Ph.D. Program in Physics Now Available

The University of Tulsa Board of Trustees approved a doctoral program in physics, expanding the university’s academic offerings and further raising the school’s profile in the fields of math, science and engineering.

“A Ph.D. program in physics will provide a bridge with all the other programs within the College of Engineering and Natural Sciences; raise the quality and number of graduate physics applicants; and provide additional opportunities for external funding, faculty participation and collaboration,” said George P. Miller, chair of the Department of Physics and Engineering Physics.

The department plans to admit three to five graduate students per year to the program, thereby maintaining a low student-to-faculty ratio and ensuring the personal educational experience for which TU is noted. The first Ph.D. physics students will be admitted for the fall 2011 semester, with the program being fully implemented by the fall of 2012.

TU has offered a master’s degree in physics and engineering physics for three years, and with the department’s rapidly growing reputation, the doctoral program is a natural extension to these programs. The presence of the Ph.D. program will strengthen an already strong undergraduate physics program and will allow many of our master’s students to continue to pursue their academic goals without leaving the university.

“In the past six years, we have grown our resources to a level comparable to many Ph.D.-granting departments of similar size,” Miller said. “We are particularly strong in instrumentation, optics, computational plasma physics, materials characterization, and nanotechnology.”

For more information about the doctoral degree program in Physics, visit [http://www.physics.utulsa.edu](http://www.physics.utulsa.edu) or contact George Miller at 918-631-3021.

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**IMPORTANT DATES**

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<td>MAR. 28</td>
<td>SUMMER REGISTRATION BEGINS</td>
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<td>APR. 4</td>
<td>FALL REGISTRATION BEGINS</td>
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<td>FINALS</td>
</tr>
<tr>
<td>MAY 7</td>
<td>COMMENCEMENT</td>
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TU Launches Sigma Xi Chapter

Sigma Xi is the global honor society of science and engineering. American Scientist is SX’s bi-monthly magazine that features articles on a broad range of sciences including biology, chemistry, physics, geology, astronomy, computer science, psychology, mathematics and more. American Scientist and many of the other benefits to members are available online.

Being a Sigma Xi member offers many benefits to graduate students who are planning a career in science. Since 1922, SX has awarded approximately 30,000 small grants to graduate and undergraduate students. There is an annual Student Research Conference. Membership in this prestigious organization, especially as a graduate student, informs current professors and mentors, and future employers that you are ready to become an active member of the science research community. Many of your professors and future colleagues probably are already members.

In the next year, TU’s Sigma Xi chapter will sponsor speakers, an induction ceremony for new members, and outreach efforts in the Tulsa community. We plan to become an active voice that promotes science and collegial opportunities for scientists, current and future.

If you would like to know more about how Sigma Xi can benefit you, please go to the website – www.sigmaxi.org. If you have questions about becoming a member of the local chapter, please contact Bob Pickering at bob-pickering@utulsa.edu. If one of your professors is already a member, he or she can nominate you for associate membership.

14TH ANNUAL STUDENT RESEARCH COLLOQUIUM
March 25 - April 3, 2011

WHAT IS IT?
The Student Research Colloquium was established in 1998 to provide TU students with an opportunity to gain public speaking experience, learn about research from fields outside their own academic discipline, and experience judging methods used by professional organizations for national and international meetings/conferences.

WHO PARTICIPATES?
Open to all TU students: undergraduate, graduate and law.

WHAT SORT OF RESEARCH IS INCLUDED?
Presentations may contain original research or scholarship that you may be conducting, work that was already submitted for a classroom project during previous semesters, or work in progress for the Spring semester. Research does not have to be experimentally based. All topics are welcome.

A session schedule and additional information will be posted in early March at http://www.utulsa.edu/research_colloquium

If you have any questions, please contact the Colloquium Co-Chairs at research-colloquium@utulsa.edu.
The University of Tulsa Chapman Graduate Scholar Presentation Awards Program provides assistance for graduate students to present their scholarship in a national or international forum to enhance the student’s career opportunities.

Any enrolled graduate student who is senior author on an abstract and orally presenting research conducted at The University of Tulsa may apply. Enrolled students entering works in juried exhibitions are also eligible for support. The applicant must also be an enrolled student (with the exception of summer) at the time of the presentation and it must be prior to the applicant’s graduation. For most graduate students, the summation of their graduate research for a scholarly presentation usually occurs during the last two semesters of their degree program. Presentations at professional meetings are usually helpful in the acquisition of (or at least interviewing for) jobs. Preference is given to doctoral students giving oral presentations, not poster presentations. Preference is also given to students that have previously presented in the Annual Student Research Colloquium.

**MASTER STUDENT AWARDS**

Abel, Nicole. “Comparative Microsatellite-Based Typing of Environmental Aspergillus Fumigatus Isolates”. 9th International Congress of Aerobiology (June 2010).

Blair, Margaret. “Reading Faulkner’s Death-Drag Through Schibner’s Regional Modernism.” Modernist Studies Association Annual Conference (September 2010).


**DOCTORAL STUDENT AWARDS**


Avery, Jason. “Dissociable Patterns in Insula Activity Associated with Anxiety and Interoceptive Awareness.” Society of Neuroscience (October 2010).


Delventura, Jennifer. “Fibromyalgia is Associated with a Disruption of Emotional Modulation.” American College of Rheumatology (October 2010).


Wiedeman, Rachel. “Clinical Outcomes in a Trauma Informed Substance Abuse Treatment Program.” International Society for Traumatic Stress Studies (October 2010).

Woodfin, Barbara. “Experimental novels of Anna Kovan for Reception of Late Modernist Women.” Modernist Studies Association Annual Conference (September 2010).
GSA Sponsors T-Shirt Design Competition

At the request of the students, the TU Graduate Student Association sponsored a t-shirt design competition as part of their preparations for the 2011 Graduate Student Appreciation Week events.

