ASU Insight

December 18, 2009

$5.6M grant drives ASU's early literacy initiative

By Carol Hughes

Elaine Ostrom, a research professor at Arizona State University and the recipient of the 2009 Nobel Memorial Prize in Economic Sciences, was recognized by Sweden's king (pictured) along with other Nobel laureates at the Stockholm Concert Hall.

Ostrom receives Nobel Prize

By Carol Hughes

Elaine Ostrom, a research professor at Arizona State University, a political scientist and the recipient of the 2009 Nobel Memorial Prize in Economic Sciences, was recognized last week with other Nobel laureates during a regal ceremony in Sweden. The medal and diploma tied to the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel were handed to her by the King of Sweden during a majestic event in the Stockholm Concert Hall.

(See ASU's on page 7)

ASU scientists improve electronic chip memory

By Skip Derra

Scientists at Arizona State University have developed an elegant method for significantly improving the memory capacity of electronic chips. Led by Michael Kozicki, an ASU electrical engineering professor and director of the Center for Applied Nanoscience, the researchers have shown that they can build stackable memory based on "ionic memory technology," which could make them ideal candidates for storage cells in high-density memory. Best of all, the new method uses well-known electronics materials.

"This opens the door to inexpensive, high-density data storage by 'stacking' memory layers on top one another inside a single chip," Kozicki said. "This could lead to hard drive data storage capacity on a chip, which enables portable systems that are smaller, more rugged and able to go longer between battery charges."

"This is a significant improvement on the technology we developed two years ago where we made a new type of memory that could replace Flash, using materials common to the semiconductor industry (copper-doped silicon dioxide). What we have done now is add some critical functionality to the memory cell merely by involving another common material -- silicon."

Kozicki outlined the new memory device in a technical presentation he made last month at the 2009 International Electron Devices and Materials Symposium in Taiwan.

He worked with Sarah C. Purden Thermadam, an ASU electrical engineering graduate student.

(See SCIENTISTS on page 7)
Professors explore legal decisions in public health crises

By Janie Magruder

Timothy Lant, a research director at Decision Theater and James G. Hodge Jr., the Lincoln Professor of Health Law and Ethics at Arizona State University’s Day O'Connor College of Law, have received a grant to examine the role play laws play in public health emergencies, such as the H1N1 flu pandemic. Lant, the director of the College’s Public Health Law and Policy Program, and Lant, an affiliate faculty member in the program, were awarded a $150,000 grant from the Robert Wood Johnson Foundation’s new Public Health Law Research program. They will use the 18-month award to examine the types of legal decisions that must be made during public health emergencies and the science behind those decisions.

“Two days after the H1N1 decision”, Lant said, “We've had strong interest in these interdisciplinary degrees, such as access to affordable health care, mental health coming to the forefront because of the health care reform move.”

“Many students may be wrapping up their current degrees and recognizing they need more business know-how in order to get the best possible return on their investment,” said Augustine Cheng, the manager of new business ventures at SkySong Development, a department within the Office of Public Affairs.

Investors meet opportunities at SkySong forum

By Jim Brover

Several of the world’s premier research universities and hospitals, as well as many top venture capitals, connected at SkySong, the ASU Scottsdale Innovation Center, for a one-day showcase of key opportunities and information exchange.

Conducted by ASU SkySong and Arizona Technology Enterprises (AzTE), the University and Global Technology Exchange will showcase the 2009 Invest Southwestern Capital Conference and featured universities, research hospitals and promising global companies presenting selected investment opportunities to an audience of investors and industry experts. Venture capital (VC) Investors interested included Andreessen Horowitz, Foundry Group, Redpoint Ventures, and Foundry Venture Partners. Ventu

The VC firms in attendance represented more than $4 billion in capital under management while the presenting universities and research institutions had collectively “spawn out” more than 100 new companies in the past year.

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W. P. Carey School offers popular new business programs

By Debbie Freeman

In an effort to help more people access knowledge about business, the nationally ranked W. P. Carey School of Business at Arizona State University is offering several innovative new degree programs.

