SVPR’s Corner

We have an important message to convey to the UNH community: “Now is the time to submit grant applications to the federal government. Many of our colleagues at other universities are discouraged and not applying. They are sitting back. So take advantage of sequestration rather than succumbing to the perception that there are fewer opportunities. Turn lemons into lemonade. And as you know, we are here to support you in any way that we can.”

On that note, I would like to share several exciting developments for UNH research.

The Faculty Senate has endorsed the proposed School of Marine Science & Ocean Engineering. A signing ceremony will take place at the end of April, followed by a public announcement in late spring or early summer. The school, which will boost the visibility of UNH’s marine initiatives, is expected to open for the fall semester.

The Office of Sponsored Programs Administration held a kickoff meeting for InfoEd Proposal Development (PD), the new system that will soon allow researchers to develop, route and submit all grant proposals electronically. PD will eliminate the need for faculty to get internal approval (a.k.a. “yellow”) sheets signed or to enter applicants’ employment information manually. It will also provide a repository of grant proposals for easy consultation. The PD pilot will launch this summer, followed by a college-by-college rollout over the next year. Leading this effort is Systems Technologist Scott Troy, with assistance from Research Administration Manager Karen Jensen.

Each Insider to Feature a Research Office Unit

This issue of the Insider continues its Research Office Unit series by featuring the Office for Research Partnerships and Commercialization.

The articles about ORPC provide the rest of the Research Office with a glimpse of what’s going on in the unit — day-to-day activities as well as special activities and achievements.

The ORPC articles were written by Sonia Scherr, RDC Editorial Assistant and MFA ’13.

Thanks to all for the articles…and their interesting work!
Groundbreaking Partnership Formed with Southwest Research Institute

In a pioneering move, UNH and a Texas-based engineering institute have formed a unique public-private partnership aimed at improving competitiveness in space science. The university signed a five-year collaboration agreement with Southwest Research Institute (SwRI), one of the largest nonprofit research and development organizations in the country.

The agreement created the SwRI Earth Oceans and Space (EOS) Department. It will be located in Morse Hall, where SwRI is leasing 2,000 square feet of space from UNH. Although owned and operated by SwRI, the new department employs nine former UNH engineers who joined SwRI when the collaboration went into effect on March 11. An additional employee is a scientist from SwRI.

“As far as I know, this is the first time in the country that a not-for-profit research institute has been embedded in a university’s academic building,” says Marc Sedam, who helped work out the agreement between SwRI and UNH. “This is an important event not just for UNH, but also for how research is done in the United States. It’s a revolutionary approach.”

In a climate of shrinking federal funding for research, the joint venture will give SwRI greater access to UNH researchers who have served as principal investigators (PIs) on grants, while UNH will benefit from SwRI’s large staff of engineers. Headquartered in San Antonio, SwRI has a research budget of about $545 million — more than three times that of UNH.

“With our PIs literally next door to their engineers, we feel like we are more competitive for grants and can show this is a real partnership and not just something that looks good on paper,” Sedam says. “Our objective is to chase bigger and broader missions together.”

Sedam hopes that SwRI-EOS will double in size over the next year. The department will provide internship and other research opportunities for UNH undergraduate and graduate students. Ultimately, SwRI hopes to work with researchers in other areas of the university, including the Center for Coastal and Ocean Mapping. “They are already discussing ways to create a broader collaboration with UNH,” Sedam says.

SwRI and UNH have worked together previously on NASA programs. Currently, under the direction of Roy Torbert, who leads SwRI-EOS, UNH’s Space Science Center is building an instrument suite for NASA’s four-spacecraft Magnetospheric Multiscale Mission that will examine the poorly understood phenomenon of magnetic reconnection (the process by which magnetic energy is converted into heat and kinetic energy). Jim Burch, vice president of SwRI’s Space Science and Engineering Division, serves as principal investigator of the mission’s Instrument Suite Science Team, with responsibility for payloads, science operations, education and public outreach. The Mission’s launch is planned for 2014.