Students were asked to submit designs the beginning of February that could appeal to a diverse graduate community. Each design had to use no more than two colors, front and/or back, and had to be submitted in PDF, MS publisher, or PowerPoint format. The winner/s would have their design reproduced and would be given a free t-shirt after the orders returned from the printer.

Submitted designs were then posted on WebCT for general voting for one week in the middle of February. Students had 8 designs to choose from, but one particular version rose above the rest.

Alicia Ware, Museum Science & Management, and Samuel Odewale, Chemical Engineering, were the winners of the first GSA t-shirt design competition. A picture of the front is included below and on the back they read “If you can’t convince them, confuse them.”

Because university guidelines state that the graduate student activity fees cannot be used to purchase non-consumable goods, the purchase of these t-shirts had to come out of the Graduate Student Association contingency fund. Each t-shirt will be sold at cost to recoup the price of production.

T-shirts will be available for sale at all Graduate Student Appreciation Week events.

COST: $5.00
(Must be cash or check)

SIZES:
SM, MD, LG, & XL

FRONT:
TU Graduate School

BACK:
“If you can’t convince them, confuse them”
Each year, the National Association of Graduate and Professional Students, in cooperation with organizations in Canada, Australia, and the United Kingdom, sponsor a week to recognize the contributions of graduate and professional students to their universities, communities, and nations. President Upham has declared the second week in March Graduate Student Appreciation Week for TU campus.

There are 670 graduate students enrolled at The University of Tulsa who come from across the United States and from 39 different countries. Graduate education attracts students with varied backgrounds and contributes to the rich diversity of students at The University of Tulsa.

Our graduate students contribute to the research, teaching and outreach mission of our university, with over 40% of TU graduate students acting as graduate assistants and contributing to these endeavors. The research and development contributions made by TU graduate students not only strengthen Oklahoma, but also our nation. Our graduate students are future leaders, researchers, and educators; please join us in recognizing their value to our university by stopping by one or more of the events below:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
<th>Time</th>
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<tbody>
<tr>
<td>SAT., March 5</td>
<td>Spring Family Picnic</td>
<td>U in Front of McFarlin Library</td>
<td>11:00AM—2:00 PM</td>
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<td></td>
<td>-Free burgers, hot dogs, vegetarian options, popcorn, inflatable games, and prizes</td>
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<tr>
<td>SAT., March 5</td>
<td>Graduate Student Soccer Tournament</td>
<td>Collins Fitness Center</td>
<td>Starts at 2 PM</td>
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<tr>
<td>MON, March 7</td>
<td>GSA Breakfast (Bagels &amp; Coffee)</td>
<td>Chapman Hall Lounge (1st Floor)</td>
<td>8:30—9:30 AM</td>
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<tr>
<td>MON, March 7</td>
<td>GSA Trivia Night with LiveEventTrivia</td>
<td>Gallery, ACAC</td>
<td>7:00—9:00 PM</td>
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<tr>
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<td>-Free pizza and prizes for the best 3 teams</td>
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<tr>
<td>TUES, March 8</td>
<td>Arts &amp; Sciences Luncheon</td>
<td>Chapman Hall Atrium</td>
<td>Starting at 11:30 AM</td>
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<td></td>
<td>-Free Indian Food from Kolam</td>
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<tr>
<td>TUES, March 8</td>
<td>Kilkenny’s Happy Hour</td>
<td>Kilkenny’s Irish Pub (Cherry Street)</td>
<td>6:30—8:00 PM</td>
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<td>-Free appetizers. Drinks and meals responsibility of students.</td>
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<tr>
<td>WED, March 9</td>
<td>GSA Breakfast (Donuts &amp; Coffee)</td>
<td>Lorton Hall 205</td>
<td>8:30—9:30 AM</td>
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<tr>
<td>WED, March 9</td>
<td>How to Survive Graduate School</td>
<td>Chouteau, ACAC</td>
<td>12:00—1:00 PM</td>
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<td></td>
<td>-Information Panel/Workshop for Undergrads entering graduate school</td>
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<tr>
<td>THURS, March 10</td>
<td>GSA Breakfast (Bagels &amp; Coffee)</td>
<td>Atrium, ACAC</td>
<td>8:30—9:30 AM</td>
</tr>
<tr>
<td>THURS, March 10</td>
<td>GSA Movie Night</td>
<td>Chapman Lecture Hall</td>
<td>7:00—9:00 PM</td>
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<tr>
<td></td>
<td>-Free drinks &amp; popcorn</td>
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<tr>
<td>FRI, March 11</td>
<td>Graduate Leadership Recognition Reception</td>
<td>Faculty Club, ACAC</td>
<td>3:30—5:00 PM</td>
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<td></td>
<td>-By invitation only</td>
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Watch your email for more information about each event and how to save a seat. We look forward to seeing you all there!
The Texas Regional meeting of the Society for the Study of American Women Writers met on TU campus on Saturday, February 19, 2011. This was an informal one-day meeting that usually focused on a single primary text by an American woman writer. The selection for this meeting is the letters of Mercy Otis Warren. They invited one of the co-editors of this volume, Jeffrey Richards of Old Dominion University, to talk about Warren and about the work of editing her letters.

The Texas Regional SSAWW Study Group was founded by Theresa Gaul (TCU) and Desiree Henderson (UTA) in order to foster a community of scholars in the Texas – Oklahoma – Louisiana region. We are associated with the national organization, the Society for the Study of American Women Writers. Our participants are professors, graduate students, and independent scholars who share an interest in American women writers. They generally host two meetings a year (one each in Fall and Spring semesters) at campuses around the region. Laura Stevens, Associate Professor of English at the University of Tulsa, hosted the February meeting.
Living Arts to Host TU Master Thesis Exhibition

The University of Tulsa School of Art and Living Arts of Tulsa are pleased to present the MFA candidates of 2011 in their upcoming Masters Thesis Exhibition. Living Arts of Tulsa will host the show in downtown Tulsa as a part of the Brady Arts District’s First Fridays.

