

ANNUAL REPORT

2005

Annual Report
Mathematics Department
2005

Department Head's Summary

- **Learning**

- 6 students completed Undergraduate Research projects in 2005. An NSA sponsored REU organized in Summer 06 which includes some VT students should help us double that total in 2006.
- Our Math Ed option continues to graduate on average 20 students licensed to teach in the Commonwealth.
- B.S. degrees were conferred on 74 students. Our average number of mathematics majors is consistently over 70. This puts us in the top 15 in the country.
- A test engine allowing asynchronous testing is in place in the Math Emporium has been put in place. Over half a million tests were served at the Math Emporium in 2005.
- There were 58 graduate students in GTA or GA positions. There were 3 GRA's.
- US News ranks our graduate program in Applied Mathematics 33rd in the country.
- In 2004 we conferred 21 M.S. degrees and 7 Ph.D. degrees
- Our graduate student connections to Peru, Tunisia and Algeria continue to grow.
- MOU's were prepared with the Universities of Trier and Karlsruhe in Germany involving graduate student exchanges

- **Discovery**

- We were a part of the College's computational cluster in 2004-2005. Lizette Zietsman, Eric de Sturler and James Turner were hired and began in Fall 2005 as a result of that initiative. Jennifer Ryan joined us after postponing her initial offer in 2003 to serve as a postdoc at Oak Ridge.
- Over the last two years, a strong computational group in the Math Department consisting of Beattie and Borggaard and joined by new comers Iliescu and Gugercin has been awarded 3 grants.
- The math department has lowered the teaching loads of research active faculty to 2-1. Since applying or possessing grants is a necessary condition for consideration, our grant submissions are up significantly.
- We were a part of the College's computational cluster in 2005-2006.

- **Engagement**
 - An MOU was developed between Springer-Verlag, InuTech and Icubed (a company owned by department member James Turner). This will provide opportunities for our students to study and intern abroad.
 - Sue Hagen is working with middle school teachers under a program funded by the Virginia Department of Education. She is also working with VT STARRS out of Ed McPherson's office
 - We sponsor the VT regional Math contest involving 40 colleges/university and 200 students.
 - We offered our annual Women's Career Day at the Math Emporium involving 20 regional middle schools, 200 girls and a panel of 5 alumnae.
 - We are consulting in the new NSF sponsored R2R program run by Carol Twigg. John Rossi and Terri Bourdon are involved in advising over 20 colleges and universities on course transformation.

- **Honors and Awards**
 - Ezra Bud Brown was named ADP in 2005
 - Abbie Kohler won the Alumni Award for Teaching in 2005.
 - Diane Agud won the Sporn Award in 2005

- **Diversity**
 - James Turner was hired in Fall 2005
 - African-Americans Camille Daniel and Kalota Stewart are slated to finish Ph.D degrees in 2006-2007

- **Future Directions**
 - The department began working on an internal review document to get ready for a Fall 2006 external review
 - The planning committee mapped out the hiring for the next 5 years

Academic Accomplishments

Learning

We graduated 76 majors in 2005 with over 20 graduated in the Math Ed option. We have been actively trying to increase undergraduate research projects. Six projects were completed in 2005. There are 4 degree options each with a course advisor for each of the four years and an undergraduate research coordinator who advises students in picking a mentor.

Dan Farkas and Peter Haskell won an NSA grant to sponsor an REU for summer 2006. Five of the students attending are VT students and we are confident that they will all complete an undergraduate research project in 2006. This should significantly raise the 2006 total of undergraduate research.

We successfully converted our business calculus (Math 1525-26) to an online course resembling our other online emporium based options. This was done with one time money from the Provost's office. This brings to five the number of courses that are completely online. The test engine established and maintained by Mike Williams had well over 500,000 hits last year. On Tuesdays and Thursdays in Fall 2005, we consistently had about 4000 students check-in at the Math Emporium. Large (about 120 students) experimental sections of 1206 have been taking all their tests at the Emporium using this engine. A recent study by Frank Quinn finds that the scores on the common finals are comparable with those in traditional sections. Seven faculty members will spend summer 2006 revising and updating course material for our online courses and test engine.

