Focal Points

the College of Arts & Sciences

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Biology

Rare and endangered species of wildlife are receiving much attention in today's society. Many public agencies have intensified efforts to restore populations that have dwindled, often because of human activity. The Biology Department at Tennessee Tech has taken an active role in this effort, and we are conducting a number of research projects that will help in the restoration of rare species. In addition, several of our faculty members are involved in state, regional, and national committees that have a mission of reversing downward population trends of many wild animals.

Dr. Jim Layzer is considered one of the national experts on propagation and restoration of native mussel species. Freshwater mussels are among the most endangered of all groups of wild animals, and over a third of all Tennessee species are either endangered or recently extinct. Freshwater mussels have a unique and interesting reproductive strategy: that the larval forms are parasitic and dependent upon a host fish, usually of specific species or a group of species. Consequently, mussels are not only in peril because of water pollution, changes in hydrologic relationships, and past over-harvest by the pearl industry, but also are negatively impacted by factors that affect their hosts. Jim, his students and research assistants have developed approaches to rear mussels from the parasitic phase–requiring expertise in fish and mussel culture techniques–to a "true mussel" phase of adequate size to ensure survival in the wild. Jim's culture facilities on campus and at fish hatcheries scattered throughout the Southeast are not that elaborate in technology but very effective in producing species that had never been propagated previously. Because of his efforts, some species of highly endangered mussels, which otherwise would have become extinct, may persist.

Dr. Steve Hayslette has recently completed a study of the highly endangered Grenada Dove. This bird, found only on the island of Grenada, has a very small population of fewer than 100 individuals. Some biologists have referred to this bird as one of the most endangered birds species in the world. Dan Twyman, one of Steve's graduate students, recently returned from Grenada, and he had a wealth of stories to tell about his adventures in studying the dove and living in the Caribbean. While he was on the island, a major hurricane struck, causing massive dam-

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Dean's Message

Parting Thought

As many of you already know, I'll be leaving the Dean's Office at the end of June to become interim provost on my way to full-time faculty status. The decision to resume the role I value most in higher education–that of professor–should not be seen as reflecting any serious concern about the future of the College of Arts & Sciences. I am confident the

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age to natural habitats and human habitations. Dan helped with relief efforts before resuming his studies, concerned that the hurricane may have destroyed the remnant dove population. Fortunately, some doves survived, and the TTU study should provide important insight into their ecology when it's released, insight that should help in future preservation efforts.

Several biologists in the department are studying rare fish species. Dr. Brad Cook and his students have recently studied the ecology of the Spotfin Chub, a rare fish that lives in streams on the Cumberland Plateau. Interest in this species is quite high, and Brad recently appeared in a segment of the television show *Tennessee Outdoors*. Dr. Hayden Mattingly is conducting similar studies on the Blackside Dace, another rare stream dweller found in northern Tennessee and southern Kentucky. Hayden, in conjunction with Dr. Phil Bettoli, also recently completed studies, on the Barrens Topminnow. This fish occurs in a very specialized habitat: small spring-fed pools in the Barrens region of Tennessee. Only a few known natural populations exist today, and Hayden and Phil's studies have shown that the primary problem appears to be competition with an introduced fish, the Eastern Mosquitofish. Hayden, Phil, and their students have studied the interaction of these species in the wild and under controlled conditions in the laboratory.

Dr. Mick Harvey has long been known as one of the experts on rare bat species found throughout the Southeast. Mick retired a few years ago, but he is still active in research. Mick and one of the graduates from our doctoral program, Dr. Eric Britzke, discovered a population of the endangered Indiana Bat in the Cherokee National Forest a few years ago and created a great deal of publicity. One of the most important achievements of Mick and Eric was refinning a technique that uses bio-acoustic recordings to identify bat species by their calls as they forage. Previously, capturing bats with mist nets was the only way to identify endangered species in foraging habitats, but the new technique is far more effective and financially efficient.

Biologists in the department also are interested in rare invertebrate species. Brad Cook is conducting surveys for rare aquatic invertebrates in several locations in Tennessee, and Hayden Mattingly recently completed a competition study between the endangered Nashville Crayfish and another species of crayfish that also occurs in the streams where the rare species is found. Hayden and one of his students maintained crayfish in a holding facility in the Biology Building and ran aggressive interaction trials where individuals of both species were placed together in small tanks and their behaviors were recorded. This study served as the impetus for field studies of rare crayfish which will be conducted by Brad in Tennessee and Hayden in Missouri.

Other studies are on the horizon, and we have been in contact with public agencies about other potential projects. As additional needs surface for information concerning rare and endangered species of wild animals, faculty members in the Department of Biology will be there to offer their services.

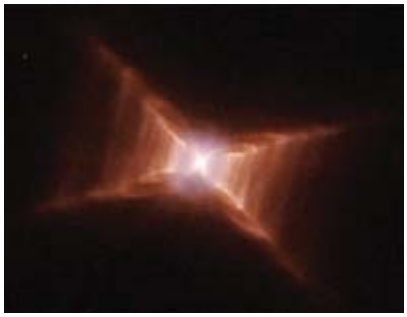
Dr. Dan Combs, Chair

Chemistry

Greetings to TTU alumni and friends! It's been another busy year around the Chemistry Department as our growth has continued. Our growth is due both to our faculty and those who generously give in support of our mission. We are indeed blessed with faculty, staff, and other supporters who work hard in helping us meet our goals. Due to your generous giving, this past year we have renovated one auditorium, one chemical preparation and storage room and one faculty research lab. What a busy year it has been! In addition, two faculty received recognition for their teaching and service efforts this past year: Dr. Scott Northrup won the College of Arts and Sciences Award for Innovative Teaching; and Dr. Barbara Jackson won the TTU Outstanding Faculty Award for Professional Service. Dr. Jeffrey Boles has been named the permanent chair of the Chemistry Department after serving one year as interim chair. Funds in support of research have increased as well. Through the hard work of Dr. Jeffrey Boles, Dr. Martha Wells, Dr. Mona Wells, Dr. John Harwood, Dr. Jisook Kim, and Dr. Edward Lisic, we have acquired funds for the purchase of two Liquid Chromatography Mass Spectrometers, and one Gas Chromatography Mass Spectrometer each of which will occupy space newly renovated with funds provided by active alumni. This will allow us to conduct advanced research in environmental

