



Fellowships in Geophysical Fluid Dynamics at the Woods Hole Oceanographic Institution

June 20 to August 26, 2005

Since 1959 the GFD program has promoted the exchange of ideas among researchers in the many distinct fields that share a common interest in the nonlinear dynamics of fluid flows including oceanography and meteorology, astrophysics, applied mathematics, engineering, geophysics and fundamental physics. Each year the program is organized around a ten-week course of study and research for a small group of competitively selected graduate-student fellows. The overall philosophy is to bring together researchers from a variety of backgrounds, to provide a vigorous discussion of concepts that span different disciplines, and to create an intense research experience. For the student fellows the centerpiece of the program is a research project pursued under the supervision of the staff. At the end of the program the fellow presents a lecture and a written report for the GFD Proceedings Volume. Over its history the GFD Program has produced numerous alumni, many of whom are prominent scientists at universities throughout the world. The interdisciplinary atmosphere of the program is the ideal place for young scientists to learn the habits of broad inquiry, speaking to others with very different backgrounds and viewpoints and seeking answers in unfamiliar places.

The program commences with two weeks of principal lectures. For the summer of 2005, the program theme will be **Fast Times and Fine Scales** with lectures given by Joseph B. Keller (Stanford), George C. Papanicolaou (Stanford), and Eric Vanden-Eijnden (Courant Institute). The theme of the lectures will be asymptotic and stochastic modeling methods that exploit a physical scale separation of some kind. Many unresolvable processes in atmosphere ocean dynamics fall into this category, such as, for instance, the momentum transfer and mixing caused by small-scale waves and eddying motions. The principal lectures will assemble a broad range of practically useful mathematical techniques and illustrate their application to problems in geophysical fluid dynamics and homogenization theory. This will set the scene for a productive research summer centered around these topics.

Up to ten competitive fellowships are available for graduate students. Successful applicants will receive stipends of \$4,600 and an allowance for travel expenses within the United States. A small number of unpaid fellowships may also be available for strongly qualified students who can support themselves financially. Fellows are expected to be in residence for the full ten weeks of the program. The application deadline is February 15, 2005. Awards will be announced by April 1, 2005. We particularly encourage applications from women and members of underrepresented groups. Further information and application forms may be obtained at <http://gfd.who.edu> or by writing to:

The GFD Fellowship Committee
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Woods Hole Oceanographic Institution,
266 Woods Hole Road, Woods Hole, MA 02543-1541 .

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Prospective visitors should contact the directors of the 2005 program, Charles Doering (doering@umich.edu) or Oliver Buhler (obuhler@cims.nyu.edu).