MICRON & UI

SHAPING THE FUTURE TOGETHER

Micron®

University of Idaho

MICRON & UI

Innovation and discovery, paired with focused energy and a spirit of collaboration, truly have the power to change our world. The longstanding partnership between the University of Idaho and Micron is proof positive of that winning formula.

For over 30 years our institution, the state's leading research university, has had a valued partner in Micron. Micron's support has enhanced our university and strategic initiatives.

In Idaho, we have an opportunity to grow and thrive with technology and innovation. At UI we are determined to bring more students in to the innovative and rewarding STEM fields that offer exciting careers, as well as opportunities to address critical problems in emerging and growing industries.

In 2014, it was a great honor that the Micron Foundation awarded a $1 million gift to create an endowed professorship in microelectronics in our College of Engineering.

Ultimately, this partnership is an investment in students and faculty, in much-needed research and in the potential of our state and our world. As we reflect on that success, we look forward to continuing our partnership to make future progress.
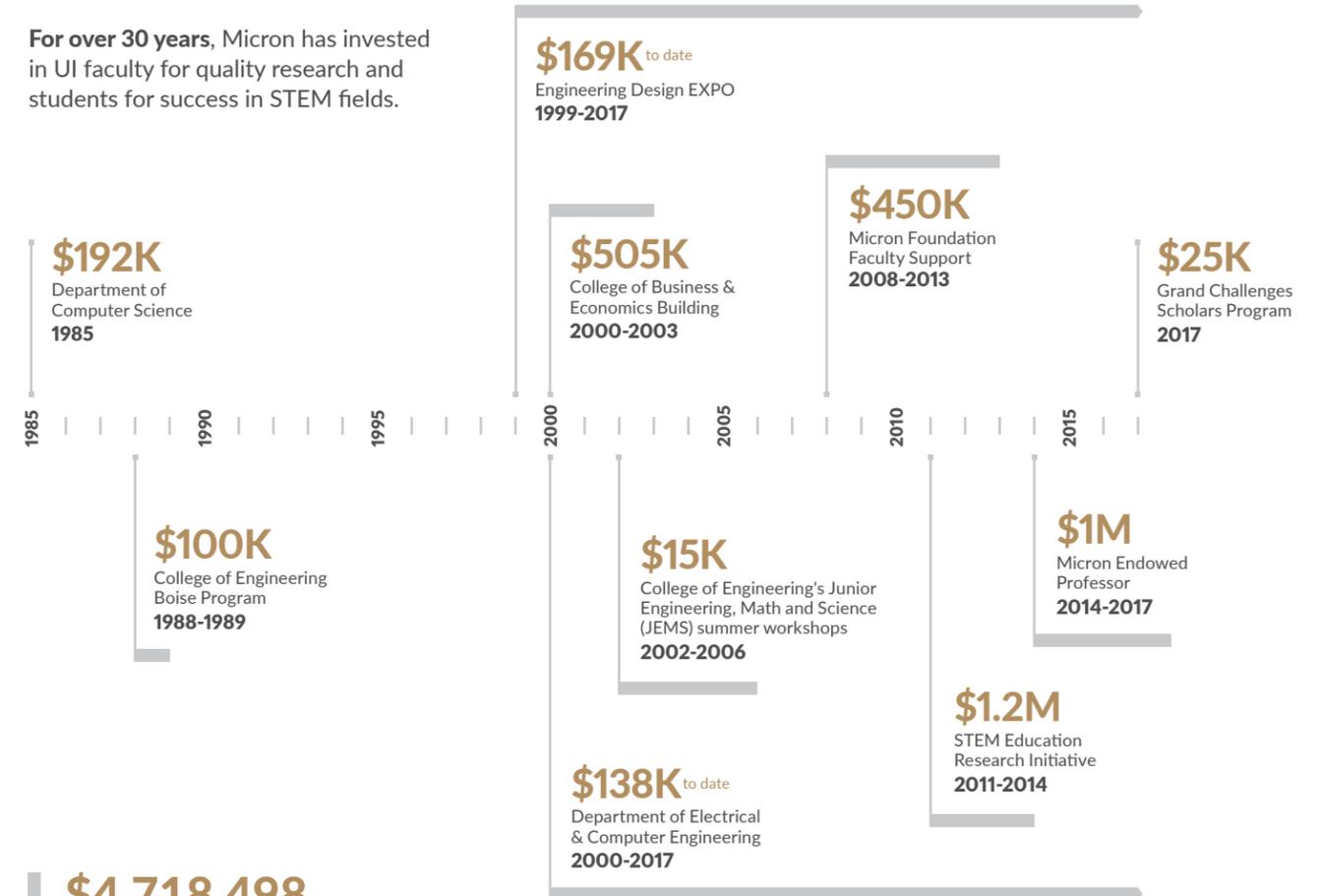
Chuck Staben

Chuck Staben
President

A FOUNDATION OF INNOVATION

OUR THRIVING PARTNERSHIP

For over 30 years, Micron has invested in UI faculty for quality research and students for success in STEM fields.