forensics and cross-disciplinary environmental and biochemical areas. Since July 1, 2006, Chemistry Department faculty members have activated $1.05 million in research funding. Thank you for your part in these endeavors.

This past year has seen a great deal of student and faculty research activity. For example, studying the molecules surrounding a very old and dying star can unlock information about the chemical story of life's origins, says Dr. Bob Glinski. Dr. Glinski's current astrochemistry focus is on the Red Rectangle, an unusual nebula that appears as a glowing red X-shaped structure through NASA's Hubble Space Telescope.



Dr. Glinski, along with senior Chemistry major Phil Michaels, is studying the molecules that emit light of their own from along the X-shaped bars of the Red Rectangle. According to Glinski, these molecules are in a unique place in space, and only a few have been identified. "My work may seem arcane, but these molecules that light up in space are fun to study because you can measure the different characteristics of the different wavelengths of light and try to identify a molecule specifically," says Glinski. "There aren't too many molecules you can identify in space from their light emission in visible wavelengths." What Glinski describes is called a molecule's "spectroscopic signature," and researchers have found some signatures they have not yet been able to link to specific molecules. It is not clear which molecules create the striking red color of the rectangle. Dr. Glinski is studying a very narrow set of colors in the light spectrum to help him learn about the material that has remained unidentified for more than 25 years. He is one of a small number of chemists in the world in the growing field of astrochemistry. Based on his scholarly publications, Glinski was nominated and elected a member of the International Astronomical Union, the organization at the forefront of the debate over Pluto's status as a planet. In collaboration with Chris Anderson, a professor of astronomy at the University of Wisconsin-Madison, Glinski utilizes the world-class WIYN telescope located on Arizona's Kitt Peak.

Dr. Mona Wells, who joined TTU in the fall of 2005, has had a busy year as well. Dr. Wells and her students, M.S. Chemistry candidate Daniel Hardison and undergraduate ACS chemistry major Maia McNabb, have been engaged with international partners at the forefront of emerging sensor technology research.

Daniel is involved in research at the forefront of device technology that shows excellent potential for novel applications in medical disease diagnosis. He recently returned from summer research work at the École Polytechnique in Paris, where he was working on fabrication of new types of nanoscaled electronic devices which may be developed into sensors that have much greater sensitivity to chemicals of interest than can be obtained with standard methods of chemical analysis. This has important implications, especially for early diagnosis of cancer, which depends on the ability to detect very low quantities of tumor markers in blood or tissue. Mr. Hardison's work abroad represents the first personnel exchange in collaborative efforts between TTU Chemistry and the École Polytechnique de Paris.

Maia and Dr. Wells spent the summer at Germany's prestigious Center for Environmental Research, a Helmholz center of excellence. Maia's research focused on understanding the molecular basis for cellular signals that result from exposure to toxins, such as environmental toxins like arsenic. The approach involved using proteomics and flow cytometry to understand the inner workings of cells, including genetically modified sensor bacteria used in their research. Since returning to TTU, she and Dr. Wells have begun work on application of a mathematical approach called real-time adaptive clustering to see if new insights can be developed about the link between cell properties such as size, shape, DNA content, and inherent response to toxic stress.

In collaboration with one of the world's top developers of genetically engineered biosensors, Dr. Wells is leading an international collaboration focused on public health threats posed by endocrine disrupting compounds. Dr. Wells and Dr. Shimshon Belkin, of the Hebrew University of Jerusalem, recently received an award totaling $280,000 through the Bi-national Agriculture Research and Development fund to investigate the development of sensor panels that exploit the ability of genetically engineered whole-cell biosensors to sense endocrine disrupting chemicals. In addition to the research value, over a three-year period

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(Dean's Message, cont. from p. 1)

College will flourish under the interim leadership of Dr. Paul Semmes, whose judicious and skilful handling of the associate dean's duties have earned him credibility and respect from within and beyond the College.

This confidence also extends to the programs and activities that have emerged since I became Dean in 1995. Because all of them developed as team efforts, I leave them in the charge of able and dedicated professionals who will continue to ensure that they grow and change with the times. A number of these activities depend heavily on the skills of staff members. The Student Success Center, for example, will forge ahead under the proven direction of Ms. Edith Duvier; fundraising will continue unabated under Maryjane Webster; and instructional technology remains in the expert care of Billy Sells. *Focal Points*, our newsletter, has a champion in our Graphic Arts Specialist, Glenda Pharris, who also will see to it that the College web-page is continually updated. The Center Stage Series and Learning Communities will continue to be coordinated by Susan Maddux, as will the "Culture Crawl" associated with the latter program. Paul Semmes already looks after the Dean's Award for Innovative Teaching and the Graduate Student Travel Award. With Colleen Harris's vital assistance, he will, I am sure, take charge of Honors Night, the Donor Recognition Dinner, the annual chairs' retreat, and the Board of Visitors annual meeting. With Glenda Pharris's help, he will, no doubt, also see to it that the Upper Cumberland Teachers Council thrives.

