

**WILLIAM KURT DEWAR**

(Jan. 2007)

***PERSONAL***

Date of Birth: May 10, 1955

Citizenship: US

***EDUCATIONAL BACKGROUND***

1983 Ph.D. in Physical Oceanography, the Massachusetts Institute of Technology -  
Woods Hole Oceanographic Institution Joint Program in Oceanography

1980 M.S. in Physical Oceanography, the Massachusetts Institute of Technology

1977 B.S. in Physics, Minor in Mathematics, the Ohio State University

***PROFESSIONAL EXPERIENCE***

September, 2005 – Present: Chair, Department of Oceanography

August, 2001 – Present: Pierre Welander Professor of Oceanography at the Florida State  
University

July 2000 – 2004: Director, the Climate Institute, A Center of Excellence at FSU funded  
through the Cornerstone Foundation

August 1999 – 2004: Faculty Affiliate, School of Computational Science and Information  
Technology and co-Director, Program in Computational Climate Dynamics, CSIT

August 1995 - Present: Professor, Department of Oceanography, Geophysical Fluid  
Dynamics Institute and Supercomputer Computations Research Institute, Florida State  
University, Tallahassee, Florida.

August 1990 - August 1995: Associate Professor, Department of Oceanography,  
Geophysical Fluid Dynamics Institute and Supercomputer Computations Research  
Institute, Florida State University, Tallahassee, Florida.

December 1985 - August 1990: Assistant Professor, Department of Oceanography,  
Geophysical Fluid Dynamics Institute and Supercomputer Computations Research  
Institute, Florida State University, Tallahassee, Florida.

Jan. 1, 1985 - Dec. 31, 1985: Assistant Professor, Research Faculty, the University of  
North Carolina, Chapel Hill, North Carolina.

1983-1984 - Postdoctoral Research Associate, the University of North Carolina,  
Curriculum in Marine Sciences, Chapel Hill, NC.

### ***GRANT AND CONTRACT HISTORY***

1. "The Effects of Seasonal Diabatic Forcing on Gulf Stream Rings," *National Science Foundation*, January 1, 1985 to June 30, 1986; Dr. William K. Dewar and Dr. John M. Bane, Co-Principal Investigators (\$52,345).
2. "Studies in Ocean Dynamics," *Office of Naval Research*, April 1, 1987 to December 31, 1989; Dr. William K. Dewar, Principal Investigator (\$148,522).
3. "Theoretical Studies of Eddy-Environment Interactions," *National Science Foundation*, October 1, 1987 to September 30, 1990; Drs. William K. Dewar, Glenn R. Flierl and Doron Nof, Co-Principal Investigators (\$234,000).
4. "Nonlinear Eddy-Environment Interactions", *National Science Foundation*, November 15, 1990 to October 31, 1993; W.K. Dewar and D. Nof, Co-Principal Investigators (\$585,000).
5. "The Dynamics of Multiscale Phenomena", *Office of Naval Research*, January 1, 1989 to December 31, 1993; W.K. Dewar, Principal Investigator (\$259,331).
6. "Eastern Boundary Effects on General Circulation Structure", *National Aeronautics and Space Administration*, June 1, 1992 to May 31, 1995; W.K. Dewar, Principal Investigator (\$234,987).
7. "Vortex Interactions with External Effects", *National Science Foundation*, June 1, 1994 to May 31, 1997; W.K. Dewar, S.P. Meacham and E. Chassignet, Co-Principal Investigators (\$356,000).
8. "Studies of Variable Climate Processes", *National Aeronautics and Space Administration*, October 1, 1995 to September 30, 1998; W.K. Dewar and D. Nof, Co-Principal Investigators (\$360,000).
9. "Effects of Topography on Wind-Driven Circulation", *National Science Foundation*, February 15, 1997 to January 31, 2000, W.K. Dewar, Principal Investigator (\$441,000).
10. "Zonal Propagation of Nonlinear Oceanic Anomalies", *National Aeronautics and Space Administration*, October 1, 1998 to September 30, 2001, W.K. Dewar and D. Nof, Co-Principal Investigators (\$454,144).
11. "Vortex Interactions with Abrupt Topography", *National Science Foundation*, April 1, 1999 to March 31, 2002, W.K. Dewar, G. S. Sutyrin and E.P. Chassignet, Co-Principal Investigators (\$234,668, Dewar portion).