Three years in the making, this show is a look into the emerging art of seven young artists: Kaylee Huerta, Katie Johnson, Clayton Keyes, Allison Lackner, Joshua Meier, Josh New, and Jason Stamper. Their works encompass a wide range of mediums from traditional to experimental and address a number of contemporary issues.

Visitors will have the opportunity to talk to the artists at an opening reception on April 1, 2011, from 6-9 p.m in the Myers Gallery of Living Arts of Tulsa at 307 E Brady.

Student Updates

The English Graduate Student Association recently launched its new website at www.tuegsa.webege.com

In November 2010, Jacob Finn (Clinical Psychology, Ph.D.) participated in the panel presentation, "Novel Collaborations Meeting the Needs of Returning Service Members and Veterans: National, Local, and Cross-Disciplinary Efforts" at the 26th annual meeting of the International Society for Traumatic Stress Studies (ISTSS) in Montreal, Quebec, Canada.

Clayton Keyes, MFA candidate, will be included in the exhibition FIGURATION from March 18 – May 1, 2011, at The Clay Studio in Philadelphia.

Kate McGee (Education, MA) was instrumental in starting up the Roger’s High school Newspaper this fall as part of the GEAR-UP program. She worked with Joel Sutton, teacher at Rogers and also a former graduate of our Education department.

MFA candidate Joshua Meier had a show of a recent body of work entitled, Coping, at the Tulsa Artist Coalition (TAC) from January 7—29th, 2011.

Summer Nelson (Clinical Psychology, Ph.D.) just got her dissertation research accepted for a symposium as the European Conference of Traumatic Stress in Vienna this summer. She has a speaking role.

Josh New, MFA Candidate, presented an exhibit of recent photographs entitled HyperReality at Club 209 January 7 through January 30. Club 209 is located at Boulder and Brady.

Rachel Swopes (Clinical Psychology, Ph.D.) did a panel presentation at the Oklahoma State Coalition Against Domestic Violence and Sexual Assault in June 2010 and a poster in November 2010 at the Annual International Society for Traumatic Stress Studies meeting in Montreal, Canada.

Can Yin (MA, Education 2010) took a position teaching Chinese at the TU University School.
Faculty Updates

Dr. Jon Arnold is working on his book, *Theoderic’s Roman Empire*. This summer he traveled to Italy and visited Milan, Ravenna, Bologna, Rome, and Ostia (Rome’s ancient port).

Dr. Joseph Bradley - In June 2010 Joseph Bradley gave a lecture at the Higher School of Economics in Moscow on his most recent book, *Voluntary Associations in Tsarist Russia: Science, Patriotism and Civil Society*.

Dr. Brian Hosmer - This summer Dr. Hosmer delivered talks to the Cherokee Strip Historic Association (on Indians in Oklahoma during Reconstruction), and for a pre-college workshop for American Indians (here at TU), on Indians in Oklahoma. And he was contracted by the U.S. Department of Justice to conduct research on the drafting and implementation of the Indian New Deal. *Native Americans and the Legacy of Harry S. Truman* is out and available, and his anthology *Tribal Worlds: Critical Studies in American Indian Nation Building* has been submitted to SUNY Press and is with reviewers, soon to be completed. Dr. Hosmer has been scheduled in October 2010 to offer a talk on American Indians and American History as viewed through portraiture for the Gilcrease Museum in connection with its exhibit “America: Life and the Pursuit of a Nation.” Brian Hosmer delivered a talk entitled “Ambiguous Images and Contested Histories” for the Gilcrease Museum Advanced Seminar Series, “America: Idealism and Reality.” Hosmer also spoke on “Working and Cooperating on Wind River” at the 2010 Annual Meeting of the Western History Association, held in Lake Tahoe, NV. Hosmer is coordinating meetings with TU faculty to discuss planning for the new research center to be located on Gilcrease grounds. And, his new class for spring 2011 semester is American Indian Environmental History.

Dr. Jeremy Kuzmarov - George Mason University’s History News Network has named Jeremy Kuzmarov as a Top Young Historian for his outstanding contributions to the discipline in his area of research: Modern American history, U.S. foreign relations history, American empire, America and the World, American covert operations, war and society, American criminal justice system and its internationalization, U.S. War on Drugs, International police training programs.

Associate Professor of Art, Michelle Martin, recently had her prints selected for inclusion in eight exhibitions in 2010, including winning Juror’s Awards in the 2010 Pacific Rim International Exhibition (Christchurch, New Zealand), the 8th Janet Turner National Print Competition (Chico, CA), and the Pacific States Biennial (Hilo, Hawaii). She is currently working on prints that will be included in exhibitions in Australia, Colorado, and South Carolina over the spring and summer of 2011.

Dr. Kristen Oertel, Mary Frances Barnard Chair, was invited to speak at the Porter Fortune, Jr. History Symposium at the University of Mississippi, and to deliver a paper titled “‘The suicide of slavery’? Bleeding Kansas and the Coming of Civil War” October 15, 2010. Her book, *Frontier Feminist: Clarina Howard Nichols and the Politics of Motherhood*, co-authored with Marilyn S. Blackwell, was published in October 2010 by the University Press of Kansas.

Dr. Christine Ruane’s new book, *The Empire’s New Clothes: A History of the Russian Fashion Industry, 1700-1917* has been awarded an honorary mention for this year’s Reginald Zelnik Book Prize in History. The annual award is given by the Association for Slavic, East European, and Eurasian Studies. Professor Zelnik was one of Ruane’s mentors during her graduate studies at Berkeley and an early supporter of her work on the Russian fashion industry.