Other activities that have been established since 1995 are already ably managed by department chairs, faculty members, or faculty committees. This goes for the Ph.D. program in Environmental Sciences and the new Masters in Computer Science. It also applies in the Faculty Development Fund, the Stonecipher Lectures on Science and Society, the Constitution Day celebration, and the interdisciplinary programs in Women and Gender Studies, Environmental Studies, and Web Design. Space limitations prevent my mentioning dozens of other important innovations within departments and programs during these years.

To all of the CAS faculty and staff, especially those individuals mentioned above, I extend my most heartfelt thanks. The development of the College over the last 12 years has little to do with new resources (which have eluded us) and everything to do with your cooperation and goodwill. Its bright future, likewise, is secure in your keeping.

Jack Armistead

(cont. from p. 3)

the award will also fund student training and international research experiences in this cutting-edge area of science.

Dr. Jeff Boles, Chair

Computer Science

It has been an eventful year for the Computer Science Department. We mourn the passing of Julie Brown, the wife of our Information and Instructional Technology Specialist Eric Brown. Eric will be establishing a Computer Science scholarship as a memorial to Julie, and while her funeral was a sad occasion, it was good to see a number of alumni return pay their respects and hear from several others who were not able to attend.

We are excited about the status of our accreditation and our faculty search. We have taken significant steps toward accreditation, submitting our self-study to the Accreditation Board for Engineering and Technology (ABET) in the summer and hosting an official ABET review team in early October. ABET accreditation aims to assure employers and students that accredited programs meet the quality standards established by ABET. The self-study and the team examined our Software and Scientific Applications concentration in great detail, including program assessment processes, faculty, the curriculum, course assignments and exams, computer labs, the library, and the level of support from the College and University. While we do not anticipate any problems, we will not know our accreditation status until the Computing Accreditation Commission of ABET votes in the summer.

We had a large pool of candidates apply for our tenure-track, assistant professor position last year. The search focused on candidates with a Ph.D. in Computer Science who would be able to support the department in either information assurance and security or software engineering. We are pleased that Dr. Ambareen Siraj accepted our offer. Dr. Siraj, whose research area

is network security, received her Ph.D. last year from Mississippi State University. Her husband, Sheikh Ghafoor, is teaching for us this year as a one-year instructor and is finishing his Ph.D. in Computer Science at Mississippi State in the area of adaptive, distributed computing.

In other faculty news, we congratulate Dr. Mark Boshart who was awarded tenure earlier this year. We are also proud of the achievements of last year's one-year teaching appointees, Luis Velazco and Dr. Huanjing Wang. Dr. Wang received a tenure-track appointment at Western Kentucky University, and Luis secured a job at Microsoft working on their Virtual Earth product.

On Nov. 4, 2006, TTU's Department of Computer Science served as local host for the Mid-Central region of the ACM International Collegiate Programming Contest, which IBM sponsored. Seventeen teams from eight schools (four from TTU, three each from Vanderbilt and Maryville College, two each from Belmont and Western Kentucky, and one each from Austin Peay, MTSU, and UT-Chattanooga) converged on Bruner Hall for five hours of intense but friendly competition. They competed simultaneously with approximately 110 other teams from Arkansas, Illinois, Kentucky, Missouri, and Tennessee. The goal for each team was to write computer programs that would solve a set of problems. Normally, programming students are allowed to take a week or two to complete an assignment, but these groups of intrepid students were given only five hours to complete up to seven or eight problems. Amazingly, they wanted to do this work on a Saturday afternoon. The students had to deal with sharing limited resources (only one computer per team, consisting of three students), budgeting their scarce time, and anticipating the tough secret test cases of the assignment creators from the regional headquarters. The winning team would be the team solving the most problems; in the case of a tie, the faster team would win. Vanderbilt's Gold Team solved six problems, winning at TTU and placing third in the entire region. The TTU Team B, consisting of juniors Ross Alan Binkley, Cory Lucas, and Mark McEver, solved five problems to place fifth locally and 25th in the region. Two other TTU teams solved five problems, and the fourth team solved four problems, to place 40th, 44th, and 52nd in the region, respectively.

Systems administrator Eric Brown, departmental secretary Valerie Nash, and associate professor Martha Kosa planned and organized the event, with the assistance of several other faculty and many student workers.

Dr. Martha Kosa, Assoc. Professor

Earth Sciences

What's better than a vacation to Hawaii? To a geoscientist, it's a trip to the island to study active volcanoes, lava flows, and coral reefs. And during this past spring break (March 3-14), eight TTU geoscience students, along with students from East Tennessee State University, had this unique opportunity. Drs. Larry Knox and Frank Stapor from the TTU Department of Earth Sciences and Dr. Chris Gregg (BS Geology, TTU, 1992) from East Tennessee State University led a field excursion to the islands of Hawaii and Oahu to illustrate the geologic history as well as the modern-day Earth processes that continue to shape these islands.

The students visited numerous field locations that best exemplified volcano and sediment processes. These topics are discussed in lecture courses, but there is no substitute for observing these processes as they occur, especially on an active volcanic island. Climbing on, walking over, and examining rocks where they formed dramatically reinforces lecture and laboratory instruction. More importantly, the students begin to learn that geologic fieldwork emphasizes observations with accurate documentation and measurements.