12. "Thermodynamics in Layered Models", *National Aeronautics and Space Administration*, March 1, 1999 to February 28, 2002, W. K. Dewar, Principal Investigator (\$403,069).
13. "Coupled Climate Model Development for Seasonal Climate Prediction", *Florida State University Cornerstone Center of Excellence Program*, July 1, 1999 to June 30, 2001, W.K. Dewar, Principal Investigator; T.N. Krishnamurti, J.J. O'Brien and M.Y. Hussaini, Co-Principal Investigators, (\$996,000).
14. "Climate Prediction by Dynamical and Statistical Models", *National Oceanic and Atmospheric Administration*, July 1, 2000 to June 30, 2003, W.K. Dewar, T.N. Krishnamurti and M.Y. Hussaini, Co-Principal Investigators (\$250,000).
15. "An Eddy-resolving Coupled Ocean-Atmosphere Model for Climate Research", *Natural Environment Research Council*, Oct. 1, 2000 to August 31, 2003, W.K. Dewar and P.D. Killworth, Co-Principal Investigators (Approximate total, \$100,000).
16. "Self-Propagating Eddies in Realistic Basins", *National Science Foundation*, August 1, 2002 to July. 31, 2005, G. Sutyrin and W. Dewar, Co-Principal Investigators.
17. "Mid-Latitude Modes of Climate Variability", *National Science Foundation*, August 1, 2002 to July 31, 2005, M. Ghil, W.K. Dewar, co-Principal Investigators, (\$163,601).
18. "Collaborative Research: CLIMODE", *National Science Foundation*, Sept. 1, 2004-June 30, 2009, W.K. Dewar, FSU-PI, FSU Budget \$750,000.
19. "CMG Collaborative Training: Modern Mathematical Methods in Physical Oceanography", July 1, 2004-June 30, 2007, H. Dijkstra, W.K. Dewar and R. Kleeman, Co-Principal Investigators, funded, PI status transferred to FSU, \$121,000.
20. "Seasonal prediction of precipitation using coupled models, regional impacts", *National Aeronautics and Space Administration*, July 1, 2005-June 30, 2009, W. K. Dewar, T. N. Krishnamurti, S. Wacongne-Speer, S. Cocke, co-Investigators, \$900,000. (declined)
21. "Collaborative Research: Mesoscale dissipation by boundary interactions and gravity wave radiation", *National Science Foundation*, July 1, 2005-June 30, 2009, W.K. Dewar, G. Sutyrin, J. McWilliams, J. Molemaker, co-Investigators, \$309,696. (declined)
22. "Collaborative Research: Mid-Latitude Modes of Climate Variability", *National Science Foundation*, Jan. 1, 2006-Dec. 31, 2010, W.K. Dewar, S. Kravtsov, M. Ghil, J. McWilliams and P. Berloff, co-Investigators, \$248,737. (declined)
23. "Collaborative Research: Fine scale Foraging Behavior of Humpback Whales in the Antarctic Peninsula", *National Science Foundation*, March 1, 2006-February 28, 2010, D. Nowacek, W.K. Dewar, K. Speer, co-Investigators, \$758,445. (pending)

24. "Collaborative Research: The Zapiola Eggbeater", National Science Foundation, Jan. 1, 2006-Dec. 30, 2008, W.K. Dewar, C. Cenedese, co-Investigators, \$123,670. (declined)
25. "Collaborative Research: Does Topography Control Mesocale Dissipation?", National Science Foundation, Feb. 1, 2006-Jan. 31, 2009, G. Sutyrin, W.K. Dewar, J. McWilliams, J. Molemaker, co-Investigators, \$600,000. (funded).