These new programs will make students more valuable to companies during the economic downturn and combine a high-quality business education with knowledge about other career fields.

"We've had strong interest in these interdisciplinary degrees, which already have more than 1,200 students participating," said Tim Desch, the assistant dean for undergraduate programs at the W. P. Carey School of Business. "We expect a large number of students to strengthen the performance and recovery during a crisis, and it is imperative to consider all areas in what type of expertise one needs to protect people from significant morbidity and mortality.

"W. P. Carey School, in cooperation with the Business Program in the ASU Day O'Connor College of Law, can be reached at (480) 727-9052 or jainemagnruder@asu.edu.

Amy Hillman

The students will want the new business degree with the law concentration.

They can use this degree to eventually help them open or run a business and to learn the legal issues relevant to any career. They will be prepared to use their skills in a variety of industries, including corporate, government, nonprofit or small business.

Another new W. P. Carey School program, the Master of Science in Commerce, gives students an opportunity to combine their non-business undergraduate degrees with a master’s degree in business. The one-year accelerated program is designed to give graduates a competitive advantage in the workforce. It is the only program of its kind in the Western States.

"Many students may be wrapping up their current degrees and realize they don’t know how to balance the demands of the "

"We have strong interest in these interdisciplinary degrees, which already have more than 2,500 students participating," said Tim Desch, the assistant dean for undergraduate programs at the W. P. Carey School of Business. "We expect a large number of students to strengthen the performance and recovery during a crisis, and it is imperative to consider all areas in what type of expertise one needs to protect people from significant morbidity and mortality."
State of Black Arizona issues second report

By Joan Sherwood

A community collaborative driven by Arizona State University, Mayo Clinic and industry leaders has resulted in the second State of Black Arizona, a comprehensive report that explores the status, issues and concerns of African-Americans in Arizona.

The project is led by Arizona State University with support from the Arizona Community Foundation, Arizona Public Service, the Maricopa County Health District, and the Tucson Urban League. The report was unveiled Dec. 9 during a community collaborative event at the Arizona Public Service Corporate Headquarters in Phoenix.

A launch event and reception are also set to take place Feb. 6, in Tucson. A community event in Sierra Vista will follow in March.

Critical issues regarding education provide the focus for the 2009 report in which topics are discussed in depth by experts in the fields of law and justice, math and science, education and law. Experts include:

- Penny Willrich, a retired superior court commissioner in justice of Arizona, on education and law.
- William Tate, IV, the Edward Mallinckrodt Professor of Arts and Sciences and director of the Center for the Study of Regional Competitiveness in Science and Technology at Washington University in St. Louis, on human capital.
- Rufus Giplsey, a director chancellor of Maricopa Community Colleges District, and Pachua Ramakrishna, a professor, on sustainability and higher education.

- Wanda Blanchert, the dean and Evelyn Marion Kauffman/Missouri Endowed Chair in Teacher Education, in the School of Education at the University of Missouri-Kansas City, on health education and HIV/AIDS education.

These and related issues, including immigration and housing, also are explored through excerpts from additional essays that appear throughout the report. All essays contributed to the 2009 report may be viewed online at http://stateofblackaz.org.

ASU, Mayo Clinic partner to combat metabolic syndrome

By Carol Hughes and Sheldon Britton

Arizona State University and Mayo Clinic in Arizona are joining forces to focus on a public health issue — a cluster of high medical costs associated with increased blood pressure, elevated insulin levels, excess body fat and abnormal cholesterol levels, which are collectively described as metabolic syndrome.

Physicians, scientists and clinicians at both ASU-Mayo Center for Metabolic and Vascular Biology and Mayo Clinic work together on a common medical disorder: Research to better understand how insulin resistance affects the body’s blood vessels and metabolism will be an important part of the work at the new center, with facilities at the ASU Tempe campus and Mayo Clinic in Arizona, on education and law.

Lawrence Mandarino, a professor and founding director of the Center for Metabolic Biology, notes: “The diseases associated with the metabolic syndrome — namely, obesity, type 2 diabetes, cardiovascular disease, stroke, hypertension, dyslipidemia and some cancers — are an increasing concern for an aging population, the cost of health care burden and costs in Arizona,” Mandarino said.