The field trip took students to see pyroclastic, cinder-cone volcanoes and basaltic shield volcanoes—the common volcano types found in Hawaii. Aa and pahoehoe, names given to different types of lava flows, were seen as well as volcanic rock that contained bits of the Earth's mantle—a rare find on the Earth's surface. Unfortunately, the students did not get to see red-hot lava flowing into the ocean or across the land because it rained heavily near Kilauea, the best location to see active lava flows. However, they did get "hot feet" as they walked over cooling lava tubes that contained flowing lava headed for the sea. The trip to (Mauna Key's) icy summit was dis-

appointing because fog obscured the panoramic view.

Near the end of the field trip, the students went snorkeling on Oahu to observe modern coral reefs and coral-encrusted lava flows. They also saw sea-cliff exposures of ancient coral reefs located high above modern-day sea level, and they learned that the beaches of Hawaii are a consequence of the sand composition: tan beaches are ground-up coral fragments, and black-sand beaches are made from ground-up lava flows. The students saw first-hand the erosion forces at work as huge waves crashed onto the beaches. Of course, a trip to Hawaii can't be all work and no play. For part of an afternoon, the students frolicked on Waikiki Beach and in the surf.

Students observe a recent lava flows across a road in Hawaii.

By any measure, the Earth Sciences trip to Hawaii was a success. Field experiences are invaluable to the technical training of the students as well as to their overall maturation as scientists. But perhaps more importantly, they are memorable for students and faculty alike.

If are wondering, we are headed to Utah for our next field excursion. Stay tuned!

Dr. Frank Stapor
Dr. Michael Harrison

English

Dr. Halina Ablamowicz, associate professor of Speech, and Dr. Kevin Christianson, professor of English, have been collaborating for the past two years on projects that are bringing important voices from Poland's war-ravaged past to the English-speaking world.

Dr. Ablamowicz, a native of Poland, has been researching a little-known historical event that occurred in Poland during World War II. Between 1940 and 1941, close to two million Poles, including women and children, were forcibly deported by Soviet authorities from their homes in eastern Poland to Siberian gulags (forced labor camps). The victims included mostly landowners and educated people who were perceived as potential threats to the USSR. Malnutrition, starvation, disease, and physical exhaustion in sub-zero temperatures took the lives of most deportees within the first year of exile. During the Communist era following the War these deportations were a forbidden topic in Polish society. With the collapse of the Soviet Union in 1991, Polish survivors of Stalin's terror began revealing facts of their experience so this event in Polish history would be known to the world and remembered by future generations.

Dr. Ablamowicz, aided by Dr. Christianson, has translated more than a dozen poems composed by *Sybiracy* (Siberian exiles) while in the camps. In 2005, *The Sarmatian Review* published Dr. Ablamowicz's article, "If Ever I Were To Forget Them, May God in Heaven Forget Me," accompanied by several poems. Dr. Ablamowicz is now assembling a book-length manuscript to feature an expanded version of her essay along with translations of original poems and texts. During a visit to Poland in May 2006, Dr. Ablamowicz presented her work to a local chapter of Polish survivors of the Stalinist deportations. Dr. Ablamowicz's project is related to her research interests in speech communication – the phenomenology and semiotics of shame, and speech anxiety – and to her courses in public speaking and intercultural communication.

Dr. Christianson, with the help of Dr. Ablamowicz, has been translating the work of nineteenth- and twentieth-century Polish poets, most of whose work is unknown to the English-speaking world. In particular, he has been translating poems by the Polish writer Andrzej Bursa who died at 25 in 1957 of congenital heart failure. As a youth, Bursa witnessed the Nazi occupation and ravages of World War II along with the subsequent Soviet occupation. During his short life he published close to forty poems and one novel and

had one play produced. A *poète maudit* (literally "accursed poet") with a social conscience, Bursa savagely attacks the cant and hypocrisy of post-war Polish society, yet beneath his caustic cynicism lies genuine compassion for children, the poor, and social outcasts, and concern for the erosion of traditional Polish values.

Though a minor literary figure, Bursa holds a cult status for younger Poles who are attracted to his rebellious spirit. In 1968, a

Dr. Ablamowicz & Dr. Christianson

Kraków literary group established a literary prize in Bursa's name that has been subsequently won by major contemporary Polish poets.

More than 15 of Dr. Christianson's translations have appeared in seven literary journals. In May 2006, Dr. Christianson traveled to Poland to give presentations of his work at two Polish universities, and met the late poet's son and widow. Dr. Christianson's project grew out of his research and teaching interests in world literature and creative writing.

Dr. Halina Ablamowicz
Dr. Kevin Christianson

Foreign Languages

A major news item from the Department of Foreign Languages is the addition of Dr. Debbie Barnard, assistant professor of French, to the faculty. Dr. Barnard received her Ph.D. from Vanderbilt University and subsequently taught at the University of Tennessee-Knoxville for two years before joining us here at Tech. While Dr. Barnard teaches a wide array of courses in French language, literature, and culture, her research interests center on francophone literature, with a primary focus on the Jewish communities of Tunisia. She has published several articles on francophone authors from North Africa, the Caribbean, and the South Pacific and is currently at work on a study of Tunisian literature in French. In addition, she spent a year in Tunisia as a Fulbright scholar and has agreed to serve as the Fulbright advisor at Tech. She welcomes questions about the Fulbright program from both students and faculty. We are very pleased that the department now has expertise in the areas of Dr. Barnard's research.

In March of 2006, the department sponsored a Symposium on Careers in Foreign Languages under the leadership of Dr. Mark Groundland. Approximately 140 students attended to learn about the advantages of foreign language study for their professional and personal development. Three professionals, one of them a Tech alumnus, explained how French, German, and Spanish were critical to their job success.

