

Summations



Dankel to Retire



Dr. Thaddeus G. Dankel, Jr.

Professor **Thaddeus G. Dankel, Jr.** will retire at the end of the current academic year, after 30 years at UNCW. When Dr. Dankel joined the faculty in 1971, after earning the B.S. at Duke University and the M.A. and Ph.D. at Princeton University, he was one of only eight faculty in the Mathematics Department. This was a time of growth on campus, with new buildings and a record high enrollment of 2000!

As an applied mathematician, Dr. Dankel's areas of interest have been applied stochastic processes, differential equations and mathematical physics. He has published papers on such topics as "Linear Bohr-Sommerfield Electron Paths," "Long-Range Undersea Acoustic Pulse Propagation," and "On the Stochastic Korteweg-de Vries Equation Driven by White Noise." He is a member of several professional and honorary societies, including the AMS, MAA, SIAM, Phi Beta Kappa, Sigma Xi, Phi Kappa Phi, Sigma Pi Sigma and Pi Mu Epsilon.

Dr. Dankel has taught many upper level courses in applied mathematics and analysis, including special topics courses on Hydrodynamics, Water Waves and Ocean Circulation. He directed three master's theses at UNCW and several undergraduate honors and research projects. These one-on-one projects and the subsequent success of his former students are the teaching experiences that have given him the most satisfaction.

Faculty development, welfare and governance issues have been Dr. Dankel's concerns throughout his career. He served 12 years as a Faculty Assembly delegate, and as member and chair of the Professional Development Committee he helped to formulate policies on leaves, professional development and the evaluation of teaching. He has long been active in the AAUP, and was president of the local branch. In that role and in the department he played an important role in establishing structures for faculty governance.

Dr. Dankel will continue to teach on a limited basis after retirement, as part of the University's phased retirement program. He may devote more time to some research interests, including a famous open problem of mathematics and joint work with **Dr. Jeff Brown** on "Racing Random Walkers," an investigation that began with a game called the Burger King Kids Club Mountain Bike Rally. He will also continue to explore and enjoy his unusually broad range of intellectual interests, certainly including choral and orchestral music.

Thanks Judy Rutledge!

The faculty of the Mathematics and Statistics Department would like to express their appreciation to **Judy Rutledge** for over 20 years of service as department secretary. **Dr. Ken Gurganus** composed the following poem in her honor.



(left to right): Dr. Douglas Smith, Judy Rutledge, Dr. Wei Feng

To Judy Rutledge on her Retirement

The department has survived, at least so far,
But it won't be the same without J. R.

Twenty years of service is her record we chart.
Too short! We're going to miss her heart.

Our names have been Toney and Yan, Fred's and Joe's;
She shared her smiles, her tears with our highs and lows.

So who will keep us from going asunder?
Welcome the new team, Pat the Young and Gloria the Younger!

You see they are the solution to our recent dilemma
Of what we will do without Judith Emma.

Let us toast the good times just ahead and afar
When we will remember the days that were -
with good old J. R.

Crews Scholars

UNCW has established the *J. Marshall Crews Scholarship for Science*. The award was made possible through an annual gift from **Gabriel W. and Robert R. Dobo** in honor of their mentor and long-time friend. It will be awarded for the first time in fall 2001.

One of the original faculty members of Wilmington College at the time of its founding in 1947, Crews served the college and UNC Wilmington as a mathematics professor, registrar, dean of students, academic dean and director of admissions. He retired in 1981. Crews is the author of *From These Beginnings*, a history of Wilmington College from 1947 to 1969. It is currently in the process of being reprinted.



Dr. J. Marshall Crews

"The university is honored by this gift from the Dobos in recognition of Dr. Crews," said **M. Tyrone Rowell**, senior associate vice chancellor for university advancement. "Dr. Crews' service and dedication to Wilmington College, and later UNCW, is legendary. It is a fitting tribute to recognize his devotion to science and education."

