



RESEARCH TRACKS

A publication of the Office of the Vice Provost for Research
Volume VIII, Issue 3

USDA grant supports research aimed at improving nutrition in corn

Dr. Bryan Gibbon, assistant professor of biology, studies the fundamental mechanisms by which plants store protein and starch in seeds. A \$348,000 grant from the U.S. Department of Agriculture’s Plant Biology program is helping Dr. Gibbon study metabolism and starch accumulation in maize, with the ultimate goal of helping farmers produce crops that provide more complete nutrition.

Corn and other grains are staples in the diets of many people living in developing countries. Unfortunately, the corn often grown in these areas does not provide adequate nutrition because the proteins inside it are not complete.

Dr. Gibbon works with Quality Protein Maize (QPM), a hybrid plant made by crossing a soft kernel but high-protein-quality corn mutant with another modifier strain to restore the kernel hardness that the high-protein-quality strain lacks. Several QPM lines have been developed by international breeding programs, but the molecular mechanisms underlying the action of the modifier genes is not well understood.

“With this grant, we’re studying how these modifier genes work and the alterations they’re causing,” he

said. “We want to know what enzymes are being altered and how that influences the formation of starch granules.”

Dr. Gibbon and his team are about halfway through the three-year period of the grant, and more work remains to be done.

“We’re finding starches with really large channels that allow large protein molecules in,” he said. “The rest of the work will be looking at the enzymes responsible for synthesizing starch in more detail to get an idea of how those enzymes work and whether these large channels influence kernel hardness.”

Understanding these functions would help to improve QPM strains and promote their widespread use, both in the U.S. and among poor subsistence farmers in developing countries.

Alongside his own research, Dr. Gibbon directs an active research program for undergraduate students, as well. With support from the Undergraduate Research and Scholarly Achievement program, he mentored students who cloned starch synthesis genes to characterize the difference between normal and QPM maize. The students’ efforts produced data that became part of Dr. Gibbon’s proposal to the USDA.



In this issue:

- External Funding Highlights 1, 2
- Undergraduate Research Highlights 2
- IACUC News 2
- Upcoming Events 3
- Reminder from OSP 3
- BRIC Update 4
- CITI Training Spotlight 4
- Funding Opportunities 5

Grant helps Baylor faculty member collect oral histories of Holocaust liberators from Texas

Dr. Stephen Sloan, assistant professor of history and director of Baylor’s Institute for Oral History, has received a grant from the Texas Holocaust and Genocide Commission to record and transcribe interviews with individuals from Texas who participated in the liberation of concentration camps during World War II.

Participants will be asked to recall their experiences in a life history format, beginning with childhood and continuing through their military career, with special attention paid to their experiences in the war and their roles as liberators.

The interviews will be recorded and transcribed, then made available in bound volumes and digital files. The finished project will provide a valuable record of the service of Texans during this pivotal point in world history.

Undergraduate Research Highlights

URSA grant provides research and publication opportunities

A grant from Baylor’s Undergraduate Research and Scholarly Achievement (URSA) program helped Charles Baylis, assistant professor in electrical and computer engineering, advance his research agenda while providing research and publication opportunities to his undergraduate students.

Dr. Baylis studies wireless and microwave communication. His URSA-supported research involved non-linear measurement systems with the goal of creating more intelligent radar transmitters that can use available spectrum more efficiently.

“We’re trying to optimize circuits and waveforms to prevent radar signals from bleeding into neighboring spectrum,” he said, noting that because of extensive regulation on spectrum use, the problem has political and economic impacts as well as scientific ones.

“We need circuits that can respond to real-time changes in frequencies,” he explained, “so the students set up non-linear measurement systems and build test beds to optimize radar systems. The students can really see how this work impacts the real world, and that’s more exciting to them than just working on equipment in a lab.”

The project also gave Dr. Baylis’ students the opportunity to present and publish the results of their work. In addition to presenting their research at URSA Scholars Week, Dr. Baylis and his students published an article in a major international publication of the Institute for Electrical and Electronics Engineers (IEEE).

