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Dimensions

There has never been a better time to be a mathematician…

From the financial firms on Wall Street to the software and hardware companies in Silicon Valley, from the automakers in Detroit to the Los Alamos National Labs in New Mexico, there is a growing need for mathematicians and statisticians who can develop new tools for modeling, analysis, and simulation, and who can also deepen our understanding in a wide variety of related fields.

We are in the midst of the new Quantitative Age: the age of virtual simulation of products yet to be developed; the age of statistical analysis of sports, politics, and pharmaceuticals; the age of our self-exploration through the genomic map. As in the transition from stone to bronze to iron, we are radically improving the tools we use. Our research tools are becoming more and more quantitative as we use math and statistics to revolutionize them.

Mathematics is ubiquitous; however, most people don't realize they're using it. Mathematical sciences departments, like ours, need to train students for jobs in all aspects of our modern society. Our undergraduate programs in mathematical sciences and actuarial mathematics, our master's programs in applied mathematics and applied statistics, our professional master's programs in financial mathematics and industrial mathematics, and our PhD program in mathematical sciences are successful in training students to be innovative in a broad range of professions. Insurance, finance, automobile, aircraft, software, Internet, biomedical, and biotechnology are just a few of the industries in which our graduates work. Since 1997, the Center for Industrial Mathematics and Statistics (CIMS), has been bringing together WPI students and faculty with more than 35 businesses, companies, and government labs, and have resulted in over 50 projects advised by 19 faculty members.

The research done by our faculty has enriched mathematics and attracted research grants from the National Science Foundation, the National Institutes of Health, the Department of Energy, and private foundations and corporations. For the past seven years, we ranked fourth among all the departments at WPI in terms of research funding. Faculty members continue to develop and maintain collaborative research relationships with the departments of Biology and Biotechnology, Biomedical Engineering, Chemical Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical Engineering, and Management.

Of course, all these accomplishments are only possible with the commitment and hard work of all faculty, staff, and students in our department, and I would like to dedicate this first issue of *Dimensions* to all of them.

Most people don't realize how much mathematics is a part of their everyday world. Mathematics is behind the Internet search engines and GPS systems we use; it is used to predict the path of hurricanes and to design the shape of airplanes on which we fly. Statistics is used to price our life insurance policies, discover which genes make us prone to certain afflictions, and (when it comes to polls) influence the statements that some politicians make. Mathematics and statistics are an integral part of our lives, and as J. R. Schatz said in the January 2006 issue of *Business Week*, "there has never been a better time to be a mathematician."

Welcome to the first issue of *Dimensions*, the newsletter of WPI's Mathematical Sciences Department.

This publication is intended as a vehicle for reaching out to our community of alumni and friends, to bring you the latest news from our students, faculty and alumni, discuss our new programs and initiatives, present our students, and faculty members' achievements in teaching and research, and share our alumni successes in their careers.

We hope to hear back from you.

—Bogdan Vernescu, Department Head

In this Issue

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Contact **lmb@wpi.edu** with your feedback or articles you'd like to see in future issues.

Lecture Series The Harold J. Gay Lecture Series began its second year with a talk by the "Father of Fractals" **Benoit Mandelbrot**, of Yale and Pacific Northwest National Laboratory. The lecture, titled "Fractal Roughness: Beautiful, Damn Hard, and Surprisingly Useful," was given on Nov. 10, 2006; the series continued with four other distinguished lecturers: Barbara Keyfitz, Fields Institute and University of Houston, "Multidimensional Conservation Laws"; Cathleen Morawetz, Professor Emeritus, Courant Institute, New York University, "From Collisionless Shocks to Integrable Systems"; Douglas N. Arnold, Institute for Mathematics and its Applications University of Minnesota, "The Geometrical Basis of Numerical Stability"; and Stuart S. Antman, Institute for Physical Science and Technology Institute for Systems Research University of Maryland, College Park, "Quasistaticity."

