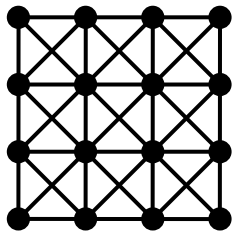


**PROBLEM CORNER:
Counting Rectangles and Triangles**

Given a 4×4 array of points, connect points whose distance between them is either 1 unit or $\sqrt{2}$ units as in the figure below.



Problem 02-1: How many triangles and rectangles (including squares) are there?

Problem 02-2: To generalize, given an $n \times n$ array of points such that the points are connected as in the example above, determine the number of triangles and rectangles that can be found on the grid as a function of n .

SUMMER CO-OP PLACEMENTS

During the past summer, ten of our students were employed in co-op positions.

Daniel Short worked at NASA LBJ Space Center. **Teresa Hesley** was in the US Army. **Natasha Holland** was employed at Tops Markets. **Bryan Lenker** worked with Independent Practice Associates. **Stephanie Maksymiw** found employment at Goulds Pumps-ITT Industries. **Melissa Matthews** worked at Baush & Lomb GSA. **Victoria Shults** found her job at Longaker Rimkus & Associates. **Jennifer Baldwin** was employed with Raytheon Company. **Garrett Manhart** and **Pamela Winn** were both employed at Healthnow New York, Inc.

Salaries for these students ranged from \$7.50 to \$18.43 per hour, with an average of \$12.95 per hour.

THE MOEBIUS STRIP

The Moebius strip is a one-sided nonorientable surface that can be parametrized by the equations:

$$\begin{aligned} x &= (r + s \cos(t/2)) \cos t \\ y &= (r + s \cos(t/2)) \sin t \\ z &= s \sin(t/2) \end{aligned}$$

where $s \in [-c, c]$ and $t \in [0, 2\pi)$. This strip can be formed by putting a single twist in a strip of paper and fastening the ends together. c is the half-width of the strip and r is the midcircle radius. The graphic shown on the first page was generated by *Mathematica* with $r = 1$ and $c = 0.3$.

The Moebius strip has often fascinated artists as well as mathematicians. A Moebius strip appears on the RIT campus in the Infinity Quad. The Dutch artist M. C. Escher used the Moebius strip in at least two of his works.

**SPRING/SUMMER/FALL
DEAN'S LIST**

Jennifer Baldwin (S,F)	Victor Kostyuk (S*,F*)
Julia Bethel (F*)	Stacy Krokowski (S)
Vikram Bhole (F)	William Kronholm (S)
Brett Billings (S*)	Bryan Lenker (S)
Saul Blanco (F*)	Laura Beth Lincoln (S)
Neil Brenner (S,F*)	Garrett Manhart (S,F)
Svetlana Bukharina (F*)	Jennifer Martorana (F)
Robert Busack (F)	Melissa Matthews (F*)
Donald Butler (S)	Patricia Miller (F)
Tonya Campbell (S,F)	William Orr (F)
Ronia Chaar (F)	Zhi Li Pan (F)
Andrew Cheshire (F)	Matthew Panas (S)
Kari Clark (S*)	Margaret Pokorny (F)
Dennis Colburn (F)	Thomas Prevendoski (F*)
Shana Dagle (S*,F)	Terese Puma (S,F)
Gregory Dufore (F*)	Joseph Rhoads (Su)
Calvin Farmer (S)	Jennifer Richter (S*)
Gillian Galle (F*)	Robert St. Pierre (S*,F)
Nicolas Germain (F*)	Michael Short (S,F)
Caitlin Glegg (F)	Victoria Shults (S*,F*)
Kevin Gonzales (F)	Wanda Strychalski (F*)
Jennifer Goodenow (S*,F)	Tiffany Swasta (S*,F*)
Nicholas Greene (S)	Samuel Thieme (S*,F)
Douglas Grove (S)	John Valcore (F)
Sarah Gruetze (S)	Michael Voelkel (F*)
Thomas Henthorn (S*,F*)	Kathryn Webb (S,F)
Teresa Hesley (F)	Pamela Winn (S)
Jason Hills (S)	Gerardo Zelaya (F*)
Stephanie Jones (S,F*)	

