



Department of Mathematics Newsletter

Volume 1, Number 1

CHAIRMAN'S COMMENTS

This is the first of what I hope will be many more issues of the Department of Mathematics newsletter. Our purpose is to keep Departmental alumni, current students, members of the University family, and others who are interested in mathematics, informed of what is taking place in mathematics at the University of South Florida.

Let me tell you just a little bit about the Department. Currently we have 30 faculty members whose research interests cover a wide variety of areas - from approximation theory to statistics to computer science to the history of mathematics. During the academic year 1983-1984, these faculty were responsible for over 80 scholarly papers either submitted, accepted for publication, or appearing in mathematical journals, and 15 books either appearing or under contract for publication. In addition, 5 graduate students graduated with Ph.D. degrees in mathematics in the areas of number theory, probability theory, and differential equations.

The Department currently has 16 teaching assistants and 8 adjunct faculty. The 30 faculty, together with these teaching assistants and adjuncts, are teaching mathematics to over 5000 students in Semester I on the Tampa campus for a total of 16,777 student credit hours. Included are students in many mathematics service courses that the Department teaches for the Colleges of Business Administration, Education, Engineering, Medicine, Nursing, and Natural Science.

I am delighted to have the able assistance in the administration of the Department of other faculty, whom I would like to introduce to

you. Dr. James Reed is serving as the Assistant Chairman. He schedules all classes, makes teaching assignments for faculty, teaching assistants, and adjuncts, coordinates the undergraduate program in cooperation with the Undergraduate Committee, and handles many other sundry duties. Dr. Mary Parrott is the Graduate Coordinator. As her title suggests, she coordinates the graduate program in conjunction with the Graduate Committee, advises current graduate students and, along with the Graduate Admissions Committee, recruits and recommends new graduate students. Dr. Frank Cleaver serves as the Undergraduate Student Advisor and helps mathematics students in planning their program of study. Finally, Dr. Kent Nagle serves as Director of the Department's Center of Mathematical Services. The Center is involved in many service activities for the University and the community. Included in these activities are special summer programs in mathematics and science for gifted secondary students and consulting services for local businesses and industries.

Although I was optimistic and excited about the prospects for the Department and the University when I assumed the chairmanship this past August, I am even more so now after several months on the job. This optimism is fueled by the vision that other members of the Department and I share regarding the potential of our present and developing programs, the synergism that is growing between the department and business, industry, and educational institutions in our community, and the growing realization of the relevance of mathematics and statistics by so many academic disciplines in the University. As this potential unfolds and events take place within the Department, we wish to keep you informed by way of this newsletter.

NEWSLETTER NAME CONTEST

We solicit your suggestions for a name for the newsletter. A special prize will be awarded to the one who submits the winning entry. Send your entry to Newsletter, Department of Mathematics, University of South Florida, Tampa, 33620.

In this and forthcoming issues we will inform you of the activities of our students - past and present - about creative and research activities of the faculty, and about programs and news of the Department.

If you as an alumnus or current student have information you think might be appropriate, I would be happy to hear from you. I trust that all will find the newsletter informative and helpful in learning about what is happening in mathematics at U.S.F.

Kenneth Pothoven

CENTER FOR MATH SERVICES

Among the many activities of the Center for Mathematical Services are the High School Mentor Program and the Training Program in Applied Mathematics. The Mentor Program enables selected high school students to work with faculty and graduate students on special mathematics and science projects. The Training Program gives students opportunities to work on special projects in local industries and technological firms such as Honeywell and GTE Data Services. Students are employed through contracts between the industries and the University.

NEWS AND ANNOUNCEMENTS

Professor M. E. Parrott received the 1983-84 Outstanding Assistant Professor Award from the College of Natural Sciences. The award is presented annually in recognition of outstanding teaching, service, and research.

Professor E. B. Saff was named the Outstanding Faculty Researcher for 1984 by Sigma Xi, the Scientific Research Society. On October 30 he presented a talk, "Rational Approximation: What a Difference a Division Makes," at the first meeting of the USF Chapter of Sigma Xi for 1984/85.

The department will host a team of consultants from the State Board of Regents on November 20 and 21. The consulting team, composed of well-known mathematicians from around the country, will meet with faculty, students, and administrative personnel.