### **REFEREED PUBLICATIONS**

- Dewar, W.K., P.B. Rhines and W.R. Young, The nonlinear spinup of a stratified ocean, *Geophysical and Astrophysical Fluid Dynamics*, **30**, 1984, 169-197.
- Flierl, G.R. and W.K. Dewar, Motion and dispersion of dumped wastes by large-amplitude eddies; Volume 5, *Wastes in the Ocean*, Wiley-Interscience, 1985, 147-169.
- Dewar, W.K. and G.R. Flierl, Particle trajectories and simple models of transport in Gulf Stream rings, *Dynamics of Atmospheres and Oceans*, **9**, 1985, 215-252.
- Dewar, W.K. and J.M. Bane, The subsurface energetics of the Gulf Stream near the Charleston bump, *Journal of Physical Oceanography*, **15**, 1985, 1771-1789.
- Dewar, W.K., Mixed layers in Gulf Stream rings, *Dynamics of Atmospheres and Oceans*, **10**, 1986, 1-29.
- Dewar, W.K., On the potential vorticity structure of weakly ventilated isopycnals: A theory of subtropical mode water maintenance, *Journal of Physical Oceanography*, **16**, 1986, 1204-1216.
- Dewar, W.K., Planetary shock waves, *Journal of Physical Oceanography*, **17**, 1987, 470-482.
- Dewar, W.K. and G.R. Flierl, Some effects of the wind on rings, *Journal of Physical Oceanography*, **17**, 1987, 1652-1667
- Dewar, W.K., Ventilating warm rings: theory and energetics, *Journal of Physical Oceanography*, **17**, 1987, 2219-2231.
- Osgood, K.E., J.M. Bane and W.K. Dewar, Vertical velocity, momentum balance and heat balance in the Gulf Stream, *Journal of Geophysical Research*, **92**, 1987, 13029-13040.

- Dewar, W.K., Ventilating warm rings: Structure and model evaluation, *Journal of Physical Oceanography*, **18**, 1988, 552-564.
- Bane, J.M. and W.K. Dewar, Gulf Stream bimodality and variability downstream of the Charleston bump, *Journal of Geophysical Research*, **93**, 1988, 6695-6710.
- Dewar, W.K., Ventilating beta plane lenses, *Journal of Physical Oceanography*, **18**, 1988, 1193-1201.
- Dewar, W.K., A nonlinear, time dependent thermocline theory, *Journal of Marine Research*, **47**, 1989, 1-31.
- Dewar, W.K. and J.M. Bane, Gulf Stream dynamics. Part I: Mean flow dynamics at 73°W, *Journal of Physical Oceanography*, **19**, 1989, 1558-1573.
- Dewar, W.K. and J.M. Bane, Gulf Stream dynamics. Part II: Eddy energetics at 73°W, *Journal of Physical Oceanography*, **19**, 1989, 1574-1587.
- Dewar, W.K., Planetons: An example of large amplitude solitary waves, *Geophysical and Astrophysical Fluid Dynamics*, **15**, 1990, 53-85.
- Dewar, W.K., Connected thermal and transport anomalies in the general circulation, *Journal of Physical Oceanography*, **20**, 1990, 534-550.
- Dewar, W.K. and P.D. Killworth, On the cylinder collapse problem, mixing and the merger of isolated eddies, *Journal of Physical Oceanography*, **20**, 1990, 1563-1575.
- Dewar, W.K., Arrested fronts, *Journal of Marine Research*, **49**, 1991, 21-52.
- Dewar, W.K., Simple models of stratification, *Journal of Physical Oceanography*, **21**, 1991, 1762-1779.
- Dewar, W.K., Spontaneous shocks, *Journal of Physical Oceanography*, **22**, 1992, 505-522.
- Sutyrin, G.G. and W.K. Dewar, Almost symmetric solitary eddies in two layer models, *Journal of Fluid Mechanics*, **238**, 1992, 633-656.
- Chen, L. and W.K. Dewar, Intergyre communication in a three layer model, *Journal of Physical Oceanography*, **23**, 1993, 855-878.
- Nof, D. and W.K. Dewar, The drift of mid-ocean jets, *Journal of Physical Oceanography*, **23**, 1993, 2313-2325.