To become a Crews Scholar, students must be a full-time student and a rising junior or senior majoring in biological, marine, earth, environmental or mathematical science, chemistry, physics or physical oceanography. A selection committee will determine the recipient based upon a review of applications. The scholarship will cover tuition and fees.

MATH FUN

The triangle ABC has points D, E on side AB, points F, G, H on side BC, and points I, J, K, L on the side AC. How many triangles can be made with all vertices on points A, B,.....,L.

The first correct response will be recognized in the next edition. Send solutions to summations@uncwil.edu

Solution to Fall 2000 Math Fun!

When three positive integers are multiplied two at a time the results are 32, 48, and 24. What is the sum of the three integers?

Congratulations to **Wendy Zohlmann** for having the first correct solution for the Math Fun in the Summations Newsletter. Wendy graduated from UNCW in May 1994 with a B.S. in mathematics. She is Vice President/Controller for Brunson Housing Center in Jacksonville, NC. She enjoys reading, yoga, meeting new people and taking her dog for long walks.

Other correct solutions were submitted by **Stewart Floyd, Tucker Smith** and **Dana Tollis**.

WENDY'S SOLUTION

$$\begin{aligned}xy &= 32 \\yz &= 48 \\xz &= 24\end{aligned}$$

$$x = 32/y \quad y = 48/z \quad x = 24/z$$

$$\begin{aligned}x &= 32z/48 \\x &= 2z/3\end{aligned}$$

$$\begin{aligned}2z/3 &= 24/z \\z^2 &= 36 \\z &= 6\end{aligned}$$

$$\begin{aligned}6x &= 24 \\x &= 4\end{aligned}$$

$$\begin{aligned}y &= 48/6 \\y &= 8\end{aligned}$$

$$x = 4, y = 8, z = 6$$

$$x + y + z = 4 + 8 + 6 = 18$$



The solution is 18!

Congratulations to the Class of 2000!

December 2000 graduates: **Ester Venitza Ortiz-Sanchez** and **Jamie Chad Cole**

Our apologies to **Scott Watson** who was accidentally left off the list of graduates in the fall issue of *Summations*. Scott graduated with a double major in physics and mathematics in spring 2000. He completed an honors project, "An exposition on Inflationary Cosmology," co-advised by **Dr. Russ Herman**. His paper was submitted to the Los Alamos preprint archive and later turned into a web tutorial in the NASA/IPAC Extragalactic Database (NED)

which is operated by the Jet Propulsion Laboratory, California Institute of Technology, under contract with National Aeronautics and Space Administration. Scott is attending graduate school in physics at Brown University where he is working on Superstring Cosmology. He has just been awarded a three year NASA Fellowship to conduct his research. On April 19, 2001 he presented a lecture, "Five Easy Pieces: A Guide to the New Cosmology" at UNC Wilmington in the physics department.

Teaching and Learning in the Wireless Classroom

From Edupage, March 26, 2001
(An electronic publication of Educause)

Researchers at the University of North Carolina at Wilmington are involved in work that could help advance teaching and learning in local and wide-area network environments. The projects for each environment make use of portable handheld computers and wireless Internet access. Project Numina, which involves local-area wireless access, provides students with handheld PCs, the appropriate software, and a connection to the Internet over a wireless network so that they can use the resources of the Web to learn abstract chemistry, mathematics, and computer-science concepts. A Web-based interactive student response pad is among the educational applications of the project. For use in large classroom settings, the response pad has students submit answers to teacher questions through Web forms on their computer screens, and the system stores their answers in a remote database and displays the responses at the front of the classroom.

(Computer, March 2001)

Congratulations Faculty!

Congratulations to **Drs. Dargan Frierson, Russ Herman and Paul Shotsberger** for receiving the 2000-2001 awards for Information Technology Innovation.