Soon to be submitted by the Department for University approval are three new five-year combined BA/MA programs in mathematics. These programs will enable students to receive both the BA and the MA degrees after a five-year period study. The three programs are in the areas of computational mathematics, mathematics of computer science and computational statistics.

Two new computer science courses, a four-thousand level course in PASCAL and a five-thousand level course in LISP, are in the final stages of formal approval by the University. These new courses are part of the continuing development of the computer science program in the department.

A Mathematics Club is being organized this year and is open to all interested students, regardless of major. The club plans to invite speakers, promote information on math-related employment opportunities, organize social events for students and faculty, and sponsor other activities of mathematical interest. Approximately thirty students attended the first meeting in October. The club will meet monthly throughout the academic year.

The Department is pleased to announce that a new Honors Program in Mathematics will soon be

offered. Successful completion of the program will be noted on the student's diploma and on all official university transcripts. Details of the requirements for the degree of Mathematics with Honors are available in the mathematics office.

MATHEMATICS DEPT. IS HOME TO NEW RESEARCH JOURNAL

A new international research journal dealing with approximations and expansions will make its home at USF. The journal, entitled Constructive Approximation (CA), will be published quarterly by Springer-Verlag and will be of interest to mathematicians, engineers and scientists who utilize splines, rational functions, interpolation operators, series expansions and special functions. According to Professor E.B. Saff of USF, who is Editor-in-Chief for the new journal, "There is a need for a high quality journal devoted to the constructive and numerical aspects of approximation theory." Saff also said that, "Since all papers submitted to CA will come to our office, this is a great opportunity for USF to be at the forefront of knowledge in approximation theory."

The editorial board for the journal consists of outstanding researchers from the US, Great Britain, Israel, Sweden, Switzerland and West Germany.

The first issue of CA will appear in the late fall. Secretarial and other costs related to the running of the editorial offices are paid from a contract agreement between USF and Springer-Verlag.

INT'L CONFERENCE HELD

An international conference entitled "Rational Approximation and Interpolation" took place December 12-16, 1983 at USF. It was the second such conference on this topic to be held at USF. The conference was sponsored by the United Kingdom - United States Cooperative Science Program, an informal agreement between NSF and the SERC of the UK to promote and support mutually beneficial scientific activities. The primary

purpose of the conference was to bring together pure and applied mathematicians, physicists and engineers to exchange information and set objectives for future research efforts dealing with rational approximation and interpolation.

Dr. P. R. Graves-Morris of the University of Canterbury and Dr. E. B. Saff of USF were the primary organizers of the conference. There were 28 participants from the US, 14 from the UK, and 14 others representing 11 additional countries.

The conference planning and activities were facilitated by the USF Center for Mathematical Services and the USF Mathematics Department organizing committee consisting of Dr. Michael Blake and Dr. Jon Snader. Financial support for the conference was provided by NSF, SERC, Division of Sponsored Research (USF) and several companies in the Tampa area.

The proceedings of the conference will be published by Springer-Verlag in its Lecture Notes Series.

FACULTY TRAVEL

Professor Mary Parrott recently presented talks at two eastern European mathematics conferences. The first of these was the Colloquium on the Qualitative Theory of Differential Equations held in Szeged, Hungary, August 27-31. The other was Applmath I, Conference on Applied Mathematics, held September 4-7 in Bratislava, Czechoslovakia.

Professor Sung Lee addressed the International Conference on Qualitative Theory of Differential Equations in Edmonton, Canada in June of 1984.

In May, Professor Ed Saff was awarded a research fellowship and conducted research at the Forschungsinstitut für Mathematik at the Swiss Federal Institute of Technology (ETH) in Zurich.

This past March, Professor Carol Williams attended the Alexander von Humboldt Colloquium for Celestial Mechanics held in Ransan, Austria. She gave an invited review paper entitled "The Problem of Small Divisors in Planetary Motions" at the conference.