Math Awareness April was Math Awareness Month at WPI. **Doris Schattschneider**, professor emerita of mathematics at Moravian College, spoke on "Mathematics and the Art of M. C. Escher." The imagery in Escher's graphic works not only makes obvious use of geometry, but often provides visual metaphors for abstract mathematical concepts. The slide lecture examined mathematical concepts implicit in several of his works, outlined the transformation geometry that governs his interlocking figures, and revealed how this "math-anxious" artist actually did pioneering mathematical research in order to accomplish his artistic goals. Escher's mathematical curiosity and insight has been the inspiration for many of today's mathematicians, scientists, and artists who seek solutions to problems (both mathematical and artistic) first posed by Escher himself.

FYE Associate Dean Professor **Arthur C. Heinricher** has been named associate dean for the first year experience. He oversees and coordinates all first-year programs, assists in finding support for new initiatives, and represents and promotes first-year programs outside WPI. "One fundamental goal for the new office is to make the first year of college as exciting as the other three years of the WPI undergraduate program," Heinricher says. "This requires a different kind of support for students who are not quite ready for the independence and responsibility that comes with university life. Support for student personal development is a key to achieving academic success."

Math Meet The 20th annual WPI Math Meet was held in Harrington Auditorium in October. First place went to Lexington High School (for the 12th consecutive year); Worcester Academy came in second, followed by Shrewsbury High. In all, 79 teams competed for more than $100,000 in team and individual scholarships to WPI. Top individual winners were Noah Arbesfeld and Sway Chen of Lexington High, and Pornchai Kaewsapsah of Worcester Academy. They earned $3,000, $2,000, and $1,500 WPI scholarships, respectively. The top scorer on each team won a $1,000 scholarship.

JASA Editor **Balgobin Nandram** has been appointed associate editor for *JASA Applications and Case Studies*. This well-deserved recognition represents Professor Nandram's research and contributions to the statistics community. *JASA*, the *Journal of the American Statistical Association*, is the premier statistical journal in the world.

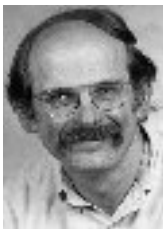
Jefferson Science Fellow **Paul W. Davis**, professor of mathematical sciences and former dean of WPI's Interdisciplinary and Global Studies Division, has concluded a one-year term as a Jefferson Science Fellow at the U.S. Department of State. One of only six fellows chosen for the 2006-07 academic year, Davis is the first mathematician to be named a fellow during the program's three-year history. The fellowship, created in 2003 by the State Department in partnership with the Carnegie Corporation, the MacArthur Foundation, the U.S. science, technology, and engineering academic community, and professional scientific societies, brings senior tenured faculty members in science and engineering to Washington, D.C., for a yearlong, onsite assignment. Davis, whose research interest is the operation and control of electric power systems, worked in the State Department's East Asia and Pacific regional bureaus in the Regional Security Policy Office, which is responsible for activities arising from the United States' commitment to an enhanced partnership with the Association of Southeastern Asian Nations (ASEAN). He also assisted with United Nations agencies whose missions involve development. Following his year in Washington, Davis remains available for short-term consulting projects for the State Department for five years.

Advisory Board News Two new members have joined the department's Advisory Board: **Keith Hartt**, director of research and founding partner at Bogle Investment Management, and **Samuel M. Rankin III**, associate executive director of the American Mathematical Society and director of the AMS Washington, D.C., office.

Terry O'Coin '83 from Computer Science Corporation and **Michele VanLeer** from Sun Life have retired from the board. Warm thanks to them for their involvement in advising the Mathematical Sciences Department and WPI. Terry served on the board since its inception, nine years ago.

NPSMA Launched The Alfred P. Sloan Foundation has awarded a $500,000 grant to a group of universities led by WPI to inaugurate the National Professional Science Master's Association, which will promote and support professional master's degree programs at universities across the nation. Bogdan Vernescu serves as the association's first president.

Colleagues Honored **John Goulet** received the 2007 Trustees' Award for Outstanding Teaching. The award recognizes an outstanding teacher who met or exceeded the expectations of the students. The only other time this award recognized a member of our department, was in 1970, when it went to Jon Van Alstyne .

