



ACADEMIC OUTREACH

FALL 2007

Bridging our college & the community

CULTIVATING THE NEXT GENERATION OF SCIENTISTS

An innovative program introduces young scholars to research and discovery in UT Knoxville laboratories; a master scientist is leading the way

Top scientists in the College of Arts and Sciences are refining the talent of exceptional students from two Knox County high schools, Farragut and Fulton, through the UT Pre-Collegiate Research Scholars Program (PRSP). Teachers often say that their biggest challenge is enhancing their prescribed curriculum to meet the needs of very bright students. Besides enriching the schools' advanced-placement science curricula, PRSP affords UT Knoxville faculty mentors a chance to cultivate students' knowledge and enthusiasm in science, technology, engineering, and mathematics (the STEM disciplines).

The successful pilot program, which launched in summer 2007, engages Farragut High students in independent research in university labs. Students from Fulton High School will join the program in summer 2008. Kristin Baksa, the program's Farragut High liaison, says that her students have more confidence in studying STEM subjects because of the program. "They all come to me at the beginning of the semester, saying 'Mrs. Baksa, I have no clue what I'm doing!' By the end of the semester, they are conducting presentations or explaining their projects at poster sessions," Baksa says.

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Mentors build confidence

The students' growing self-assurance comes from their successful encounters with the university's faculty. Each student is paired with a faculty mentor who guides the student in developing a research plan, conducting research, preparing an abstract and poster, and participating in a poster session highlighting the student's work. Becky Ashe, science supervisor for Knox County Schools, says, "The success of the students and this program

On the front: Pictured left to right are Emma Stockdale, Kyle Peterson, Michael McCormick, and Ward Plummer. (Photo by Jeremiah Harris) **Right:** Ward Plummer talks to students at Farragut High School. (Photo by Nick Myers)

is always contingent upon willing hosts for lab assignments and placements. We are grateful for the ardent support and experience provided by some world-class researchers at the University of Tennessee.”

Ward Plummer, Distinguished Professor of Physics, is one of those researchers. Named a Distinguished Scientist in the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory, he is a highly regarded physicist with more than 40 years of professional experience and more than 300 publications. He is also a member of the elite National Academy of Science. Plummer is more intent, however, on helping students succeed than on touting his own achievements. “My research may win awards or recognition,” he says, “but it is meaningless unless I can share my discoveries with others. These bright young scholars are the next generation of scientists, and their excitement in the field indicates a promising future, both for them and for nanotechnology.” He has mentored three Farragut students, Emma Stockdale, Michael McCormick, and Kyle Peterson, for the past two terms.

While working in Plummer’s lab among the massive foil-wrapped contraptions they use to collect data, these students share their



thoughts about the program. Plummer has provided an authentic learning atmosphere, Stockdale says: “Since I actually do work in the lab, I have a real-life feel of what this job is like.”

McCormick is grateful that Plummer’s instruction has enriched his high-school courses. “Working in the lab is definitely something I wouldn’t normally get the opportunity to do,” he says.

Peterson agrees, adding that he has learned a lot of things he could never learn in his high-school physics class. All three students say that working with Plummer has increased their interest in science careers.



Lynn J. Champion, Ph.D.
Director of Academic Outreach
and Communications
College of Arts and Sciences

DEAR READERS,

In our fall 2007 issue of this newsletter, we acquaint you with a new outreach program in the college, the Arts and Sciences Pre-Collegiate Research Scholars Program. We also update you on a long-standing outreach program, the Faculty Speakers Bureau, and share some highlights from our annual academic outreach report that documents our many contacts with the community.

Our feature article introduces the Pre-Collegiate Research Scholars Program (PRSP), a pilot program we have initiated with Knox County Schools. Through this program, students from Farragut and Fulton High Schools experience scientific research firsthand as they work in the laboratories of UT Knoxville researchers and are mentored by their faculty hosts. PRSP provides enrichment to the science classes at the two high schools and affords university faculty mentors a chance to encourage students to pursue careers in science, technology, engineering, and mathematics (the STEM disciplines).

While PRSP enables faculty members to extend and enrich area high-school students’ learning, the Arts and Sciences Faculty Speakers Bureau brings a wealth of faculty expertise to community members of all ages. The bureau is a resource for exceptional speakers for many organizations and schools.

Finally the outreach report summary for fiscal year 2007 dramatically illustrates the college’s influence on the lives of citizens in this region and throughout the state. From July 1, 2006, through June 30, 2007, faculty members and their students from the College of Arts and Sciences touched the lives of more than 562,800 Tennesseans. That’s a record we’re proud to report.

Sincerely,

Lynn J. Champion, Ph.D.

Director, Academic Outreach and Communications

Lab environment enables achievement

Like Plummer, Alison Buchan, an assistant professor and microbiologist, enjoys cultivating students' enthusiasm for the STEM disciplines. Her protégé, Alexis Wong, has already learned a great deal through her mentored research on bacterial movement. Holding up a petri dish to examine its contents, Wong says, "I really appreciate this opportunity to come into the lab and work because it gives me research experience I would never be able to have in high school."

