



The College of _____
WILLIAM & MARY

Department News, Fall 2007

Faculty and Student Awards

Kendra Letchworth, a senior physics and mathematics major at the College of William and Mary, has been named the recipient of the college's 2007 Thomas Jefferson Prize in Natural Philosophy. The prize is awarded each year to a William and Mary student for academic achievement in the sciences and for leadership.



Kendra Letchworth ('07). By Stephen Salpukas



From left to right: Blair S. Ashley, Kendra L. Letchworth and Evan A. Saltzman

Two mathematics majors Kendra L. Letchworth ('06) and Evan A. Saltzman ('08) have been named Goldwater Scholars according to a press release from the Barry M. Goldwater Scholarship and Excellence in Education Foundation, along with another William and Mary student Blair S. Ashley ('08). Letchworth, who is majoring in mathematics and physics, has a goal of earning a doctorate in theoretical physics. She hopes to conduct research and teach physics at the university level and specialize in theoretical particle physics or astrophysics. Saltzman is majoring in mathematics and public policy in order to earn a doctorate in mathematics and to pursue a career in applied mathematics.

The scholarships awarded to the three William and Mary students were among 323 given for the 2006-07 school year by the Goldwater Foundation to undergraduate sophomores and juniors throughout the United States. The scholars were selected on the basis of academic merit from a field of 1,081 mathematics, science, and engineering students who were nominated by the faculties of colleges and universities nationwide. One hundred eighty-two of the scholars are men, 141 are women and virtually all intend to obtain a doctorate as their degree objective. Thirty-two scholars are mathematics majors, 234 are science majors, 47 are majoring in engineering and 10 are computer-science-related majors. Many of the scholars have dual majors in a variety of mathematics, science, engineering and computer disciplines. The one- and two-year scholarships will cover the cost of tuition, fees, books, and room and board up to a maximum of \$7,500 per year.

The Goldwater Foundation is a federally endowed agency established by Public Law 99-661 on Nov. 14, 1986. The scholarship program honoring Senator Barry M. Goldwater was designed to foster and encourage outstanding students to pursue careers in the fields of mathematics, the natural sciences and engineering. The Goldwater Scholarship is the premier undergraduate award of its type in those fields.

[New article on W&M News](#) [Goldwater Scholarship Recipients in W&M](#)

- Christina Casares, a mathematics major aiming for teaching in elementary school, received a scholarship from the Virginia Space Grant Consortium for the 2006-07 academic year.

Faculty News

New Faculty members



(from left to right: David Phillips; Kendall Giles; Dan Volok; Zhifu Xie)

- [David Phillips](#) (Assistant Professor). David joins William and Mary from Columbia University, from which he received a PhD degree in 2006. His research area is operations research and optimization, and in Fall 2006, he is teaching Math 323 Operations Research I - Deterministic Models; and CSCI 628 Linear Programming.
- [Sarah Day](#) (Assistant Professor). Sarah will join William and Mary in January 2007. In Fall 2006, she is a postdoc fellow at [MSRI](#) in the [Computational Applications of Algebraic Topology program](#). Sarah received a PhD degree in 2003 from Georgia Institute of Technology. Her research area is dynamical systems.
- [Kendall Giles](#) (Visiting Assistant Professor). Kendall joins William and Mary from Johns Hopkins University, from which he received a PhD degree in 2006. His research area is fast high dimensional search and knowledge discovery, network data analysis, and random disambiguation paths. In Fall 2006, he is teaching Math 106 Elementary Probability and Statistics; and Math 351 Applied Statistics.
- Dan Volok (Visiting Assistant Professor). Dan joins William and Mary from Weizmann Institute of Science of Israel, from which he received a PhD degree in 2002. His research area is operator theory. In Fall 2006, he is teaching Math 111 Calculus I; and Math 211 Linear Algebra.
- [Zhifu Xie](#) (Visiting Assistant Professor). Zhifu joins William and Mary from Brigham Young University, from which he received a PhD degree in 2006. His research area is celestial mechanics, and nonlinear partial differential equations. In Fall 2006, he is teaching Math 112 Calculus II; and Math 413 Numerical Analysis I.

Other Faculty News

- In the academic year of 2006-07, Professors [David Lutzer](#) (Fall 2006), [Rex K. Kincaid](#) (Fall 2006), [Larry M. Leemis](#) (Spring 2007), [Michael Lewis](#) (full year), [Junping Shi](#) (Spring 2007) will be on Faculty Semester Research Assignments.
- Professor [Michael Trosset](#) has taken the new position of Professor of Statistics and Director of the Indiana Statistical Consulting Center at Indiana University in Bloomington, IN since August 2006. We wish him the best in his new post.
- Professor [Eva Czabarka](#) has taken the new position of Assistant Professor at University of South Carolina in Columbia, SC since August 2006. We wish her the best in her new post.