Our students have been very busy sponsoring activities that bring attention throughout the campus to the richness of the French, German, and Spanish cultures. Members of the Tech community celebrated Oktoberfest with the German club (Der Deutsche Klub) and the Day of the Dead Fiesta with the Spanish Club (Amigos). To commemorate National French Week, the French Club (Avant Garde) hosted the Soirée française, where attendees enjoyed a four-course French dinner. Other activities for that week included selling crêpes on the South Patio, attending a conversation hour, and viewing a French movie.

11-06 Freench Soirée

To help French, German, and Spanish 1010 students adjust to university language classes, the Department is offering free group tutoring. All students who have specific questions or who need advice on how to succeed in these classes are encouraged to attend. Please contact the department for times for these sessions. Conversation Hours are also available in all

three languages for anyone wanting to practice language skills or to meet other language learners. Those who simply want to listen to the target language should also attend; they will soon find themselves speaking as well. Movie nights offer another opportunity to improve aural skills.

El Día de los Muetos

Alumni should watch for our alumni survey, which will soon arrive in the mail. We would appreciate your feedback so we can continue improving our program and, of course, we always enjoy hearing from you.

Dr. Marketta Laurila, Chair

German Club preparing gifts for the Cookeville Hs German classes for Saint Niklaus Day

History

In 2005, the United States Congress mandated that all educational institutions receiving federal funds designate a day on or near Sept. 17 to commemorate the signing of the Constitution on Sept. 17, 1787. On Sept. 20, 2005, Tennessee Tech University presented its first annual Nolan Fowler Constitution Day Celebration. Daniel Driesbach, a law professor at American University, gave an intriguing lecture entitled "How Thomas Jefferson's 'Wall of Separation' Redefined the Constitutional Relationship between Church and State." The occasion was a tremendous success with several hundred students, faculty, and community members in attendance.

The event is named in honor of Dr. Nolan Fowler, professor emeritus who retired from the Department of History in 1979 after a distinguished record of service that included teaching constitutional law. Dr. Fowler made the event possible through a generous $150,000 endowment.

"I was very happy to provide the money," said Fowler, "because the Constitution is so important–it is the foundation of our system of government–yet so many people know so little about it."

Fowler's gift will allow Tennessee Tech to bring distinguished scholars from across the United States to the campus on an annual basis. A Constitution Day Committee comprised of faculty from both the Department of History and the Department of Sociology and Political Science (currently Drs. Kent Dollar and Sharon Whitney) has been established to select, invite, publicize and coordinate the visits of the guest speakers. The 2006 event featured constitutional scholar Mark A. Graber, whose talk was entitled "Now More than Ever: Expanding, Protecting, and Contracting Civil Liberties in Wartime." Once again, the event drew hundreds to Derryberry Auditorium.

The department of history would like to thank Dr. Fowler for his generosity and thoughtfulness is making the Constitution Day Celebrations possible.

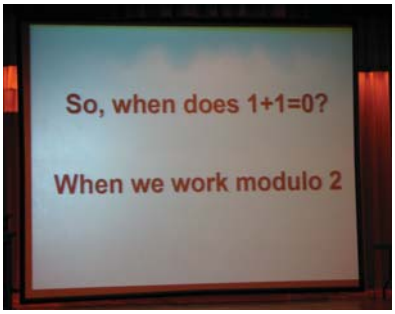
Dr. Jeffery Roberts, Chair

Dr. Nolan Fowler

Mathematics

"Who Wants to be a Mathematician" Contest

We in the Mathematics Department were delighted to welcome former department member Dr. Mike Breen back to campus in September. Mike was here to help us stage a morning of entertaining and educational



mathematical activities for high-school students. Those of you who were at TTU while Mike was on faculty probably recall that he appeared on both *Jeopardy* and *Wheel of Fortune* during that time. After joining the American Mathematical Society in 2001 as Public Awareness Officer, Mike's interest in game shows led him to develop, along with Bill Butterworth of DePaul University, a mathematical adaptation of the popular *Who Wants to be a Millionaire* game show. In the *Who Wants to Be a Mathematician* game, high-school students compete by answering questions on mathematics history and pre-calculus topics.

On the morning of Sept. 21, the department of mathematics hosted the *Who Wants to Be a Mathematician* events in Derryberry Auditorium. Dr. Andrew Hetzel led off by introducing the audience to modular arithmetic and its applications to UPC barcodes and the RSA Public Key Cipher with his talk, "When Does 1+1=0?" Next, a brief intermission allowed audience members to enjoy refreshments while the stage was reconfigured. Then eight high-school students had the chance to turn their mathematical knowledge into cash and prizes in the *Who Wants to Be a Mathematician* competition. Contestants had been previously selected based on their scores on a qualifying test sent to schools in Middle and Eastern Tennessee. The contest consisted of two rounds in which four students were questioned at a time. To add to the excitement, the questions were projected on a screen so that the audience could match wits with the contestants. By correctly answering multiple choice mathematics questions within an allotted time period, the four contestants were able to accumulate points. In addition, each student had one chance to call on his designated helper for assistance with a question. Since the designated helper was usually the student's high-school teacher, this served to keep the teachers involved in the action. The contestant with the highest point total in each of the preliminary rounds qualified for a chance to answer the Two-Grand Prize Question. This question was about the circumstances under which the operation of averaging is associative. Both finalists, John Cooper from Oak Ridge High School and Will Pickering from The McCallie School, correctly answered it to win $2,000 each. All eight contestants received prizes. The cash prize was donated by the AMS, while Maplesoft, John Wiley & Sons, and Texas Instruments supplied computer software, calculus textbooks, and graphing calculators, respectively.

