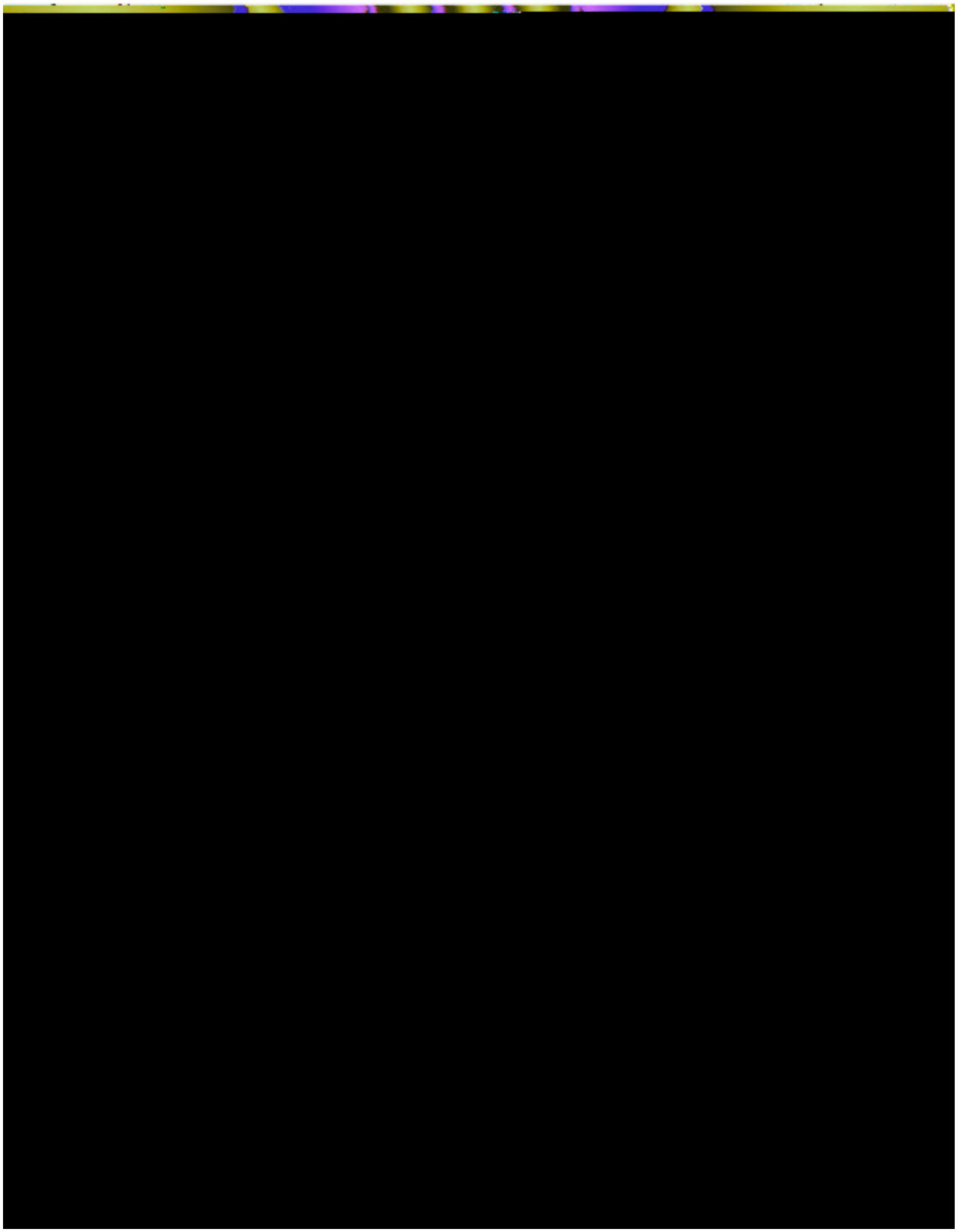


# Department of Applied Mathematics

The vision of the Department of Applied Mathematics at the University of Colorado is to be an internationally leading department in Applied Mathematics in research and education.

The Department of Applied Mathematics at the University of Colorado strives to provide excellent teaching, research, and service to the university community and to the world in the application of mathematics to other disciplines.

