The past year has proven to be the most difficult year since I became the department chair in 2005. A midterm budget cut from the state resulted in a $40,000 cut in our operation budget. As a result, we struggled to meet our financial obligations and maintain the normal operation of the department. To reduce the operation cost, we had little choice but to terminate the employment of the student workers in the main office and the computer technician who maintained our Linux system. In addition, we suspended the purchasing of computer equipment and cut back on travel. I appreciate the understanding and cooperation of faculty members in dealing with this difficult situation.

Due to the slow improvement of the economy, all state universities in Mississippi have been asked to develop plans for the anticipated budget losses for 2012. According to the news released from the upper administration, we anticipate a budget decrease of approximately $15 million in 2012. In spring 2010, upon the request of the University Priority Committee (UPC), all departments had to prepare various Academic Initiative Reports to get ready for cuts in programs. I would like to express my deep appreciation to the majority of faculty members who were actively involved in this tedious and difficult process. According to the recent announcement from the president, in addition to a score of retired positions, twenty-nine faculty positions have been eliminated. It is fortunate that there is no negative impact on the Department of Mathematics. We have demonstrated that our programs are vital to the university.

The building renovation of the new Math Zone (a $1 million project) was completed in summer 2009 and began operating at that time. The new Math Zone has 8,000 square feet of space and contains 165 computers, five offices,
At the end of last June, I announced my intention to step down as the department chair effective December 31, 2010. I will return to serve as a faculty member next spring. It has been a privilege to serve this department during the past five years. I am proud that the department has made significant progress in research productivity and external funding. I would like to take this opportunity to thank many faculty members who contribute so much to improving our department and to helping me as well in this task. I am optimistic that the department will continue to move forward under new leadership. Meanwhile, I would like to share good news that I have received a Distinguished Overseas Visiting Scholar Fellowship from China. (See elsewhere in this newsletter for more about the fellowship.) The timing is perfect. According to the agreement of the fellowship, I am expected to spend at least two months per year in China collaborating in research with top Chinese scholars over the next five years. The full funding and support of the fellowship will allow me to travel extensively in China and the neighboring countries in Asia. I am looking forward to the opportunity to work with overseas researchers in my research area. I am also looking forward to the opportunity to have my sabbatical leave in fall 2011 to complete a book project in computational mathematics.
**Promotions and Awards**

**DRS. HIAYAN TIAN** and **JOHN HARRIS** have received tenure and have been promoted to associate professor effective July 1, 2010.

**MS. LUE BELL** received the Outstanding Black Faculty Award given by the Afro-American Student Organization at Southern Miss to acknowledge her outstanding service and dedication.

**DR. JAMES LAMBERS** won the Best Paper Award at the 2010 IAENG (International Association of Engineers) International Conference on Scientific Computing, which was held March 17-19 in Hong Kong, for his paper "Krylov Subspace Spectral Methods for the Time-Dependent Schrodinger Equation with Non-Smooth Potentials."

**MS. SUSAN HOWELL** received the Distinguished Instructor Award from the Office of Disability Accommodations for her great effort in helping students with disabilities.

**MS. GUANGMING YAO** received the 2010 Graduate Student Award from the University Research Council. Award winners were recognized at the Centennial Convocation on March 20, 2010.

**MS. EOWYN CENEK**, a Ph.D. student in computational mathematics, received a Graduate Research Fellowship from Mississippi Space Grant Consortium. The stipend of the fellowship is $17,000 per year.
Dr. C.S. CHEN presented a paper in an international conference, ICCES Meshless Symposium, in Ljubljana, Slovenia, in September 2009. During winter break 2009, he was invited to visit Professor Y.C. Hon at the City University of Hong Kong for collaborative research in inverse problems. In May 2010, Drs. Chen and Ding visited Linyi University in China to initiate an exchange program in mathematics between Southern Miss and Linyi University. During the visit, Dr. Chen attended the International Young Scientists Conference on Mathematics Modeling, which was organized by the host institution, and later he gave a series of lectures to a group of researchers after the conference. Subsequently, Dr. Chen visited Professor Wen Chen at Hohai University in China and Professor D.L. Young at National Taiwan University (NTU) in Taiwan. His two-week visit at NTU was sponsored by the National Research Council in Taiwan. In July, Dr. Chen was invited to attend a Ph.D. oral defense at the University of Nova Gorica in Slovenia. In August 2010, Dr. Chen presented a paper in the Fourth International Conference on Neural, Parallel and Scientific Computations in Atlanta.