$192K
Department of Computer Science
1985

$100K
College of Engineering Boise Program
1988-1989

$169K to date
Engineering Design EXPO
1999-2017

$505K
College of Business & Economics Building
2000-2003

$15K
College of Engineering's Junior Engineering, Math and Science (JEMS) summer workshops
2002-2006

$138K to date
Department of Electrical & Computer Engineering
2000-2017

$450K
Micron Foundation Faculty Support
2008-2013

$25K
Grand Challenges Scholars Program
2017

$1M
Micron Endowed Professor
2014-2017

$1.2M
STEM Education Research Initiative
2011-2014

Timeline: 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015

$4,718,498
Faculty and Research

$596,191
Scholarships, students and employee matching

$618,750
Buildings and facilities

Total Investments

$5,933,439

SPARKING A PASSION FOR STEM

- The UI STEM Education brings together the many unique and impactful programs across the state from preschool to graduate school that prepare and inspire students to enter and succeed in STEM fields.

- University of Idaho has awarded over half of the bachelor's degrees related to STEM in the state of Idaho and has become our mission to meet the needs of the state.

- With the Micron Foundation's five-year, $1.2 million leadership gift, university researchers identified many of the complex factors that shape STEM interest and learning. The university's research findings are available to other researchers, decision-makers and stakeholders to increase the successful implementation of evidence-based innovations that increase STEM performance and competitiveness in Idaho and nationally.

> *"Micron is the great advocate and supporter of STEM in Idaho. They do a tremendous amount of outreach in the state. Their reach is so vast that not everyone recognizes what a huge impact they make. They're a great partner for the University of Idaho and the state."*
>
> **Melinda Davis**
> UI STEM Education Director

FROM SKILLED STUDENTS TO DISTINGUISHED EMPLOYEES

Micron staff currently includes about 350 UI alumni with more on the way, thanks to our robust recruiting and internship programs. A total of 185 students were selected to intern for Micron historically. These are a few proud faces of the Micron - UI recruiting partnership.

Vishal Saxena
Micron Endowed Professor in Microelectronics works with students and cultivates those students interested in working for Micron as interns and employees

Alexa Aguilar '17
UI electrical engineering major, College of Engineering electrical engineering ambassador and Micron intern

Eric Stubbs '93
Micron director of DRAM Product Engineering and liaison for UI recruiting and internships

Brent Keeth '82
Micron senior fellow in the Advanced DRAM Architecture Group and College of Engineering Advisory Board

April Arnzen '95
UI alumna and Micron HR vice president and employee since 1996

UI COLLEGE OF ENGINEERING DESIGN EXPO

The annual Engineering Design EXPO is a hallmark event that showcases UI Engineering senior students' capstone projects and **provides hands-on learning**. The EXPO is the Northwest's longest-running interdisciplinary initiative featuring **student innovations**.
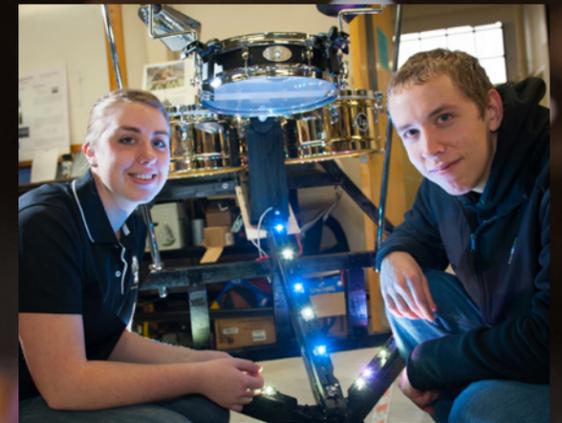
SUMMER CODING CAMPS

UI hosts coding camps around the state (Boise area, CDA, Moscow) for low-income students, minorities and girls. Camps are taught by UI computer science faculty and provide a fun and safe environment for middle and high school students to explore STEM. Computer science professor Terrence Soule teaches both teachers and students how to use coding tools to create projects that were presented by students during an afternoon showcase for parents, industry and other interested stakeholders.

UI maintains a fun and safe environment by partnering with Micron STEMbusUSA on coding laser tag to round out the camp's focus on hands-on learning and innovation.