We graduated 21 M.S. and 7 Ph.D. students in 2005. We are seeing a growth in the number of our Ph.D. students due to our active recruitment of foreign students. We have a pipeline to Peru and to Tunisia and Algeria. Next year there will be 6 Peruvians, 4 Tunisians and our first Algerian student. The 5 students from those countries who are here are progressing very well. We have a GTA coordinator, Eileen Shugart, who works on scheduling and mentoring of grad students in their role as teachers. She is a past recipient of an AMS Preparing Future Faculty grant and has published a booklet on being a Math GTA.

As a result of the International Faculty Development Workshop at CESA in Switzerland John Rossi initiated MOU's with the University of Trier and the University of Karlsruhe in Germany which should be completed in 2006. The agreements involve faculty and student exchanges. Two graduate students from Trier came to VT in Fall 2005 and completed their M.S. degree in Spring 2006. Two students from Karlsruhe will be here in Fall 2006

Discovery

We hired 4 new faculty in 2005 and continued 4 postdoctoral fellows for a second year. Lizette Zietsman, Eric de Sturler and James Turner were hired as a result of the Dean's Computational Cluster initiative. Jennifer Ryan, also in computational mathematics, delayed her initial starting date in 2003 to serve as a postdoctoral fellow at Oak Ridge. These new hires together with our existing numerical group give us national prominence in computational mathematics. In fact Chris Beattie, Jeff Borggaard, Serkan Gugercin and Trian Iliescu were awarded 3 grants in 2005 and Slimane Adjerid has taken on five Ph.D students.

Last year we lowered the teaching load to 2-1 for research active faculty. By definition research active faculty need to have their scholarship recognized by the Personnel Committee and they must either have external funding or they must have submitted a proposal in 2005. We approved 17 requests in 2005. This convinced some of our strong faculty who had given up on external funding to start applying for grants again. Twenty-two faculty members applied for reduced loads in 2006.

In 2005 the Faculty has published over 100 articles in refereed journals and given over 150 invited lectures. Our faculty has over 40 active grants including a 2.3M grant awarded to our ICAM team from DARPA. Collectively we have over 35 Editorships or Associate Editorships of peer reviewed journals. We have an active colloquium series which bring in about 25 outside speakers brought throughout the year.

We were part of the college's cluster initiative and began a search for an Analyst. The pool was one of the strongest we had seen in years.

Engagement

An MOU was developed between Springer-Verlag, InuTech and Icubed (a company owned by department member James Turner). This will provide opportunities for our students to study and intern abroad. This will be folded into Turner's African initiative which is coordinated through John Dooley's office. The plans call for a center in Capetown, South Africa for VT and African students. Turner is also part of the planning committee for K-12 program in South Africa jointly with School of Education faculty.

K-12 teacher professional development is run by Wayne Patty. He has received a one year extension on his large grant.

Sue Hagen is working with middle school teachers under a program funded by the Virginia Department of Education She taught one class in the Fall semester, in Roanoke County for Roanoke County, Roanoke City and Salem City teachers. She is also working with VT STARRS out of Ed McPherson's office

We sponsor the VT regional Math contest involving 40 colleges/university and 200 students.

We offered our annual Women's Career Day at the Math Emporium involving 20 regional middle schools, 200 girls and a panel of 5 alumnae.

During Math Awareness Month, we sponsor a poster contest for Montgomery and Giles K-6 students. The winners and their parents and teachers are invited to a reception in our Commons Room.

As a result of our past Pew grant involving the Math Emporium, we were asked to help consult in the new NSF sponsored R2R program run by Carol Twigg. John Rossi and Terri Bourdon are involved in advising over 20 colleges and universities on course transformation.

Honors and Awards

Bud Brown was named ADP in 2005. Abbie Kohler won the Alumni Teaching Award. Diane Agud won the Sporn Award. John Burns was named Honorary Professor of Math at the Beijing Institute of Technology. Bill Greenberg and Mike Williams had their paper voted "Best Paper" at the 3rd EISTA Conference. A special conference was organized in Amsterdam in honor of a visit by Gail Letzter.

Diversity

James Tuner began working for us as a tenured full professor in Fall 2005. Besides being a well known researcher, James has been instrumental in the recruitment and retention of African-American graduate students. He is also involved in the University's Africa program and plans to open a VT center in Capetown, South Africa.

Camille Daniel and Kalota Stewart, two African-American females, are slated to complete their Ph.D's in 2006-2007.