Dr. Andrew Wood’s work on tenant organizing was discussed at a gender and social movement forum held in Orizaba, Mexico in June and sponsored by the University of Veracruz. Wood will be presenting his research on the history of tourism at a conference of Historians of Mexico from Canada, the U.S. and Mexico in Queretaro, Mexico in late October.
Collins College of Business Launches Mobile App

The University of Tulsa, Collins College of Business recently launched a mobile app for iPhone® that is available for free download from the App Store™.

The app engages current students by providing easy access to course, faculty and campus event information. The app is also used to pique the interest of prospective students with a glance of what their academic career would be at TU, as well as provide a simple interface to request more information.

In January 2011, the Collins College of Business app was used as an example of good utilization of social technologies to market graduate programs and capture graduate student interest at the NAGAP Winter Institute for Advanced Graduate Professionals in Fort Lauderdale, FL. The presentation was given by Dr. Bob Johnson, a college and university marketing consultant who is not affiliated with The University of Tulsa.

Summer & Fall 2010 Collins College of Business Graduates

MASTER STUDENTS

**Theron Bowling**, M.S. - Finance
**Hoa Quynh Thi Truong Burns**, MBA - Business Administration
**Luis Chaves**, MBA - Business Administration
**Jessica Clifton**, MBA - Business Administration
**Ryan Davis**, MBA - Business Administration
**Lyndsey Derkatch**, M.S. - Finance
**Alexis Downs**, M. Taxation
**Christin Foley**, MBA - Business Administration
**Debra Gordan**, M. Taxation
**Travis Grooms**, MBA - Business Administration
**Laura Hockett**, M.S. - Finance
**Melanie Holder**, M. Taxation
**Johnathan King**, M.S. - Finance
**Jason Paslak**, M.S. - Finance
**Travis Pelletier**, MBA - Business Administration
**Jennifer Price**, M.S. - Finance
**Mark Servis**, M. Taxation

**Ethan Singleton**, MBA - Business Administration
**Mark Slovoisky**, M. Taxation
**Derek Speck**, MBA - Business Administration
**Lukas Stirneman**, MBA - Business Administration
**Kenneth Stone**, M.S. - Finance
**Robert Trout**, M. Taxation
**Guangrong Yuan**, M. Taxation
Graduate Business Mentor Program

The Collins College of Business Graduate Programs has reinstated the Graduate Business Mentor Program for students who wish to gain valuable insight and knowledge from local industry leaders. The initiative was driven by the Placement Committee of the college’s Executive Advisory Board as an opportunity to set students apart from today’s tough competition.

Participating students meet monthly with their mentors to discuss everything from career goals to personal experiences. To date, 24 Mentor-Protégé connections have been made.

"Not only do I get to ask questions and get honest answers from an experienced professional," said Chad Bell, protégé and MBA Candidate, “but I also get to update my mentor on what's being discussed in today's MBA program and hear his reactions to the cases we’re studying."

“I am incredibly excited about the program and the opportunity to meet with my mentor,” said Tera Hering, protégé and MBA Candidate. “He is very knowledgeable and I feel his advice will be beneficial in the development of my future!”

For more information about the mentor program or to volunteer to be a mentor, contact Kaci Kegler at kaci-kegler@utulsa.edu.

MBA Student Promotes Public Service

Jason Grunin, a first-year MBA student at The University of Tulsa, has been selected to serve as a federal service student ambassador for the 2010-11 academic year. The prestigious Ambassadors program enlists students to promote public service on U.S. college campuses. Forty-seven students representing 40 schools were selected from more than 150 applicants.

As an ambassador, Grunin will serve as an on-campus resource for federal job and internship information, providing “insider” tips on where to find and how to land coveted federal jobs. Responsibilities range from conducting presentations and workshops to collaborating with campus career services representatives.

“Many students don’t consider working for the U.S. government, either because they don’t know about the opportunities or because of our location in Tulsa,” Grunin said. “However, there’s a job for every major and internships for students.”

More than 720 campuses and 75 federal agencies have joined the Call to Serve network, which is a joint effort of the private, nonprofit Partnership for Public Service and the U.S. Office of Personnel Management to educate youths about the importance of a strong civil service, help re-establish links between federal agencies and college campuses, and provide students with information about federal jobs.
First Collins Scholar

The Collins College of Business has named Katie Strahan as the first recipient of the Collins Scholar award. The endowed scholarship was largely funded by Margery Mayo Bird, as well as family and friends of Fulton Collins.

“I’m very excited and really grateful they even considered me for it,” said Strahan, who is on track to graduate in May 2012 with a Master of Taxation degree. “It’s truly a great honor.” Strahan’s path to The University of Tulsa began when she had the opportunity to work with her father, an accountant, during high school. The exposure led her to change her career path from interior design to accounting.

She graduated in May 2010 from TU with a degree in accounting, and her interest in taxation began in her first tax class with Professor Wray Bradley in the School of Accounting and Management Information Systems.

A full-time MTAX student, she is also participating in an internship at Lohrey and Associates. After a break this summer to visit her mother and stepfather in Germany, Strahan knows she is on the right path. “As soon as I came back, I really started to enjoy it,” Strahan said of returning to her internship. “The excitement shows me I’m doing the right thing.”

Strahan’s previous internship with Samson Resources, a privately owned oil and gas company, piqued her interest in the industry. She hopes to one day have the opportunity to work with oil and gas returns.

Scholarship Funds Matched by MBA Fundraising Campaign

A major gift to support scholarships for students pursuing MBAs at the Collins College of Business has been matched by the Fulton Collins-Walt Helmerich Challenge fund. More than $900,000 for scholarships was given by the trust of Emma R. Showman, a champion of education throughout her life who served as a dedicated teacher. The donation will be matched by the Collins-Helmerich Challenge, creating a permanent source of funding of $1.8 million for The Emma R. Showman MBA Scholarship Endowment Fund. The funds will provide merit-based scholarships to students in the MBA program.