Buchan praises her young student's achievements. "I have been thoroughly impressed with Alexis's intelligence, dedication, and interest in her work," she says. "I'm thrilled to have the opportunity to participate in this program, and I feel fortunate to work with students who are clearly on the fast track to success." Besides her role as a mentor, Buchan has written a grant that could allow Fulton students to have even more lab opportunities.

Fulton's PRSP partner, Mary Jane Kirkham, is delighted to be able to offer her students a chance to work with the college's faculty and is thankful that PRSP will enhance her curriculum. "I can enrich my teaching only so much with the restrictions of the gateway biology course," she explains. "The benefits of this program for my students cannot be put into words. It can open the world to my students who dare to dream dreams and work hard to attain them."

In Kirkham's AP biology class at Fulton, some of next summer's potential scholars are already excited about the program. Cory Bean, a junior, will be a first-generation college student in 2009. He is enthusiastic about getting acclimated to college before he graduates from high school and augmenting his high-school classes with college-level research. "I like the fact that I'm actually going into a college atmosphere," he says. "In high school, we do our AP labs, but there isn't much more for us."

LaQuisha Carter agrees, adding "this program isn't an opportunity that comes to everyone."

A win-win situation

Along with Plummer and Buchan, several other faculty members have also hosted students in their laboratories. Albrecht von Arnim from the Department of Biochemistry and Cellular and Molecular Biology mentored Ken Jacobs over the summer. Steven Wilhelm, from the Microbiology Department, led Brandon Falls in research last summer. Tim Sparer, also a microbiologist, presently hosts two students in his lab, Vivek Patel and Erin Scheuer. Also in the Department of Biochemistry and Cellular and Molecular Biology, Hong Guo mentors Tim Moon. Finally, Todd Freeberg from the Department of Psychology, will host Gabriella Lloyd in the spring. Since the College of Engineering is a participating partner,

several members of the engineering faculty have hosted students in their labs, as well.

Farragut's Baksa explains that the program is unusual because it targets high-achieving students rather than those who lag behind. "Many initiatives address ways to help struggling students or ways to provide more teacher training," she says. "No doubt those are important efforts, but they don't really address the needs of our best and brightest students. This program allows us to enhance their education by exposing them to expertise, technology, and sophisticated instrumentation that just isn't found in high schools. We recognize the importance of this, and we are fortunate to be able to work with a university that recognizes it also."

Just as these talented Farragut and Fulton students come to the university for an extraordinary research experience, science curriculum enrichment also flows back to their schools. Top UT Knoxville scientists are giving talks to the students, teachers, and parents at Farragut and Fulton through the Distinguished Scientists Lecture Series. Professor Ward Plummer kicked off the series at Farragut High School on November 1 with his talk "Materials for the 21st Century: A Revolutionary—Not an Evolutionary—Approach." Other scientists will speak throughout the academic year. **AO**

For more information, go to www.artsci.utk.edu/outreach/high_school_mentor.asp.



Alison Buchan (right) shows Alexis Wong an example of bacterial movement. (Photo by Nick Myers)

A SPEAKER FOR EVERY INTEREST

The Arts and Sciences Faculty Speakers Bureau extends the classroom into the community



Once a week, sometimes twice, upwards of a hundred senior citizens gather at O'Connor Senior Center in Knoxville to enjoy a presentation by a College of Arts and Sciences faculty member. The attendees are the members of Seniors for Creative Learning who are continuing to learn through the Faculty Speakers Bureau. Today Dr. Christopher Craig gives a talk, "Beyond Court TV: Criminal Justice Roman Style." The presentation is fascinating, the audience attentive, and the Q-and-A session lively.

Seniors for Creative Learning isn't the only group to delight in such lectures, however; many clubs, schools, churches, senior centers, and women's groups frequently host Speakers Bureau members. On any given day, one may find a professor in a school classroom, supplementing a teacher's lesson. Across town, several faculty members might be contributing to an in-service workshop for language arts or mathematics teachers. Other faculty members may be presenting the program for the monthly meeting of a civic organization such as the Rotary Club.

Inviting community dialogue

Founded in 1990 as a vehicle for connecting the faculty with the community, the Faculty Speakers Bureau has consistently provided quality speakers for many area schools and diverse community organizations. Through the bureau, faculty members offer quality educational programs that are engaging as well as informative. This reliable resource—coordinated by Karen Windham—extends the college's teaching mission well beyond the campus.



Christopher Craig (top) educates as he entertains his audience of community members.

The exceptional scope of faculty expertise within the college allows the bureau to provide a first-class speaker on nearly any topic, and the speakers' dedication to community outreach makes the bureau a rich resource for teachers and program planners alike. The hundred faculty members who volunteer their time and effort through the bureau represent the rich diversity of disciplines the college has to offer. These knowledgeable, enthusiastic professors provide 20- to 90-minute talks on a wealth of subjects.

Craig, who is the Lindsay Young Professor of Classics and director of the College Scholars program, enjoys these presentations. “Some would say that we have a moral obligation to share our knowledge with our fellow citizens outside the university,” he says. “I wish all my moral obligations were this much fun!”

