

**Department Chair's Column**  
**Walter Czarneck**

The school year is winding down as I write this and everyone in the department has contributed to a very productive year. We have been busy with a number of issues including an evaluation of our teacher preparation programs by the Massachusetts Department of Education (Fall 2003) and a visit by the New England Association of Schools and Colleges (Spring 2004). The latter group is responsible for accrediting institutions and colleges. Preliminary reports indicate that both groups were very impressed with Framingham State College.

We continue to work on improving the curriculum in the Mathematics Department and we seek your input. Any suggestions that you may have are more than welcome. We ask our alumni to keep in touch because we still consider you as a part of this department. Beginning this spring, the newsletter will be available on our department Web site, <http://www.frc.mass.edu/math/Alumni/index.htm>, and we invite alumni to respond to a survey that we have posted there concerning the department. Your response to the survey will help us to continue to improve our programs.

**Department News**

Department members have been very active in seeking grants related to the professional development of teachers. **Anita Goldner** and **Eileen Lee** have been part of a team from Framingham State College, Rutgers, and Tufts that has been granted \$180,000 to teach a 2-week workshop in Discrete Mathematics to K-8 teachers this summer. Anita and Eileen will be teachers in the program. There is still space, and we encourage any graduates who are teachers to apply to this implementation of a successful course that has been taught in nine states during the past nine years.

Framingham State College is partnering with Lesley University on a Title IIB Massachusetts Mathematics and Science Program Grant. The \$223,000 grant was funded last fall, and focuses on providing strong, intensive, and sustained professional development to 105 teachers in grades 4-8 in Malden, Revere, Saugus, and three neighboring urban school districts of high need. **Michelle Capozzoli** is acting as the coordinator for FSC.

In addition, the Framingham State College Mathematics Department together with the University of Massachusetts Lowell Graduate School of Education secured a grant from the Massachusetts Department of Education to provide professional development for teachers in three middle schools in Lowell. The grant was funded under the Improving Teacher Quality State Partnership Program. **Joyce Cutler** assisted with the institute provided for teachers last summer and is currently analyzing the data collected from the project.

The department has sponsored several interesting speakers, some from within the campus community and some from other places. **Eileen Lee** continues to organize the Math and Computer Science Department Research Colloquium. This is a monthly research colloquium that provides the opportunity for faculty to present their research or other scholarly work. The colloquium begins with refreshments followed by the presentation. The talks provide good intellectual stimulation for all and they promote pleasant collegiality among the faculty in both departments.

Two speakers from off-campus accepted our invitations to speak and large numbers of students and faculty attended their talks and enjoyed them. **Frank Morgan**, Professor of Mathematics at Williams College, gave a talk titled "Soap Bubbles and Mathematics." His presentation included a discussion of the research done on soap bubbles including current research being done by undergraduates. Two of his undergraduate student researchers came with him and they spent the day talking with our students and faculty. In March, **Lucy Dechene**, Professor of Mathematics at Fitchburg State College gave a talk on "Bell Ringing (at St. Paul's Cathedral, London) and Permutations." Her talk highlighted the correspondence between the intricate sequences used in bell ringing and the mathematical structure of groups. Students and faculty alike found it fascinating.

We are lucky to have several retired members of the department continue to contribute to department activities. Both **Fred Bown** and **Ned Price** gave talks at the Research Colloquium, Fred on "Path Dependent Line Integrals and the Clock Paradox" and Ned on "Surface Area and Approximations." **Betsey Whitman** enjoys teaching in the Overseas International Masters Program for American teachers abroad. She has recently been to Guadalajara, Mexico; San Jose, Costa Rica; and Warsaw, Poland and has an assignment for Beirut, Lebanon in August. In May and June, she and her husband will be back in Malawi giving primary teacher workshops on Saturdays and tutoring AIDS orphans after school on weekdays.

The Kenneth J. Preskenis Scholarship Committee, chaired by **Thomas Koshy**, has successfully achieved its first goal of being able to award a scholarship to a student from South Boston who will be entering FSC in Fall

2004. **Sarah Mabrouk** organized the second annual NES/MAA Dinner Meeting in memory of Ken Preskenis during which **Thomas Koshy** gave a presentation on Catalan Numbers.

**Faculty News**

We are happy to welcome back to the department, **Sonja Sandberg**, who was on leave last year after spending a year working at the FDA in Washington, D.C., and **Anita Goldner**, who was on sabbatical last spring. In January, **Sonja** attended the AAAS annual meeting in Seattle, Washington, and gave a presentation titled "Using Simulation Models to Explore the Potential Effects of an HIV Vaccine." In April, she was invited to attend a meeting hosted by the NIH that discussed "End Points and Regulatory Issues in HIV Vaccine and Clinical Trials." The information that she learned at the NIH meeting will be especially helpful for a current research project on the long-term consequences of an HIV vaccine with low efficacy. **Anita** used her sabbatical to do research on the Problem Solving course that she taught this spring. Last fall, she designed and taught a new graduate course in mathematics education. The course used case studies and videotapes of children involved in mathematics lessons for an in-depth investigation of how children learn about numbers and arithmetic.