> *"The opportunity to work with Professor Soule at the Sage Valley Coding Camp last year was more beneficial than I could have imagined. It opened up a world of new opportunities for me and my students!"*
>
> **Julie Rice**
> Middle school teacher
> at Vallivue School District

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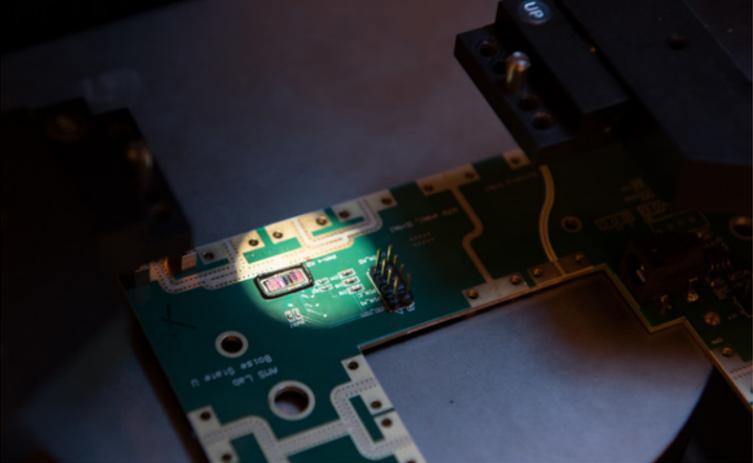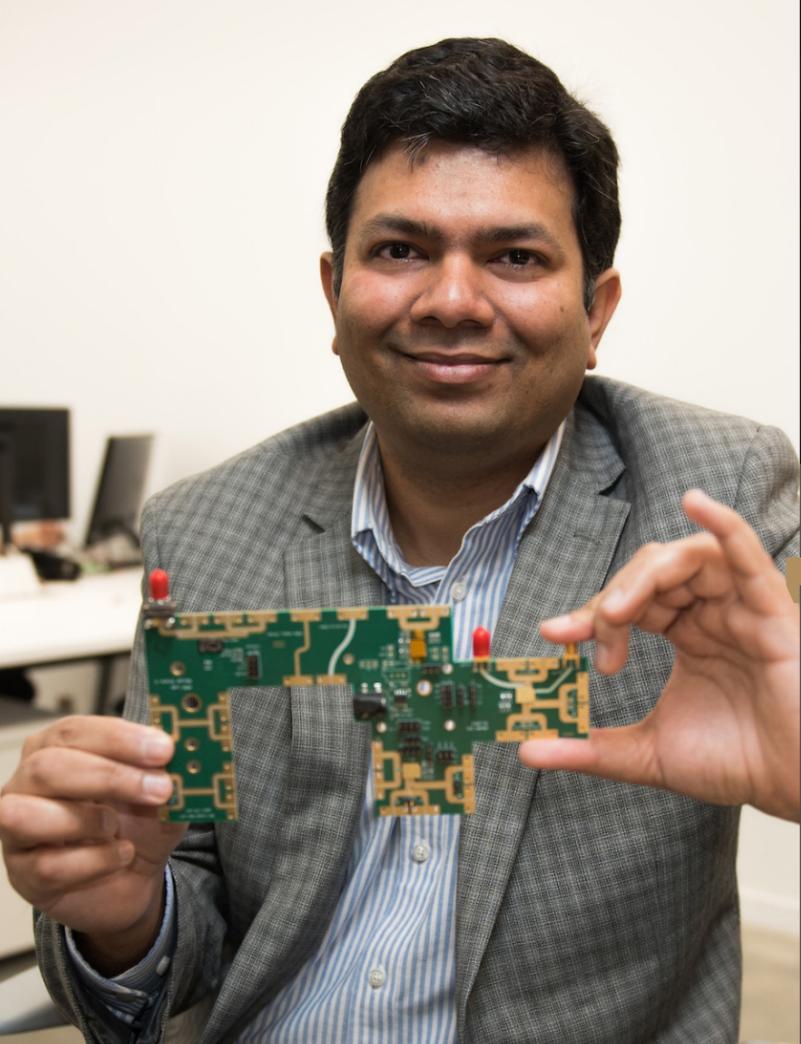
> *"We need to make progress. For the sake of scientific curiosity and from an economic point of view, we want to come up with better and more interactive and 'intelligent' computing products that will drive the future of the semiconductor industry. UI is building a regional center of excellence in electronic integrated circuits in synergy with Micron."*
>
> **Vishal Saxena**
> Micron Endowed Professor
> in Microelectronics

CYBERSECURITY EXCELLENCE - A PARTNERSHIP OPPORTUNITY

UI recognizes that one of the greatest engineering challenges faced by the state and nation is digital security. It's also a tremendous opportunity to invest in expertise, education and research to make UI Idaho's center for cybersecurity excellence.