“We are incredibly thankful for this gift that will be used to support deserving students in our MBA program for years and years to come,” said Gale Sullenberger, dean of the Collins College of Business. “Donations like these from the friends, alumni and members of the corporate community continue to elevate the caliber of our college as students compete for these scholarship funds.”

The fundraising campaign for the new MBA program at the Collins College of Business is making significant progress since kicking off in 2008 with more than 70 percent of the funds raised. Organizers are seeking additional donations and anticipate crossing the finish line within the next 12 months. The new MBA program is the focus of the $30 million campaign, which began when Fulton Collins and Walt Helmerich offered to donate $15 million in matching funds to support the development of a new nationally competitive MBA program. In addition to adding new scholarships, the campaign is creating new endowed faculty positions and expanding business career placement services.

The bulk of the remaining campaign needs will support endowed faculty positions in finance, accounting and MIS. Bringing in additional top-caliber faculty will further raise the profile of the Collins College of Business and help develop star graduates.

With the new program, students enroll in an increased number of topic areas through a combination of half-semester and traditional full-semester courses. They also have the ability to customize their programs with concentrated studies in accounting, energy management, finance, international business, management information systems or taxation.
Summer & Fall 2010
Engineering & Natural Sciences Graduates

DOCTORAL STUDENTS

Jonathan Butts, Ph.D. - Computer Science
Jesse French, Ph.D. - Mechanical Engineering
Sohini Ghosh, Ph.D. - Biological Sciences
Bahadir Gokcal, Ph.D. - Petroleum Engineering
Gizem Ersoy, Ph.D. - Petroleum Engineering
Hui Li, Ph.D. - Petroleum Engineering

MASTER STUDENTS

Nicole Abel, M.S. - Biological Sciences
Denis Akhiyarov, M.S.E. - Petroleum Engineering
Ahlam Alarbi, M.S. - Biochemistry
David Barros Barrios, M.S.E. - Chemical Engineering
Ben Bbosa, M.S.E. - Petroleum Engineering
Donald Bennett, M.S. - Applied Mathematics
Raul Borjas, M.En. - Electrical Engineering
Kareemot Braimoh, M.S. - Geosciences
Heather Brown, M.S. - Computer Science
Thomas Brownback, M.S. - Computer Science
Matthew Butler, M.S. - Computer science
Marc Campbell, M.S. - Computer Science
Sean Carrick, M.S. - Computer Science
Yuanhang Chen, M.S.E. - Petroleum Engineering
Amaka Chidume-Okoro, M.S.E. - Chemical Engineering
Aaron Curley, M.S. - Computer Science
Nathan Daniels, M.S. - Computer science
Jason Dunn, M.S. - Computer Science
Shalini Dwarakapally, M.En. - Mechanical Engineering
Mehtem Er, M.S.E. - Petroleum Engineering
Chenliang Fan, M.S.E. - Mechanical Engineering
David Freeman, M.S. - Computer Science
Uday Gandla, M.En. - Electrical Engineering
Muzaffer Gokdemir, M.S.E. - Petroleum Engineering
Amy Hor, M.S. - Physics
Jennifer Kammer, M.S. - Computer Science
Baurzhan Kassenov, M.S.E. - Petroleum Engineering
Grant Katus, M.S. - Computer Science
Ceyda Kora, M.S.E. - Petroleum Engineering
Yungming Lai, M.S.E. - Mechanical Engineering
Huan Liang, M.S. - Engineering Physics
Thomas Lindvig, M.En. - Petroleum Engineering
Yingdi Liu, M.S. - Physics
Cucui Lu, M.S.E. - Petroleum Engineering
Haidan Lu, M.S.E. - Petroleum Engineering
Shu Luo, M.S.E. - Petroleum Engineering
Samaneh Noor-Mohammadi, M.S.E. - Chemical Engineering
Olasumbo Okuboye, M.En. - Petroleum Engineering
Haitham Othman, M.S.E. - Petroleum Engineering
Jesus Pacheco, M.S.E. - Petroleum Engineering
Sairav Parab, M.En. - Petroleum Engineering
Ashwin Padsalgikar, M.S.E. - Mechanical Engineering
Maria Parra, M.S.E. - Petroleum Engineering
James Parson, M.S. - Computer Science
Daniel Polczyński, M.S. - Computer Science
Scott Rainwater, M.En. - Electrical Engineering
Warren Roberts, M.S. - Computer Science
Gaurav Seth, M.S.E. - Petroleum Engineering
John Schlesinger, M.S. - Computer Science
Ethan Singleton, M.S. - Computer Science
Stefan Smuk, M.En. - Petroleum Engineering
Stephanie Stelling, M.S. - Computer Science
Mark Vaccari, M.En. - Chemical Engineering
Jiafu Xu, M.S.E. - Petroleum Engineering
Bo Zheng, M.En. - Petroleum Engineering
TU Chemical Engineering Alumna, Christina Bishop Jackson, Honored in USA Today

Christina Bishop Jackson (BS ’05, PhD ’10) is being honored as an up-and-coming young engineer during Engineers Week 2011, Feb. 20-26.

This is the 60th anniversary of E-Week. The 14 “New Faces of Engineering” honorees were featured in a full-page USA Today promotion on Monday, Feb. 21.

Jackson, 27, was nominated by the American Institute of Chemical Engineers. She is a quality engineering manager for Callidus Technologies by Honeywell in Tulsa.

Jackson’s doctoral research at TU focused on nanobatteries, and she worked with Chemistry Chair Dale Teeters.

“Christina worked with me in the area of enhanced battery performance. Her work was very novel, and she discovered aspects of battery technology that were not previously known,” Teeters said. “She was an outstanding graduate student whose ability to work with others and establish a team approach to research allowed her to accomplish her exemplary research results.”