Some conditions, such as obesity, are increasing dramatically, he added.

An ASU-OFFICE OF RESEARCH AND ECONOMIC AFFAIRS survey found that 38 percent of the Arizona workforce are considered obese, and the increased cost of health care due to the health of its citizens over the next few decades as a result of these conditions,” said Mandarino, who holds a joint appointment as Professor of Medicine at Mayo Clinic in Arizona and a cross appointment in the Department of Basic Medical Sciences at Arizona State University.

To combat that scenario, the ASU/ Mayo Center for Metabolic and Vascular Biology and Mayo Clinic collaborate to combat metabolic syndrome.

Scientists at ASU’s Center for Metabolic Biology have worked to better understand the molecular, biochemical and physiological mechanisms of insulin resistance. They have learned that the condition nearly always accompanies obesity, and they now know that insulin resistance is the underlying cause of many of the diseases associated with obesity.

“Bringing together our scientists with the investigators at Mayo Clinic will vastly strengthen the clinical capabilities of the ASU Center for Metabolic Biology,” said SaD Boaz, the dean of natural sciences in ASU’s College of Liberal Arts and Sciences.

Laurence Miller, the director of research at Mayo Clinic, said, “This new partnership will expand the already highly successful synergy between ASU and Mayo.”

“We are moving into an area with immense importance for public health, locally and nationally. Many of our clinicians, clinical investigators and basic scientists already have engaged in this area, and I think these people are energized by the prospects of making a positive difference.”

Faculty members from ASU and Mayo Clinic will have access to scientific resources available at both facilities. Additionally, ASU experts will have access to Mayo’s comprehensive clinical infrastructure.

“ASU is well positioned to conduct translational research to facilitate useful to researchers at ASU and Mayo Clinic,” Mandarino said.

“Then we will move on to include researchers at Mayo Clinic in Rochester, Minnesota. Eventually we will include outside investigators.”

“Joint research program will strengthen the basic research in metabolic biology,” said Sethuraman Panchanathan, the deputy vice president of research and economic development at Arizona State University.

"More importantly, it will result in innovations that make a real impact on the quality and affordability of health care".

Mandarino’s research, which includes the study of the mechanisms of insulin resistance, has been supported by the National Institutes of Health for more than 20 years, and he has more than 100 publications in peer-reviewed journals.

Mandarino received the Cure Award from the American Diabetes Association.

Hughes, with the College of Liberal Arts and Sciences, can be reached at (480) 965-6375 or carol.hughes@asu.edu.

Britton, with the Office of the Vice President for Research and Economic Affairs, can be reached at britton@asu.edu.
ASU

EMPLOYMENT

ASU POSITIONS

A complete job announcement for classified, administrative and professional positions at Arizona State University Tempe, Scottsdale and West campuses is available in the Human Resources Web page at www.asu.edu/hr/departments, or telephone information: (480) 965-3310.

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TEMPLE CAMPUSES

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Retiring ‘ASU Research’ editor has stories yet to tell

By Sarah Auffret

Colin Wigpil, a 20-year-old ASU junior who already has spent more time abroad than most people do in a lifetime, has won an around-the-world study trip next summer from the Circumnavigators Club Foundation. The grant program is for four students in the country each year.

Wigpil spent last summer teaching English to 60 students in a school in Shanghai, China. The summer before, he traveled through Hungary and Romania, then lived in Israel, Turkey, for a month, studying the Turkish language and meeting with human-rights organizations. Currently he is in Turkey for a year, studying at Bogazici University under a National Security Education Program scholarship.

A global studies and political science major who has taken classes in Liberal Arts and Sciences, Wigpil came to ASU as a Finnish student interested in international studies, knowing he wanted to be a diplomat. After a few semesters, he found a new interest.