Congratulations to all!
S – Spring Quarter 01-3
Su – Summer Quarter 01-4
F – Fall Quarter 02-1
* denotes 4.0 GPA

Mathematics and Statistics Newsletter

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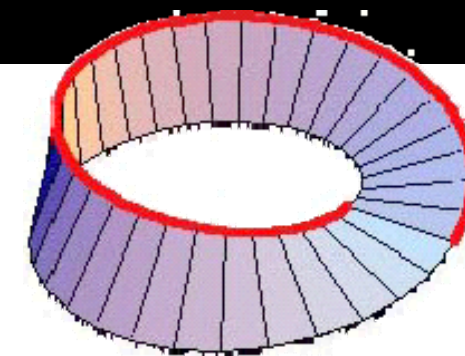
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**MATHEMATICS
& STATISTICS**

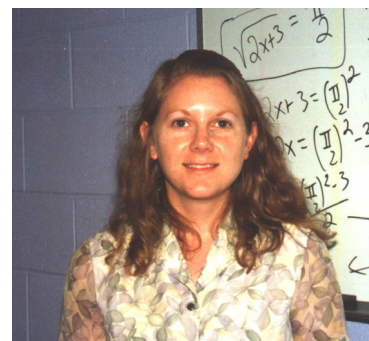
NEWSLETTER

Volume 17, Number 1

December 2002



NEW FACULTY MEMBER



Dr. Tamara Burton joined our faculty this year as an assistant professor. She completed her Ph.D. in mathematics at the University of South Carolina in August 2001. She specialized in graph theory because of an outstanding professor, David Sumner, who

became her dissertation advisor. After graduation, she taught as an assistant professor at Armstrong Atlantic State University in Savannah, GA.

Prof. Burton actually majored in biology as an undergraduate at the University of North Carolina at Chapel Hill. After graduation, she worked for over two years in Columbia, SC at the Riverbanks Zoo and Botanical Gardens in the bird department. She was in charge of the penguin section where her “glamorous” duties included the daily public penguin feedings and hand-raising the penguin chicks from the egg. However, the majority of her time was spent cleaning cages, so she decided to return to school.

Prof. Burton wanted to teach mathematics at the college level, but she had only taken second-semester calculus at Chapel Hill. She had to pick up all the undergraduate mathematics courses in a year and a semester at the University of South Carolina before she could enroll in graduate school.

Since joining our department at RIT, Prof. Burton has discovered many new opportunities. These include having

other graph theorists to talk to as well as participating in the calculus with workshops project.

Prof. Burton grew up in Anderson, South Carolina, a small town near Clemson, so she was snow-deprived as a child. Now she is looking forward to seeing some snow this year. When she does have a spare moment, she loves to read fiction, rollerblade, bike, and spoil her two cats rotten.

Our department is happy to welcome Prof. Burton to RIT, and we hope that her tenure here will be long and enjoyable.

“The different branches of Arithmetic—Ambition, Distraction, Uglification, and Derision”. – Lewis Carroll

**KAREN PROVINSKI CONLAN CHOSEN FOR RIT
HALL OF FAME**

Karen Provinski Conlan (SMAC '96), a native of Unionville, PA and formerly of Middletown, CT, was one of six individuals chosen for induction into the RIT Sports Hall of Fame. The induction took place November 9, 2002 at the Oak Hill Country Club in Rochester.

Karen will be remembered as one of the finest basketball players in RIT history. She played forward/center from 1992 to 1996. Whether on the court or in the classroom, Karen was always at the head of her class. She was the first woman to surpass 900 career points (932) and 800 rebounds despite missing most of her freshman year with a knee injury. Her

record for most points in a career has since been broken, but she still maintains the school mark for rebounds with 835.