TU Cyber Corps Students Help Police Crack Case

National Science Foundation Cyber Corps students at The University of Tulsa helped police crack a triple homicide, and the case was profiled on a national television program, Forensic Files, on Feb. 11.

“TU students helped gather electronic evidence and identify the murderer,” said computer science professor Sujeet Shenoi, who heads TU’s Cyber Corps. The program prepares students for careers in cybersecurity and many go on to work in federal intelligence agencies. “These are brilliant students, committed to helping their community and their country.”

TU launched its Cyber Corps Program in 2001. Since then, the program has trained about 225 students. The NSF’s Federal Cyber Service: Scholarship for Service and the Department of Defense’s Information Assurance Scholarship Program support many of the students.

Shenoi said the university has an extraordinarily close relationship with the city, the Tulsa Police Department and other law enforcement agencies. Through a unique arrangement, TPD’s Cyber Crimes Unit is housed on the university campus and detectives work alongside students, Shenoi said. This particularly high-profile investigation involved the 2003 murder of a Tulsa couple, Fred and Rebecca Barney, and a passerby, Kenneth Maxwell. James Kidwell was convicted and sentenced to life in prison without parole. The case broke open after police found a computer in a home where Kidwell lived that had information linking him to one of the victims. TU Cyber Corps students worked with Tulsa Police detectives to extract vital e-mails and instant messages from the computer’s hard drive.
Petroleum Engineering Advisor Recounts Use of ACS Petroleum Research Fund

“The Petroleum Research Fund was my first successful sponsor, and the grant allowed me to conduct the research that I like the most,” states Dr. Mahadevan. “Because there are not a lot of strings attached to the funding, it supports novel and creative approaches, and gives the grantee a lot of flexibility in how he or she brings the research forward.”

Dr. Mahadevan’s curiosity has led him to investigate natural gas recovery from unconventional onshore resources. “I started as a chemical engineer in an academic setting, which brought me to chemical and natural gas processing plants,” says Dr. Mahadevan. “I was very keen on working on energy, especially natural gas, since natural gas is one of the largest and cleanest energy resources we have right now. After a brief exposure to natural gas production facilities I was curious to learn about the source of natural gas which led me to explore subsurface engineering.”

Most of the research in natural gas recovery has focused on conventional resources—existing reservoirs that allow for relatively easy gas extraction. Dr. Mahadevan and his team study how to recover gas locked away in very tight conditions or states of low permeability such as tight gas sandstone or shale gas. In particular, the scientists have focused on the pore scale phenomena affecting natural gas flow such as crystallization of salt and its impact on the productivity of natural gas reservoirs. Generally, natural gas occurs along with brine which is generally high in dissolved salt content. When gas is produced, brine evaporates due to gas expansion resulting in super saturation and subsequent crystallization. Capillary effects can be important as liquid migrates due to capillary effects, bringing more salt that may even plug the well completely. Thanks to his research, Dr. Mahadevan has created a model that helps predict permeability and porosity in the cases in which salt crystallization occurs. “We now know exactly how to predict when the salt deposition will be important, and once we have this condition, we can treat the wellbore with chemicals so that the migration due to capillary effects stops,” according to Dr. Mahadevan.

In the work that has just concluded, Dr. Mahadevan focused on tight gas, but moving forward, he hopes to explore the effects of salt crystallization on shale gas recovery as well. “The problem with offshore deposits of oil is that they are very hard to recover. One has to go to great water depth, which leads to environments that can’t easily be controlled if an accident occurs. The work that I am doing will help produce clean, natural gas from onshore resources,” indicates Dr. Mahadevan. “Natural gas burns much cleaner than other resources and can be a very good bridge fuel to alternative energy resources such as wind and solar power, helping us transition into a cleaner energy strategy.”

“Although the PRF funds were much less than those from other projects I had, they enabled me to produce the most research,” Dr. Mahadevan says with pride. His research has resulted in one published paper with another in the works, supported two undergraduate research scholars who later went on to do graduate studies, and has been integrated into the course he currently teaches titled “Transport in Porous Media”.

For more information about the American Chemical Society Petroleum Research Fund and further references to Dr. Mahadevan’s work in their Annual Report, visit http://acswebcontent.acs.org/prfar/2009/story2.html.

Student/Faculty Updates

Prem Bikkina, Petroleum Engineering (1) is expecting a baby boy in late March, early April, (2) had a paper accepted for publication in the Petroleum Science and Technology journal, (3) had a patent on a surfactant formulation used for Enhanced Oil Recovery granted in India, (4) worked as a reviewer for four international peer reviewed journals and reviewed seven journal papers, (5) has a paper being reviewed in Journal of Greenhouse Gas Control, (6) and was granted a Student Research Grant by TU in the Fall 2010 semester.

Dr. Daniel J. Bradley, who earned his master’s degree in petroleum engineering from The University of Tulsa in 1983, was named a Fellow of the Accreditation Board for Engineering and Technology during the 2010 ABET Annual Awards Banquet in Baltimore, Md., on Oct. 28., 2010.

Dr. Selen Cremaschi, assistant professor in the Department of Chemical Engineering, has received an award from the National Science Foundation’s Faculty Early Career Development (CAREER) Program for her project titled Modeling and Optimization of Next Generation Feedstock Development for Chemical Process Industry. The project is expected to receive more than $400,000 from the foundation during the next five years.

TU Assistant Professor of Physics Alexei Grigoriev has received a National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award that will support novel research and new educational activities in the Department of Physics. In particular, these funds will be used to synthesize ultrathin multilayers of nanoscale oxide films and to investigate their electrical, mechanical, and structural properties. Such new materials may possess novel properties that can be used in practical applications including computer memories, infrared and ultrasound imaging sensors, and clean energy technologies.