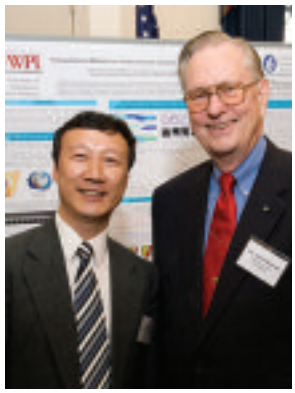


Jon Abraham was given the 2007 Trustees' Award for Outstanding Academic Advising. Established in 2000, the award recognizes the outstanding work academic advisors play in guiding and mentoring students through stages of professional and personal development.

Suzanne Weekes, associate professor and associate department head, was one of five recipients of the 2007 WPI Women of Strength Award. The award, co-sponsored by Pratt & Whitney, recognizes WPI women who demonstrate strength of character, community spirit, and leadership; who serve as role models; and who are committed to improving the quality of life for women at WPI.

We extend a big thank you to Edmund W. Bacon '94, Dennis Donovan '86, and Gwen S. Lilly '90 for their generous gifts to the Mathematical Sciences Department. Their support helps supplement funds for our student prizes. This year a larger number of meritorious students were awarded several prizes for their outstanding work.

Tang Represents AMS **Dalin Tang**, professor of mathematical sciences and biomedical engineering, represented the American Mathematical Society at the Coalition for National Science Funding exhibition on Capitol Hill on June 26. Tang (shown here with NSF director Arden Bement) presented results from multi-institution research he directs that is producing, for the first time, a comprehensive understanding of the growth, progression, and rupture of human atherosclerotic plaque.



Kudos to Lurie Professor **Konstantine Lurie** has written *An Introduction to the Mathematical Theory of Dynamic Materials*, a book that gives a mathematical treatment of a novel concept in materials science that characterizes the properties of dynamic materials (i.e., material substances whose properties are variable in space and time). Dynamic materials are mostly the products of modern technology developed to maintain the most effective control over dynamic processes. Published by Springer-Verlag, this book is volume 15 in the series *Advances in Mechanics and Mathematics*.

Onofrei receives PhD **Daniel T. Onofrei** successfully defended his dissertation April 2, 2007, on "New Results in the Multi-Scale Analysis on Perforated Domains and Applications," advised by Professor **Bogdan Vernescu**. He received an MS in industrial mathematics from WPI and a BS in mathematics from the University A. I. Cuza University of Iasi, Romania. He is currently a postdoctoral associate in the mathematics department at Rutgers.

GRAD (Graduate Research Achievement Day)

On Graduate Research Achievement Day, March 28, 2007, five of our graduate students presented posters summarizing their research: **Brian Cordes**, **Emily Evans**, **David LeRay**, **Casey Richardson**, and **Rebecca Wasyk**.

Wasyk won first place in the science division for "Numerical Approximation of a Transmission Problem with a Prefractal Layer," advised by Umberto Mosco. Richardson placed third in the same division for "Modeling and Analysis of Fracture Trajectories Based on Crack Fronts," advised by Christopher Larsen and co-authored by Michael Ortiz (Caltech). *At right, Richardson and Wasyk.*

Project Presentation Day Awards

The 2007 Project Presentation Day took place April 18 in Higgins House. The following projects were presented:

Andrew Port, Jeremy Ristau: "One-Dimensional Viscoelastic Cell Motility Model," *Roger Lui, advisor*

Jessica Clark, Sean Mulready: "Optimal Portfolio Analysis with Turnover Constraints," *Arthur Heinricher, advisor*

Russell Yang Gao: "Credit Default Swap and Asset Swap Pricing Models," *Jon Abraham and Arthur Gerstenfeld (MGE), advisors; Bank of America (London), sponsor*

Heather LaHart, Mark Melko: "Optimization Methods for Project Integration," *Arthur Heinricher, advisor*