The Department of Applied Mathematics has four primary objectives:

- *to teach our students well;*
- *to seek out and develop new, interesting applications of mathematics in other disciplines;*
- *to provide each student with a rich educational experience; and*
- *to create new mathematics.*

We interpret this to mean:

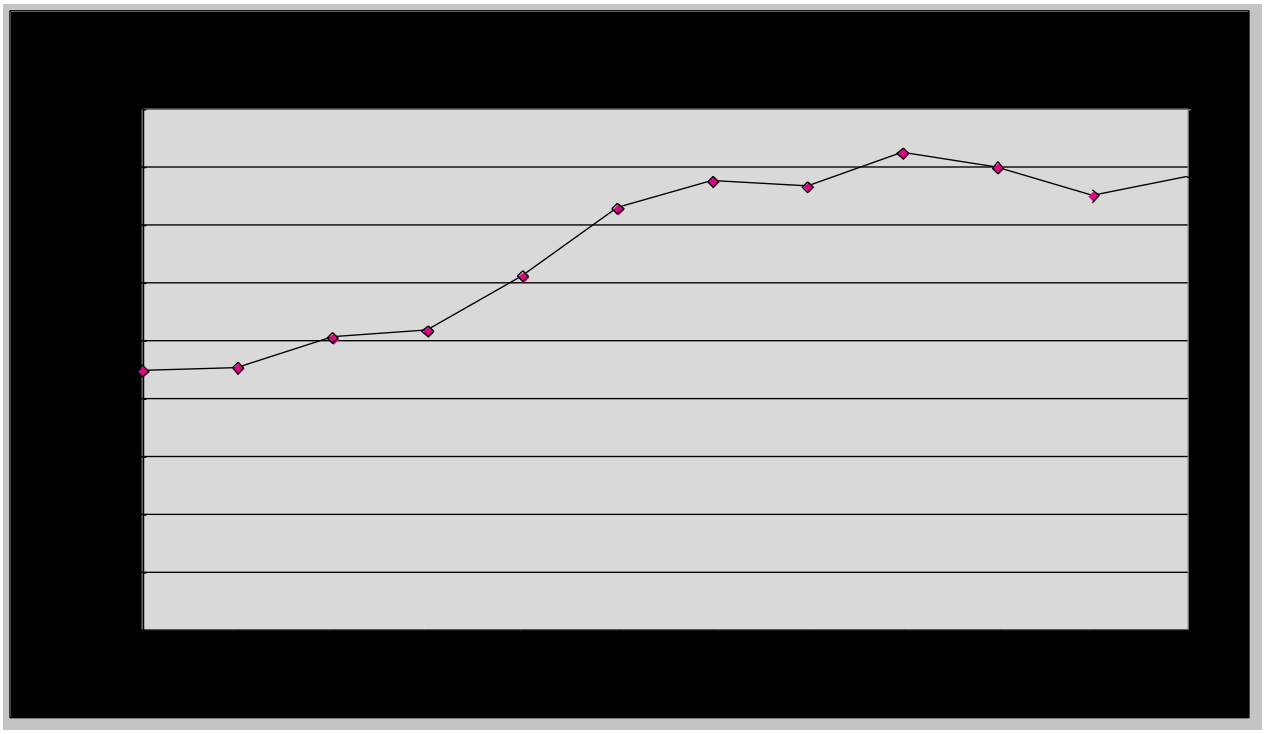
- Provide undergraduate and graduate students with a high quality education and training in applied mathematics and prepare them for careers in industry, laboratories and the academic professions;
- Offer and monitor degree programs leading to BS, MS and PhD degrees in Applied Mathematics;
- Nourish and maintain a professional environment in which excellence in teaching, learning, scholarship and

# Annual Report 2006

Undergraduate education in the Department of Applied Mathematics provides students with broad-based preparation for the challenges and opportunities of today and tomorrow. Through courses, projects, research and other educational activities, the Department provides unique experiences to our majors and minors. The Department also has a large teaching commitment since most undergraduate engineering majors are required to take four courses in applied mathematics. The Department taught a total of 3650 undergraduate and graduate students in 2005-2006.