Dr. Allan Mills, Interim Chair

Physics

End of an Era

Dec. 8, 2006 will see the end of an era when Professor Emeritus John C. Wells teaches his last physics class at TTU. John came to TTU in 1970, recruited by Fred Culp to increase the research activity in the department. With John's interests lying in the field of nuclear physics, the proximity of TTU to Oak Ridge National Lab was a natural fit for him. He spent the next 30 years working on various aspects of nuclear physics, winning the Sigma Xi Research Award in 1976, and holding an adjunct research position at ORNL from 1977 until 2001. He has been teaching physics classes at TTU on a part-time, post retirement appointment for the last four years.

However, it wasn't always obvious that John would be a physicist. He was an accomplished pianist in high school, but he also became fascinated with physics and mathematics. On entering college,

John had to choose between science and music. Physics and math won, and he graduated with a BS from Florida State University and gained a Ph.D. in experimental nuclear physics from Johns Hopkins in 1968. He has no regrets about his choice of career path, as he has also been able to keep up his organ and piano playing at a professional level. He says, "If I had gone into music for a professional career, the most I would have ever done with physics is read about it." Indeed, John is as well known for his musical side as his science side, performing an annual organ recital at TTU and playing the Derryberry Hall carillon for almost every commencement between 1985 and 2003.

Over the last few years John has managed to merge his interests in physics and music by offering an Acoustics of Music course (PHYS 1100) on a volunteer basis. Open to any who are interested, this class starts with the basic physics of vibrations and waves and applies them to musical situations, including musical instruments, speech and singing, auditorium acoustics and recording techniques. The department is particularly happy that Dr. David Murdock, who also has musical interests, will continue to offer this class after John leaves.

John has also been very active in the community, including being a member of Gideon's International and current treasurer of the Putnam County service unit of the Salvation Army, for which he was honored by the Cookeville City Council in 2004. For the past 6 years John and his wife Marilee have also participated in short-term missionary work in Brazil.

John says he and Marilee have had a full and rewarding life so far and expects that it will continue into retirement. He will continue to teach occasionally at Bryant College and continue with his volunteer work. With more time to devote to his music he is taking up the French horn, which he has not played since high school, and he and Marilee have recently taken up traditional folk dancing. They are also looking forward to spending more time with their grandchildren. The physics department wishes John and Marilee a fulfilling and well-deserved retirement and hope to see them around the department.

Physics Alum wins Award

Physics alumnus Dan Bardayan has been honored with a Department of Energy Presidential Early Career Award for Scientists and Engineers (PECASE) for his work in nuclear astrophysics. He received the award at a White House ceremony in July of 2006.

After graduating summa cum laude from TTU in 1993, Dan went on to complete his master's and doctorate degrees at Yale University. His thesis work, much of which was conducted at Oak Ridge National Lab, used radioactive ion beams to study the processes by which many elements are created in supernova explosions. Because of this work Dan was awarded the 2001 Dissertation in Nuclear Physics Award from the American Physical Society.

Dan then went on to hold post-doctoral appointments at the University of North Carolina at Chapel Hill and at Oak Ridge National Lab before joining the permanent lab research staff in 2003. He continues to work in the field of stellar nucleosynthesis and is currently engaged in developing better techniques for detecting the particles emitted when radiative ion beams collide with targets at the Holifield facility at ORNL.

Secretary for Science Raymond Orbach.

Dr. Stephen Robinson, Chair

Forum for Sociology Majors

During the summer of 2006, a forum was created for all Sociology majors. As of fall 2006, the forum is available to sociology majors when they log onto their TTU WebCT account. The primary purpose of this forum is for Sociology majors to get to know each other and to assist each other in matters such as course selection, studying, and socializing. The second purpose is to provide students with information and assistance in areas such as finding jobs, applying to graduate school, and being successful in course work.

Four discussions are the core of the forum: Social, Academic, Suggestions and Complaints, and Ask the Faculty. The Social discussion is for discussing whatever students wish to discuss, e.g. music, sports, politics and for arranging social events such as parties or going to the movies. The Academic discussion is for students to offer each other help in course selection, studying, research, and related matters. Here students can offer and request tutoring and other types of assistance. There is also a Chat Room for real-time interaction and discussions. Since the start of the semester, two additional discussions have been added, one for students enrolled in Sociology 1020 and one for the Sociology/ Criminal Justice Club.

The Suggestions and Complaints discussion provides a way for students to make suggestions and/or complaints that they think would improve the department or particular courses. This discussion is anonymous so students do not have to fear offending anyone. The Ask the Faculty discussion is also anonymous and is a place for students to ask general questions or questions addressed to a particular faculty member. Answers are not guaranteed, but most questions will be answered.

Students can also create their own homepages. Homepages allows students to create a place that contains information about themselves, the projects they are working on, links to their favorite websites, and perhaps biographical information about favorite movies. A Pictures Page is also available in the forum for students to post photos, other pictures, and cartoons. This Pictures Page was recently used for a Cutest Pet Contest that attracted 25 entries.

The forum also provides helpful information for students, some provided internally by faculty and some through links to external sources. Information and links relate to matters such as: study habits; graduate and law school application processes; job finding; internships; and numerous other topics. As of Oct. 9, 2006, the Forum had been accessed by students and faculty over 1100 times.

Check our website, http://www.tntech.edu/sociology/, for additional information on new projects.