Susan Anderson won the "Gandhi, King, Ikeda Award" from Morehouse College (an HCBU) for serving the "Community and World through dedication to peace and unity, commitment to non-violence, and persistent efforts to establish justice for all humankind."

Future Plans

The department personnel committee, John Rossi, Gwen Lloyd and Ken Eriksson (Geosciences) have been crafting the department internal review document. We expect to be externally reviewed in Fall 2006.

A department planning committee was appointed to plan future directions of the department. Between retirements and new College positions, the committee recommended the hiring of 28 positions in the next 5 years. Immediate hires in the areas of Algebraic Combinatorics and Math Ed were seen as necessary to solve retention and programmatic issues respectively. Our pure math group has been dwindling over the years and the committee recommended hires in Analysis and Algebraic Geometry. They also recommended hires in Discrete Mathematics and in Mathematical Biology.

FACULTY

Hatcher Professor

Burns, John

Alumni Distinguished Professor

Brown, Erza

Professors

Adjerid, Slimane

Ball, Joseph

Beattie, Christopher

Day, Martin

Farkas, Daniel

Floyd, William

Green, Edward

Greenberg, William

Hagedorn, George

Haskell, Peter

Herdman, Terry

Holob, James

Kim, Jong Uhn

Klaus, Martin

Kohler, Werner

Laubenbacker, Reinhard

Letzter, Gail

Lin, Tao

Linnell, Peter

Parry, Charles

Patty, C. Wayne

Prather, Carl

Quinn, Frank

Renardy, Michael

Renardy, Yuriko

Riess, R. Dean

Rogers, Robert

Rossi, John

Russell, David

Sachs, Ekkehard

Shaw, Kenneth

Shimozono, Mark

Snider, Robert

Sun, Shu Ming

Turner, James

Wheeler, Robert

Associate Professors

Borggaard, Jeffery
Elder, Griffith
Gao, David
Lloyd, Gwendolyn
Shockley, James
Washenberger, James
Williams, Michael

Assistant Professors

Gugercin, Serkan
Illiescu, Traian
Mortveit, Henning
Ryan, Jennifer
Wapperom, Peter
Zietsman, Lizette

Instructors

Agud, Diane
Anderson, Susan
Bonawitz, Elizabeth
Bourdon, Terri
Cothorn, Marlene
Hagen, Susan
Hanks, Lucy
Hart, Heath
Hodges, Charles
Hoggard, John
Holub, Lorraine
Kohler, Abigail
McQuain, Margaret
Peters, Tom
Powers, Linda
Shealor, Bonnie
Shugart, Eileen
Smith, Deborah
Stephens, Catherine

Research Associate

Kay, Leslie

Post-Doc/Research Associate

Kreiman, Victor
Raney, Mike
Roop, John
Wahl, Charlotte

GRANTS

SLIMANE ADJERID

Discontinuous Galerkin Methods for Partial Differential Equations, NSF, Principal investigator, \$110K, period: 2005-2008, status: Current.

M. Sc. Program in Computational Mechanics at PST and Impacts on Development in Tunisia, State Department, \$187,181, status: Current.

SUSAN ANDERSON

Dr. Rossi (PI) and I (Co-PI) submitted a grant proposal for our 2005 “Women In Mathematics: Career Day at Virginia Tech” to the National Security Agency and were awarded \$3,445.00. Career Day is described under IV.B. (i)

JOSEPH BALL

Co-principal investigator (with D. Alpay (Ben Gurion University), C. Sadosky (Howard University) and V. Vinnikov (Ben Gurion University), US-Israel Binational Science Foundation BBSF grant no 2002414): “Multidimensional systems, multivariable operator model theory, Scattering and function theory”, November 2003 – November 2007, \$80,000.00.

CHRISTOPHER BEATTIE

NSF DMS-0505971, Applied Mathematics, Model Reduction with Rational Krylov Methods; Christopher Beattie and Serkan Gugercin(\$210,875) June 1, 2005-May 31, 2007.

NSF DMS-0513542, Computational Mathematics, Computation and Analysis of Reduced-order Models for Distributed Parameter Systems; Christopher Beattie, Jeff Borggaard, Serkan Gugercin, & Traian Iliescu, (\$431,342) June 15, 2005-June 14, 2008.