**Thomas Koshy** has given several talks this year and also had several articles published in addition to publishing a new book, *Discrete Math with Applications*. The book was published by Elsevier/Acadmic Press and is Tom's sixth book. He is currently using it in the Discrete course. Tom has given two talks on Catalan Numbers at the department research colloquium. Tom's articles include an article titled "A Pair of Floor and Ceiling Formulas" published in the *Mathematical Gazette*, articles titled "The Ends of a Fermat Number" and "The Digital Root of a Fermat Number" published in the *Journal of Recreational Mathematics*, an article titled "Failing Grade for Math in American Schools" that was published in *The Metrowest Daily News*, and an article titled "Fibonacci, Lucas, and Eigenvalues" published in *The Pi Mu Epsilon Journal*. He also reviews articles for several journals including *The American Mathematical Monthly*, *Pi Mu Epsilon Journal*, and *The Mathematical Gazette*. Tom served on the Advisory Panel for the Committee on American Mathematics Competitions, which develops examinations for various competitions, such as the American Invitational Mathematics Examination, The U.S.A. Mathematical Olympiad and the International Mathematical Olympiad. Last March, Tom served on the National Science Foundation grant review panel in Washington, D.C.

In January, **Tom** and several members of the department (**Anita**, **Sarah**, and **Mohammad Salmassi**) attended the Joint Mathematics Meeting in Phoenix, Arizona. They attended several interesting sessions and they brought back ideas for the department to consider. **Mohammad** gave a talk titled "Hands-On Experiments in Inferential Statistics." Mo has been a leader in the department in the development of cooperative learning activities and on the use of Blackboard (an online vehicle for course design). He continues to collaborate with Tom on research and they have papers in preparation. Last fall, Mo attended the meeting of the New England Isolated Mathematicians.

**Eileen** not only organized the speakers for the department colloquium, but also spoke last May. Her talk was titled "Irrational Numbers: Irrationality Degree and Classifications ala Liouville, Mahler, and Lee." She also serves as advisor to the Math Club and helped them to organize activities this year including inviting Frank Morgan to speak at our campus. Eileen will participate in a 2004 summer workshop at Rutgers University's DIMACS Center. The workshop is titled "Integrating Information from Sequence and Evolution: An Introduction to Computational Biology" and will cover material fundamental to Computational Biology that is accessible at the undergraduate level. The hope is that the material may be incorporated into relevant courses in discrete mathematics providing material to motivate fundamental concepts as well as exposing undergraduates to a potential exciting career track. A joint event sponsored by the FSC Mathematics Department and the Biology Department is being planned for next fall that includes a follow-up discussion about the workshop and other research in this area.

In addition to coordinating the Title IIB grant and lending her expertise in statistics to this project, **Michelle Capozzoli** reviewed "A Power Analysis with Tests for Paired Lifetime Data" for Lifetime Data Analysis.

In November, **Sarah Mabrouk** began her term as Chair of the Northeastern Section of the Mathematical Association of America. She was appointed as the Chair of the Committee on Sessions of Contributed Papers for the Mathematical Association of America and she will chair the committee for three years. She has also made arrangements for the department to host the Fall 2007 NES/MAA meeting and she will serve as Program Chair and as Local Arrangements Coordinator for the meeting.

Last summer, **Sarah** participated in the NES/MAA short course "Hands-On Statistics for Teachers" and the MAA PREP Workshop

“Presenting Mathematical Masterpieces and Power Techniques of Effective Thinking to Non-Science Students.” She continues to enjoy participating in the College’s laptop program, this year integrating technology into her courses from General Mathematics to Differential Equations. She remains active in presenting papers at local and national meetings as well as organizing paper sessions for MAA Mathfests and the Joint Mathematics Meetings. She had a paper published in the Proceedings of the Fifteenth Annual International Conference on Technology in Collegiate Mathematics. Most recently, she has presented several papers and a poster about the interactive workbooks that she has created using MS Excel.

**Joyce Cutler** is participating in the PMET (Preparing Mathematicians to Educate Teachers) initiative of the MAA. She attended a two-week workshop last summer at Potsdam, New York, with approximately 30 other mathematicians and mathematics educators. They will meet again this summer to continue their study and to present the results of the projects that they have been pursuing this year. Joyce also served as a member of the Associate Faculty in the Singapore Mathematics Pilot Program funded by the Massachusetts Department of Education. The statewide initiative, coordinated by Richard Bisk of the Worcester State College Mathematics Department, trained and assisted teachers in the implementation of the Singapore Mathematics Curriculum in grades K-8.

We welcome the newest member of our faculty, **Julie Levandosky**. She was a summa cum laude graduate of the University of Massachusetts-Amherst in 1994, where she received her B.S. degree in mathematics. She went on to earn her Ph.D. in mathematics from Brown University in 1999, where she wrote a thesis entitled “Gain of Regularity for Nonlinear Dispersive Equations in Two Spatial Dimensions”, under the supervision of Walter Strauss. She then spent four years as Szego Assistant Professor at Stanford University before starting a tenure-track position at Framingham State College in September of 2003.