The Magnetospheric Multiscale Mission will use four identical spacecraft, variably spaced in Earth orbit, to make three-dimensional measurements of magnetospheric boundary regions and examine the process of magnetic reconnection. Credit: Southwest Research Institute

Learn more about the mission at http://mms.jpl.nasa.gov/index.html

The Southwest Research Institute® (SwRI®), headquartered in San Antonio, Texas, is one of the oldest and largest independent, nonprofit, applied research and development organizations in the United States.

Its 11 technical divisions offer a wide range of technical expertise and services in such areas as chemistry, space science, nondestructive evaluation, automation, engine design, mechanical engineering, electronics and more.

Learn more about SwRI at http://www.swri.org/
Creating a Foundation to Promote Innovation

UNH plans to create a nonprofit research foundation that would be responsible for managing many of the university’s opportunities to share UNH’s innovations and resources with the public.

President Mark Huddleston’s cabinet has approved a proposal to pursue formation of the organization, tentatively named the Office for Innovation and Economic Development (OIED). The proposed foundation would bring together UNH’s efforts to commercialize the outputs of its researchers, to boost economic growth in the region, and to create additional revenue streams for the university. “The objective of the research foundation is to have it bundle the university’s business interests and be extremely focused,” says Marc Sedam, who would direct the OIED.

Although it would remain affiliated with UNH, the new 501(c)(3) organization would be separate from the University and have its own board of directors — an arrangement similar to that of the UNH Foundation, the philanthropic arm of UNH.

The proposal does not request significant additional funding or staff from UNH. “The goal is to find new revenue streams and increase existing ones,” says Sedam, noting that any proceeds from the research foundation would go back to the University.

The foundation would manage UNH’s intellectual assets, including its copyrights, patents and trademarks. It also would promote economic development by supporting startup companies, make it easier for businesses to access university resources, and potentially provide seed funding for faculty entrepreneurs.

A common opinion in the state is that the university is a closed system focused mostly on undergraduate teaching, Sedam says. The research foundation would help business leaders and other members of the public take advantage of university resources ranging from high-end instrumentation to students for summer internships. “It gives the world a front door to the outputs of the university,” he explains. “At the same time, it allows the university that everyone understands to continue to focus on what it does best, which is teaching, research, and service.”

The foundation would unite the current entities/services through which UNH interacts with the community:

- **ORPC**, which oversees the transfer of research to the public;
- **InterOperability Lab**, which tests data networking technologies;
- **University Instrumentation Center**, which leases time on university equipment to external entities;
- Space and services for technology startup companies (currently the New Hampshire Innovation Commercialization Center and the Idea Greenhouse); and
- **New Hampshire Innovation Research Center**, which provides funding to promote partnerships between the state’s businesses and universities.

In addition, relationships with the NH Small Business Development Center and the newly-created UNH Broadband Center of Excellence are possible.

In creating the OIED, UNH would be following the lead of other top institutions of higher education nationwide. Among the oldest research foundations is the Wisconsin Alumni Research Foundation, founded in 1925 to manage an invention that allowed for Vitamin D enrichment of foods.
ORPC Profile: Senior Licensing Manager Maria Emanuel

When Maria Emanuel (’95) was studying biochemistry as an undergraduate at UNH, she never imagined that she’d one day return to her alma mater. Nor did she imagine that when she did, she’d be making it possible for UNH to transform its scholarly and creative research into innovations that benefit the public.

But midway through a doctoral program in cell biology at Case Western Reserve University, where she was researching the role of neuroinflammation in Alzheimer’s disease, Emanuel realized she didn’t enjoy laboratory work. Instead, she was intrigued by how scientific investigations such as her own ultimately get translated into new therapeutic regimens that aid patients. After earning her Ph.D. in 2002, she decided she wanted to help take research from bench to bedside. She worked in Copenhagen, Denmark, as a research consultant for a pharmaceutical company, then served as the marketing director for Ardais Corporation, a biomedical start-up company in Lexington, Massachusetts. In 2006, after Ardais abruptly shut down, she landed a job in the ORPC.