Enrollment in the courses offered by the Department continues at extremely high levels. It is particularly noteworthy, given the faculty's small size, that the Department teaches so many students. The statistics over the past fifteen years are as follows:

| Year | Total Enrollment in courses | Number of Graduate Students |
|---|---|---|



We congratulate our students who graduated in the last year with a degree in Applied Mathematics. they are:

**PhD degree (See 7D for thesis titles and advisors)**

**December 2006**

## Research:

This has been a year of significant accomplishment in research both by the faculty and students in the Department. Two undergraduate students and one graduate student were awarded National Science Foundation Graduate Research Fellowships: Moorea Brega and Alejandro Cantanero, who will contin5 (i4 (5) 53 (o t) 44 (5) 53 (oi) 6) 4hi 4 (5

**Department-wide Grants:**

**Outreach:**

**Donor Activities:**

**Changes in Personnel:**

# FACULTY, INSTRUCTORS, RESEARCH ASSOCIATES, VISI

**Andrew Moore -** *Atmospheric and Oceanic Sciences; CIRES*, Ocean-Atmosphere Modeling.

**Kamran Mohseni -** *Aerospace Engineering*, Physical Applied Math, Computational Fluid Mechanics.

**Douglas Nychka -** *National Center for Atmospheric Research*, Geophysical Statistics.

**Lev Ostrovsky -** *CIRES/NOAA Environmental Technology Laboratory*, Nonlinear Waves, Fluid Dynamics, Oceanography, Acoustics.

**K.C. Park** - *Aerospace Engineering*, Parallel computation, Structural vibrations.

**Scott Parker** - *Physics*, Plasma Physics.

**Carl Patton**

**Henry Tufo -** *Computer Science*, Computational science, parallel algorithms for high performance computers

**Oleg Vasilyev** - *Mechanical Engineering*, Computational Fluid Mechanics, Large Eddy Simulations of Turbulent Flow, Wavelet Methods for Modeling and Simulation of Complex Multi-Scale Phenomena, Thermal Convection Flows.

**Thomas Warner** - *Atmosph6 0.227Tm /F.2 9 (At) 6 (m) -2 0.24 l*

**Marcia Flynt**, Office Manager.

**Doug Langley**, Office Coordinator.

**Charles Moseley**, Accounting Technician II, Undergraduate Student Coordinator.

**Susan Pryor**, Graduate Program.

**Anshul Mehendale**, part-time student assistant.

**Scott Portnoy**, part-time student assistant.

# 3 WEEKLY COLLOQUIA and SEMINARS 2006

## A

*Our Applied Mathematics Colloquium series continues to be held on Friday afternoons during the academic year at 3:00 p.m., with refreshments preceding at 2:30 PM outside the APPM conference room, ECOT 226.*

**Mevin Hooten**, University of Missouri Columbia, Department of Statistics, January 20, 2006, *Non-linear process specifications in hierarchical spatio-temporal models*

**Jing Wang,**

**Mark Rast,** CU Boulder, LASP, April 28, 2006, *Lagrangian statistics in point vortex flows.*

**Robert Ecke,** Los Alamos National Laboratory, Center for Nonlinear Studies, May 5, 2006, *Exciting frontiers in fluid turbulence.*

**Elisabeth Larsson** , Uppsala University, Sweden, September 1, 2006, *Radial basis function approximations for high-dimensional PDEs.*

D Dynamical Systems Seminars, 2006-2007

The weekly Dynamical Systems Seminar is a research working group led by James Meiss, held on Thursday afternoons at 2:00. The following is a list of the speakers and the titles of their talks:

Anca Radulescu, CU Boulder, August 31, 2006, "Is topological entropy computable?"

Michael Watson

E Joint Probability and Statistics Seminars, 2006-2007

These sessions were organized jointly with the Math Department, and were held on Wednesday afternoons at 3:30 pm. in Math 220.

Elena Zhizhina, Institute for Information Transmission Problems (Moscow, Russia), August 30, 2006, "Stochastic Markov evolutions in continuum".

B. Rider, Department of Math, CU Boulder, September 13, 2006, "The old Riccati map and RMT"