Dr. DING and PROFESSOR YIFA TANG of the Chinese Academy of Science disproved a conjecture on the dimension function for a new class of fractals called Sierpinski Pedal Triangles. They published a paper in the international journal Fractals in 2010. Dr. Ding published a Chinese article on education in the inaugural issue of the Chinese journal Mathematical Culture in April 2010. Dr. Ding was invited to present his papers at special sessions of two American Mathematical Society meetings in November 2010. Invited by the College of Science at Linyi University in China, Dr. Ding gave a series of lectures during his visit from May 19-27, 2010. He also gave a talk at the International Young Scientists Conference on Mathematics Modeling and at the Mississippi Council of Teachers of Mathematics Conference. Supervised by Dr. Ding, Mr. Robert Satchfield, an honor undergraduate student, presented a talk at the USA/USM Mini-Conference on Undergraduate Research in Mathematical Sciences on April 15, 2010.

2010 Summer Mathematics Institute

For the second year in a row Dr. Haiyan Tian has organized the Summer Mathematics Institute, a project under the leadership of Dr. Myron Henry before his retirement in 2008. The Summer Institute is designed for in-service teachers in Mississippi. Its primary goal is to improve participating teachers’ content knowledge in mathematics and their technology proficiency. Twenty-two teachers from 17 Mississippi school districts were selected to participate in the institute. The summer session was held from June 2 to June 29, 2010. The two follow-up sessions will be held on October 30, 2010, and February 12, 2011. This is the eighth consecutive Summer Institute hosted by the Department of Mathematics.
The Math Tutor Center continues to serve undergraduate students who are taking mathematics courses other than algebra. Students enrolled in College Algebra have the opportunity to attend the Math Zone for tutoring as part of the comprehensive educational process provided through the Math Zone.

While the Department of Mathematics Tutor Center is staffed by our graduate teaching assistants (GTAs), those GTAs and the Math department are fortunate to have Dr. Gaston Smith working alongside them as a volunteer tutor. Dr. Smith has extensive experience teaching mathematics and brings to the Tutor Center a wealth of knowledge and expertise. He served as the chair of the Department of Mathematics at William Carey University from 1967 until his retirement in 1992, and he has taught since then in the undergraduate program at Southern Miss.

Even though Dr. Smith is now retired from full-time teaching, he retains his enthusiasm for mathematics and for helping students to learn mathematics. Students recognize his genuine desire to help them, and his assistance is in great demand. In these days of tight budgets, the department is especially grateful to Dr. Smith for the time he donates to the department and to our students. In addition, he is an exemplary model to our graduate students, setting an example based on high standards that will serve them well in their careers in teaching and research.

Thank you, Dr. Smith!

Dr. Gaston Smith at the Math Tutor Center

External Funding and Awards

• Dr. Julie Cwikla has been awarded an NSF grant in the amount of $302,316. The award is effective January 2011 and expires December 31, 2012. The title of the project is “Early Fraction Learning: Links with Prosociality and Self and Other Perspective Taking.” This is her third NSF award during the past five years. External funding at the NSF is very competitive. This is a prestigious recognition of Dr. Cwikla’s research contribution.

• The 2010 Summer Mathematics Institute was funded through the U.S. Department of Education (No Child Left Behind) and the Mississippi Institutions of Higher Learning. PI: Haiyan Tian; Co-PIs: Myron Henry and Sherry Herron. The total award is $90,000 for the grant period March 9, 2010, to April 30, 2011.

• Dr. C.S. Chen has been awarded a Distinguished Overseas Visiting Scholar Fellowship by the Ministry of Education in China. The awarded amount of the fellowship is one million RMB (approximately $150,000) for 2010-14. The fellowship provides sufficient funding for the overseas scholars to actively engage in research with Chinese scholars. The nature of the awarded fellowship is similar to the Fulbright Fellowship in the U.S. Dr. Chen is expected to visit Professor Wen Chen and his research group in the Department of Engineering Mechanics at Hohai University, a tier one engineering research university in China, for at least two months per year for the next five years.
Our department established an academic exchange program with Linyi University in China in spring 2009. **Drs. Jiu Ding** and **C.S. Chen** visited Linyi University in May 2010 for a period of ten days. **Dr. Joseph Kolibal** has been invited to visit Linyi University for two weeks and give a series of lectures in fall 2010 during his sabbatical leave. **Professor Kefeng Diao** from Linyi University will visit our department in fall 2010 for a period of three months.