Karen was the first RIT player named as a GTE Academic All-American, maintaining a 3.81 grade point average in computational mathematics. Karen was chosen to represent her senior class as a speaker at both Commencement and Convocation ceremonies. She was named Senior Women's Athlete of the Year in 1996 and also garnered the Ellingson Award for Academic Excellence by an RIT student-athlete. She is the first and only person to receive both awards the same year.

Karen was named to the New York State Women's Collegiate Athletic Association, Eastern College Athletic Conference, Empire Athletic Association, and Rochester Area Colleges All-Star Teams. She was also cited as RIT Athlete of the Week seven times in her four seasons.

In 1999, Karen married James Conlan. The couple resides in Kennett Square, PA. Karen is currently a systems analyst with DuPont in Wilmington, DE.

PI MU EPSILON



Pi Mu Epsilon is a national organization that began in 1914 at Syracuse University and now has chapters in all 50 states and the District of Columbia. Pi Mu Epsilon is dedicated to the promotion of mathematics and recognition of students who successfully pursue mathematical understanding. More information about the national organization can be found at the PME web site: <http://www.pme-math.org>.

On November 10, 2002 the RIT Department of Mathematics and Statistics was installed as the New York Alpha Kappa chapter of Pi Mu Epsilon. At the installation of our chapter the following mathematics and statistics majors were inducted as charter members of Pi Mu Epsilon:

Svetlana Bukharina	Calvin Farmer
Jennifer Goodenow	Brett Billings
Jennifer Baldwin	Garrett Manhart

These students were recognized for their excellent academic achievement, along with their work in promoting mathematics awareness through our own PiRIT organization. J. Douglas Faires (from the National Board of Pi Mu Epsilon and Youngstown State University) conducted the installation

of the chapter and induction of the students. Dr. Faires also delivered a short talk about Pi Mu Epsilon activities.

The faculty advisors to our chapter are Profs. Marcia Birken and David Ross. Each spring our department will have the opportunity to honor our best majors with induction into this honor society.

PiRIT

The 2002-03 PiRIT organization is headed by Svetlana Bukharina (President), Beth Hesley (Vice President), Jennifer Goodenow (Secretary), and Calvin Farmer (Treasurer). The group was started late last year with the help of our Department Head, Prof. Sophia Maggelakis.

The main objective of PiRIT is to provide any student who has an interest in mathematics or statistics with a voice and identity regarding mathematics and statistics within the RIT community.

Last year, PiRIT presented three speakers from our department and helped to organize events for the mathematics awareness month. PiRIT also proposed a revised computational mathematics curriculum, which has been approved recently by our department.

This year PiRIT plans to have a variety of social events, invite speakers from industry, and host talks by faculty members. In addition, the group will promote undergraduate research within the department and eventually collaborate with other departments within the university.

Last year, research proved to be very successful. As a result, four members of our department plan to go in January to a Joint Meeting of the AMS and MAA in Baltimore to present their results in the areas of Graph Theory, Fluid Dynamics, plus Partial and Ordinary Differential Equations. PiRIT also intends to host panel discussions in December regarding graduate school.

"Fractal Patterns in Poetry and Mathematics" was the talk sponsored by PiRIT on November 8. **Profs. Marcia Birken** and Anne Coon (Department of Language and Literature) focused on the ways in which contemporary poets have explored self-similarity, dimension, and the iterating qualities of fractals in poetic language and composition.

UNDERGRADUATE RESEARCH

Four of our students have already been involved in undergraduate research: Jennifer Baldwin, Svetlana Bukharina, Jennifer Goodenow, and Victoria Shults. They plan to attend the Joint Mathematics Meetings to be held in Baltimore, Maryland, January 15-18, 2003. This opportunity was made possible by a generous gift from COS alumni Kay and Tony Carlisi. In addition, Jennifer Baldwin, Svetlana Bukharina, and Jennifer Goodenow will be presenting the

October 29: Steven J. Weinsten of Kodak presented "Modeling of Thin Film Flows." His work involved modeling the coating process of multiple thin layers to camera film. Using both physical and mathematical arguments, the resulting predictions were found to compare favorably with experiments.