- Dewar, W.K. and J.C. Marshall, Inertial embedded fronts, *Journal of Physical Oceanography*, **24**, 1994, 79-90.
- Dewar, W.K. and C. Gailliard, The dynamics of barotropically dominated rings, *Journal of Physical Oceanography*, **24**, 1994, 5-29.
- Dewar, W.K., On mid-ocean fronts in multi-layer models, *Geophysical and Astrophysical Fluid Dynamics*, **74**, 1994, 1-22.
- Nof, D. and W.K. Dewar, Alignment of lenses: Laboratory and numerical experiments, *Deep-Sea Research*, **41**, 1994, 1207-1229.
- Reznik, G.M. and W.K. Dewar, An analytical theory of distributed axisymmetric barotropic vortices on the  $\beta$ -plane, *Journal of Fluid Mechanics*, **269**, 1994, 301-321.
- Dewar, W.K. and P.D. Killworth, On the stability of oceanic rings, *Journal of Physical Oceanography*, **25**, 1995, 1467-1487.
- Dewar, W.K. and H. Meng, The propagation of submesoscale coherent vortices, *Journal of Physical Oceanography*, **25**, 1995, 1745-1770.
- Dewar, W.K. and P.D. Killworth, Do fast gravity waves interact with geostrophic motions?, *Deep-Sea Research-Part I*, **42**, 7, 1995, 1063-1081.
- Dewar, W.K. and R.X. Huang, Fluid flow in loops driven by freshwater and heat fluxes, *Journal of Fluid Mechanics*, **297**, 1995, 153-191.
- Dewar, W.K. and R.X. Huang, On the forced flow of salty water in a loop, *Physics of Fluids*, **8**(4), 1996, 954-970.
- Huang, R.X. and W.K. Dewar, Haline Circulation: Bifurcation and Chaos, *Journal of Physical Oceanography*, **26**, 1996, 2093-2106.
- Killworth, P.D., J.R. Blundell and W.K. Dewar, Primitive-equation instability of wide oceanic rings. I. Linear theory, *Journal of Physical Oceanography*, 1997, 941-962.
- Kravtsov, S. and W.K. Dewar, Multiple equilibria and transitions in a coupled ocean-atmosphere box model, *Journal of Physical Oceanography*, **28**, 1998, 389-397.
- Dewar, W.K., Y. Hsueh, T.J. McDougall and D. Yuan, Calculation of pressure in ocean simulations, *Journal of Physical Oceanography*, **28**, 1998, 577-588.
- Dewar, W.K., Topography and barotropic transport control by bottom friction, *Journal of Marine Research*, **56**, 1998, 295-328.
- Dewar, W.K., On "too-fast" baroclinic planetary waves in the general circulation, *Journal of Physical Oceanography*, **28**, 1998, 1739-1758.

- McDougall, T.J. and W.K. Dewar, Vertical Mixing, Cabbeling and Thermobaricity in Layered Models, *Journal of Physical Oceanography*, 28, 1998, 1458-1480.
- Miranda, A., B. Barnier and W.K. Dewar, Mode waters and subduction rates in a high-resolution South Atlantic simulation, *Journal of Marine Research*, 57, 1999, 1-32.
- Miranda, A., B. Barnier and W.K. Dewar, On the dynamics of the Zapiola Anticyclone, *Journal of Geophysical Research*, 57, 1999, 213-244.
- Dewar, W.K., P.D. Killworth, J.R. Blundell, Primitive-equation instability of wide oceanic rings. II. Numerical studies of ring stability, *Journal of Physical Oceanography*, 29, 1999, 1744-1758.
- Dewar, W.K. and T.J. McDougall, On the solution of the one dimensional advection-diffusion equation in layered coordinates, *Monthly Weather Review*, 128, 2000, 2575-2587.
- Dewar, W.K. and M.Y. Morris, On the propagation of baroclinic waves in the general circulation, *Journal of Physical Oceanography*, 30, 2000, 2637-2649.
- Dewar, W.K. and R.X. Huang, On the adjustment of the ventilated thermocline, *Journal of Physical Oceanography*, 31, 2001, 1676-1697.
- Dewar, W.K., Density coordinate mixed layer models, *Monthly Weather Review*, 2001, 129, 237-253.
- Dewar, W. K., Ocean dynamics in mid-latitude climate, *Journal of Climate*, 14, 2001, 4380-4397.
- Dewar, W.K., Convection in small basins, *Journal of Physical Oceanography*, 32, 2002, 2766-2788.
- Dewar, W.K., Baroclinic eddy interactions with isolated topography, *Journal of Physical Oceanography*, 32, 2002, 2789-2805
- Jacob, J., E. Chassignet and W. Dewar, Influence of topography on the propagation of isolated eddies, *Journal of Physical Oceanography*, 32, 2002, 2848-2869.
- Mark P., R. van Engelen, K. Gallivan and W. Dewar, A Case Study for Automatic Code Generation on a Coupled Ocean-Atmosphere Model, *Proceedings of the International Conference on Computational Science, 2002*, Amsterdam, Netherlands.

Dewar, W.K., Nonlinear mid-latitude ocean adjustment, *Journal of Physical Oceanography*, 2003, 33, 1057-1082.