**New Course Offering**

During the summer 2010 semester the department offered two sections of a new course – MAT 100, Quantitative Reasoning. The course is designed as an alternative to the traditional College Algebra for those students whose degree program does not require any additional courses in mathematics. Successful completion of the course by such students will satisfy the General Education Core Curriculum requirement in mathematics. Topics covered in MAT 100, Quantitative Reasoning, include elementary set theory, an introduction to logic, counting methods, probability, statistics and financial management. There are also two sections of MAT 100 in the fall 2010 semester, and it is anticipated that enrollment in the course will increase in future semesters as knowledge of this course offering becomes more widespread throughout the university community.

**Post-Doc Position**

After completing her Ph.D., **Guangming Yao** received a job offer to work at the Department of Computer Science at the University of Wisconsin at Milwaukee as a post-doc for two years. She is applying the meshless numerical methods developed in her dissertation to solve biomedical problems involving coupled systems of nonlinear equations.

**Distinguished Alumni Award**

**Mr. and Mrs. Jim and Mary Sue Angelo** have received Distinguished Alumni Awards from the College of Science and Technology for their continuous support to our department. Due to their ongoing donations to our foundation fund, we have been able to support our graduate students in attending conferences and other scholarly activities. It is worthwhile to mention that due to their donation, we were able to provide a summer graduate fellowship to Ms. Guangming Yao so that she could focus on her dissertation without working on a summer job. As a result, Ms. Yao was able to complete her Ph.D. in August 2010, which was one semester ahead of her scheduled graduation date.

**Exchange Program**

International Conference for Young Scientists held at Linyi University in May 2010

**Distinguished Alumni Award**

Distinguished Alumni Award for Mr. and Mrs. Angelo

**Dr. Guangming Yao**
**Undergraduate and Graduate Research**

**Ms. Miao Yu** graduated in August 2010 with a master’s in mathematics under the supervision of Dr. John Perry. Dr. Perry also supervised Ms. Elisabeth Palchak who graduated Summa Cum Laude in May 2010 with a bachelor’s in mathematics. In addition, Dr. Perry assembled a student team consisting of Lorrin Debenport, Elisabeth Palchak, Jonathan Yarber and Miao Yu to attend the regional MAA section meeting held at Southeastern Louisiana University. Miao Yu won first prize in the graduate paper competition and a $100 cash award.

**Ms. Guanming Yao** completed her Ph.D. dissertation under the supervision of Dr. C.S. Chen in August 2010. This is the first Ph.D. completed in this department during the past five years.

**Mr. Joey Emfinger** completed his master’s thesis in August 2010 under the supervision of Dr. Sungwook Lee.

**Sabbatical Leaves**

**Dr. Joseph Kolibal** is on sabbatical leave in fall 2010.

**Dr. Jiu Ding** will be on his sabbatical leave in spring 2011.

**Visiting Scholars**

**Dr. Vladim Kompisv** from the Academy of Armed Forces in Slovakia came to visit Dr. Chen for a joint NATO project in material science for a period of one week in October 2009.

**Dr. Tongsong Jiang** from Linyi University completed his one-year visit during his sabbatical leave in December 2009. He has collaborated on three papers with colleagues in the research group of computational science. During his visit, he has made great effort to make the exchange program between Southern Miss and Linyi University possible.

**Faculty Attrition**

**Drs. Jose Contreras** and **Dohyoung Ryang** have received competitive job offers from other universities and have decided to accept the offers. Dr. Contreras has served in this department for 14 years and Dr. Ryang for two years. As a result of their departure, we have hired two visiting assistant professors, Drs. Harold Williford and Regina Jackson to replace them.
Our 2009-10 Graduates

Bachelor of Science

Fall 2009:
Chayna Cosse
Jude Martin

Spring 2010:
Benjamin Benson
Latoya Carter
Sabinia Duckworth
Sedrick Jefferson
Brittany Juraszek
Alyson Martin

Master of Science

Fall 2009:
Raymond Hanser

Summer 2010:
Joey Emfinger
Miao Yu

Ph.D. in Computational Science

Summer 2010:
Guangming Yao

2009-10 Scholarship Recipients

Chardae D. Cousin
Alton C. Grimes ($533.69)

Zuzana Caso
Wright W. Cross ($2,000)

JaMie Lambert
Fred H. and Nadyne M. Drews ($1650.81)

Emmalee Bolton
Jack D. Munn Memorial ($427.02)

Saydrianne Harris
Wright W. Cross ($732)