"I enrolled in Barrett, the Honors College, and almost immedi-ately I got involved in Global Outreach and Advocacy for Refugees (COAR), a student-founded organization. At COAR, our main goal is to connect refugees from Eritrea, teaching them English and helping them navigate the American culture. I'm now the university vice president of ASIEEC Arizona, a chapter of a global nonprofit that creates interna- tional internships for college students. These activi-ties helped me find my passion for international relations and teaching others about the world and a desire to make a difference." 

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"What set Conard J. Storad apart would appear in the last print edition of 'ASU Reaction,'" which former Gov. Janet Napolitano selected to kick off her tenure as president and chief executive officer. "It's all the amazing people I got to meet – all the scientists, artists, researchers, writers, and scholars and researchers," he says. "Our magazine was the printed face of ASU. We took it seriously."

The stories are still good ones, and they are now online at http://asuinsight.asu.edu.

Storad has now read his books and talked about the creatures and plants they feature to more than 80,000 children in their classrooms and at their homes. His mission of helping young children become excited about science and discovery he hopes will be carried on by his grandchildren, one of whom he's already named a future author.

"My hope is that conducting in-depth analyses of part-nerships between aid institutions and NGOs can improve aid organizations’ effectiveness and efficiency." -Emis Cox, Arizona State University

Emis Cox, a student at Arizona State University, has been awarded the American Association of Artificial Intelligence Women Scholarship. Cox was congratulated by former U.S. Secretary of State Madeleine K. Albright at the award event.

Cox is enrolled in the New College of Interdisciplinary Arts and Sciences at ASU’s West campus. On track to graduate in May 2010 with a bachelor’s degree in communication and a minor in Spanish, Cox has her sights set on obtaining an ASU master’s degree in non-profit management and later getting a PhD in communication studies and a minor in Spanish, Cox has her sights set on obtaining an ASU master’s degree in non-profit management and later getting a PhD in communication studies and a minor in Spanish.

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"When I was deen my best at my class assignments, I don’t forget to find the time to help my children with their homework," she said. At the Sandra Day O’Connor Awards Luncheon, Cox had the opportunity to meet Albright as a reception before the luncheon.

"The Arizona Foundation for Women, a women’s foundation, and the AFW are proud to be able to support the educational pursuits of outstanding women such as Emis,” said Nancy A. Dran, AFW’s president and chief executive officer. Cox had been selected to receive this year’s award, which was presented in a competition to select the next student to win AFW’s Scholarship. This scholarship, dedicated to helping students who are attending an ASU college or university, was created by the AFW, an auxiliary group of women who support the Arizona Foundation for Women in its mission to create a safe and secure haven for women and children.

"I am fascinated by how decision-making in de-velopment organizations, as well as envy from its peers. It was telling the story of people." -Ira Fine, former assistant business editor at the Arizona Republic

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December 18, 2009

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In BRIEF

Service requests for Facilities Management

The ASU Facilities Management Department, located in the University Services Building at 255 South Rural Road, would like to remind faculty and staff how to access the 24-hour ASU Service Center provided by the department to service ASU-managed buildings with maintenance needs.

Emergency repairs should be called in to the center at (480) 965-3633. Non-urgent service requests should be submitted via email to facmaint@asu.edu or submitted online at http://uabf.asu.edu/ims/service_request_form. Service requests should be submitted to the ASU Service Center within 24 hours (M-F 8am-5pm).

Facilities Management Operations and Maintenance shops are staffed with technicians skilled in various trades including carpentry, painting, plumbing, electrical, mechanical, HVAC, automation and controls, custodial services, recycling, and grounds maintenance, among others. Facilities Management also provides moving and event services, elevator maintenance and repair, the sign shop, fleet services, building technicians, and lock services.

More information is available online at http://uabf.asu.edu/arservice_services_home.

ASU Police discuss volunteers' roles

Jay Spradling, Arizona State University’s assistant police chief, and the Tempe Police Department will be presenting the TORONTO (TorrOn.to) Emergency Management Symposium in Canada. Based on a program he co-founded while working for the Tempe Police Department, Spradling’s presentation explored the use of volunteers during disasters and in emergency management preparation. The symposium, conducted by the Toronto Police Service in partnership with the City of Toronto, featured local, national and international experts in various fields such as risk management, crisis communications, counter terrorism and natural and man-made disasters.