November 5: Fourth-year RIT math student **Jennifer Baldwin** and **Prof. Darren Narayan** presented their summer research project "Optimal Rankings with Unavoidable Controversy," which is joint work with **Bill Kronholm**, a 2002 graduate of our department. In the context of player rankings, players in a round robin tournament are ranked in order to minimize inconsistencies. Their results are set to be published in *Congressus Numerantium*, December 2002.

November 13: Fernando Schwartz, a graduate student under Prof. Jose' Escobar of Cornell University, presented "What is Curvature?, a Talk for Undergraduates." Mr. Schwartz gave a very basic introduction to the subject of differential geometry and how it can be applied to "black holes."

GRADUATE PLACEMENTS

The Department of Mathematics and Statistics at RIT has generally had great success at placing its graduates. This year was no exception.

Of the twenty 2001-2002 graduates, more than a third are in graduate school. Many of those who chose instead to begin their careers have relocated in New York City. Among them are authors, associate analysts and consultants. Still other graduates moved to warmer climates, choosing to work in the Florida financial industry.

As is often the case, some of our best recent graduates have been recruited by the National Security Agency. This year, RIT kept some of this new talent by employing them in the Imaging Science Department.

It is with pride that we observe these graduates select from a vast pallet of choices, embarking on careers and building on the foundation of life-long learning that has been firmly laid at RIT.

MAA SEAWAY SECTIONAL MEETING AT POTSDAM

The Fall 2002 Seaway Section meeting of the Mathematical Association of America was held November 1-2 at SUNY Potsdam. The meeting was attended by three of our faculty members: Profs. Bernard Brooks, Edwin Hoefler, and James Marengo.

The annual John F. Randolph Lecture in Mathematics Education was given by Prof. David Henderson of Cornell University. His talk was titled "Educational Mathematics."

Prof. Brooks presented "Two Interpretations of Discrete Diffusion and Their Consequences on Turing Instabilities." **Prof. Marengo** presented a very well attended talk, "Patterns in Coin Tossing."

HONORARY AWARDS & MEMBERSHIPS

The Department of Mathematics and Statistics is very pleased to announce our majors who have been selected to receive the *2002 Mathematical Association of America Honorary Student Award*.

Jennifer Lynn Baldwin	SMAK
Svetlana Bukharina	SMAC
Jennifer Goodenow	SMAM
Victor Kostyuk	SMAC
Robert St. Pierre	SMAK
Victoria Shults	SMAM

The Department is also pleased to announce our majors who have been selected to receive the *Association for Women in Mathematics Honorary Student Membership*.

Stephanie Jones	SMAS
Anne McDonald	SMAS
Wanda Strychalski	SMAC

The Department is also very pleased to announce our majors who have been selected to receive the *2003 American Mathematical Society Student Nominee*.

Melissa Matthews	SMAN
Thomas Prevendoski	SMAI
Joseph Rhoads	SMAN

These very prestigious honors are awarded based on the overall academic achievement and performance of our majors.

"What I tell you three times is true" - Lewis Carol

SOLUTIONS

Are you looking for solutions to the problems posed in our last issue? You will find them by visiting the web: <http://www.rit.edu/~673www/newsletterindex.htm>.

MELISSA MATTHEWS' CO-OP



During the summer of 2001, I worked for a company in Victor, NY called InfoDirections. During that co-op, I was responsible for testing software and writing test procedures for the software. The company was relatively small, under 100 people worked there. I met some incredible people whom I still keep in touch with, so the experience was definitely worth it.

This past summer, I worked for Bausch & Lomb's Optical Center in Rochester. I wrote a program that creates files which are entered into a machine that cuts contact lenses. I found it much more interesting to be writing the program instead of testing it. During this co-op, I got to see first-hand how a larger company operates. As an added benefit, I was able to keep my foot in the door by working there part-time while taking classes. Overall, I believe both experiences were beneficial.

