

2021

CS

CELEBRATING 50 YEARS



of Colorado **Boulder**



MESSAGE FROM THE DEAN

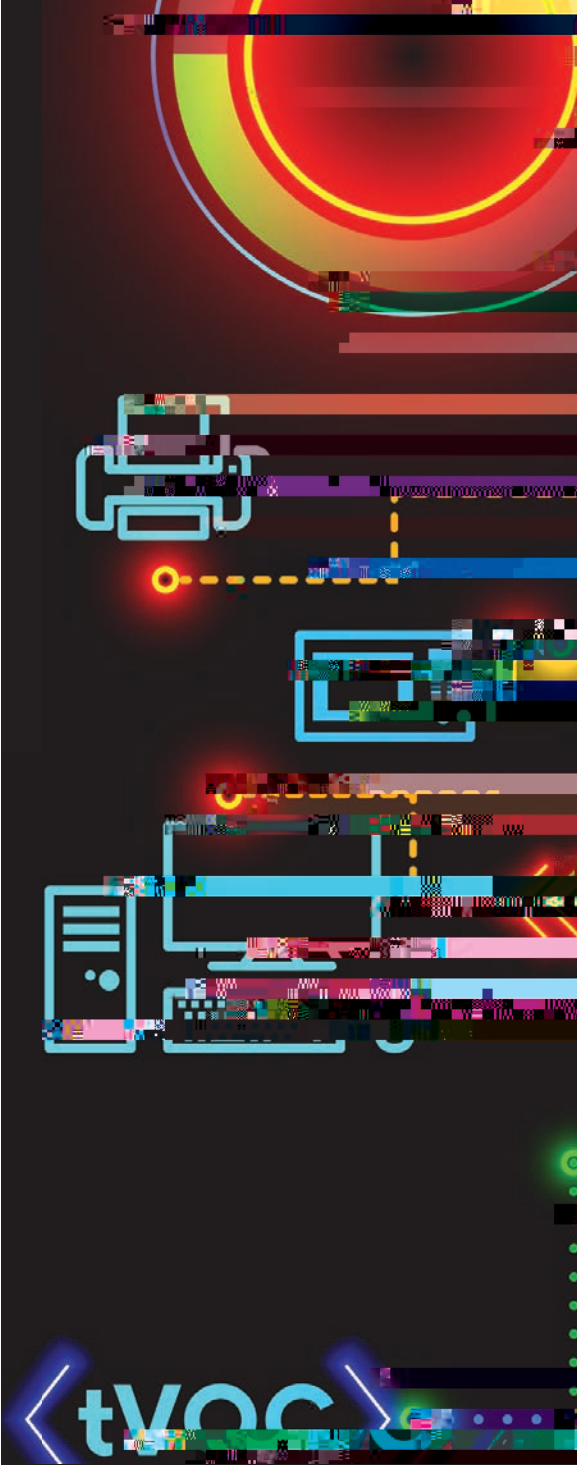


 @KeithMolenaar

Dear CU Engineering community,

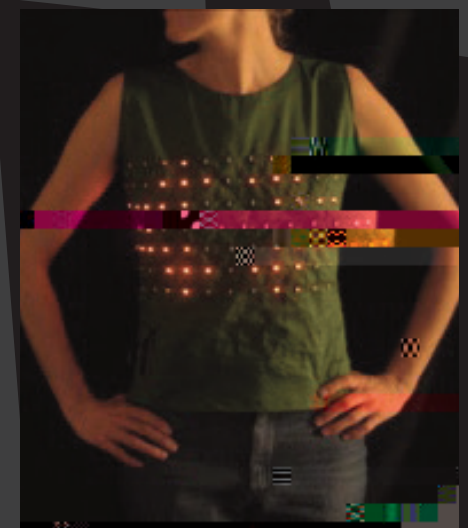
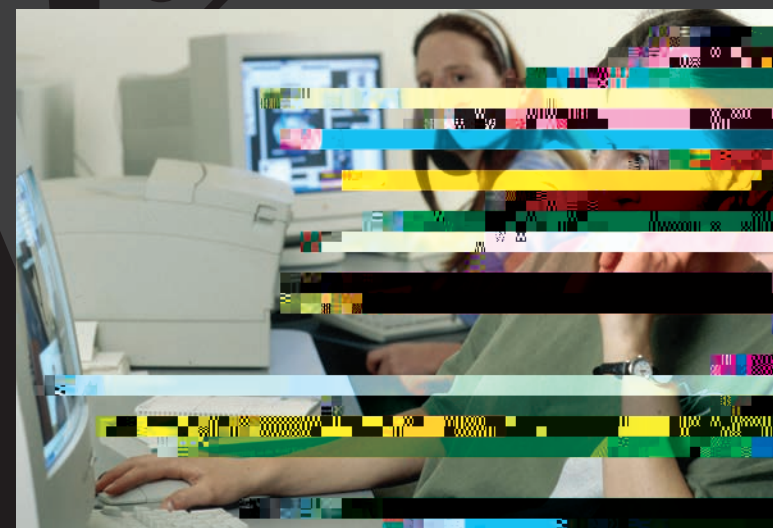
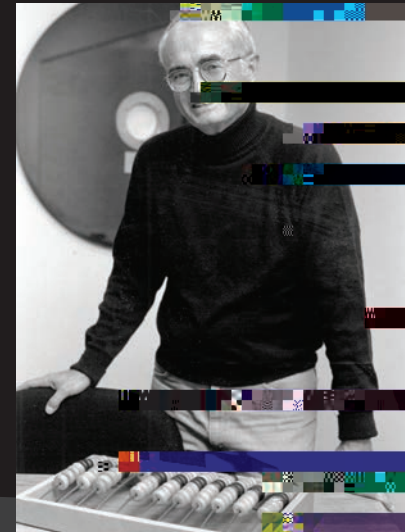
This edition of *CU Engineering* magazine commemorates the 50th anniversary of the CU Boulder Department of Computer Science. While the Byron Page 14 chart many of the department's important milestones, I want to take a moment to celebrate the last 10 years in particular.