Craig’s department head, David Tandy, agrees. A bureau member himself, Tandy finds his work in the community both a duty and an honor. “What’s great about the Speakers Bureau is that it represents a fundamental service expected of UT as a land-grant institution. Among other things, we are here to serve the citizens of this state,” he says, adding, “We find it a pleasure to do so.”

But the lecturers aren’t the only ones who relish the talks. Patrons of today’s O’Connor Center presentation say that almost all the lectures compare to Craig’s. Kia Royal-Barrett, a member of the curriculum committee of Seniors for Creative Learning, says that most of the bureau members “have been wonderful speakers—extremely knowledgeable in their field (which one would expect)—and they do a wonderful job with the Q-and-A portion of their lectures.”

Windham, who is just such a person, coordinates the Faculty Speakers Bureau with careful attention and dedication. She ensures timely communication between a host organization and a prospective speaker and makes certain that both host and speaker have all they need to make each encounter a success. Echoing the sentiments of many who have used the Speakers Bureau, one host says, “Karen Windham is always so pleasant and willing to help.”

Royal-Barrett says that bureau speakers also provide another invaluable benefit: “Besides updating and teaching, the lectures become a wonderful source of entertainment and camaraderie for all of these clubs’ members. The Speakers Bureau is a vital and necessary organization. We are very fortunate and grateful that the University of Tennessee has made this wonderful resource available to us.” **AO**

For more information go to www.artsci.utk.edu/outreach/speakersbureau/speakersbureau.asp.



“WHAT’S GREAT ABOUT THE SPEAKERS BUREAU IS THAT IT REPRESENTS A FUNDAMENTAL SERVICE EXPECTED OF UT AS A LAND-GRANT INSTITUTION. AMONG OTHER THINGS, WE ARE HERE TO SERVE THE CITIZENS OF THIS STATE, AND WE FIND IT A PLEASURE TO DO SO.”

—DR. DAVID TANDY
PROFESSOR AND HEAD OF THE CLASSICS DEPARTMENT

Douglas Hubbard, a regular at O’Connor Center, says that he is always impressed by the depth of knowledge and warm personalities of the college’s faculty members. Speakers Bureau lecturers are so engaging that they often increase the membership of the organizations that host them by drawing new attendees who later join up. Since Seniors for Creative Learning began tapping the bureau’s resources, the club has set new records in membership and attendance.

“As soon as I started recruiting faculty speakers from the Speakers Bureau,” Royal-Barrett says, “our membership grew by leaps and bounds, and our lecture attendance went from an average of 30 to 50 members to an average of 90 to 100 members. We set a new record this semester with 133 members attending our first lecture of the semester!”

Ensuring successful encounters

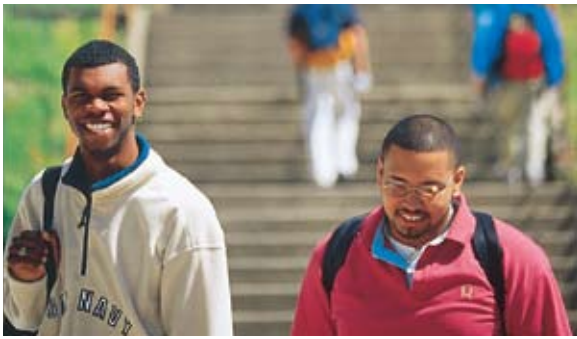
Facilitating these connections between the college’s faculty and the community requires a service-oriented person. Karen



REACHING OUT TO TENNESSEANS

In fall 2007, the College of Arts and Sciences participated in a UT system-wide effort to tally our outreach contacts with Tennesseans. Engagement with the state's citizens, communities, counties, and regions is expected of each academic unit of the university, and it occurs through a variety of outreach programs. Outreach is such an important element of the university's mission that part of UT's strategic plan through 2010 includes benchmarks for increasing our outreach to Tennesseans each year.

The largest and most diverse college of UT Knoxville—the state's flagship public research university—Arts and Sciences alone accounted for more than half a million contacts with citizens throughout the state during the period of July 1, 2006, through June 30, 2007. The table below lists the outreach contacts reported by each unit of the college. **AO**



**College of Arts and Sciences
University of Tennessee, Knoxville
Outreach Contacts, July 1, 2006–June 30, 2007**

Department	Contacts
Anthropology	406
Art, School of	15,880
Audiology/Speech Pathology	5,942
Biochemistry/Cellular & Molecular Biology	14
Chemistry	2,776
Classics	1,365
Earth & Planetary Sciences	1,148
Ecology/Evolutionary Biology	267,989
English	987
Geography	179,294
History	1,795
Mathematics	913
Microbiology	545
Modern Foreign Languages & Literatures	2,330
Music, School of	32,690
Philosophy	3,092
Physics/Astronomy	6,552
Political Science	925
Psychology	551
Religious Studies	1,345
Sociology	1,005
Theatre	28,107
Academic Outreach	7,192
Total	562,843

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