THE MATHEMATICS AND STATISTICS FRESHMEN

There are twenty-four new freshmen students in our department this quarter! Six are in Computational Mathematics, fifteen in Applied Mathematics, and three in Statistics. Although the majority come from New York, there are some from New Jersey, Pennsylvania, Maine, Maryland, Virginia, Connecticut, Rhode Island, and even California!

When asked, "Why did you choose RIT?" the answer was loud and clear, "Co-op!" They also appreciate the availability of our faculty and RIT's reputation. Our future looks bright with enthusiasm emanating from this in-coming class of freshmen!

"The whole is more than the sum of its parts" – Aristotle

PROVOST'S LEARNING GRANT

Prof. Carol Marchetti is a co-recipient of a Provost's Learning Innovations Grant, "Engineering Modules for Statistics Courses." She is collaborating with Prof. Vinnie Gupta of the Mechanical Engineering Department to develop this series of modules for teaching statistics to engineers. Each module will address statistical concepts as well as engineering concepts.

The purpose of the modules is to increase the motivation for engineering students to learn statistics, to increase the retention of what they learn, and to help them apply the concepts to engineering problems, both in their statistics class and in future engineering courses.

"Life is a school of probability"- Walter Bagehot

MATHEMATICS CURIOSITY SEMINARS AND COLLOQUIUM SERIES

The department's seminars and colloquia continue to be organized this year by **Prof. Maurino Bautista**.

September 10: The math seminar series started with "Constant Mean-Curvature Surfaces with Variable Contact Angle," which provided details about the summer research project of **Svetlana Bukharina**, a 4th year math student, and **Prof. David Ross**. They studied the topic of finding the shape of a liquid drop on a non-uniform surface. They presented an algorithm that solved the problem together with computational results obtained with the aid of a computer program to implement the algorithm. Both hope that their results will be applied to some practical applications such as ink jet printing and crop dusting.

September 17: **Prof. James Marengo** presented "An Information Inequality." The *Rao-Cramer Inequality* for the variance of unbiased estimators is an important result in mathematical statistics which can be described as a type of uncertainty principle. The result was proven and discussed in the context of some examples such as coin tossing.

September 24: **Prof. Bill Basener** presented "From Poincare' to the Present: Rotation Numbers to Homological Vectors." The subject begins in the early 1900's with the attempt to solve the 3 body problem in celestial mechanics. More recently, it has been proven that there are infinitely many periodic orbits of the earth and moon going around the sun. Prof. Basener discussed some recent extensions of the concept of rotation vectors and applications to topology, dynamical systems, number theory, and his own research.

October 8: Prof. Michael P. Knapp of the University of Rochester presented a general overview of his research in a talk entitled "Artin's Conjecture on Homogeneous Polynomials in Many Variables." Prof. Knapp described how Artin's Conjecture can be said to have been "almost correct" and discussed some problems related to the conjecture.

results of their research in the AMS-MAA-SIAM Special Session on Research in Mathematics by Undergraduates.

Svetlana Bukharina, a computational mathematics major, continues to work with Prof. David Ross studying fluid mechanics. Their project, Algorithms for Minimal Surface Equations, is a joint research effort with Eastman Kodak Company. Svetlana presented their results at the 50th Annual Meeting of the Society for Industrial and Applied Mathematics recently held in Philadelphia.

Jennifer Baldwin, a computational mathematics major, continues to work with Dr. Darren Narayan investigating warehouse operations and facility design.

Victoria Shults is working with Prof. Darren Narayan investigating a mathematics modeling problem involving graph theory.

Melissa Matthews is working with Prof. Tamara Burton on a research project on vertex domination in graphs.

MATHEMATICAL MODELING POSTER SESSION

On November 5, **Prof. Bernard Brooks'** Mathematical Modeling class presented posters that summarized their projects, modeling a wide variety of scenarios.