Kravtsov, S. and W.K. Dewar, On the role of thermohaline advection and sea ice in glacial transitions, *J. Geophys. Res.*, 2003, 108, C6, 3203, 10.1029/2002JC001439.

Wang, G. and W.K. Dewar, Meddy-seamount Interaction: Implications for the Mediterranean Salt Tongue, *Journal of Physical Oceanography*, **33**, 2003, 2446-2461

Hogg, A., W. K. Dewar, P. Killworth and J. Blundell, A Quasi-geostrophic coupled model: Q-GCM, *Monthly Weather Review*, **131**, 2003, 2261-2278.

Dewar, W.K. and D. A. Leonov: Variability on Steep, Confined Topography, *Deep-Sea Res.*, 2004, 2973-2993.

Penduff, T., B. Barnier, W. K. Dewar and J. O'Brien, Impact of the North Atlantic Oscillation on the Oceanic Eddy Field: Dynamical Insights from a Model-Data Comparison, *Journal of Physical Oceanography*, 2004, 2615-2629.

Dewar, W. K., R. M. Samelson and G.K. Vallis: The ventilated pool: A model of subtropical mode water, *Journal of Physical Oceanography*, 2005, 137-150.

Hogg, A., P.D. Killworth, J. Blundell and W.K. Dewar: On the Mechanisms of Decadal Variability of the Wind-Driven Ocean Circulation, *Journal of Physical Oceanography*, 2005, 512-531.

Yun, W. T., L. Stefanova, A. K. Mitra, T. S. V. Vijaya Kumar, W. Dewar and T. N. Krishnamurti, 2005: Multi-Model Synthetic Superensemble Algorithm for Seasonal Climate Prediction using DEMETER Forecasts. *Tellus*, 2005, 280-289.

Hogg, A., W.K. Dewar, P. Killworth, J. Blundell, Decadal Variability of the Mid-Latitude Climate System Driven by the Ocean Circulation, *Journal of Climate*, **19**, 2006, 1149-1166.

Krishnamurti, T. N., A. K. Mitra, T. S. V. V. Kumar, W.T. Yun and W. K. Dewar, 2006: Seasonal climate forecasts of the South Asian monsoon using multiple coupled models. *Tellus*, 2006, 487-507.

Dewar, W.K., R. Bingham, R. Iverson, D. Nowacek, L. St Laurent, P. Wiebe, Does the Marine Biosphere Mix the ocean?, *Journal of Marine Research*, **64**, 2006, 553-573.

- Kravtsov, S., P. Berloff, W.K. Dewar, M. Ghil, and J.C. McWilliams: Dynamical origin of low-frequency variability in a highly nonlinear mid-latitude coupled model, *Journal of Climate*, 2006, 6391-6408.
- Krishnamurti, T.N., A. Chakraborty, R. Krishnamurti, W.K. Dewar and C. Clayson, Seasonal prediction of sea surface temperature anomalies using a suite of 13 coupled atmosphere-ocean models, *Journal of Climate*, **19**, 2006, 6069-6088.
- Berloff, P., W.K. Dewar, S. Kravtsov and J.C. McWilliams: Ocean eddy dynamics in a coupled ocean-atmosphere model, *Journal of Physical Oceanography*, 2007, in press.
- Kravtsov, S., W.K. Dewar, P. Berloff, M. Ghil and J.C. McWilliams: A highly nonlinear coupled mode of decadal-to-interdecadal variability in a midlatitude ocean-atmosphere model, *Dynamics of Atmospheres and Oceans*, 2007, in press.
- Berloff, P., A. Hogg and W.K. Dewar, Dynamical mechanisms of the generic low-frequency variability in wind-driven ocean gyres, *Journal of Physical Oceanography*, 2007, in press.
- Kravtsov, S., W. K. Dewar, J. C. McWilliams, P. Berloff, and M. Ghil: A mechanistic model of mid-latitude decadal climate variability. *Climate Dyn.*, 2007, submitted.
- Kravtsov, S., WK Dewar, M. Ghil, P. Berloff and J. McWilliams, Mid-latitude climate variability in coupled models and data, *Science*, 2007, submitted.