Dr. Jerry Neapolitan

Development

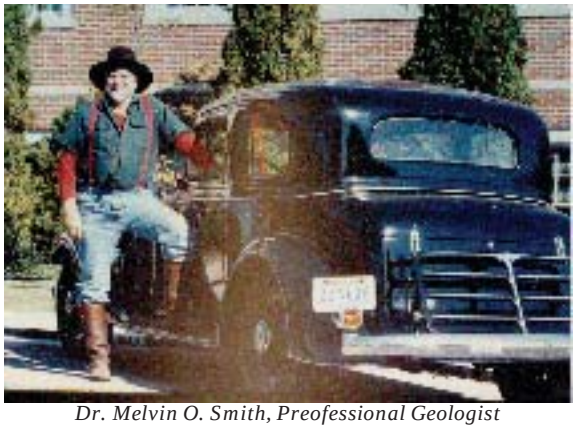
Enrichment Endowment brings back memories of the Good Ol' Days

The Dr. Melvin O. Smith Student Enrichment Endowment is being created in memory of Dr. Smith, whose presence can still be seen in TTU's Department of Earth Sciences. Dr. Smith taught geology and geography classes from 1967 to 1985 and helped initiate the Geology Field Study Program, an integral part of today's curriculum. The endowment, exclusively for students, will provide financial support to individuals needing assistance with costs related to field excursions or conference presentations.

Maryjane Webster, Development Director

For more information on this or other endowments, please visit our website at www.givetottu.com or contact:

Maryjane Webster
Development Director
TTU Box 5047



Dr. Melvin O. Smith, Preofessional Geologist

Dr. Smith's 1973 Field Geology Class – Ready to ride in new Department Van

Tommy Haskins '74 GEOL, Wendell Pennington '74 BIOL, Don Stephens '74 GEOL, Dr. Smith (deceased), Carolyn Spruill '73 SEEN major, Vaughn Yates '74 BIOL, Sammy Pyle '74 GEOL, Andrew S.Griswold '75 BIOL (& father of '06 Geosciences major, Andrew M. Griswold), John McClain '73

Dark as a Dungeon -- on way down in the Black Cloud Mine – Leadville, Colorado - 1979

Sitting L-R: Wayne Cross '80 GEOL, Ken Haislip '80 GEOL, Tommy Cate '80 GEOL, Dr. Melvin O. Smith (deceased) Standing L-R: Sam Littlefield '80 GEOL, Harvey Vick '80 GEOL, Laura Keith '80 GEOL (deceased), Patrick Sullivan '79 GEOL, Michelle Cooper Fleck '79 GEOL