Professor recognized by Rutgers University

Linda Costigan Lederman, dean of the College of Liberal Arts and Sciences, is being recognized by Rutgers University with a distinguished alumni award. Lederman, a 1995 graduate of the College of Liberal Arts and Sciences, is being recognized by Rutgers University with a distinguished alumni award. Lederman, a 1995 graduate of the College of Liberal Arts and Sciences, was recently named dean of the College of Liberal Arts and Sciences at Rutgers University with a distinguished alumni award. She is also a member of the New Jersey Legislative Commission on Cultural Affairs and the National Congress of American Indians.

Jennifer Jackson is one of 20 American Indians enrolled in Project Mashchamacht, an ASU community initiative to prepare Native American Indian early childhood educators to work in schools that serve Arizona Indian Nations.

$1.3M grant to support early childhood education program

Jennifer Jackson, a young Navajo mother of six, had only a high school diploma when she was hired as a director of a reservation Head Start preschool in 1999. Before her promotion, she had been a volunteermother educator, education coordinator, and finally Head Start director between 1999 and 2003 on the Walapai Reservation Head Start near Peach Springs, eastern Arizona.

“Touched in two places, he said.

“Touched in two places.” said Jackson.

Jennifer Jackson is one of 20 American Indians enrolled in Project Mashchamacht, an ASU community initiative to prepare Native American Indian early childhood educators to work in schools that serve Arizona Indian Nations.

To Native children in all schools. We are not seeing much movement in terms of test scores,” he said.

“There is a fundamental disconnect. There are many programs that are trying to fix the child. This program (Project Mashchamacht) is designed to fix the school, address the needs of the child and eliminate the ‘broken child’ point of view,” Brayboy said.

Named after a fitting O’odham word for “one who teaches and who learns,” students enrolled in Project Mashchamacht, will complete a specialized bachelor’s degree curriculum focused on the unique needs of Native children, with a particular emphasis on language development and the transition of children from Head Start to kindergarten preschools.

“Having worked with other early childhood educators, particularly with Head Start teachers, I know the potential of this project for making an impact in the lives of children,” said Brayboy.

The preschool teaching techniques will be tailored to each tribal group, focusing on “moving more cooperation and reinforcing tribal languages and cultural patterns of communication,” he said.

Jackson said early childhood education certification is essential because those teachers have “the greatest influence on preschool children. It makes or breaks them,” she said.

That is not uncommon in many Head Start programs serving American Indian children, where officials say few teachers have bachelor’s degrees or other advanced degrees.

But now, Jackson, 39, is one of 20 American Indians enrolled in Project Mashchamacht, a Native American Indian early childhood educators to work in schools that serve Arizona Indian Nations.

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Looking at the child as a whole person is the important thing. We want to do better here.”

By Carol Sowers

Joining the ASU researchers as partners on the project are the McOwen Yavapai Nation, the Salt River Pima-Maricopa Indian Community, the Hopi Tribe, the Gila River Indian Community, Colorado Indian Tribes and the San Carlos Apache Tribe.

Early childhood education certification of American Indian preschool teachers “is about future potential,” Swadener said. “It is about making sure that our kids have a better chance at being successful. That is the important thing. We want to do better here.”

Of the 5,776 children in Arizona Head Starts, 26.6 percent are American Indian. However, of the 11,981 certified early childhood education teachers in Arizona, only 2 percent are American Indian.

In addition to the low number of highly qualified Native American Indian early childhood educators, Swadener and colleagues from the AzTec Early Childhood Center for Indian Education on Native teacher preparation programs serving American Indian children, where of -

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The leaf-cutter ant (pictured) inspired experiments, research, discovery and the book "The Superorganism," co-written by Dr. Hans Hoflund, at the ASU Institute of Life Sciences and Complex Systems. (Continued from page 1)

They and other social insects also play growing roles in developing new systems, swam, system theory, social complexity, aging and biomedical discovery. "The Superorganism" details one of the many intriguing studies of Hillocke with leaf-cutter ants which revealed ants' use of vegetation to make threads - work that inspired his Nobel Prize in 2002. Now in University in Illinois, Germany, to develop vibrational micro-surgery techniques.

