NORTHERN ARIZONA UNIVERSITY

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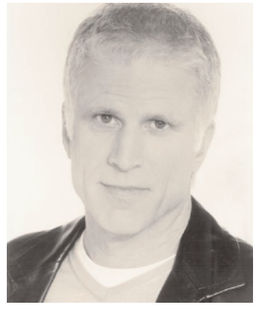
NAU Research Highlighted in *A River Reborn*

A new film, narrated by Ted Danson, highlights the importance of College of Engineering and Natural Sciences research to the restoration of Fossil Creek—a gem of Arizona's rim country. The groundbreaking saga of Fossil Creek illustrates how collaboration and informed decision-making can work together to solve environmental conflicts.

Emmy Award videographer Douglas Crawford produced this joint venture between NAU and the Museum of Northern Arizona. On March 10, the National Educational Telecommunications Association (NETA) will distribute this award-winning documentary to PBS stations nationally. Give your local station a call if you would like to see your alma mater on your home screen!

Principal funding for the documentary came from the National Science Foundation, the US Department of the Interior Bureau of Reclamation, and the Heritage Program of the Arizona Game and Fish Department, with additional funding from the Nina Mason Pulliam Charitable Trust, the Ecological Research Institute, and the Merriam-Powell Center at Northern Arizona University.



Ted Danson grew up in Flagstaff while his father was the director of the Museum of Northern Arizona. He returns as the narrator of *A River Reborn*—an NAU - MNA collaboration.

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We're on the Web!
nau.edu/cens
Stay in touch with fellow alumni online at naualumni.com

NORTHERN ARIZONA UNIVERSITY
College of Engineering & Natural Sciences

College of Engineering and Natural Sciences Newsletter

Inside this issue

From the Dean –

I'm very pleased to launch the premier issue of the CENS Newsletter—our commitment to keep you informed (and, we hope, entertained) with news from the college. Both the former College of Arts and Sciences, and the former College of Engineering and Technology, had published alumni newsletters of some kind; but the College of Engineering and Natural Sciences has relied on letters to communicate with you until now. Let us know—by phone, e-mail, or best of all by visiting us on campus—what you most want to hear about. Whether it's the newsletter—planned for three issues this first year—or our web site (nau.edu/cens), we aim to inspire and to satisfy your curiosity about the college!

Laura J. Huenneke

Laura Huenneke,
Dean, College of Engineering and Natural Sciences

Getting the Word Out

To accompany the Fossil Creek documentary, *A River Reborn*, the Merriam-Powell Center is developing three educational resource guides for national distribution. Stefan Sommer expects to complete the High School Guide, College Guide, and Community Educator Guide this summer.

For more information on the DVD and guides, please visit www.RiverReborn.org

Photo by Nick Berezenko, courtesy of APS

The Rebirth of Fossil Creek

In the early 20th century, copper miners disrupted the ecological harmony of Fossil Creek by harnessing the waterway to generate electricity and power regional copper mining operations. Now, in a historic turnaround, miners close their doors as they decommission the hydroelectric facilities and return the river to its natural state.

The Fossil Creek story is remarkable because Arizona Public Service, the owner and operator of the dam, chose to cooperate with private environmental organizations and state and federal agencies to decommission the hydroelectric facilities without litigation.

NAU's College of Engineering and Natural Science professors, Jane Marks, Rod Parnell, Bruce Hungate, and their students, were invaluable contributors in the decision to decommission Fossil Creek. Ongoing watershed research, by these and other NAU scientists, is a critical component of the adaptive management model used by state and federal agencies with management responsibilities in the Fossil Creek watershed. Fossil Creek research shows that good science is an indispensable ingredient in wise management. For more information, call 928-523-3471.

A generous gift from Chemistry alumnus, Tim Snider (Class of 1979), helped outfit the new Science Laboratory Building with more than $150,000 in new equipment, ranging from new microscopes for the biology teaching laboratories to a new gas chromatograph-mass spectrometer for students in the Chemistry Department. Tim's gift is transforming the way students learn today at NAU.