Drs. Dargan Frierson (mathematics and statistics), **R. D. McCall** (anthropology) and **Steve Kinsey** (biological sciences) received a \$22,000 award from the Department of Information Technology Systems for "Acquisition of DNA Microarray Technology in Support of Investigation of the Human Biologic Response to Hypoxia." The grant will go toward the purchase of specialized equipment and software for genetics research. Dr. Frierson will also involve techniques to analyze the data arising from the microarray experiments.

Dr. Russell Herman, mathematics and statistics, **Laela Sayigh**, biological sciences, **Genevieve Haviland**, graduate student, and **Dr. Alex Bocconcelli**, CMS, received an award of \$15,000 to develop a digital acoustic signal aquisition.

Dr. Paul Shotsberger, mathematics and statistics, received an award of \$23,920 for "Use of Mobile Wireless Devices to Enhance Undergraduate Teacher

Preparation and Support." The project uses Jornada Pocket PC Devices, allowing wireless communication for pre-service and in-service teachers.

The Board of Trustees of UNC Wilmington approved the recommendation that **Dr. Xin Lu** be promoted to full professor in the Department of Mathematics and Statistics, effective August 1, 2001.

Congratulations to **Drs. Gabriel Lugo and Russ Herman** on their recent success in obtaining grant funds (with **Drs. Dick Ward, Jimmy Reeves, and Ron Vetter**) from Person Education for the project titled "Project Numina: Innovative Integrations of Media into Science and Mathematics Curricula."

Drs. Paul Shotsberger and Ron Vetter were cited in Edupage based on the article that they wrote for "Computer" about the Numina Project.

Alumni! We want to hear from you!

Name: _____
Dr./Mr./Mrs./Ms. First Middle Maiden Last Suffix

Address: _____
Street/PO Box City State Zip Code+4

Phone: Home () _____ Work () _____ E-Mail _____

Employer: _____ Position _____ Gift Matching Co.? YES NO

Street City State Zip code + 4

Grad. Date: _____ Degree/Major: _____ Is spouse UNCW alumnus? YES NO

Alumni News! Send your update to: alumnews@uncwil.edu or complete our form on the web at www.uncwil.edu/alumni

Yes, I want to support the UNCW Mathematics and Statistics Department!

Enclosed is my gift of \$ _____ made payable to UNCW

Please direct my gift to:

- Mathematics and Statistics Trust Fund** **Crews Scholarship Fund**
(supports student awards, guest speakers and other needs)

- Toney Scholarship Fund** **International Student Graduate Fund in Mathematics and Statistics**

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Spotlight on Douglas V. Nance '84



Douglas V. Nance is a Research Scientist at the U.S. Air Force Research Laboratory at Eglin Air Force Base in Florida. Doug graduated from UNCW in 1984 with a B.S. degree in mathematics and a second major in physics. After serving as a U.S. Navy officer aboard a nuclear submarine, Doug entered UNCW's master's degree program in mathematics.