AFOSR FA9550-05-1-0449, Mathematics & Space Sciences, High Performance Parallel Algorithms for Improved Reduced-order Modeling; Christopher Beattie, Jeff Borggaard, Serkan Gugercin, & Traian Iliescu, (\$325,723) August 15, 2005-August 14, 2008.

JEFF BORGGGAARD

Computation and Analysis of Reduced-Order Models for Distributed Parameter Systems, Principal Investigator (with C. Beattie, S Gugercin and T. Iliescu), National Science Foundation, Grant DMS-0513542, 2005-2008 (\$431,342).

High Performance Parallel Algorithms for Improved Reduced-Order Modeling, Principal Investigator (with C. Beattie, S. Gugercin and T. Iliescu), Air Force Office of Scientific Research, Grant FA9550-05-1-0449, 2005-2008 (\$542,822).

JOHN BURNS

2005 – Present: “Orbital intercept and Evasion”, Principal Investigator (with E.M.Cliff), AFOSR Grant Augmentation. F49620-03-1-0243 (\$40,000).

2004-Present: “Mathematical and Computational Tools for the Analysis, Design and Optimization of Very Large Membrane Structures with Advanced Material Models”, Principal Investigator (with E.M. Cliff, T.L. Herdman and D.J. Inman), NASA/DARPA Grant (\$2,300,000).

2003- Present: “Computational Methods of Design, Control and Optimization For Micro Air Vehicles”, Principal Investigator (with J. Borggaard, E.M. Cliff and T. Iliescu), AFOSR Grant. F49620-03-1-0243 (\$600,000)

2002- 2005: “ A Systematic Investigation of Bluff Body Combustion – Phase II”, Principal Investigator (with E.M. Cliff), AeroSoft Inc. Contract (\$99,621). This has since ended in 2005.

WILLIAM FLOYD

Principal Investigator of NSF Grant DMS-427236, 15, July 2002 -30, June 2006. The total award is \$89,016.

DAVID GAO

Gao, D.Y. (PI) Primal-Dual method and Algorithm for large Scale Computation with Applications in Engineering Mechanics, National Science Foundation, Primal-Dual Method and Algorithm for large Scale Computation with Applications in Engineering Mechanics, CCF-0514768, 2005-2008: (\$180,000)

Gao, D.Y. (Co-PI), National Science Foundation, DMII, 2005-2006 (\$30,000)

EDWARD GREEN

National Security Agency, Individual Research Grant H98230-050-01-0039 Dec. 2004-Dec. 2006, \$59,259

SERKAN GUGERCIN

NSF, DMS Applied mathematics Grant – DMS-0505971, Model Reduction With Rational Krylov Methods; Chris Beattie and Serkan Gugercin; June 1, 2005-May 31, 2007 (\$139,000) (2 year budget only)

NSF, DMS, Computational Mathematics Grant. DMS -0513542, Computation And Analysis of Reduced-order Models for Distributed Parameter Systems. Jeff Borggaard, Chris Beattie, Serkan Gugercin and Traian Iliescu; June 15, 2005-June 14, 2008 (\$431,342)

Air Force Office of Scientific Research Grant FA9550-05-1-0449, High Performance Parallel Algorithms for Improved Reduced Order Modeling; Jeff Borggaard, Chris Beattie, Serkan Gugercin and Traian Iliescu; (\$325,723) (two-year budget only)

GEORGE HAGEDORN

National Science Foundation Grant DMS-0303586. Rigorous Studies in Quantum Mechanics. Award Amount \$162,493 5/15/03 – 4/30/06

SUSAN HAGEN

“Geometry for Highly Qualified Middle School Mathematics Teachers” Contract course with Roanoke City, Roanoke County and Franklin County. (Spring 2005) (\$10,366)

“Statistics for Highly Qualified Middle School Mathematics Teachers” Contract course with Roanoke City and Roanoke County. (Summer 2005) (5,838).

“Preparing Highly Qualified Middle School Mathematics Teachers Across Virginia.” Mathematics & Science Partnership grant. (2005-6) Partner with University of Virginia, James Madison University, Norfolk State University, Mary Washington College and Virginia Commonwealth University. (\$30,062)

TERRY HERDMAN

PI, Research on Mathematical and Computations Tools for Analysis, Design And Optimization of Very Large Membrane Structures and Advanced Material Models, with J.A. Burns, E.M. Cliff, and D. Inman, \$2.3M for 3 years, DARPA/NASA LaRC/NIA 2535.