NAU in Top 20

In a new national ranking of doctoral programs, Northern Arizona University ranks in the top 20 of comparable universities. The Faculty Scholarly Productivity Index lists NAU at No. 17 of 61 smaller research universities. The index measures faculty scholarly output, which includes the number of books and journal articles published, journal citations, awards, honors, and grants received.

"It is great to see the university recognized nationally for what those of us here know to be true," said Liz Grobsmith, provost and vice president for Academic Affairs. "NAU has extremely talented faculty members who produce phenomenal work in their disciplines."

Sponsored research support at the university has increased more than 300 percent in the last decade, she noted. (Figure 1.)

The State University of New York at Stony Brook collaborated with the for-profit company Academic Analytics to fund the Faculty Scholarly Productivity Index. The Chronicle of Higher Education wrote that Academic Analytics calls the new index the "first completely objective measure of productivity."

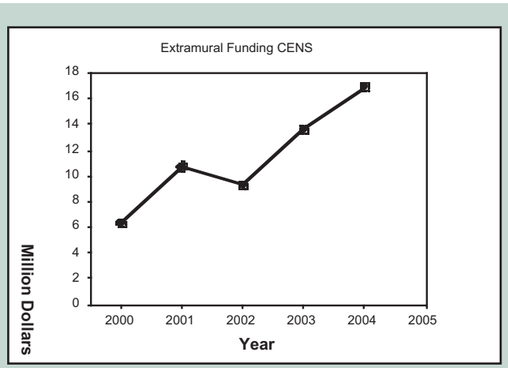


Figure 1.
Sponsored research support at NAU has increased more than 300 percent in the last decade.

Top 20 Schools

1. DePaul U.
2. San Diego State U.*
3. Bryn Mawr College
4. Wright State U.
5. U. of Alaska at Fairbanks
6. U. of Massachusetts at Boston
7. Clarkson U.
8. College of William and Mary
9. U. of Colorado at Denver
10. Central Michigan U.
11. U. of Missouri at St. Louis
12. Clark U.
13. Rutgers U. at Newark
14. Illinois State U.
15. Southern Methodist U.
16. Duquesne U.
17. **Northern Arizona U.**
17. Northern Illinois U.
17. Wesleyan U.
20. Miami U. (Ohio)

Celebrate Undergraduate Research and Design

Join the College of Engineering and Natural Sciences for its 14th annual Celebration of Undergraduate Research and Design on April 27, 2007, at the du Bois Conference Center in Flagstaff.

With more than 100 posters and design presentations last year, this event gives students the opportunity to communicate their results to professionals in a competitive environment—a practical way to teach the value of written and oral communication as an essential part of any design or research project.

Dr. Loretta Mayer, Dr. Cheryl Dyer, and Dr. Henry Hooper made generous contributions to provide awards for the top presentations.

Dr. Leonard Fine, Director of Research and Education, Science Foundation Arizona, will give the keynote address: *"Science – The endless frontier, and the undergraduate research experience."*

For more information about the event, contact Bonnie O'Donnell at 928-523-8765 or bonnie.odonnell@nau.edu.

Philanthropic Prize Makes a Difference

To encourage and reward science and engineering undergraduates for their writing skills, alumni Peter McClean ('67), Diana Gabaldon ('73 and '78), and Jim Uhl ('67) recently established an annual award for writing in the sciences, the Louis Agassiz Prize for Writing Excellence.

Thanks to generous contributions from Peter, Diana, and Jim, significant prize money is available. These alumni, along with a group of faculty, also donated their time to serve as judges for the competition.

Prizes were awarded as follows:
1st place - $1,500
2nd place - $1,000
3rd place - $50

The prize highlights the value that the college puts on communication. According to Dean Laura Huenneke, "The ability to clearly communicate complex ideas to a broad audience is an invaluable skill, and one that is promoted by faculty across the college. I'm so pleased that our alumni have initiated this prize."