"There are several advantages that emerge from countless interactions of hun- dreds, thousands or millions of individual cells through cooperation, communication and division of labor, find their highest expression in the insects, according to Hillocks. And while the concept of the collective - the superorganism - is not new and indeed has been popularized in novels, movies and television, it is gaining new insights and understandings. For example, ants and bee collec- tives have contributed to discoveries about one's own human societies. Savvy businesses translate findings from insect studies into corporate sav- ings. The USDA uses ant-based delivery proto- cols to save more than 6 million dollars a year. Companies in Italy and Switzerland, according to the National Geographic (2007), use ant-foraging methods with teams of trucks cart- ing milk and dairy products, heating oil, and groceries - to find the best routes for deliveries. In England and France, telephone companies have made calls go through faster on their networks by programming messages to deposit groceries ... to find the best routes for deliveries.

The California almond crop, produced from 420,000 acres of trees, is entirely dependent on bee pollination and involves up to 500,000 bees. What else do ants, bees and wasps hold in secret? Hölldobler said that while more than 13,000 species have been discovered, there are thousands more yet to be found. "The Superorganism" is one glowing chapter in the book-yet-to-be-written and brings us closer to the mystery, diversity and invention of our natural neighbors.

"The nature of our planet without ants, bees, and termites would be very different," he said. "The tremendous ecological success of these social insects is certainly due to their elaborate systems of division of labor and complex social organizations. They are fantastic model systems for the study of social complexity and the evolution of social life on Earth." Hölldobler came to ASU's College of Life Sciences and Arts Sciences in 2004. He is a member of several national and international academies, among them the German Na- tional Academy of Sciences (Leopoldina), the American Philosophical Society, the Ameri- can Academy of Arts and Sciences, and the American Academy of Science (USA). He has written three books with Wilson, including, "The Ants," which won the Pulitzer Prize for General Nonfiction in 1991.

Costa Rica. With each layer applied, memory capac- ity significantly expands.

"Stackable memory is thought to be the only way of reaching the densities necessary for the type of solid state memory that can compete with hard drives on cost as well as "memory storage capacity," Kozicki said. "If you had eight layers of memory in a single chip, this would give you almost eight times the density without increasing the number of layers memory above the silicon substrate." Rather than having one transistor in the architecture, requiring each layer to access a chip, we have a memory cell with a built-in diode (ac- cess device) and since it is built into the cell, it will allow us to get into every layer and can squeeze in there," Kozicki said. "We showed that by replacing the bottom electrode with silicon it is feasible to go to any number of layers above it."

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By Stephen Des Georges

Laura Libman's pedigree is part analytical thinking, part business-model building, part upbringing. Mix them together and the result is ownership of a successful nonprofit foundation that is making a difference in the Valley housing market.

A graduate of ASU's New College of Interdisciplinary Arts and Sciences, she earned her business degree at Thunderbird School of Global Management in 2003, then went on to graduate from the W. P. Carey School of Global Management with an MBA in international development just two years later. These two educational degrees, plus the business experience that included countless trips and extended stays in Mexico, have shaped her professional career. 

"Over the summer, we did research showing what it would take to make our school even more appealing in the Tempe area. Business at Arizona State University to become a huge draw, and the W. P. Carey School on campus at the ASU Tempe campus," she says. "He was one of the first of many who bent over backward to help me and to push me. I had so many at the West campus who encouraged me and insisted I go to graduate school. I thought I wasn't smart enough or too old."

One of those who helped Libman get back on her educational feet was Kathy Grant, a program coordinator for the Learning Enhancement Center, who today is the program manager for the Student Success Center at the West campus. Libman says, "When I graduated from Thunderbird, I thought I was going to spend a year traveling, but I ended up going back to school in ASU. I found the opportunity to shoot for something beyond myself." Libman grew up in Glendale and eventually attended Glendale Community College and eventually Northern Arizona University before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University of Wisconsin-Madison before attending the University 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