FACULTY PROFILE PROFESSOR A. W. GOODMAN

Prof. Goodman received the Ph.D. in Mathematics from Columbia University in 1947, but he originally started out in Chemical Engineering, receiving the B.Sc. degree in that subject from the University of Cincinnati in 1939. After 2 years at Rutgers University in New Jersey, and 15 years at the University of Kentucky, he came to the University of South Florida in 1964, and intends to remain here until his retirement. He and his family love the Florida climate and believe that there are only a few places in the United States that have a similar attractive climate.

Prof. Goodman has published 50 research papers in various journals, and a few more are either accepted, submitted or are in progress. Most of the papers concern analytic functions (complex variables) but two are on graph theory, one is on elementary number theory, and one is a note on differential equations. Along with quite a few textbooks, he recently finished a two volume treatise on the theory of Univalent Functions. Although one usually judges a mathematician by the number and quality of theorems he proves, there is another side to publications that may be even more important. This is: (a) the statement of new problems, (b) announcing new conjectures, and (c) the creation of new classes of functions for detailed study. In Prof. Goodman's thesis, published more than 35 years ago, he posed a conjecture on the coefficients of a multivalent function that is still unsolved in general, although some special cases have been proved during the intervening years. In a more recent paper he proved that the sum of two normalized univalent functions may be infinite-valent and posed an open problem in that area that has not been touched. In a more recent paper, Prof. Goodman introduced the concept of "valence sequences" and proved three theorems on that topic. But far more important is the large number of open problems that can be posed about valence sequences. In his latest paper, which will soon appear in the Proc. Amer. Math. Soc., he introduced a new class of functions, namely "convex functions of bounded type." Here again the theorems he proved are probably less important than the questions that remain open about these functions.

Prof. Goodman spent the academic year 1957-1958 as a visiting scholar at the Institute for Advanced Study in Princeton, New Jersey. In 1959, he was awarded the University of Kentucky Alumni Award for outstanding research in Mathematics. He has given invited lectures in France, Holland, Greece and Israel.

Prof. Goodman and Betty will soon celebrate their 37th wedding anniversary. Among their children, Sheila is the only true scholar. She is working for a Ph.D. in English at Florida State University.

Prof. Goodman's hobbies are chess, listening to good music (Mozart, Beethoven, Italian opera, etc.), and playing tennis with Prof. Michaelides. Since the latter (known to his close friends as Mike) is younger, faster, lighter, taller and hits the ball much harder than Goodman, Mike always wins, but Goodman keeps on trying.

PI MU EPSILON NEWS

In February, 1964 a Mathematics Honor Society was begun at USF with the dual purpose of recognizing outstanding students and of presenting programs on aspects of mathematics not normally encountered in the classroom. On April 13, 1966 the Honor Society became the Florida Epsilon Chapter of Pi Mu Epsilon Fraternity, the national mathematics honorary. In these 18 years, 487 students at USF have become members of Pi Mu Epsilon Fraternity, which is now the oldest continuously active honor society in the University. Since its founding, the Chapter has been under the guidance of Dr. Fredric Zerla, Faculty Correspondent, and Dr. Frank Cleaver, Advisor. The student officers this year are Jonathan Frisco, President, and Sam Tannous, Student Correspondent.

Biweekly meetings are held on Friday afternoons at 2:00 P.M. in PHY 130 and recently have featured Jonathan Frisco's Presidential Address, "Areas under Polynomial Curves without the Limit Process," an address by Dr. Emilio Toro of the University of Tampa on large numbers, and a talk by Dr. Zerla about "Nicole Oresme: A Fourteenth Century Mathematician."

ALUMNI CORNER WHO IS THIS MAN?

On a hot, muggy day in September of 1960, USF opened its doors to its first students, 1900 freshmen. Among these students was a young man who was admitted provisionally - he had high entrance test scores, but an abominable high school record. He started as a chemistry major, but soon discovered that mathematics held an irresistible fascination for him. His calculus teacher assigned as homework all exercises in the text where a proof was required. The teacher soon discovered that this special student came to the classroom early and put the proofs on the side board before class.

While at USF, he met and married Lola Wykoff and their son, Dylan, was born in Tampa. Along with his mathematics, he developed an avid interest in writing poetry, which was published in the USF journal. After compiling an excellent record, he graduated with the very first graduates of USF in 1963.

