develop an understanding of the diversity of ways organisms construct materials, organize body plans, and interact with their physical environment and other organisms. The first three weeks of the course will introduce biomechanical theories and techniques through lectures, laboratory exercises, and field activities. The final two weeks of the course are devoted to independent student research projects. The 2008 course is focused around two major themes:

1) Ecomechanics. Organisms must perform within the constraints of their physical environment. How have environmental parameters guided the evolution of organismal form and function, and how will future shifts in climate (temperature, water motion, ocean acidification, etc.) affect ecological performance?

2) Biomaterials. Material scientists increasingly look to nature for inspiration in the design of high performance materials, such as the strong underwater adhesives of barnacles, the tough durable tethers of mussels, and the fracture resistant shells of snails. How many other marine biomaterials could be considered "high performing"? To date, relatively few marine biomaterials have been adequately characterized; the rich diversity of marine flora and fauna in the San Juan Islands will undoubtedly provide for novel observations.

Application deadline is February 1, 2008. Enrollment is limited to 12 students. For online application instructions, see http://depts.washington.edu/fhl/studentClasslist2008.html#SumA-4. Late applications will be considered if space is available. Questions? Contact Emily Carrington at ecarring@u.washington.edu.