Topic for 2007 Competition
Scientific Literacy: What is it? Why is it Important? What roles does it play in society?

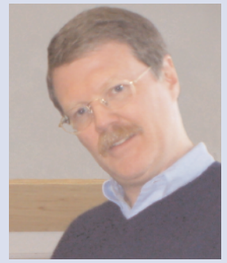
Read the award winning essays at nau.edu/cens/agassiz.

Student Spotlight

Lauren McIntire

Each year, the WISE Program (Washington Internship for Students of Engineering) selects outstanding engineering students to spend nine weeks in a special summer program in Washington, D.C. Students learn how government officials decide on complex technological issues and how engineers contribute to legislative and regulatory public policy decisions. Lauren McIntire, an Environmental Engineering major, was one of 12 students who won this prestigious internship. She will interact daily with leaders in the Congress, the Administration, industry, and prominent non-governmental organizations. As a culmination project, she will research and present a paper on a topical engineering-related public policy issue that is important to the sponsoring society.

Faculty Spotlight



Paul Flikkema

Recently awarded a Nokia Fellowship, Paul Flikkema enters his eighth year as an aspiring associate professor of electrical engineering. In a long and varied career, Dr. Flikkema has written on topics including wireless sensor networks, ad-hoc wireless networks, multi-pulse signal design for multi-path channels, and waveform design for active sensors. Furthermore, Dr. Flikkema secured more than $420,000 in external funding to support undergraduate and graduate teaching and learning. He's witty and has a lot to share about cross college collaboration and research opportunities for undergraduates. Dr. Flikkema recently spoke to us about his work.

When did you become interested in electrical things?
I recall from a young age being fascinated with radios. At night, you could hear stations from hundreds or thousands of miles away.

What are the guiding principles that helped you achieve success?
Never give up—keep working towards your goals. Keep a broad perspective, and read in disciplines outside your field. It will open up new research areas and opportunities.

Do you have any special projects outside of teaching?
NAU is a great place for someone like me. I can collaborate with people in environmental and ecological research. My goal for years has been to apply technology to help people and understand and protect our planet. NAU is a place where people from different disciplines are open to collaboration, and I have been lucky to work with researchers in ecological and environmental sciences.

I work on wireless sensor networks for environmental monitoring. We design, build, and test computer-based sensors that can measure many variables (e.g., light, temperature, soil moisture, and sap flow in trees) and collaborate via wireless communication to collect the information at one central computer. I support and work with students in the UMEB (Undergraduate Mentorships in Environmental Biology) program and also the MSD (Minority Student Development) program. I have grant funds that support the students to work on undergraduate research projects in my lab—the Wireless Networks Research Laboratory.

Of the many challenges that people here in Arizona and around the country will face over the next decade, in which of them do you think the university and our college can play a major role?
Global climate change and the use of resources as the world's population continues to increase. Arizona in particular must deal with challenges of increasing our water and energy resources in a sustainable manner. I think NAU and CENS can contribute in scientific discovery, engineering innovation, the development of solutions with public and private partners, and the education of a new generation.

Doris Duke Fellowship

The Doris Duke Charitable Foundation (DDCF) is a nationwide leadership development program for master's degree students who are enrolled in interdisciplinary environmental programs and who plan to pursue careers in conservation and environmental organizations and agencies. The program provides funding for tuition and a paid internship, up to a total of $30,000 per student, for each student selected as a Conservation Fellow.

The DDCF named Eli Bernstein, Michelle Cruz, and Ryan Drum as Conservation Fellows for NAU's Master of Science program in Environmental Sciences and Policy (MSESP). In addition, MSESP students will be eligible to apply for one of four additional fellowships awarded each year to promote diversity among the next generation of conservation leaders. The total funding package could potentially exceed $100,000.

The DDCF's investment in our students is a strong endorsement of the national visibility and excellence of our MSESP program.