Kirsten Murphy, Onalie Sotak: Alumni Data Mining; *Jon Abraham, Arthur Heinricher, and Jayson Wilbur, advisors; WPI Office of Development and Alumni Relations, sponsor*

Timothy Connor, Xinjia Liu, Gregory Lynskey, Ida Rapaj: "Analysis of Methods for Loss Reserving," *Jon Abraham and Arthur Heinricher, advisors; Hanover Insurance, sponsor*

Joanna Kluza, Joseph Kraynak, William Treese, Jaris Wicklund: "Risk Score Assignment for Long-Term Care Underwriting," *Jon Abraham and Arthur Heinricher, advisors; John Hancock, sponsor*

Alex Patkowski: "Functional Identities," *Brigitte Servatius, advisor*

Eric Griffel, Paul Sader: "Verification for Role-Based Access Control," *Daniel Dougherty (CS) and William Martin, advisors*

In view of the high quality of the projects and presentations, two projects were singled out for the Provost's MQP award: Port and Ristau's project tied with Clark and Mulready's. The CIMS award for best industrial MQP went to the team of Connor, Liu, Lynskey, and Rapaj.

Student Awards

The following students were recognized for departmental and university distinctions in the 2006-07 Mathematical Sciences Awards Ceremony, held in April:

- **Yang Russel Gao** received the Salisbury Prize from the university, following nomination by the department. This award is given annually to highly meritorious WPI seniors and was established by Stephen Salisbury, a WPI founder and former president of the Board of Trustees.
- The Senior Math Award, presented annually to senior mathematical science majors who have shown outstanding performance and who have made valuable contributions to the WPI mathematical community, was given to **Jessica Clark** and **Sanjayan Manivannan**.
- The Dimensions Award, presented to a highly meritorious member of the graduating class of WPI who has faithfully, industriously, and with distinguished attainment completed all requirements (and beyond) for the BS degree in mathematical science, was given to **Xinjia Liu**.
- **William Owens** was the recipient of the Olson Award, which recognizes excellence in freshman and sophomore mathematics courses and outstanding overall academic achievement. This award was established to honor the memory of mathematics professor Richard V. Olson, who taught at WPI from 1963 until his death in 1983.
- **Eric Mbakop** (top scorer), **Benjamin Moody**, and **Vasil Savov** were recognized for their strong showing on the Putnam Exam: the WPI team, advised by Darko Volkov and Daniel Onofrei, was ranked 71 among the 500 participating teams. Several individual contestants, **Eyuel Abebe**, **William Owens, Ilan Shomorony,** and **Alexander Volfson**, were also recognized for their participation in the exam.

New Faculty Members

Assistant professor **Hasanjan Sayit** earned a PhD in mathematics and an MS in statistics from Cornell University, and an MS and BS in applied mathematics from Xinjiang University, China. Before joining WPI, Hasanjan held postdoctoral positions at the University of Houston and the University of California, Santa Barbara. His research interests are in financial mathematics, stochastic partial differential equations, and statistical inference on stochastic processes and time series. His two accepted papers investigate the no-arbitrage in economies with price processes that need not be semimartingales and the study of a large class of processes without arbitrage under transaction costs.

Associate professor **Tao Luo** earned a PhD in mathematics from the Chinese Academy of Science (Academia Sinica), Beijing, an MS from Guizhou University, China, and an BS from Xiamen University, China. After graduating in 1995, with a thesis that obtained a Presidential Award from the Chinese Academy of Sciences, Luo joined the academy as a research assistant professor. In 1997 he joined the City University of Hong Kong as a research fellow. In 2000 he obtained a postdoctoral position at the University of Michigan, Ann Arbor, and in 2003 he moved to Georgetown University as Assistant Professor. Luo works in nonlinear partial differential equations, with applications to fluid mechanics, material sciences, astrophysics and geophysics. He has worked on the study of transonic shock solutions, transport equations, and shock-wave theory of hyperbolic systems. He has published some 30 papers; some report breakthroughs in areas in which important groups have worked with little success. He has recently obtained a three-year NSF grant from the Applied Mathematics Program in the Division of Mathematical Sciences.