#### **OTHER PUBLICATIONS**

- 1985 Dewar, W.K. and J.M. Bane, An analysis of Gulf Stream mean flow energetics off Charleston, South Carolina, *Gulf Stream Workshop Proceedings*, D.R. Watts, Ed., April 1985, pp. II. 256-272.
- 1985 Bane, J. M. and W. K. Dewar, Bimodality in the Gulf Stream?, *Gulf Stream Workshop Proceedings*, D.R. Watts, Ed., April 1985, pp. II. 116-126.
- 1988 Dewar, W.K., The evolution of cooling rings, *Mesoscale/Synoptic Coherent Structures in Geophysical Turbulence*, Nihoul & Jamart, Eds., Elsevier Oceanography Series, **50**, 75-94.
- 1990 Dewar, W.K., A buoyancy-driven thermocline model, *Deep Convection and Deep Water Formation in the Oceans*, P.C. Chu and J.C. Gascard, Eds., Elsevier Publishing Co., 1991, 309-323.
- 1997 Dewar, W.K., Topography and barotropic transport control by bottom friction, *International WOCE Newsletter*, October, 28, p. 17.

- 2004 Krishnamurti, T.N., A. Mitra, W. Yun, T. Vijaya Kumar and W.K. Dewar, Seasonal climate forecasts of the Asian monsoon using multiple coupled models, FSU Report No. 04-05.

***STUDENTS SUPERVISED***

Major Advisor for Dr. Liang gui Chen, Ph.D. student. (Degree received June, 1991)  
Topic: Intergyre communication in a three layer model

Major Advisor for Ms. Christine Gailliard, M.S. student. (Degree received January, 1992) Topic: The evolution of barotropically dominated eddies

Major Advisor for Ms. Huan Meng, M.S. student. (Degree received August, 1993)  
Topic: The dynamics and propagation of submesoscale coherent vortices

Major Advisor for Dr. Sergei Kravtsov, Ph.D. student. (Degree Received May, 1998)  
Topic: Climate Sensitivity to Sea-Ice.

Major Advisor for Ms. Katharine White, M.S. student. (Degree Received May, 1998)  
Topic: Mediterranean Sea Outflow

Major Advisor for Ms. Guohui Wang, M.S. student. (Degree Received Dec., 2001)  
Topic: Meddy Seamount Interaction,.

Major Advisor for Mr. Sebastian Bigorre, Ph.D. student. Topic: Topographic Effects on Oceanic Flow

Major Advisor for Mr. Dmitri Leonov, Ph.D. student, Topic: Effects of Topography on the Large Scale Circulation

Major Advisor for Mr. Michael Beck, M.S. student, Topic: Mode Water Formation and Variability

Co-Advisor for Ms. Alison Byrd, M.S. student, Topic: Mode Water Formation and Surface Fluxes

***POSTDOCS SUPERVISED***

Sergey Kravtsov, May - Oct., 1998. Topic: Process Climate Modeling.

Shan Sun, Nov. 1999 – 2002, Topic: Climate Modeling and Hybrid Coordinate

Analysis.

Donliang Yuan, Jan. 2000 - 2002, Topic: Seasonal to Interannual Climate  
Prediction

Andrew Hogg, Jan. 2002-2004, Topic: Quasi-geostrophic Coupled Climate Models

Nicolas Wienders, March, 2005-present, Topic: Mode Water Dynamics

***COURSES TAUGHT IN THE LAST FIVE YEARS***

Spring 2000: Dynamical Oceanography, OCP-5285, 3 credit hours, enrollment 5.  
Seminar in Physical Oceanography

Fall 2000: Main Ocean Thermocline, OCP-5265, 3 credit hours, enrollment 5.

Spring 2001: Dynamical Oceanography, OCP-5285, 3 credit hours, enrollment 8.

Fall 2001: Elementary Oceanography, OCE – 1001, 3 credit hours, enrollment  
500.

Fall 2002: Main Ocean Thermocline, OCP-5265, 3 credit hours, enrollment 8.

Spring 2003: Dynamical Oceanography, OCP-5285, 3 credit hours, enrollment 7.

Fall 2003: Elementary Oceanography, OCE – 1001, 3 credit hours, enrollment  
500.

Spring 2004: Dynamical Oceanography, OCP-5285, 3 credit hours, enrollment 6.

Fall 2004: Main Ocean Thermocline, OCP-5265, 3 credit hours, enrollment 4.

Spring 2005: Dynamical Oceanography, OCP-5285, 3 credit hours, enrollment 6.

Fall 2005: Elementary Oceanography, OCE – 1001, 3 credit hours, enrollment  
500.