Dennis Colburn's poster was entitled "The Stability of Predator-Prey Simulations with Migration." **Calvin Farmer's** poster answered the question of the optimum number of years a company should keep a vehicle. **Thomas Henthorn's** poster investigated the optimal parking time. **Josh Latimore's** poster displayed an iterated prisoner's dilemma model. **Laura Beth Lincoln's** poster compared two programs for elevators. **Danielle Merritt** modeled pluming from smoke stacks using the radiative transfer equation. **Rafal Rozycki** presented "Driven Pendulum as a Clock." **Victoria Shults** used minimal rankings and maximal distances in her graph theory themed poster. **Wanda Strychalski's** poster investigated the Hardy Weinberg Equilibrium. **John Valcore's** poster investigated a Dooms Day population model.

Prof. Matthew Coppenger has organized an Outstanding Student Achievement Honors to recognize the outstanding effort put forth by the mathematical modeling class.

NSF GRANT

A faculty team including **Darren A. Narayan**, Assistant Professor of Mathematics, has been awarded \$392,000 from the National Science Foundation to support an innovative cross-disciplinary scholarship program. The project, entitled Mechanical Engineering, Mathematics, Computer Engineering and Computer Science (EMC²)

Scholars Program, is a collaborative effort among four different departments from three colleges at RIT.

The grant will support 62 scholars each year, and RIT has generously provided an additional \$526,000 to bring the project support to nearly one million dollars. RIT's matching support to this program indicates the university's enthusiasm, a firm commitment of support to our students, and an endorsement of the goals and objectives of the EMC² program.

DR. EDWIN T. HOEFER

Dr. Edwin T. Hoefer plans to retire at the end of the Winter Quarter this year after teaching twenty-five years at RIT. When he first arrived in 1977, the Henrietta campus was just ten years old and had only half the number of buildings it has today. Over the years he has witnessed not only



the physical growth but also the tremendous advancement in educational technology that is seen in nearly every department on campus.

Prof. Hoefer was one of those who pioneered the teaching of distance learning classes in mathematics at RIT. He developed calculus classes for students working at General Motors offices in Detroit and taught them using videotapes and interactive computer sessions. Prof. Hoefer also taught calculus to advanced high school students via two-way televised communication from specially equipped classrooms at RIT and in the schools.

In 1981, Prof. Hoefer received a Fulbright Exchange Teaching Fellowship to visit the Polytechnic of Wales. In 1989, Prof. Hoefer traveled to Hangzhou China to teach the students there the subject of analysis of a complex variable. He remembers with feelings of sadness the time he visited Tianamen Square in the days before the government attacked the students who protested there.

Prof. Hoefer's research in the area of mathematical wavelets led to collaboration with Prof. Raghuveer from the Engineering Department. He also served on the Ph.D. committee for Joe Chapa, one of the first Ph.D. graduates in the RIT Imaging Science program, who wrote his thesis on using wavelets to detect targets in images.

Prof. Hoefer also served as the secretary-treasurer for the Seaway Section of the Mathematics Association of America for the past fifteen years.

In looking back on his years at RIT, Prof. Hoefler estimates he has taught over 6,000 students in mathematics classes. He has done this with a desire not only to help them understand the applications of mathematics, but also to appreciate the elegant logical development of mathematical concepts. His students made teaching at RIT enjoyable and rewarding.

Prof. Hoefler is now looking forward to reading more about functions of complex variables, enjoying some recreational mathematics, and trying to solve mathematical problems posed in various mathematical journals.

DEAN'S SUMMER FELLOWSHIP

The Department of Mathematics and Statistics certainly received the lion's share of the Dean's Summer Fellowships this past summer. Of the 15 proposals accepted from the College of Science, seven of the successful faculty were from our department.