Research assistant professor **Zhongzhao Teng** earned a PhD and a BS in mechanics and engineering science from Fudan University, China. Teng joins us after three years of postdoctoral experience at the University of Zaragoza, Spain. His research interests include mathematical modeling in biomechanics, tissue engineering, and cardiovascular and respiratory mechanics. He has co-authored over 20 papers in these research areas. He will collaborate with Dalin Tang on blood flow modeling.

Affiliate professor **Burt Tilley** earned a PhD in applied mathematics from Northwestern University. On a sabbatical leave from Olin College of Engineering, Tilley spent the fall semester at WPI. Before his appointment at Olin, he was on the faculty of the New Jersey Institute of Technology. His research interests are in the mathematical modeling of problems in scientific and engineering applications. More recently he worked on unsteady slide bearing motion on a thin liquid film, pattern formation in self-assembly processes in cholesterol crystallization, and stability problems in fluid dynamics. His research was funded by the National Science Foundation. At Olin College he has been involved in the development of the mathematics courses for engineering majors and was co-PI on a NSF grant that developed large-scale interdisciplinary design experiences for first-year engineering.

External Funding

In 2006–07, faculty members submitted 13 grants, for a total value of 3,341,306. The amount of awards received through the Office of Research Administration was 1,102,610. Recently awarded:

Nandram, B., for "Propensity Score Method for Nonignorable Nonresponse Adjustment for Health Survey Data," from the Centers for Disease Control and Prevention/DHHS, $30,000.

Martin, W., for "Problems in Association Schemes," from the National Security Agency, $29,579.

Tang, D., Petruccelli, J., Walker, H., for "Multi-Physics Modeling and Meshless Method for Atherosclerotic Plaque Progression," from the NSF, $368,054.

Wilbur, J., Weekes, S., for "REU Site: Research Experience for Undergraduates in Industrial Mathematics and Statistics," from the NSF, $81,186.

Fehribach, J., for "Vector Spaces and Kirchoff Graphs," from the NSF, $87,600.

Lui, R., "Mathematics of Molecular and Cellular Biology, University of Minnesota," from the NSF, $49,000.

In addition, several continuing multi-year grants have contributed to the total of awards received:

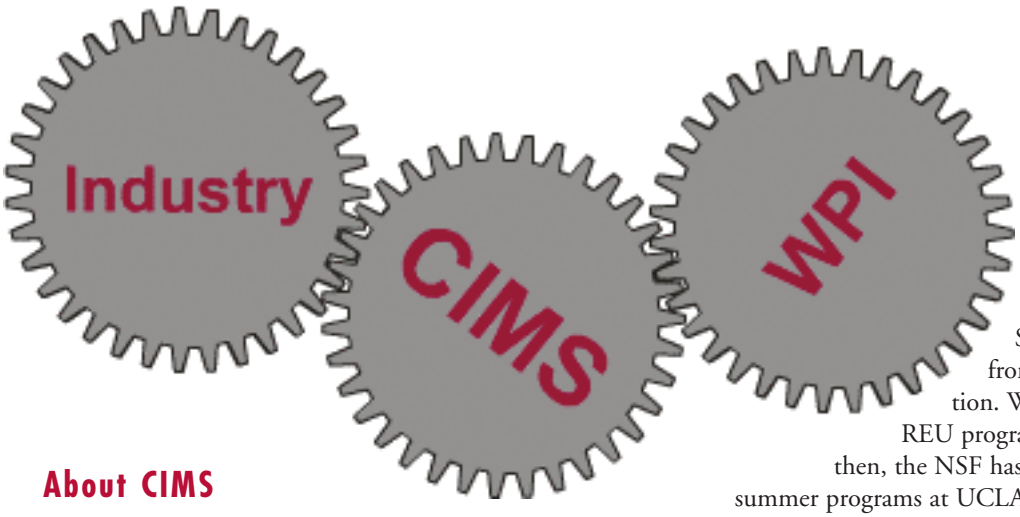
C. Larsen, for "Variational Methods for Material Damage: Fracture, Fatigue and Debonding," from the NSF, $79,350.