Coordinator and PI, Institute for Computational Science and Engineering, with Virginia Tech CS&E Faculty, Governor's Research Panel, \$251,000, October 2005- June 2006.

TRAIAN ILIESCU

Computation and Analysis of Reduced-Order Models for Distributed Parameter Systems, Co-Principal Investigator (with Chris Beattie, Serkan Gugercin, and Jeff Borggaard) National Science Foundation Grant DMS-0513542, June 15, 2005-June 14, 2008, (\$431,342)

High Performance Parallel Algorithms for Improved Reduced-Order Modeling, Co-Principal Investigator (with Chris Beattie, Serkan Gugercin, and Jeff Borggaard) Air Force Office of Scientific Research Grant FA9550-05-1-0449, August 15, 2005- August 14, 2008, (\$157,422 -2005 budget).

Collaborative Research: Three Dimensional Numerical investigation of Density Currents, Co-Principal Investigator (with Jinqiao Duan and Paul Fischer), National Science Foundation, Grant DMS-0209309, September 2002 – August 2005, (\$94,829)

Scientific Computing Research Environments in Mathematical Sciences, Co-Principal Investigator (with Jeff Borggaard), National Science Foundation, September 1, 2003 – August 31, 2005, Grant DMS-0322852, (\$155,858).

Computational Methods for Design, Control and Optimization of Micro Air Vehicles, Senior Investigator (with J. Borggaard, J. Burns, and E. Cliff), AFOSR, Grant F49620-02-C-0048, (\$600,000)

GAIL LETZTER

NSA Mathematical Sciences Research Grant, Principal Investigator, Quantum Symmetric Spaces and Their Zonal Spherical Functions, 2005-2007, (\$46,661).

TAO LIN

ERC, Inc, Modeling electric propulsion plume-spacecraft interactions, (\$145,000), Co-PI WITH j. Wang of AOE.

NSF CMS-0427951, Highly Multiplexed Optical Fiber Sensing Networks for Infrastructure Monitoring, (\$500,000), Co-PI with K. Cooper, Luiz DaSilva, G. Pickrell, A. Wang of ECE.

GWENDOLYN LLOYD

National Science Foundation Early Career Grant, Principal Investigator, Building A Theory of Teacher Learning with and about Mathematics Curriculum: The Role of Innovative K-12 Materials in Elementary Teacher Education, 2000-2006 (\$435,000)

Virginia Department of Education, Co-Principal Investigator (Jay Wilkins, PI), Mathematics Specialists in Southwest Virginia, 2005-2007 (\$70,000)

National Science Foundation – Centers for Teaching & Learning, Research Associate (PIs are at Michigan State, W. Michigan and Missouri), Center for the Study of Mathematics Curriculum (CSMC) 2005-08 (\$5000.00 per year).

WAYNE PATTY

National Science Foundation Grant (Systemic Reform of Mathematics K-5 for Virginia), April 1, 2000 – March 31, 2007, Principal Investigator, (\$2,894,459).

This is a Local Systemic Change (LSC) grant, and the purpose is to provide Professional development for K-5 teachers in the two participating school divisions in order to implement NCTM – Standards – based, research – based curricula. The above dates include two one-year, no cost extensions, one of which we received in 2005.

YURIKO RENARDY

National Center for Supercomputing Applications, High Performance Computing Environment IBM P690, 10,000 SUs, DMS050002, 10/27/04 – 10/30/05. The development of algorithms to investigate drop fragmentation under shear for viscoelastic liquids.

National Science Foundation, Mathematical Sciences Priority Area if the Division of Chemical and Transport Systems (CTS) and the Division of Mathematical Sciences (DMS) DMS-0456086. The development and implementation Of algorithms to investigate drop fragmentation under shear for viscoelastic liquids with surfactant. Principal Investigator: Yuriko Renardy, (\$200,000) 6/15/2005-5/31/2008.

EKKEHARD SACHS

Calibration of Derivative Models, Hypo VereinsBank/Unicredit, Munich, administered by University of Trier.