Pursuing his academic career, he was accepted as a graduate student at FSU and earned a Ph.D. degree there in 1966. His thesis was in geometric topology. While a graduate student, he published two research papers, one of which contained a counter-example to a published "theorem" by Hudson and Zeeman. A daughter, Shannon, was born while he was at FSU.

After graduation from FSU, he received a one year visiting membership at the Princeton Institute for Advanced Study. This year was unbelievably difficult and it had a profound influence on his life and work. After the next two years as an Assistant Professor at the University of Georgia, he returned to the Princeton Institute in 1969 for another year, at which time he was research assistant to Deane Montgomery.

In 1970, he accepted an Associate Professorship at Stevens Institute of Technology in New Jersey. While at Stevens, his interests shifted to theoretical computer science and graph theory.

In 1976 he was visiting professor of computer science of The University of Saarland in West Germany, and in the fall of 1982 he was visiting professor in the Mathematics Department at USF.

He has published over forty papers and was promoted to full professor in 1978.

Please, meet Professor Ralph Tindell who has now joined the Computer Science and Engineering Department here at USF.

CALENDAR

The annual joint meeting of the MAA (Mathematical Association of America) and the AMS (American Mathematical Society) will be held in Anaheim, California, from January 9 to 13, 1985.

The Florida Section of the MAA will be held at Stetson University in Deland on March 8th and 9th.

The Ninth Annual Minisectional meeting of the MAA will meet on the Tampa campus of USF from 3 PM to 9 PM on December 7, 1984.

Pi Mu Epsilon meetings are held biweekly on Friday afternoon at 2 PM in Phy 130. Dr. Zerla addressed the fraternity on October 19th on the 14th century mathematician Nicole Oresne.

Departmental Colloquia are presented every other Wednesday at 2 PM in Phy 107. Future speakers include the following:

Prof. A. Kirk of the University of Iowa. He will speak November 28th on the topic "Some Recent Developments in Geometrical Fixed Point Theory."

Prof. M. Ghosh of the University of Florida will speak on December 5th.

Ph.D. DEGREES AWARDED IN 1984

Student/Major Advisor	Dissertation Title	Present Position
1. Yousef Abbas Prof. J. Liang	On Fundamental Sets Over a Finite Field	Asst. Professor, Auburn Univ., Montgomery
2. Rita Chattopadhyay Prof. A. Mukherjea	On Some Problems in the Theory of Non-homogeneous Markov Chains	Asst. Professor, Eastern Michigan University
3. Jessica Craig Prof. A. Kartsatos	Functional Evolution Equations Involving T-accretive and T-Lipschitz Operators in Banach Lattices	Asst. Professor, Eckerd College
4. Victor Dannon Prof. A. Kartsatos	The Generation of an Evolution Operator in a Banach Lattice	Asst. Professor, Winthrop Coll.
5. David Steele Prof. A. Mukherjea	A Commentary on the Correlated Random Walk: Some Additional Results and a Two-Step Correlation	Asst. Professor, Clearwater Christian College

M.A. DEGREES AWARDED IN 1984

6. Gabor Belovari
Prof. R. Stark

UNIVERSITY OF SOUTH FLORIDA

Tampa, Florida

GRADUATE STUDIES IN MATHEMATICS LEADING TO M.A. AND Ph.D. DEGREES

Our 30 full time faculty members represent most areas of pure and applied mathematics and statistics. Special M.A. programs are offered in Computational Statistics, Applied Mathematics, and Computer Science. Ph.D. programs are available in these areas also, as well as in Differential Equations, Probability, Statistics, Analysis, Approximation Theory, and other areas. Interdisciplinary programs with the College of Engineering and the College of Medicine are available. The special facilities of the department include a computer laboratory and a Center for Mathematical Services in which qualified students and faculty can become involved in consulting services to business, industries, hospitals, and schools in the Tampa Bay Area.

The University has about 27,000 students and three branch campuses. The main campus is located north of the City of Tampa. The area is a resort area boasting of a warm climate all year.

Financial aid is available to qualified students in the form of Fellowships and Teaching Assistantships. Stipends for Teaching Assistantships range from \$7,000 to 9,000. Tuition waivers are available to qualified students. For further information, write to:

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