Faculty Grants



- Professor [Chi-Kwong Li](#) has received a research grant of \$111,868 from the National Science Foundation. The project name is **Problems in Matrix and Operator Theory** and the duration is from July 1, 2006 to June 30, 2009. In this project, he will work with collaborators and students to study problems in matrix and operator theory arising in different branches of science. The emphasis will be on establishing connections and stimulating interactions among researchers in different areas. ([Full project summary at NSF](#))
- Professor [Sebastian Schreiber](#) has received a research grant of \$25,379 from the National Science Foundation. The project name is **COLLABORATIVE RESEARCH: Biocomplexity and Environmental Change in a Vegetated Estuarine Ecosystem**, and the duration is from January 1, 2007 to December 31, 2009. This research builds on a decade of research in a Chesapeake Bay eelgrass (*Zostera marina*) ecosystem to address this goal. The proposed research brings together an experimental ecologist and a biomathematician, employing a complementary suite of experiments, analyses of continuing longterm monitoring data across three trophic levels (eight years of monthly sampling to date), and simulation modeling, to construct and parameterize a dynamic food web model of a Chesapeake Bay eelgrass community. ([Full project summary at NSF](#))
- Professors [Chi-Kwong Li](#) and [Leiba Rodman](#) are the US participants of Slovenian Research Agency project: **Non-linear preservers**. The co-ordinator of the project is Tatjana Petek, University of Maribor, Slovenia. The amount of the grant is 1.152.000 SIT (=5890 USD) in 2006 and the same amount in 2007 for the Slovenian part (travel expenses for Slovenian researchers together with accommodation and daily costs for US researchers). The project will enhance the scientific collaboration between William and Mary and Slovenian universities. Three Slovenian mathematicians visited William and Mary in September 2006 for 10 days
- Professor [Junping Shi](#) is one of two co-PIs of a National Natural Science Foundation of China grant: **Applications of singularity theory, generalized inverse in bifurcation problems and nonlinear analysis**. The PI of the project is Yuwen Wang of Harbin Normal University, China. The duration is 2007-2009, with an amount of 267,000 Chinese Yuan (about 33,000 USD). The project will enhance the scientific collaboration between US and Chinese universities. Professor Wang visited William and Mary in December 2005; Professor Shi has co-supervised five M.S. students in Harbin Normal University during 2004-2006.

Faculty Research Highlight



- Professor [Leiba Rodman](#)'s book (coauthored with Israel Gohberg, Peter Lancaster) [Invariant Subspaces of Matrices with Applications](#) has been reprinted by SIAM as one of the **Classics in Applied Mathematics** in March 2006. The original book was published in 1986 by John Wiley & Sons. Mathematical Reviews for this book says: *"This is a superb advanced linear algebra text and reference for analysts and engineers. The choice of topics and emphasis is original, and the book accomplishes its goal of clearly exposing the central role of invariant subspaces in linear algebra."*

Student Activities



- Many William & Mary undergraduate students have participated in the annual [William Lowell Putnam Competition](#) (a national college mathematical competition), and [Virginia Tech Mathematical Competition](#) (a regional college mathematical competition) in 2005 and 2006. In Dec. 2005, 15 W&M students entered Putnam competition; and 10 students will enter the 2006 Putnam competition. Katie Field (Math 2007) received a score of 23 in 2005 Putnam, which is ranked 367 nationally among 3545 contestants, and a perfect score is 120; Tina Little, Derek LaMontagne, Shelley Devereaux, Lei Gao, David Rose, and Erin Catlett also received at least 9 points. Carolyn Offutt (Math/Accounting 2007) received scores of 38 (ranked 17/370) in 2005 and 37 (ranked 22/347) in the 2006 Virginia Tech Competition respectively. Seminars of problem solving have been organized by William & Mary Math faculty in every fall semester, most recently by Prof. [Nahum Zobin](#) (1999-2003) and [Junping Shi](#) (2004-2006).

Result of VT Competition: <http://www.math.vt.edu/events/competitions/Vtregional/Results/index.html>

Problem solving seminar 2006: <http://www.math.wm.edu/~shij/math410-problem-solving/index.html>

- [MOST](#) is a William and Mary math club, and its members are mainly undergraduate students with a math major. Evan Saltzmann (Math/Econ, 2008) is the current president, Katie Field (Math, 2007) and Katie Benedetto (Math, 2007) are vice president and webmaster respectively. It has a new website: <http://www.wm.edu/so/most/>, and the fall schedule includes several pizza problem solving sessions, a session of introduction to math grad schools, and a student lecture on an REU project. A petitioning for a chapter of [Pi Mu Epsilon](#), a national mathematical honors society, at William & Mary is also in process in Fall 2006, mainly by Katie Benedetto. Prof. [Nick Loehr](#) and [Junping Shi](#) are the current advisers of MOST and PME chapter.

Created by Junping Shi, November 2006

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