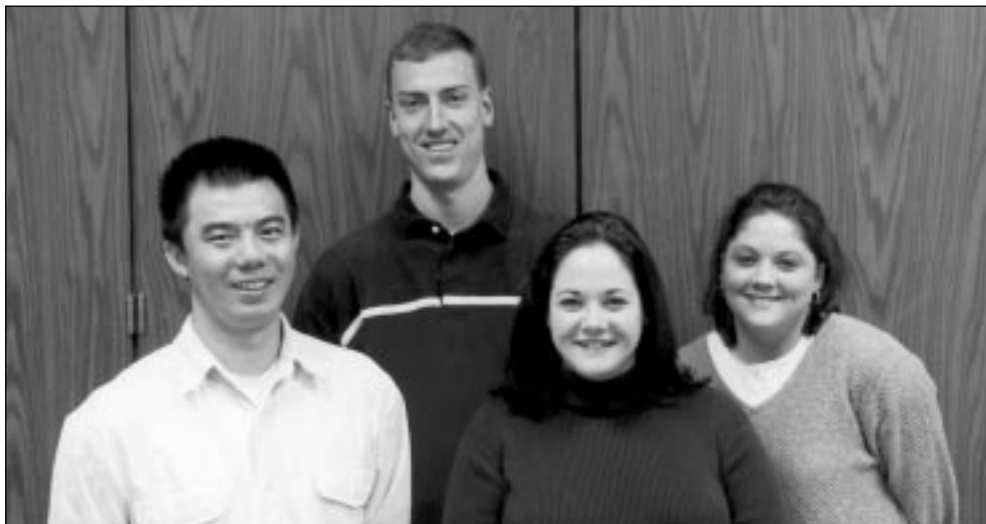
Upon graduation from UNCW with a M.S. degree in mathematics, Doug became a full-time civil service employee of the Air Force, winning through national competition a place among a small group of promising young scientists known as Palace Knights. The Air Force paid Doug's salary and benefits while he earned a Ph.D. in Aerospace Engineering at Georgia Tech. The Air Force also paid all of Doug's graduate school tuition and fees at Georgia Tech, and guaranteed him a job after his graduation. During the last two years at his position in the Munitions Directorate at Eglin AFB, Doug has won three awards for technical achievement.

Doug supplied the following reflections on his work experience and his education at UNCW: "My work at the Air Force Research Laboratory entails the assessment of new technology for application in conventional munitions design.

To aid in the assessment process, I often develop new computational tools that are designed to focus on the physics behind the technology and provide information back to the designers. If applied early enough, this process can help engineers steer away from problematic designs and reduce overall costs."

"My training in the Department of Mathematics has proved invaluable in the creation of mathematical models to support my assessments. I routinely solve a variety of ordinary and partial differential equations in my modeling efforts. In many cases, the associated solutions are, in part, analytical although computer programming is an absolute necessity. I have found the courses Applied Analytical Methods, Linear Algebra, Applied Probability, Complex Variables and Advanced Numerical Analysis to be particularly valuable. I also rely on tensor analysis, differential geometry and functional analysis in the consideration of the problems brought to my attention."

"With respect to my work both in doctoral studies and in my job, I cannot overemphasize the importance of the mathematical foundation I gained while studying at UNCW. The skills I learned in the Math Department have given me a distinct, competitive advantage at each stage of my career."



(left to right): Biaozi Wei, Tommy Casey, Sarah Ives, Stephanie Angst

As the academic year is coming to an end, I would like to tell you about our graduate program. The Department of Mathematics and Statistics has offered a Masters of Arts and a Masters of Science degree for over 10 years. We have graduated over 40 students. These graduates are working in jobs as four-year or community college mathematics instructors, software engineers, statisticians at several pharmaceutical companies, designers of optimal distribution and packaging strategies, and directors of computer services. Several have entered Ph.D. programs in mathematics and related fields or have chosen to teach mathematics at the secondary school level.

Eight students will soon complete the degree requirements and receive their Master's degrees in the spring or during the summer. Some will receive the M.A. and others will receive the M.S. Two chose to complete a project while the rest chose to write theses. These students have varied interests and many have already decided what they will do with their newly obtained degree.

Stephanie Angst will graduate with a M.A. from UNCW after commuting from Raleigh for several semesters. She is completing a project with **Dr. Matt TenHuisen** in the area of operations research. She plans to pursue a teaching career either at the community college

or high school level. She is currently looking for employment in the triangle area. Besides teaching, other possibilities of employment that interest her are in the area of statistics, in particular, in analysis or research and development.

Tommy Casey who has an undergraduate degree from UNCW will graduate with a M.A. degree under the non-thesis plan. Students under this plan must take a written comprehensive exam and complete a project. He is completing his project "A Scheduling Model to Optimize Departmental Preference in Course Assignment" under the direction of Dr. TenHuisen. After graduation, he plans to find a job in the Wilmington area using mathematics and statistics. In August, he will marry his fiancée who is a UNCW business student. He says that he has enjoyed being a student here over the past six years.

