Engineering research seeks tools to improve aircraft safety

Steve McClain, assistant professor in the Department of Mechanical Engineering, has recently secured a $250,000 research agreement with NASA to study the formation of ice on aircraft wings.

Dr. McClain studies a particular icing phenomenon called supercooled large-droplet icing, which occurs at temperatures just below freezing. This type of icing is particularly dangerous because it occurs at low altitudes, where reductions in lift and increases in drag are especially dangerous.

The large droplets and relatively warm temperatures cause ice to form a rough surface on the aircraft body. This rough surface transfers heat into the air differently from smooth ice and can cause the ice to grow in ways that are difficult to predict. Determining how the ice will grow requires understanding how heat transfers from the rough surface to the air.

"Once you know the convection heat transfer rates," Dr. McClain said, "you can predict the ice accumulation rates and design a heating system to either prevent the ice from forming or to melt it once it has formed."

The overall objective of Dr. McClain's effort is to provide tools for aircraft manufacturers to help them meet federal aviation safety standards.

"Icing on aircraft has been studied since the 1940s," he said, "and there is a lot of complicated physics involved. We may not be able to solve the problem, but we hope to be able to give manufacturers more confidence in the safety of their designs."

COS Pivot user guides help faculty search for external research funding

Baylor subscribes to the **COS Pivot** database to help faculty locate funding for their research and creative activities. Pivot is an enhancement to the previous COS database that seeks to provide more targeted opportunities based on faculty members' prior work.

The newly updated **Pivot support page** contains a variety of tools to assist faculty in searching for funding or setting up automatic alert services to deliver weekly updates on new search results.

Contact **Blake Thomas** at 710-3153 for information on getting started with COS Pivot.

URSA Small Grants Program fosters undergraduate research throughout the university

Undergraduate Research and Scholarly Achievement (URSA) was instituted as part of the university's Quality Enhancement Plan (QEP) with the goal of improving the undergraduate experience by helping faculty to provide students with opportunities for independent research and scholarly projects.

With the completion of the FY 2013 round of URSA Small Grant awards, the URSA program continues to extend its reach to students and faculty in a wide variety of academic units, from the sciences to the fine arts and humanities, as well as social sciences and professional programs.

This year, for the first time, the URSA Steering Committee invited previously-funded faculty to assist with the grant award process by providing merit reviews of URSA Small Grant proposals. The reviewers, representing seven departments and three colleges and schools, evaluated proposals on their scholarly significance and level of student involvement.

The process was not only meant to assist the committee in making funding decisions, but also to provide an additional avenue for faculty to be involved in the URSA program beyond serving as faculty mentors.

This year's grant review process was especially competitive, with over twice as many proposals submitted as the prior year. Limited program funds and a large number of strong proposals meant that the committee was not able to recommend all well-reviewed projects for funding.

The review process yielded an excellent group of funded projects from nearly all corners of the university. In total, 15 faculty mentors received funding, representing 12 different departments in four colleges and schools.

OVPR grant supports commission of new song cycle on the life of Mary Magdalene

Jeffrey Peterson, an assistant professor of vocal studies in the School of Music, has commissioned a piece of music by noted composer Libby Larsen. The commission, funded in part by a grant from the OVPR's Arts & Humanities Faculty Research Program, will produce a new song cycle for soprano and piano.

A song cycle is a set of musical pieces tied together by common musical motives or subject matter. Dr. Larsen's song cycle will take the form of a first-person narrative of Mary Magdalene.

Dr. Larsen's composition goes beyond musical notes and words to encompass an entire multimedia production, with directions as specific as instructions for stage lighting and the vocalist's costume.

"She has done a huge amount of research into the life of Mary Magdalene as she works on this cycle," Dr. Peterson said. "The text will be in Coptic, which is the language we believe Mary Magdalene spoke."

The choice to commission this work by a prominent contemporary composer was meant to emphasize the continued relevance of the song cycle, a musical form that has seen some declines in the last two decades.

"As the culture has changed, we've seen fewer song cycles composed and performed," he said, "but the art is still out there. By commissioning this work, we are adding to the catalog."

The new song cycle will premier at Baylor in the fall as part of a program featuring sacred music by living composers.

Dr. Peterson said that the composer's high profile ensures that the new piece will be published and performed extensively.