MARK SHIMOZONO

Continuing National Science Foundation Grant DMS-0401012, 6/04-5/07,
Principal Investigator, (\$94,584), Combinatorics in Representation Theory and
Algebraic Geometry.

SHU-MING SUN

National Science Foundation, Division of Mathematical Science, DMS-0309160,
Three Dimensional Nonlinear Gravity Capillary Water Waves, (\$116,000),
8/01/03 – 7/31/06, Principal Investigator

PETER WAPPEROM

Simulation of Injection Molding of Thermoplastics Reinforced with Micro and
Nano-Particles, D.G. Baird (PI) and P. Wapperom, NSF-DMI/DOE (\$360,000)
For 3 Years, (\$100,000) for 1 Year.

DISTINGUISHED PROFESSIONAL SERVICE

SLIMANE ADJERID

Guest editor for a special issue of the IMACS Journal of Applied Numerical Mathematics, Elsevier, Proceedings of ADAPT03, appeared in 2005

JOSEPH BALL

Associate Editor for Proceedings of the American Mathematical Society (179 papers handled in 2005)

Associate Editor for Journal of Mathematical Analysis and Applications (18 papers handled in 2005)

Associate Editor for Integral Equations and Operator Theory (9 papers handled in 2005)

ERZA BROWN

Associate Editor for the American Mathematical Monthly

Editorial board, INTEGERS: The Electronic Journal of Combinatorial Number Theory

Editorial Board, Math Horizons

JOHN BURNS

Editor – Advances in Design and Control, 1998-2005

Associate Editor – Applied and Computational Control, Signals and Circuits, 1996-present

GEORGE HAGEDORN

Associate Editor for the Journal of Mathematical Analysis and Applications (resigned 22 March 2005)

TERRY HERDMAN

Editorial Board, Journal of Integral Equations and Applications

DAVID GAO

Co-Editor-in-Chief for book series of Modern Mechanics and Mathematics
Published by Chapman & Hall/CRC

Co-Editor-in-Chief for book series of Advances in Mechanics and Mathematics
Published by Springer.

Associate Editor for Journal of Global Optimization. Springer.

Editor for Discrete of Continuous Dynamical Systems, Series B. An
International Journal Bridging Mathematics and Sciences. AIMS Press.

Associate Editor for Journal of Industrial and Management Optimization.

Associate Editor of Optimization Letters, Springer Journal.

GWEN LLOYD

Editorial Panel of the Journal for Research in Mathematics Education

Co-Editor of a research volume of the Journal for Research in Mathematics
Education.

MICHAEL RENARDY

Editor, Zeitschrift Fuer Angewandte Mathematik and Physik.

Co-Editor, Mathematical Methods in the Applied Sciences.

Co-Editor, Advances in Differential Equations.

Co-Editor, Communications in Applied Analysis.

Co-Editor, International Journal of Differential Equations and Applications.

Co-Editor, SIAM Problems and Solutions (electronic publication).

Co-Editor, International Journal of Pure and Applied Mathematics.

YURIKO RENARDY

Editorial Committee for Journal of Non-Newtonian Fluid Mechanics (2002-2005)

Editorial Committee for IMA Journal of Applied Mathematics (2002-2007)

ROBERT ROGERS

Member of co-editorial board of Journal of Applied Mathematics and Physics (ZAMP)

DAVID RUSSELL

Member of the Editorial Board, "International Journal of Information and Systems Sciences".

EKKEHARD SACHS

Member of the Editorial Board for Mathematical Programming.

Member of the Editorial Board for Computational Optimization and Application.

Member of the Editorial Board for Optimization, Methods and Software.

Member of the Editorial Board for Journal of Industrial and Management Optimization.

Member of Editorial Board of SIAM book series on Advances in Design and Control.