EXPANDING THE BREADTH OF CYBERSECURITY RESEARCH

With support from the **Idaho Global Entrepreneurial Mission** and the **M.J. Murdock Charitable Trust**, UI College of Engineering is leading cybersecurity and defense by developing new methods of protecting the **Cyber Physical Control Systems** that are vital to Idaho and the nation's critical infrastructure. The effort includes strengthening collaboration with industry, fostering technology transfer and improving the talent pipeline.

IMPROVING AND INVESTING IN STATEWIDE FACILITIES

Through these initiatives, UI is developing a network of new facilities and laboratories that span the state connecting Coeur d'Alene, Moscow, Boise and Idaho Falls. Fiberoptics company **Fatbeam** donated two high-speed private fiber optics lines to UI's Research Park to support the CTOC and workforce development in cybersecurity. In addition, UI will develop a **Distributed Testbed for the Smart Grid and Industrial Control Systems Cybersecurity Research** connecting laboratories across the state that builds capacity for research and instruction on cybersecurity of smart grid and industrial control systems.

MICRON ENDOWED PROFESSOR IN MICROELECTRONICS

University of Idaho welcomed the Micron Endowed Professor in Microelectronics, Vishal Saxena, in 2016.

Professor Saxena focuses on energy efficiency in computing and communication for next-generation microchips. His Analog Mixed-Signal and Photonics IC (AMPIC) lab is developing novel solutions for energy-efficient chip-to-chip communication and data center interconnects, and new wireless chips for 5G and beyond.

Since arriving at UI, Professor Saxena has convened engineering faculty from diverse disciplines to form the Neural Engineering and Brain Inspired Systems

(NeuBIS) collective. Their goal is to use their collaborative understanding of the brain to develop new ultra-low-power Artificial Intelligence chips utilizing in-memory computing, which have strong synergy with Micron. NeuBIS's shared laboratory is located in UI's Integrated Research and Innovation Center building.

Professor Saxena's work is also integral to the Next Generation Microelectronics Research Center (NGeM), which advances the entire field of microelectronics and semiconductors through dynamic, interactive courses and sponsored research. NGeM students gain a deep understanding of the entire chip design process including layout, pre-silicon validation, fabrication, packaging and test.

Additional partner investments in microelectronics would increase research activity in integrated circuits and systems, and expand UI's centers on Microelectronics and Systems Research. With Micron's support, UI can continue its industry-leading research.

BUILDING ON A HISTORY OF INFORMATION ASSURANCE EDUCATION

Since 1999 UI's **Center for Secure Dependable Systems** (CSDS) has been a leader in computer-related security education and research. The center's **CyberCorps®: Scholarship for Service** and Information Assurance Education program sponsored by National Security Agency and the Department of Homeland Security produces graduates with expertise in cybersecurity and defense.

ENHANCING TECHNICAL CERTIFICATION AND WORKFORCE TRAINING

At the UI Coeur d'Alene Center, the **Cybersecurity Training and Operations Center** (CTOC) offers professional opportunities to gain industry-backed credentials such as the **Certified Information System Security Professional** and **Cisco Certified Network Professional Security**. CTOC also collaborates with local businesses to demonstrate cybersecurity control measures to raise awareness of threats and vulnerabilities.

ENGAGING PARTNERS

UI is working to continually grow the list of partners and industry leaders to offer more opportunities to students and faculty for training, research and engineering expertise in cybersecurity and computer science. The university is grateful to the following partners in this effort.

CyberCorps®: Scholarship for Service National Science Foundation

Fatbeam

Idaho Department of Commerce – Idaho Global Entrepreneurial Mission

Idaho Department of Labor

Idaho National Laboratory

Idaho STEM Action Center

M.J. Murdock Charitable Trust

Power Engineers

Schweitzer Engineering laboratories, Inc.

State of Idaho

U.S. National Security Agency and the Department of Homeland Security

THE UNIVERSITY OF IDAHO STRATEGIC VISION

INNOVATE

- UI research expenditures for FY2016 totaled over $100 million, and UI's annual research activity makes up 2/3 of Idaho's total research within universities.

- UI is aggressively growing research activity to become the only R1 university in the state of Idaho.

TRANSFORM

- Increase overall enrollment 50% by 2025, including tripling the number of women students enrolled in the UI College of Engineering.

- Double the number of women in faculty positions in the UI College of Engineering by 2025.

CULTIVATE

- Significantly increase overall multicultural and international student enrollment, including those in the College of Engineering and the China 3 + 1 program.

ENGAGE

- UI contributes $1.1 billion to Idaho through developing a well-educated workforce, consumer spending, start-up and spin-off company impact, research expenditures and other factors.

- Through expanded industry partnerships and increased enrollment and research, UI will power Idaho's economic engine to the tune of $2 billion by 2025.

University of Idaho

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