Prof. William Basener's "Research on the Gottschalk Conjecture and Related Problems" led to a notable presentation at the Canadian Mathematical Society's 2002 Summer Meeting at the University of Laval in Quebec. He also wrote two papers: "A Short Constructive Proof that Every Manifold that Admits a Nonsingular Flow Has Zero Euler Characteristic," submitted to *The Transactions of the AMS*, and "Knots in Topologically Transitive Flows," submitted to *Topology*. Prof. Basener also began work on a third paper "Booming and Crashing Populations and East Island" which has become a joint project with Prof. David Ross.

Prof. Bernard Brooks' "Turing Instabilities in Discrete Genetic Dynamics" was the subject of his presentation at the CMS summer meeting. He has submitted "Linear Stability Conditions for a First Order 3-Dimensional Discrete Dynamic" to *Applied Mathematics Letters*. He presented "Two Interpretations of Discrete Diffusion and Their Consequences on Turing Instabilities" at the Seaway Sectional Fall Meeting of the MAA. "Turing Instabilities in Discrete Diploid Dynamics" is now in final form and ready for submission for publication.

Prof. David Farnsworth's "Median-Based Statistical Analysis" resulted in two submitted manuscripts, "A Calculus Theorem Motivated by a Data Analytic Technique" to *The American Mathematical Monthly* and "Energy Guides as Teaching Aids" to *Mathematics and Computer Education*.

Prof. Carl Lutzer's project was entitled "Green's Functions for Elliptic Operators on Unbounded Domains in R^d ."

Prof. Darren Narayan's "Analysis of Minimum Feedback Arc Sets in a Directed Network" was one of two graph theory focused research projects.

Prof. Michael Radin organized the Special Session on Dynamical Systems at the CMS Summer 2002 Meeting in Quebec City, which provided a forum for the presentation of two of the research programs described above. His proposal "The Boundedness and Periodic Character of Solutions of a

Max-Type Difference Equation" also gave Prof. Radin the opportunity to present a paper at the 12th International Conference of the Society for Chaos, Psychology and Life Sciences at Portland State University.

Prof. Hossein Shamohamad's work on "Constructing Flow-Equivalent Graphs" has led him to produce two papers, "Cycles and Wheels Are Flow Invariant Under Permutations" and "Constructing Flow-Equivalent Graphs." He plans to present them at the Sixteenth Midwest Conference on Combinatorics, Cryptography and Computing at Southern Illinois University.

As the varied and far ranging research directions described above demonstrate, the Dean's Summer Fellowship program has provided a catalyst for the department's research initiatives. The Summer Quarter was a productive and exciting one, full of newness and innovation. RIT's research strength was publicized through published papers and in domestic and international presentations and conferences. Most importantly, the Department of Mathematics and Statistics' research engine has momentum and energy created in the Summer Quarter with the help of the Dean's Summer Fellowship sparkplug.

SABBATICALS

During the academic year 2001-02, **Professors Marcia Birken** and **Rebecca Hill** were granted Leaves for Professional Development, commonly known as sabbaticals. Prof. Birken was on leave during the winter and spring terms and Prof. Hill was away during the spring term. Both professors were actively engaged in professional activities during their time away from the classroom.



Prof. Birken made an invited presentation, with Prof. Anne Coon of the College of Liberal Arts, for the Association of Mathematics Teachers of the Rochester Area for high school and college mathematics teachers entitled "How Mathematical Ideas are Presented in Literature." She and

Prof. Coon presented "Developing the Interdisciplinary Course: Analogy, Mathematics, and Poetry" at the national meeting of the MAA in January, 2002, in San Diego.

Prof. Birken, along with Profs. Ron Jodoin and Paul Craig, represented RIT as a team at the Project Kaleidoscope Conference in Colorado. Their presentation was "The World Wide Web: Strengthening the Undergraduate Learning Environment." Prof. Birken published, with Prof. Coon, the paper "Reflections on a Long-Term Interdisciplinary *for the Art of Teaching*, Spring 2002. She also presented a paper, Collaboration: Literature and Mathematics," in the *Journal* with Prof. Coon, "Developing Analogical Thinking and

Creativity in University Students," at the 8th conference of the International Society for the Study of European Ideas in Aberystwyth, Wales, in July 2002.