Walker, H., for "Algorithms and Software for C-SAFE," from the University of Utah, $21,875.

Heinricher, A., Vernescu, B., Weekes, S. for "Focus on Mathematics: Creating Learning Culture for High Student Achievement, Boston University," from the NSF, $86,540.

Heinricher, A., Vernescu, B., Weekes, S., for "Focus on Mathematics: Creating Learning Culture for High Student Achievement, Boston University," from the NSF, $10,075.

Tang, D., for "MRI-Based Computational Modeling for Carotid Plaque Rupture and Stroke," from the Department of Health and Human Services, $259,351.



About CIMS

The Center for Industrial Mathematics and Statistics was created in 1997 as a mathematical resource to industries that faced highly technical problems involving sophisticated mathematics. The faculty members and students associated with the center have the experience and expertise to address today's complex problems.

The primary aim of CIMS is to build partnerships between the university and industrial sponsors that benefit sponsors, students, and university faculty. In addition to helping companies address their needs for mathematical solutions and enhance their technological competitiveness, the Center offers undergraduates and graduate students the opportunity to gain experience in the corporate world that can make them more competitive in today's job market. Through the partnerships developed with industry, the faculty associated with the center gain valuable experience that enriches their teaching and research.

Faculty and students associated with CIMS have worked with more than 35 companies on over 50 projects at the graduate and undergraduate levels.

Research Experience for Undergraduates

In 2007, **Jayson Wilbur** and **Suzanne Weekes** organized CIMS' 10th year of the REU in Industrial Mathematics and Statistics at WPI with funding from the National Science Foundation. WPI ran the first industrial math REU program in the nation in 1998; since then, the NSF has added similar industrial math summer programs at UCLA and North Carolina State.

Eleven students participated in the 2007 REU at WPI: Matthew Bader, Nazareth College, New York; Paul Bernhardt, Messiah College, Pennsylvania; Naomi Brownstein, University of Central Florida; Jaye Bupp, Alma College, Michigan; Patrick Crutcher, University of Illinois at Urbana-Champaign; Morgan Gieseke, Winona State University, Minnesota; Yu-Jay Huoh, University of California at Berkeley; Nathan Langholz, St. Olaf College, Minnesota; Sean Skwerer, University of North Carolina at Chapel-Hill; Christopher Steiner, University of Illinois at Urbana-Champaign; and Grant Weller, Concordia College, Minnesota. This year's REU assistant was **Gerardo Hernandez** from WPI. **Jonathan Adler** completed his MQP project with this REU group.

Three projects were completed in the 2007 program:

"Modeling Stock Returns and Optimizing Bond Portfolios," *State Street global Advisors (SSgA), sponsor; Bogdan Doytchinov, advisor*

"Failure, Clamp Load, and Heat in Screw Insertion Process," *BOSE Corporation, sponsor; Suzanne Weekes, advisor*

"Quantifying Uncertainty in Predictions of Hepatic Clearance," *Pfizer, sponsor; Jayson Wilbur, advisor*

The REU final presentations were held on July 26, 2007. The students presented to an audience that included the project sponsors, CIMS advisory board members, faculty, families, and friends.

REU 2007 From left, Weekes, Skwerer, Doytchinov, Bader, Gieseke, Weller, Huoh, Steiner, Bupp, Crutcher, Brownstein, Langholz, Bernhardt, Adler, Wilbur; in front, Hernandez.

Industrial Microwave Modeling

The Industrial Microwave Modeling Group (IMMG), led by Vadim Yakovlev, a participant in CIMS, focuses on mathematical modeling and computations of physical processes and industrial systems in microwave power engineering and antennas for wireless communications. The IMMG's activities are aimed at enhancing the technological competitiveness of its partners as well as enhancing the expertise of the faculty and the value of the students' education.