"I've already received calls from other schools wanting to host performances of the piece," he said. "Having a piece by such a prominent composer debut on our campus is a great way to extend Baylor's name."

Dr. Peterson will be the pianist for the debut performance, and Rebecca Wascoe, an adjunct professor of voice at William Carey University will be the vocalist.

OVPR welcomes two new staff members

Julia Bales
Administrative Associate

Julia joins the OVPR after working at Baylor with the GEAR UP Waco program for the last two years.

In her new role, Julia will provide administrative support to the Undergraduate Research & Scholarly Achievement program (URSA) and other OVPR programs.

Toni Wadle
Senior Research Project Manager

Toni comes to the OVPR from the University of Texas Medical Branch at Galveston, where she worked for the last 19 years. Toni's background includes grant writing, project management and manuscript preparation.

Toni will support the OVPR in managing research support and development initiatives.

New search tool from NIH helps investigators find applications and awards in their disciplines

Have you ever wanted to see what NIH has awarded in your area of interest? Would you like to find out which study section reviews applications similar to yours?

A new search tool in the eRA Commons called LikeThis lets investigators enter scientific terms or access their own applications or grants and then find a list of similar NIH grants and/or publications.

The tool can help investigators locate potential collaborators or make strategic decisions on the best direction of future research.
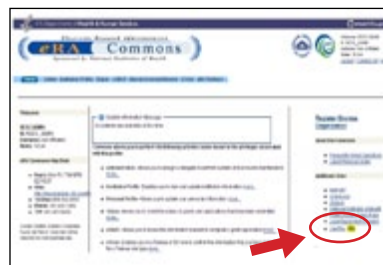
LikeThis provides some of the same functionality as the existing "Similar Projects" tab in NIH RePORTER, but while RePORTER only allows

searches of funded projects based on existing applications, LikeThis indexes applications as well as awards, and it allows users to enter free-form search terms.

The link to LikeThis is located on the right side of the eRA Commons home page at the bottom of the Additional Links section.

The NIH has prepared an **overview**, **user guide** and **FAQs document** for LikeThis.

The new search tool requires an eRA Commons login. Contact your academic unit's **assigned OSP coordinator** for information about accessing eRA Commons.

Request Visiting Scientist/Scholar Agreements for all guest researchers

The Office of the Vice Provost for Research (OVPR), in collaboration with the Office of General Counsel, has developed standard agreements to be executed whenever guest scientists/scholars plan to be on campus and/or use Baylor facilities and resources.

These agreements codify the relationships between Baylor, our

visitors, and their home institutions, and satisfy legal requirements of our insurance carriers.

Faculty wishing to host a visiting scientist/scholar should notify the OVPR as soon as possible, but no later than one month before the visitor is to arrive on campus.

To initiate the process, complete the **Request for a Visiting Scientist/ Visiting Scholar Agreement form**.

If you have questions about these procedures or need any assistance, please contact **Lisa McKethan** at 710-8905.

Federal Grants

Opportunity Title	Due Date
US Air Force Office of Scientific Research	Open
USAID - Higher Education Solutions Network	03/22/2012 (Concept Note)
Dept. of Justice Office on Violence Against Women - OVW Legal Assistance for Victims Grant Program	03/26/2012
EPA - Source Reduction Assistance Program	04/10/2012
NSF - Pan-American Advanced Studies Institutes Program	04/24/2012
Dept. of Justice - Research on the Impact of Technology on Policing Strategies in the 21st Century	04/30/2012
NIH - Social, Behavioral, Health Services, and Policy Research on Minority Health and Health Disparities (R01)	05/04/2012 (LOI)
Office of Naval Research - Communications & Networking Discovery & Invention	06/29/2012

Foundation Grants

Opportunity Title	Due Date
Robert Wood Johnson Foundation - Public Health Law Research: Making the Case for Laws That Improve Health	04/04/2012
Whitehall Foundation - Research Grants (Neurobiology)	04/15/2012 (LOI)
Brady Education Foundation - Research & Program Evaluations in Early Ed.	04/24/2012
United Engineering Foundation - Research Grants	06/01/2012 (LOI)
Wenner-Gren Foundation - International Collaborative Research Grants (Anthropology)	06/01/2012
* William T. Grant Foundation - William T. Grant Scholars (Youth Development)	07/03/2012

* - Limited submission opportunities. **Click here** for application information

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.