Since arriving at Framingham State, she has been involved in several projects outside the classroom. She recently refereed a paper entitled “Orbital stability and instability of a class of dispersive symmetric regularized-long-wave equations” for *Discrete and Continuous Dynamical Systems*. She took part in a Section Next meeting at the fall meeting of the NES/MAA. In addition, she participated in Addison-Wesley’s Math Technology Forum this spring. She is currently co-chairing the program committee for the spring meeting of NES/MAA to be held at Roger Williams University in June. She is also working on a paper involving the smoothing properties of dispersive equations. She is one of several authors writing a solution manual for *Partial Differential Equations: An Introduction* by Walter Strauss.

#### Student News

We are proud of the accomplishments of our students. The 2004 winner of the **Frank Castagna Award** for excellence in mathematics is Steve Noble. Congratulations!

**Matthew Palmacci** presented a paper titled “The Golden Ratio” during the Student Paper Session of the Fall NES/MAA meeting held at Wellesley College in November 2003. Matthew has been accepted to the graduate program in mathematics at Worcester Polytechnic Institute.

The executive board of the Math Club consists of President **Kathryn Del Vecchio**, Vice President **Matthew Palmacci**, Treasurer **Elyza Knapp**, and Secretary **Tiffany Colachhio**. Activities this year include scheduling movie afternoons, assisting with the visit by Frank Morgan and his students, a presentation by **Matthew** on “The Golden Ratio”, and organizing the beginnings of a problem-solving group led by the Chair, **Walter Czarnec**. They have plans for other activities including other guest speakers. They hope to see new faces!

In February, **Sarah Mabrouk**, and twelve students from the Differential Equations course attended “African-American Mathematics: Successes and Challenges”, the sixth in the annual series of symposia “Without Number: Mathematics and Culture” held at Boston University; the keynote speaker was Floyd L. Williams, University of Massachusetts, Amherst. The group also attended RUMBUS 2004, the Research by Undergraduates in Mathematics Boston University Symposium at Boston University in April; the keynote lecture was given by Pau Atela-Cortes of Smith College.

#### Alumni News

We include the news of some of our alumni below and we encourage others to respond through our Web site and let us know what you are doing. Several students are teaching. **Jennifer Jordan** is teaching middle school mathematics at Cathedral Grammar School in Boston. She plans to begin work on her master’s degree in elementary education in January. **Andrea Prova** is currently teaching in a long-term substitute position at the Sherborn Public Schools. She is teaching in an integrated preschool classroom and she really enjoys it. She is considering beginning her master’s degree in Special Education soon. **John Meany** teaches freshman and sophomore Algebra I classes at Gardner High School. He is the assistant boys varsity soccer coach and the head coach of the boys junior varsity ice hockey team. **Gordon McLean** is completing his first year of teaching mathematics at Marblehead High School. He is teaching Algebra II to sophomores and juniors and he plans to return there next year. **Steve O’Leary** has been teaching at Ashland High School for two years. He is looking forward to teaching a project-based Visual Basic Class next year. **PJ Yim** is working as a mathematics teacher at Leland High School in San Jose, California. He is also the math coach plus the club advisor for Samulnori/Pungmul (traditional Korean percussion) Club. He is thinking about graduate school in architecture. **Jennifer Lumb** is currently working at Long Creek Development Center as a mathematics teacher. She loves her job. **Sue Ekberg** has just completed twelve exhausting weeks of student teaching at Ambridge Junior High School in Pennsylvania. She is also the assistant track and field coach at Ambridge Junior High. She will receive her teacher’s certification from Robert Morris University as soon as she passes the state exam.

Other alumni have pursued careers other than teaching. **Aaron Gong** continues to work at the U.S. Army Soldier Systems Center in Natick. He is an Equipment Specialist/Provisioner on the Field Services/Field Feeding Team in the Integrated Logistics Support Center. He is involved in the process of recording and cataloging spare and repair parts associated with their equipment. He also assists in the review of maintenance procedures and technical documents. **Kevin Jackson-Mead** is working at McDougal Littell (a division of Houghton Mifflin) in downtown Boston. He has been working on state-customized teacher’s editions for middle school and high school books. He reports that they are gearing up to start a major revision on teacher’s editions, ancillaries, and technology products. He is happy to talk to anyone who might be interested in textbook editing as a career. **Steve Bairos** works as a Senior Software Quality Assurance Engineer at Data Translation and is responsible for verifying the operation and performance of a wide-range of data acquisition and image processing software products. **Daniel Lopes** is a lease analyst at T.J. Maxx in Framingham, but does work pertaining to other TJX chains such as Marshalls, HomeGoods, and A.J. Wright. His primary responsibility is to reconcile Common Area Maintenance (CAM) billings sent to the company by the company’s landlords throughout the country. He is currently training to perform all general accounting functions for the T.J. Maxx chain rent and CAM accounts.

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