Karen Fagan, whose husband is in the military, obtained a masters while commuting from Jacksonville. She wrote her thesis "Solution Methods for Multiobjective Linear Programming Problems and Their Application to Graduate Assistance Hours Allocation Programs" under the direction of Dr. TenHuisen. She is presently in California where her husband is stationed.

Sarah Ives is completing the M.S. with a thesis on "The Julia Set of Riemann Zeta

Function" under the direction of **Dr. Russ Herman**. In August, Sarah will begin work on a Ph.D. in mathematics at North Carolina State University. She will be a teaching assistant while working on her degree.

Yinggang Li is completing his M.S. He is writing a thesis under the direction of **Dr. John K. Karlof**. His title is "p-median algorithm for Optimally Choosing Nuclear Waste Dump Sites." He plans to go to graduate school to get his Ph.D. in computer science. He has been accepted at several universities and has decided to enter the Ph.D. program of Computer Engineering at North Carolina State University.

Francine Smith is working at PPD and completing her thesis in statistics under **Dr. Dargan Frierson**. Her title is "A Regression Tree approach to linking High School Accountability to College Performance." Francine did an internship with PPD during the summer. This work turned into a permanent job for her. She is presently using her statistical training at work while putting the finishing touches on her thesis.

Wenjie Wang is working for Analytix, Inc. in New York. He will soon become the company's business representative in Hong Kong. He completed his thesis this semester and began work at his new job. His thesis "Dynamics of a 3-species Food-chain System with Time Delays" was written under the direction of **Dr. Wei Feng**.

Biaozi Wei has completed his thesis "Coupled System of Two-Stage Chemical Reaction with Diffusion" under Dr. Wei Feng. He has already found a job using his mathematics. He is working for PPD as an associate programmer analyst. His primary duty is writing SAS code and doing data analysis.

The department is extremely proud of these students. We expect to continue to hear outstanding accomplishments from this group of graduates.

Alumni News

Jeff Grizzle '86 is vicepresident of Atlantic Services, Inc. He resides in Wilmington with his wife Sheila and his three children.

Linda Lane Jordan '70 graduated with a B.A. in mathematics. She is currently working with the state of North Carolina as a counselor.

Lisa Albert Soberano '00 is working with SAS Institute as a technical training specialist. She presented her mathematics honors project "The Mathematical Foundations of Image Compression" at the Joint Mathematics Meetings this past January in New Orleans. She lives with her husband Robby in Chicago, Ill.

Ben Stroehl '00 was hired to teach mathematics at Ashley High School. He will also be the assistant varsity baseball coach.

Congratulations!

Alan Bass '99 and **Holly Smith '99** were married in July 2000.

Jennifer Dudley '99 and **Carey Gibson '99** were married in August 2000.

In Memorium

Cynthia (Cindy) Eloise Brown Mucci 1960 - 2000

Cindy attended NC State University and graduated *cum laude* from UNCW in 1982 with a B.A. degree in mathematics with teacher certification. She taught briefly at Hobbton High School in Sampson County before beginning her software engineering career at NASA Goddard Space Flight Center in Greenbelt, Md. She continued her distinguished professional career as an employee of Computer Sciences Corporation. As a software engineer and manager for the Flight Dynamics Group at CSC, Cindy was responsible for the development of software to support satellite operations. Her last assignment was as manager for the Hubble Space Telescope Vision 2000 Project.

Student News

Jonathan Duggins, Paul Chapman, and Sophie Trawalter participated in the Virginia Tech and the Putnam math competitions for undergraduate math, physics, and computer science majors.

Summations

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We want to hear from you!

Please provide us with information about yourself. Where are you and what are you doing? Do you know of other alumni? If so, please include information about them as well.

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