Center Stage Series

SPRING 2007 EVENTS

January 16-February 9 February 8, 3:30pm Gallery talk/Reception	**Alonso Sierralta** RUC – J.D.A.G.	Sculpture/Mixed Media Exhibit. Mr. Sierralta's work reflects his experience as an immigrant, not in a political way, but as a visual representation using organic forms and natural motifs. His family came from Chile and while they retain many Chilean customs, they have adapted to the American way of life.
January 25 11:00am Master Class 7:30pm Concert	**Boston Brass** Wattenbarger Auditorium	From exciting classical arrangements, to breathtaking vocal harmony, to burning jazz standards, Boston Brass achieves new levels in brass performance while treating audiences to a unique musical experience that captivates all ages. http://www.herbertbarrett.com
February 1 11:00am Master Class 7:30pm Concert	**Princely Players** Wattenbarger Auditorium	In the tradition of the Jubilee Singers and the Fairfield Four, The Princely Players offer evocative and stunning programs on the enslavement and liberation of African-Americans. The eight-member ensemble performs their unique program of spirituals, work songs, hymns and songs of freedom.
February 6 7:00pm	**Herman Boone** Derryberry Auditorium	**"A Night With Herman Boone - Lessons In Diversity"** Mr. Boone's inspirational story was captured in the Disney film *Remember the Titans*. He is now retired but continues to motivate and inspire audiences with his presentations. Co-sponsored by Minority Affairs, Athletics and UPC. Hosted by Minority Affairs. http://www.apbspeakers.com http://www.tntech.edu/bcc/
February 12-March 9 February 13, 3:30pm Gallery talk/Reception	**Lorraine Glessner** RUC – J.D.A.G.	Mixed Media Exhibit. Ms. Glessner is a fiber artist whose media are usually beeswax, encaustic, and oil paint on silk. Her work is concerned with raising questions in the viewer's mind concerning how all of creation-the universe, earth, nature, and humanity all coexist, connect, and interweave. The artist currently resides in Philadelphia, PA.
February 20 7:00pm	**J. Ivy (Poet)** RUC-Multipurpose Room	Mr. Ivy has been an instrumental force in the spoken word scene in his hometown of Chicago and has gone on to perform throughout the U.S. at colleges, special engagements, headlining concerts and more. Co-sponsored and hosted by Minority Affairs. http://www.sphinxmg.com http://www.tntech.edu/bcc/
March 1 7:30pm Concert Master Class time TBA	**Terra Nova Consort** Wattenbarger Auditorium	The Terra Nova Consort was founded with the idea of exploring ethnic influences on the performance of early music. Terra Nova has been actively involved in educational programs throughout Oregon and Washington. http://www.mcmartistsworldwide.com
March 12-April 6 March 13, 3:30pm Gallery talk/Reception	**Amy Gerhauser** RUC-J.D.A.G.	Installation Sculpture Exhibit Ms. Gerhauser describes her work as developing from themes of transience and transformation and explores connections between the natural world and human material culture. Ms. Gerhauser is currently an assistant professor of art at the University of Texas at Tyler in Tyler, TX.
March 20 11:00am Master Class 7:30pm Concert	**Amelia Piano Trio** **With Eric Ruske** Wattenbarger Auditorium	The Amelia Piano Trio (violin, cello, and piano) is a sought-after ensemble since taking prizes at international competitions and becoming a National Public Radio Young Ensemble in Residence. Mr. Ruske, horn soloist, has established himself as an artist of international acclaim. http://www.ameliapianotrio.com
March 23-24 March 23, 7:30pm Concert March 24 9:30am-4pm Workshop	**Hal Ott, Flute** Wattenbarger Auditorium	Dr Ott, assisted by Mr. Paul Thurmond on piano, will perform original music by Maria Newman and a variety of other pieces representing various nationalities and time periods. Saturday's workshop & classes will be given by Dr. Ott on flute performance and pedagogy culminating with a 3:00pm concert.
March 27 7:00pm	**Dr. Bernice Sandler** Derryberry Auditorium	**Dr. Sandler will be discussing Women and Higher Education.** Dr. Sandler is a Senior Scholar at the Women's Research and Education Institute in Washington, DC, where she consults with institutions and others about achieving equity for women. http://www.tntech.edu/women http://www.jodisolomonspeakers.com
March 28 5:00pm	**France and India** Sherlock Park	There will be free French food and a Cricket demonstration. In case of inclement weather, the event will be held in the Multipurpose Room of the Roaden University Center. Hosted by One World of TTU.
March 30 6:30pm	**Focus on India** Derryberry Auditorium	Focus on India - Music program with Dr. Sandaran Mahadevan, an Indian classical vocalist in the Carnatic (South Indian) music tradition.
April 9-10 April 9, 7:30pm Concert April 10, 11:00am Master Class	**Philippe Castagner** Wattenbarger Auditorium	Tenor Philippe Castagner has won numerous international competitions already at his young age. He has appeared with the New York City Opera and the Metropolitan Opera. He is a native of Canada who grew up in New Jersey. http://www.yca.org/
April 9-May 4 April 10, 3:30pm Gallery talk/Reception	**Duane Johnson** RUC-J.D.A.G.	Painting Exhibit. Mr. Johnson's works are mixed media on canvas. A self proclaimed narrative artist, he uses a cartoon drawing style that suggests a humorous approach that conceals the serious tones of the content from the viewer's initial response.
April 10 7:00pm	**Susan Estrich** Derryberry Auditorium	**"Sex and Power: Women, Men, Sexism and the Future"** Ms. Estrich is currently a law professor at the University of Southern California. She writes a nationally syndicated column that appears weekly in such publications as *The Washington Post, The Boston Herald,* and *The Houston Chronicle*. Hosted by the Tech Ladies Coalition.
April 13-14 April 13, Symposium April 14, 11:30am-6:30pm	**WOW-International Festival** RUC	An international symposium and daylong festival. Experience this celebration of world cultures through music, dance, crafts, displays and food. Visitors will be given a passport at the door that can be stamped from the different countries/cultures. www.tntech.edu/wow
April 16-20	**Leo Chaves** Location TBA	**"Culture and Natural Resources of Costa Rica"** Mr. Chaves will present information about Costa Rica and offer a comparison to one of it's neighboring countries that has followed a different historical path.
April 19, 20, 21, 23, 24, 27, 28, 8:00pm; April 26, 10:00pm; April 21, 2:00pm	***The Importance of Being Earnest*** BDPH	This play, by Oscar Wilde, and in cooperation with the English Department and the Tech Players, is the 16th Annual Dorothy Printz Penebaker Memorial Spring Production. Directed by Mark Harry Creter. Tech students are FREE with their ID. http://www.tntech.edu/bdph

All Center Stage events have FREE admission*. Students show Eagle ID card for attendance tracking.
J.D.A.G. – Joan Derryberry Art Gallery *1st Floor Roaden University Center* **Derryberry Auditorium –** *2nd Floor Derryberry Hall*
Multipurpose Room – *2nd Floor Roaden University Center* **Wattenbarger Auditorium –** *Bryan Fine Arts Building*
Backdoor Playhouse – *Bottom Floor, back of Jere Whitson Building* ***Students MUST show Eagle Card for free admission to Center Stage theatre productions. http://www.tntech.edu/centerstage 372-3637 centerstage@tntech.edu**

College of Arts & Sciences

Mrs. Allison Chandler, Dr. Paul Semmes, Mrs. Gina Mattingly, and Mrs. Deborah Allen

Ms. Edith Duvier, Director of the Student Success Center, & Dr. Kurt Eisen, chair of the English Department

L-R: Mr. Gene Mullins, Dr. Jeffrey Boles, and Dr. Dan Combs

Dr. Gretta Stanger and Dr. Marketta Laurila

L-R: Edith Duvier, Allison Chandler, Dr. Paul Semmes, and Deborah Allen. Standing-Lisa Rice and Dr. Kurt Eisen

Dr. Brad Cook, Biology and Mrs. Wanda Maxwell, Chemistry

Dr. Doug Talbert, Dr. Stephen Robinson, Dean Jack Armistead

Ms. Mary Saunders, Secretary

Student Success Center
Staff and Work Study Students

Dr. Robert Clougherty
Director of Institute

Linda Fisk
English secretary

Dr. Michael Harrison, Earth Sciences Chair

L-R: Colleen Harris, Edith Duvier,
Susan Maddux, Dean Jack Armistead,
Glenda Pharris, & Assoc. Dean Paul Semmes

Colleen Harris
Executive Aide to the Dean

Notes:

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Please help us keep your records current by completing the information below.

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