“It’s great for our students to have this kind of oppourtunity. [The IEEE publication] goes to engineers all over the world, so it’s great exposure for our students and our program to have their work featured there.”

The URSA grant supported a total of four students, three of whom went on to graduate school, including two at Baylor.

Dr. Baylis said the URSA program has helped his department to build its graduate program by identifying top undergraduate students and encouraging them to build mentoring relationships with graduate students and faculty.



IACUC News

Reminder: IACUC review required for all work involving animals

Baylor’s Institutional Animal Care and Use Committee (IACUC) oversees the use of non-human vertebrate animals in all research, teaching, research training and testing activities.

Rick Duhrkopf, IACUC chair, would like to remind faculty that due to university policy and federal regulation, any activity involving animals requires review by the committee.

“There are some cases that people wouldn’t think of,” he said, “but even something as simple as taking a class to the zoo to look at animals needs to be approved ahead of time.”

Dr. Duhrkopf urges faculty to err on the side of contacting him before beginning any work with animals to avoid future problems.

IACUC electronic protocol submission

As a reminder, the IACUC now requires electronic submission of all protocols through IRBNet.

[Click here](#) to access the IRBNet system. If you have questions or encounter difficulty using the system, contact [Jill Combs](#) at 710-3708.

Registration open: Second Annual OVPR Proposal Development Workshop, January 5 & 6, 2012

The OVPR will present its second annual proposal development workshop the week before the beginning of the spring 2012 semester.

Faculty will attend one of the two days depending on their research interest. Science faculty will attend the section on January 5, while humanities faculty will attend the January 6 section.

Workshop seats are limited. [Click here](#) to fill out the registration form, or contact [Blake Thomas](#) at 710-3153 with any questions.

The OVPR will be partnering with Grant Writers' Seminars and Workshops. [Click here](#) to learn more about our presenters.

NSF Day at Texas A&M-Commerce, November 14



The National Science Foundation and Texas A&M University-Commerce will present a one-day workshop on the TAMU-Commerce campus on Monday, November 14.

While the event is geared toward researchers who are less experienced

with the NSF proposal process, even more experienced investigators will find the workshop useful.

There is no fee for this workshop, but registration is required by November 8. [Click here](#) for more information or to register.

Registration is limited, so sign up early.

Technology Entrepreneurship Initiative workshops on SBIR/STTR proposals, November 15 & 16

Baylor's Technology Entrepreneurship Initiative is hosting a pair of workshops to help applicants maximize their success in applying for funding from Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.

SBIR and STTR are federal programs that support small business technology product development.

Dr. Greg Leman, TEI director, says the workshops will help promote Baylor to companies with needs that match up with the university's capabilities. "These partnerships benefit Baylor and the whole region," he said, "because they provide research funding to Baylor and encourage economic development in the area."

He said that faculty who attend the workshops will learn to articulate the value proposition of their innovations to

businesses. "This will help them bring their technologies to an SBIR-ready stage," he said.

The workshop's main presenter, Sharon Ballard, is a nationally recognized SBIR expert and a member of the TEI Board of Advisors. She said that scientists and technologists often need help contextualizing their technologies and making a compelling business case for their development.

"There's a methodology and way of thinking about your technology to help take it out of the lab and into the market," she said.

Seating for the workshops is limited. Contact [Monica Vardeman](#) at 710-6176 for more information.

[Visit the TEI website](#) to learn more about the initiative.

Sponsored Programs Reminder

Check grant terms before booking international travel

OSP would like to remind investigators on all sponsored projects that many grants, especially those from federal agencies, require that all sponsored travel be made on a U.S. flag carrier.

Before booking international travel under a grant, carefully review the sponsor's terms and conditions to ensure compliance.

If your sponsor requires use of a U.S. flag carrier and you use a foreign carrier, your airfare may not be reimbursable using grant funds.

If you have questions about this requirement, contact your department's assigned [OSP coordinator](#).



Research park organization visits Baylor facility; BRIC named finalist for international innovation award

AURP leaders provide advice on second phase of BRIC development



Representatives from the Association of University Research Parks (AURP) visited Waco last month to observe the ongoing construction at the Central Texas Technology and Research Park (CTTRP). The group visited the old General Tire facility, which is currently undergoing renovation to become the Baylor Research and Innovation Collaborative (BRIC), the centerpiece of the CTTRP.