DEGREES AWARDED 2005

Ahn, Peter S. – Spring 2005
Armstrong, Andrew – December 2005
Baitis, Brian M. – Spring 2005
Baldwin, Morgan C. – Dual – Spring 2005
Biber, Joshua – Spring 2005
Bonner, Janine - Spring 2005
Booker, Jewell – Spring 2005
Boquet, Grant M. – Spring 2005
Brandao, Derek C. – Dual – Spring 2005
Cannady, David B. – Spring 2005
Carpenter, William R. – Summer II 2005
Carter, William P. – Spring 2005
Chan, Po-Wei – Dual – Spring 2005
Cook, Brandon J. – Spring 2005
Cox, Rupert G. – Spring 2005
Crawford, Emily – Spring 2005
Dalton, Aaron J. – Spring 2005
Dickenson, Hunter K.- Spring 2005
Douglass, Morgan A. – Spring 2005
Doyle, Ashley M. – Spring 2005
Drombetta, Lawrence – December 2005
Farley, Bernard E. – Spring 2005
Furlong, Kevin – December 2005
Garrity, Teresa - Summer II, 2005
Gil, Christine C. – Spring 2005
Glover, Nikki M. – Spring 2005
Gravett, Kimberly – Spring 2005
Hamilton, Bethany – December 2005
Howell, Michael J. – Spring 2005
Huber, Bryan – December 2005
Ihlendorf, Claire E. – Spring 2005
Inge, Peter A. – Spring 2005
Kang, JungHo – Dual – Summer II 2005
Keaney, Megan – December 2005
Kelly, Erin W. – Spring 2005
Kern, Shannon – Dual – Spring 2005
Kezmarsky, Nicole – Spring 2005
Laprelle, Robert – Spring 2005
Link, Michel – Summer I 2005
Lynch, Matthew E. – Spring 2005
Mamaril, Christopher R. – Dual – Spring 2005
Martin, Jennifer – December 2005
Maxted, Kalena – Spring 2005
McFerrin, Lisa – Spring 2005

McIntyre, Stephen – Dual – Spring 2005
Meermans, Brian – Summer II 2005
Molaire, Melissa – Summer II 2005
Mulligan, Gavin – Dual – Spring 2005
Murray, Shauna M. – Spring 2005
Nemec, Jennifer M. – Spring 2005
Nicely, Christina L. – Spring 2005
O'Connor, Jeremy – Dual – December 2005
Oksanen, Justin – December 2005
O'Neill, Meagan – Summer I 2005
Pac, Michelle C. – Spring 2005
Parris, Michael A. – Spring 2005
Preston, Terri – December 2005
Rash, Ricky L. – Spring 2005
Rayburn, Jillian – Spring 2005
Ritch, Erik D. – Spring 2005
Scheffel, Peter W. – Dual – Spring 2005
Steele, Ryan M. – Spring 2005
Subramanian, Karthik – Dual – December 2005
Texler, Kareem – Spring 2005
Vickery, Erin – Spring 2005
Vodicka, Mary F. – Spring 2005
Ward, Justin M. – Dual – Spring 2005
Wilson, Amy N. – Spring 2005
Wilson, Shomir J. – Dual – Spring 2005
Wolf, Brandon – December 2005
Woods, Tyler R. – Spring 2005
Woodward, Emily A. – Spring 2005
Wright, Dedra – Summer II 2005
Yuskavage, Alexander J. – Spring 2005

Master of Science

Jeffrey Arndt

Mahboub Baccouch

Cory Brunson

Steve Buck

Adam Childers

Sarah Davis

Marcos Donolo

Edward Gow

Peter Hou

Molly Ison

Denis Issaev

Denis Kovacs

Patricia Mellodge

Nicole Miller

Archana Pokharel

David Profili

Mark Seiss

Helmi Temimi

Andrew Vance

Sabiha Wadoo

Tzin Wang

Doctor of Philosophy

Harald Brunnhofer

Mark Pierson

Dustin Potter

Omar Colon-Reyes

John Singler

Brandilyn Stigler

Kay Vugrin

HONORS, AWARDS

DIANE AGUD

2005 Winner of the University Sporn Award
Inducted into the Academy of Teaching Excellence – 4/27/05

SUSAN ANDERSON

On April 18, 2005 received the “Gandhi, King, Ikeda Award” from Morehouse College for serving the “Community and world through dedication to peace and unity, commitment to non-violence, and persistent efforts to establish justice for all humankind.

JOHN BURNS

Named Honorary Professor of Mathematics – Beijing Institute Of Technology, November, 2005.

DAVID GAO

Scientific Committee Member for the International Conference on Nonlinear Programming with Applications. May 30 – June 2, 2006. Shanghai, China.

Scientific member for the 2nd International Conference on Nonsmooth/Nonconvex Mechanics, Aristotle University of Thessaloniki (A.U. Th.), June, 2006.