The 9th International Seminar, "Computer Modeling for the Microwave Power Industry," organized annually by Yakovlev, was hosted by the Electromagnetic Applications Group of Polytechnic University of Valencia (UPV) and sponsored by the UPV Telecommunication School. Held in Valencia in March 2007, the event brought together 15 delegates representing industrial and academic institutions from Belgium, Germany, Italy, Spain, Switzerland, and the United States.

SIAM Math in Industry

The 2007 SIAM Conference on Mathematics for Industry: Challenges and Frontiers (MI07) was held Oct 9–11 in Philadelphia. Kirk Jordan, chair of the department's advisory board, co-chaired the conference; professors Vernescu and Weekes served on the organizing committee.

WPI alumni participating in the mini-symposium session "Undergraduate Industrial Research at WPI" were **Brian Cordes '05**, "Optimization of the Sierpinski Carpet Fractal Antenna," The Ferrite Company; **James Lescoe '05**, "Estimating Disability Incidence Rates for Long-Term Care Insurance," Aetna Insurance Company; **David Voutila '05**, "Modeling Gioblastoma Multiforme," Empirix; and **Angela Leo '06**, "Modeling of Torque for Screw Insertion Process," WPI.

The following posters were presented by WPI graduate students at the research poster session: "Modeling and Analysis of Fracture Trajectories Based on Crack Fronts," **Casey Richardson**; "Numerical Approximation of Transmission Across Prefractal Layers," **Rebecca Wasyk**; "Failure Methods, Clamp Load, and Heat in Self-Tapping Screw Insertion," **Jonathan Adler**. Morgan Gieseke, of Winona State University and REU 2007, also presented a poster, "Quantifying Uncertainty in Predictions of Hepatic Clearance."

Graduate Theses and Projects

The following students completed industrial research with our CIMS partners:

Brian Cordes, "Modeling-Based Minimization of Time-to-Uniformity in Microwave Heating Systems," *Vadim Yakovlev, advisor; The Ferrite Company, sponsor.*

Maurice LaMontagne, "Development of a Statistical Model for NPN Bipolar Transistor Mismatch," *advised by Jayson Wilbur, advisor; Allegro Microsystems, sponsor.*

William Marjerison, "Bayesian Logistic Regression with Spatial Correlation: An Application to Tennessee River Pollution," *Balgobin Nandram, advisor; National Center for Health Statistics, sponsor.*

Criselda Toto, "Benchmarking on Small Areas," *Balgobin Nandram, advisor; National Center for Health Statistics, sponsor.*

What's New? *Let us hear from you…*

Please drop us a line to tell us what you're up to. Snapshots are always welcome. We are especially interested in news suitable for sharing in the Alumni News section of *Dimensions*. Submit your news to lmb@wpi.edu.

Name _____ Year _____

Current Address _____

Email _____

Web page URL _____

Current job title and employer _____

Professional and/or personal news _____

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Did you know . . .

- In 2001, two new Professional Master's programs were established at WPI, one in Financial Mathematics and one in Industrial Mathematics, with help from a $290,000 award from the Alfred P. Sloan Foundation.
- The first person to teach mathematics at WPI was a woman: Harriet Goodrich. She was one of four faculty who taught 32 students when the Institute opened its doors on November 10, 1868.
- WPI's Department of Mathematical Sciences is as old as the university itself.

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Calendar

2008

Feb. 28-29 International Seminar: "Computer Modeling and Microwave Power Engineering," Modena, Italy. (Vadim Yakovlev, seminar chair)

March 19 GRAD 2008 (Graduate Research Achievement Day), Campus Center Odeum, 1–4:30pm

March 24 Conant Lecture: "The Shape of Space," Jeffrey Weeks, Olin Hall 107, 3pm

April 15 Project Presentation Day

April 18 H. J. Gay Lecture, David Kinderlehrer, Carnegie Mellon

May 17 Spring Commencement

June 16-20 Math Problems for Industry workshop, (Joseph Fehribach, organizing committee chair)

Honorary Marshal John Goulet, coordinator of the Master of Mathematics for Educators program, leads the procession at WPI's 139th commencement ceremonies.