As part of her actual sabbatical project, Prof. Birken worked with Prof. Coon on researching and writing a book length manuscript on mathematics and poetry. The chapter that is the most fully developed is the one on Patterns. Probably the most interesting aspect of this chapter has been their research and writing on fractals and poetry. They plan on presenting a session on Fractals and Poetry at the national MAA meeting this coming January in Baltimore.



The main focus of **Prof. Hill's** sabbatical project was to investigate the use of the World Wide Web as a means of collaboration by differential equations students as they work on group projects outside the classroom.

Collaborative learning is one of the active participation models that has been stressed in the calculus project at RIT. Prof. Hill experimented with several different software products including LiveMath, Web-Mathematica and Prometheus, all of which have some limitations. The Web has become a valuable source of information during the past few years, but interactive mathematics is still difficult because of the specialized notation.

Prof. Hill attended the Basic Prometheus Training Course and a session on Getting More out of the Prometheus Gradebook. These training sessions were very well presented by staff members of ETC, ITS, and the Library. Prometheus does allow students to confer in groups via the Web, but mathematical notation is still quite limited.

Another aspect of Prof. Hill's leave was to plan new group projects for her differential equations courses. The Web has certainly become a great source of materials. She discovered several very helpful sites such as IDEA (Internet Differential Equations Activities), Project Links, Mathwright Library and Café, and Qualitative ODE Software. The Consortium for ODE Experiments web site is also an excellent source.

Our department is happy to welcome both Profs. Birken and Hill back to the classroom this academic year. RIT students will certainly benefit from the energy and enthusiasm that they gained during their leaves.

FACULTY SUMMER ACTIVITIES

To compliment the text "Statistics and Data Analysis", by Peck, Olsen and Devore, **Prof. David Crystal** has called upon his 37 years of college teaching to create a sequence of Power Point presentations to complement the textbook. Electronically published by Duxbury Press, the presentation provides over 600 slides to capture and illustrate 15 chapters of text with a multimedia approach to benefit the visual learner. The slides augment the text with a clear cut approach that aids the student in visualizing the statistical concepts discussed within the pages of the book.

Prof. Sophia Maggelakis, Department Head of Mathematics and Statistics, and Andreas Savakis, Department Head of Computer Engineering, published an invited chapter, entitled "Modeling Techniques in Epidermal Wound Healing," in the *Computational Methods in Biophysics, Biomaterials, Biotech and Medical Systems* series, Volume 2, Kluwer Academic Publishers. Prof. Maggelakis also gave a talk on Modeling the Complex Biological Mechanisms of Cancer Growth: A Review at the Workshop on Mathematical Models in Cancer at Vanderbilt University.

Prof. Michael Radin gave a talk at the 12th International Conference by the Society for Chaos, Psychology and Life Sciences, held in Portland State University, Portland, Oregon, August 2 - 4.

The Rochester Institute of Technology was well represented at the Canadian Mathematical Society's 2002 Summer Meeting at the University of Laval in Quebec City, June 15 - 17, 2002. **Prof. Michael Radin** organized the Dynamical Systems special session at which **Prof. William Basener** presented "Disk Global Cross Sections in Flows on Manifolds" and **Prof. Bernard Brooks** presented "A Frequency and Density Dependent Multi-Allele Haploid Dynamic."

STAFF RECOGNITION AWARDS

The RIT community honored staff efforts "above and beyond the call of duty" during the sixth annual Staff Recognition Awards on Wednesday, Oct. 16, in Ingle Auditorium, followed by a reception in Fireside Lounge.

The awards recognize staff who have demonstrated excellence in satisfying customers, excellence in increasing work productivity, and outstanding citizenship within RIT community. Two members of our staff, **Anna Fiorucci** and **Shelly Cicero**, were nominated for the Excellence in Satisfying Customers category.

Our faculty all agree that Anna and Shelly make a great team that provides outstanding service to our students, faculty and administrators.