“It’s exactly at that intersection of science, business — and now law — that interests me,” says Emanuel. “I like being able to facilitate the transfer of research to the public. Plus, it’s fun to be back at my alma mater in such a different capacity.”

As UNH’s senior licensing manager, Emanuel works with faculty, staff and students to protect their work and find opportunities to commercialize it. Traditionally, research in academia gets shared with the larger world through conference presentations and journal publications. “To me, turning research into a service or product is another way of making it available to the public,” Emanuel says. “It expands the potential of our research to affect society.”

Emanuel helps form partnerships with businesses that have the resources to commercialize UNH’s innovations. “Our office lets the faculty focus on getting their ideas out to their peers in the academic ‘marketplace’, while we focus on getting to the business marketplace,” she explains.

Among the researchers she assists is plant biologist Brent Loy, who breeds vine crops such as melons, squash, pumpkins and gourds. His new varieties of fruits and vegetables are licensed to seed companies that sell them throughout the world. “That’s a real testament to the quality of his work,” Emanuel says. She drafts and negotiates agreements giving growers the rights to UNH’s plant materials for commercial use. These licenses typically include royalty payments based on sales. She also makes sure the agreements’ intellectual property terms allow UNH to retain ownership of the intellectual assets, thereby protecting the work that Loy is doing at the University.

Sometimes, the challenge lies in adapting an invention to fit the needs of potential users. Emanuel has been working with Jim Ryan, a professor of physics and space science, to patent technology related to the NSPECT Portable Imaging Neutron Spectrometer. After developing the spectrometer for imaging radiation in outer space, Ryan realized it could help combat terrorism on Earth by detecting radioactive materials emitted by hidden nuclear devices. With the support of a grant from the Defense Threat Reduction Agency of the Department of Defense, he has been collaborating with Michigan Aerospace Corp. to modify the instrument for homeland-security applications. Last October, UNH Police Chief Paul Dean introduced NSPECT to first responders, who suggested scenarios in which it might be helpful. “It was developed for something completely different, but it’s getting a new life,” Emanuel says.

Her work extends to the humanities and social sciences as well. She recently helped Professor of Music David Ripley figure out who owns the rights to various components of a multimedia project he produced. Student musicians performed Ripley’s “Seeds for El Hatillo,” a song telling the story of his former student, Danielle Costanza (’08), and her work as a Peace Corps volunteer in a Nicaraguan village. UNH Video Production created a video of the performance that also featured Costanza’s still photographs of the villagers. Now posted on YouTube, the video is raising money for Costanza’s work in El Hatillo. “It was a great opportunity for UNH to lend its name to a goodwill project that showcased the talents of a faculty member and the efforts of a former student,” Emanuel says.

Maria isn’t the only Emanuel who holds a degree from UNH – her husband, Dave, graduated in 1997 from the Whittemore School of Business and Economics and the College of Engineering and Physical Sciences. He is now a fire captain with the Durham Fire Department. The Emanuels often can be seen at UNH hockey games and other University events with their three young children.
Brian Cournoyer, OEHS’s occupational health and safety coordinator, attended the 42nd annual New Hampshire Safety and Health Conference in Concord. The conference is sponsored by the nonprofit Safety & Health Council of Northern New England, the region’s only accredited chapter of the National Safety Council. The Council promotes safety and health by providing programs, resource services and education to prevent personal and economic loss associated with injuries, accidents and health hazards.

At the request of Thad Gulbrandsen, Vice Provost for Research and Engagement at Plymouth State University, Lynnette Hentges (RDC) conducted a day-long workshop at PSU in January on Tools & Strategies for Grant Seeking. 20+ faculty/staff from departments across PSU attended the morning seminar and afternoon hands-on search tutorial and Q&A session.

Michele Arista, OEHS’s radiation safety officer, attended a one-day class in Waltham, MA, that covered all aspects of shipping radioactive materials. The class, taught by Roy Parker, Ph.D., radiation physics consultant to FedEx, covered general familiarization, identification, classification, packaging, marking, labeling and documentation required for this type of shipping. The New England chapter of the Health Physics Society sponsored the class.