Three years ago, AURP representatives visited Baylor to assess the early plans for the CTTRP and provide advice and direction. Now, with Phase I construction nearly complete and the facility almost ready for occupation, AURP returned to review the progress so far and make further recommendations.

The representatives, including AURP 1st Vice President and The University Financing Foundation COO Kevin Byrne, Louisiana Business and Technology Center Executive Director Charles D'Agostino, AURP Past President and Purdue Research Park Vice President and Executive Director Gregory Deason, and AURP CEO Eileen Walker, advised CTTRP stakeholders on master planning, financing, marketing and business development. The meetings provided insights that will help guide the development of the BRIC and other planned elements of Baylor's research park.

BRIC facility earns recognition for innovation

The OVPR was recently informed that the BRIC project was selected as one of eight worldwide finalists for the 2011 H. Bruce Russell Global Innovators Awards (GIA).

First presented in 2000, the award is given annually by CoreNet, an international organization for real estate developers, equity investors and economic development professionals.

Innovation is defined as an activity or initiative that brings about a paradigm shift in the way business is done in a rapidly globalizing economy. It produces a new concept to practice and makes it a commercial success.

On August 9-10 representatives from the OVPR, the Greater Waco Chamber, and Perkins + Will Architects went to Atlanta to deliver the BRIC presentation.

Final results will be announced at the annual CoreNet Members Summit meeting on November 6th in Atlanta.

CITI Training Spotlight

Considering research in a school setting? Review the optional CITI module "Research in Public Elementary and Secondary Schools"

Federal law affords public school students additional protections above and beyond those granted to all human subjects of research.

The Family Educational Rights and Privacy Act (FERPA) and the Protection of Pupil Rights Amendment (PPRA) require parental consent for schools to divulge certain records or for students to participate in certain types of research.

Depending on the nature of your research and your funding source, some or all of these protections may impact your research.

Because of these heightened protections for students, it is important to carefully consider the applicable regulations during the early stages of a research project.



The CITI training program offers a module dedicated to research in public and secondary elementary schools. While this module is not required by the IRB as part of mandatory human subjects training, it is helpful to those investigators who are considering research on students.

[Click here](#) to access the CITI training portal, or contact [Michael Sherr](#), IRB chair, with questions.

Federal Grants

Opportunity Title	Due Date
<u>NEH - Sustaining Cultural Heritage Collections (SCHC)</u>	12/01/2011
<u>NEH - Collaborative Research Grants</u>	12/08/2011
<u>NIH - Behavioral and Social Science Research on Understanding and Reducing Health Disparities (R01)</u>	12/14/2011 (LOI)
<u>NSF - Science, Technology and Society (STS)</u>	02/01/2012
<u>NSF - Sustainable Energy Pathways (SEP)</u>	02/01/2012
<u>NASA - Research Opportunities in Space and Earth Sciences (ROSES)</u>	02/08/2012 (LOI)
<u>Department of Ed. - International Research and Studies Program</u>	03/01/2012
<u>Office of Naval Research - Navy and Marine Corps Science, Technology, Engineering & Mathematics Programs</u>	09/30/2012

Foundation Grants

Opportunity Title	Due Date
<u>Getty Foundation - Getty Scholar Grants</u>	11/01/2011
<u>Burroughs Wellcome Fund - Collaborative Research Travel Grants</u>	12/01/2011
<u>Sigma Theta Tau International Honor Society of Nursing - Small Research Grants</u>	12/01/2011
<u>American Sociological Association - Fund for the Advancement of the Discipline</u>	12/15/2011
<u>Association for Institutional Research - Research Grant Program</u>	01/06/2011
<u>Whitehall Foundation - Research Grants</u>	01/15/2012

Questions?

If you'd like to apply for these or other specific opportunities, contact your department's assigned **OSP coordinator**. For questions about searching for funding or setting up funding alerts, contact **Blake Thomas** at 254-710-3153.