WILLIAM GREENBERG

Voted Best Paper (along with M. Williams) at the 3rd EISTA Conference in Its Special Session. Currently on Program Committee for EISTA4.

SUSAN HAGEN

Named Instructor of the Year at the end of the 2004/5 academic school year.

ABIGAIL KOHLER

Alumni Teaching Award, April ‘05

Inducted into the Academy of Teaching Excellence, April ‘05

**Undergraduate Semester Course Offerings
Fall '05 and Spring '06**

| <u>Course Number</u> | <u>Title</u> | <u>Number of Sections</u> |
|----------------------|--------------------------------------|---------------------------|
| 1015 | Elementary Calculus with Trig. I | 15 |
| 1015* | Elementary Calculus with Trig. I | 3 |
| 1015** | Elementary Calculus with Trig. I | 2 |
| 1016 | Elementary Calculus with Trig. I | 13 |
| 1016* | Elementary Calculus with Trig. I | 3 |
| 1016** | Elementary Calculus with Trig. I | 2 |
| 1034 | Statistics, A Liberal Arts Approach | 2 |
| 1114 | Elementary Linear Algebra | 19 |
| 1114H | Elementary Linear Algebra | 3 |
| 1114** | Elementary Linear Algebra | 2 |
| 1205 | Calculus | 34 |
| 1206 | Calculus | 33 |
| 1224 | Vector Geometry | 50 |
| 1224H | Vector Geometry | 2 |
| 1525 | Elementary Calculus with Matrices | 8 |
| 1526 | Elementary Calculus with Matrices | 7 |
| 1535 | Geometry & Math of Design | 2 |
| 1536 | Geometry & Math of Design | 2 |
| 1614 | Number and Computing for Teachers | 1 |
| 1624 | Geometry and Computing for Teachers | 1 |
| 2015 | Elementary Calculus with Trig. II | 3 |
| 2016 | Elementary Calculus with Trig. II | 2 |
| 2214 | Intro Differential Equations | 30 |
| 2214H | Intro Differential Equations | 2 |
| 2224 | Multivariable Calculus | 36 |
| 2224H | Multivariable Calculus | 1 |
| 2534 | Introduction to Discrete Mathematics | 2 |
| 2644 | Mathematical Tutoring | 1 |
| 3034 | Introduction to Proofs | 6 |
| 3124 | Modern Algebra | 4 |
| 3134 | Applied Combinatorics & Graph Theory | 6 |
| 3144 | Linear Algebra I | 4 |
| 3214 | Vector Calculus | 6 |
| 3224 | Advanced Calculus | 6 |
| 3414*** | Numerical Methods | 4 |
| 4044 | History of Mathematics | 1 |
| 4124 | Introduction to Abstract Algebra | 2 |
| 4134 | Number Theory | 1 |
| 4164 | Advanced Discrete Mathematics | 1 |
| 4175 | Cryptography | 1 |
| 4176 | Cryptography | 1 |

| | | |
|----------|--|---|
| 4225 | Elementary Real Analysis | 3 |
| 4226 | Elementary Real Analysis | 2 |
| 4245 | Intermediate Differential Equations | 1 |
| 4254 | Chaos and Dynamical Systems | 1 |
| 4334 | College Geometry | 2 |
| 4404**** | Applied Numerical Methods (on-line) | 1 |
| 4414 | Issues in Scientific Computing | 1 |
| 4414*** | Issues in Scientific Computing | 1 |
| 4425 | Fourier Series PDE | 1 |
| 4426 | Fourier Series PDE | 1 |
| 4445 | Introduction to Numerical Analysis | 2 |
| 4446 | Introduction to Numerical Analysis | 2 |
| 4564 | Operational Methods for Engineers | 5 |
| 4574 | Vector and Complex Analysis for Engrs. | 4 |
| 4625 | TS: Math for Secondary Teachers | 1 |
| 4644 | TS: Secondary Math w/Tech | 1 |
| 4654 | Capstone Thesis and Seminar | 1 |
| 4664 | TS: Senior Math Education Seminar | 1 |
| 4984 | SS: Math of Computer Simulations | 1 |
| 4984** | SS: Applied Complex Variables | 1 |

*VTASP Sections

**On-Line Course

***Taught by Computer Science

****Taught by AOE