Molly Simpson, MS Geosciences, completed the majority of her research on her Masters Thesis over the summer. Molly is studying the largest oil and gas complex in Oklahoma, the Sho-Vel-Tum Field, which is immediately southwest of the Arbuckle Mountains. She completed a series of geologic cross-sections which were then balanced, or retro-deformed, to test if deformation increased to the southwest. Her work contributes to the complex, and controversial, geologic background of this region. She plans to get her work published by late Spring. Over the Fall semester, Molly went to three geology conventions to present her work. She went to the American Association of Petroleum Geologists Student Convention in Houston and the Rocky Mountain Rendezvous in Laramie Wyoming where she presented posters on her work. In late October Molly gave an oral presentation of her work at the Geological Society of America Annual Convention in Denver. This convention is one the most anticipated events for a geologist with nearly 6,000 attendees this year alone. Molly will graduate with her Masters of Science in Geology this May, and has accepted an offer from Chesapeake Energy in Oklahoma City where she will begin her career.

Prof. Sanwu Wang received a DOE grant for research on nanocatalysis and another grant, as a Co-PI, with Professor Daniel Resasco of the University of Oklahoma (PI) and the other three professors (as Co-PIs) at the University of Oklahoma and Oklahoma State University, together have received a $2,901,363 grant from the U.S. Department of Energy to study nanocatalysis and interfacial reaction engineering. The award is under the EPSCOR program of the Department of Energy.

New Arrival

Nick Davis, Computer Science Ph.D. student, and his wife welcomed a new baby girl this fall.

Sydney Marie Davis
born on October 12, 2010.

Congratulations!
Three Partnerships with TU Connections Funded Through OCAST

Three research and development intern partnerships with connections to The University of Tulsa were awarded nearly $180,000 over two years by the Oklahoma Center for the Advancement of Science and Technology (OCAST) last week.

TU electrical engineering Professor Surendra Singh and representatives from private sector companies in Tulsa will oversee student interns in the awarded projects. The partnerships will operate for two years and support undergraduate internships in energy, environmental research and computer software.

“These awards follow a long tradition of OCAST intern funding at TU dating back to 2003. With the new awards, the total funding received from OCAST is close to $800,000 with an equal amount provided by the participating companies,” Singh said.

Singh and Tulsa-based Miratech Corp. received $60,000 to oversee two undergraduate interns to develop a selective catalytic reduction control system, a diesel oxidation catalyst and optimization of a three-way catalyst. Miratech offers exhaust emission solutions for industrial engines. The research is expected to improve the environment by targeting engine emissions and the benefit-cost analysis of design upgrades.

Singh also will work with Holly Corp.’s Tulsa refinery to supervise two TU undergraduate students working at Holly Refining and Marketing through a $60,000 award. The research focuses on increasing efficiency of oil refinery components and will be involved in all phases of engineering design, specifications, development, testing and deployment of Holly’s process heaters, above ground storage tanks and relief valves. They will use 3-D AutoCad and other software unique to the refining industry while being introduced to the business, safety and ethics protocols of the engineering field.

True Digital Security and its president, TU alumnus Jerald Dawkins (MSCS ’03, PhD ’05), received $59,140 to sponsor interns who will gain experience in designing and developing a complex information security auditing application. While working alongside engineers, the students will design testing documents, develop scripts to support automated testing and validation, do quantitative analysis and interview clients in order to improve cyber security.

Since 1998, the OCAST R&D Intern Partnerships program has helped Oklahoma small businesses locate hard-to-find technology trained employees. OCAST pays half of the cost for an undergraduate intern to work in a research and development setting. OCAST’s program combines university faculty oversight with financial support and company mentoring. Many of the college students who participate in the program eventually become employees of the small businesses that sponsor them.
TU Biological Science Faculty and Alumna Assisted with Seaweed Lineage Research

A team of researchers from across the United States and Belgium, including three members from The University of Tulsa, say they have found “living fossils” in the form of seaweed more than 650 feet deep in the ocean. The seaweed is a form of alga that had been identified by other scientists as *Palmophyllum* from New Zealand waters and *Verdigellas* from the western Atlantic Ocean. However, little research had been done regarding the algae’s origin.

The algae are multicellular, but, unlike other green seaweeds and all land plants, their cells do not form complex tissues. The team discovered that both types of algae form an ancient group of green plants and should be assigned their own order. The algae require little light to survive, and in deep waters, the plants face fewer challenges from scouring by waves or currents, temperature changes and grazing animals. The research team suggested that these factors may have contributed to the longevity of this algal lineage that is estimated to have been around for more than a billion years.

Researchers from TU include Dr. Mark A. Buchheim, professor of biological science, as well as former TU research associate Julie A. Buchheim and former graduate student Bindhu Verghese (PhD ’07). The team’s findings were to be published in the December issue of the *Journal of Phycology*.

The TU research group is part of an alliance of researchers, informally called “deepestgreen” whose goals include an assessment of plant origins. Professor Buchheim noted that the results from this investigation “challenge the current origins hypothesis for the progenitor of all green plants. The prevailing hypothesis favors a motile cell as the ancestral form for green plants, but the new data indicate that *Palmophyllum* and *Verdigellas*, which are non-motile, may predate any motile cell lineage.”

Buchheim also said, “The broad relevance of this basic research is in our improved understanding of the origin of land plant traits, ultimately influencing our knowledge of organisms like rice, wheat, corn and soybean.”

Chevron Contributes Major Gift to TU

The University of Tulsa has announced the naming of the Chevron Center for Education and Research, made possible by a generous $1 million commitment that stems from the success of TU’s partnership with one of the nation’s leading energy companies.

The donation, made through Chevron’s University Partnership Program and announced during halftime at the Nov. 6 game against Rice University, will establish the Chevron Center on the bottom floor of the soon-to-be constructed Stephenson Hall, home to the McDougall School of Petroleum Engineering and Department of Mechanical Engineering. The center will comprise the entire bottom floor of the new facility and will include 13 laboratories and two student lobbies.

Stephenson Hall, a 38,600-square-foot facility will house 16 laboratories, 33 faculty and graduate assistant offices, two large student commons areas and conference facilities. Its construction will be a major boon for the two TU programs whose growing enrollments have placed current laboratory and classroom space at a premium.
TU, OU, and OSU Collaboration Receives $2.9 Million from DOE

A research team made up of five faculty members from The University of Tulsa, University of Oklahoma and Oklahoma State University has received a $2.9 million grant that could help develop technology to efficiently refine complex biofuels and fossil fuels. The award, from the U.S. Department of Energy’s Experimental Program to Stimulate Competitive Research, will help establish a new Center for Interfacial Reaction Engineering.

Researchers include Sanwu Wang, assistant professor in physics at TU; Jeffrey Harwell and Friederike Jentoft, OU professors with expertise in colloidal chemistry and catalysis; and Khaled Gasem, professor and head of the OSU School of Chemical Engineering. Daniel Resasco, OU professor in the School of Chemical, Biological and Materials Engineering, is the leading principal investigator and will direct the activities of the joint project.

According to Resasco and Wang, tiny nanoparticles are used in the integrated catalytic process to accelerate reactions at the interface of water and oil. Solid nanoparticles that are attracted to water and oil seek out water-oil interfaces. The product of the reaction is an emulsion used to convert biomass in the refinery process or in enhanced oil recovery processes.

As part of the research, Dr. Wang will contribute fundamental understanding about nanocatalysis based on quantum theory. Large-scale quantum mechanical calculations will be employed to investigate the atomic structures and electronic properties of the pertinent catalytic nanohybrids composed of carbon nanotubes, silica, and metal/metal-oxide nanoparticles. A set of the associated catalytic chemical reactions including deoxygenation, decarbonylation, hydrogenation and hydrogenolysis of aromatic oxygenates, as well as partial oxidation of the oil components in highly viscous crudes, will be also studied.

Key elements of the new technology are multifunctional materials that serve as solid surfactants and as catalysts. Nano-sized catalytic components, namely nanocatalysis, in such materials play particularly important roles, Wang said. Fundamental understanding about the multifunctional materials is an important issue in this project.

An article on this subject was published in the Jan. 1 issue of the journal Science.

New Microscope Helps to Improve Variety of Geoscience Research

The Department of Geosciences has acquired a new microscope that Chair Bryan Tapp said will allow faculty and graduate students to conduct significantly better research into the composition, development and textures of natural and man-made materials. The world-class Nikon refracted microscope is intended for microscopy and photomicrography of thin-sections of rocks, minerals, and man-made materials using a polarized light illumination, as well as reflected light illumination.

"The new optics on the scope have a pure optical path with zero to minimal distortion. That means that image you see in the oculars is as good as light microscopy can be, and the image that you can capture with the digital camera is as good as it can be," Tapp said. "The system allows for detailed visual observation and analysis of materials in transmitted and reflected light."

The new equipment eclipses the department's older microscopes, which have seen thousands of hours of use. The Nikon has a heavier frame - perfect for multiple users - as well as crisp optics, a 12-megapixel camera, multiple-use objectives.
Chemical Engineering Professor Receives CAREER Program Grant

Selen Cremaschi, assistant professor in the Department of Chemical Engineering, has received an award from the National Science Foundation’s Faculty Early Career Development (CAREER) Program for her project titled Modeling and Optimization of Next Generation Feedstock Development for Chemical Process Industry. The project is expected to receive more than $400,000 from the foundation during the next five years. The CAREER program offers the NSF’s most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of the mission of their organizations. Their activities build firm foundations for a lifetime of leadership in integrating education and research.

According to Cremaschi, a switch from fossil-fuel feedstocks – such as crude oil fractions for ethylene – to plant-based feedstocks – such as switchgrass for ethylene – will require substantial amounts of research and development and capital investments by industry and the government, and hence there is great opportunity for investigating how these investments will impact the evolution of the biomass conversion technologies. The objective of her project is to develop novel models and computational methods that are able to predict the effect of research and development and capital investment decisions (how much to invest and in which technology and when) on the evolution of biomass conversion technologies for chemical process industry feedstock development.

The project aims to aid education through four means: (1) Integrate research themes and projects that require and promote system-level thinking and interdisciplinary work into traditional engineering undergraduate curriculum courses, (2) Expand TU’s “Risk Management and Optimization” course, developed by Cremaschi, and integrate projects from this research program into the course, (3) Engage and mentor at least two undergraduate students per year in this research project utilizing two successful unique campus-wide capstone programs that promote student participation in original research, (4) Recruit and supervise at least two full-time graduate students who will pursue advanced degrees in chemical engineering.

Cremaschi said plant-based feedstock development is important to national and economic security and there is a wide range of options to evolve a complex biomass feedstock system, therefore the research could have substantial scientific, technical and societal effects. In addition to the dissemination of the results via scientific publications and conferences, the developed models will be made available online.

TU Physics Students Earn Prestigious Publication

TU Physics students Yingdi Liu (MS 2010), Michael Halfmoon (BS 2010, MS 2012), and Christine Rittenhouse (BS 2011), along with their research advisor Professor Sanwu Wang, published an article titled “Passivation Effects of Fluorine and Hydrogen at Applied Physics Letters.”

The paper reports their quantum-mechanical investigations concerning defect passivation of high-temperature and high-power microelectronics based on silicon carbide (SiC). Their results suggest a new way to reduce the density of the interface traps - by incorporating fluorine in the form of molecules and hydrogen in the form of atoms. The reduction of the interface trap density is necessary for effective applications of SiC microelectronics.

American Institute of Physics, is widely regarded as a leading journal in the field of physics and especially applied physics. According to the journal’s web site, Applied Physics Letters publishes “reports on significant new findings in applied physics.”