Over the past decade, the department has experienced transformational growth and increased its impact on the state and nation.



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ByEmilyAdams



Department has become known for championing collaboration and diversity in the computing field

2004: Faculty and alumni secured a major National Science Foundation grant to create the National Center for Women and Information Technology (read more on Page 28).

2013: They teamed with the College of Art and Sciences to introduce the Bachelor of Art in Computer Science, allowing students with more diverse academic interests to pursue a CS degree.

2017: The introduction of the online post-baccalaureate degree made it possible for people with more diverse academic backgrounds to pursue a CS degree.

2018: The department launched a partnership with Western Colorado University, allowing students to earn a CU Boulder computer science degree from the Western campus in Gunnison.

As the computing community across campus grows, Anderson said, they're working to maintain that collaborative, inclusive nature.

We acknowledge that computing is much broader than just any one department and we're actively trying to foster that community across the university, she said.

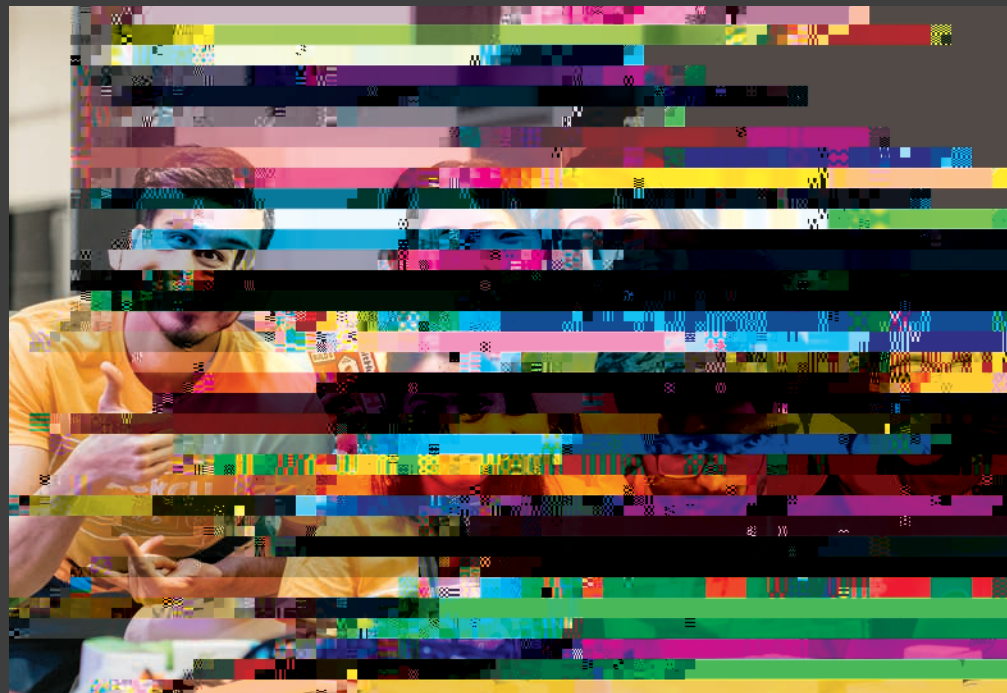
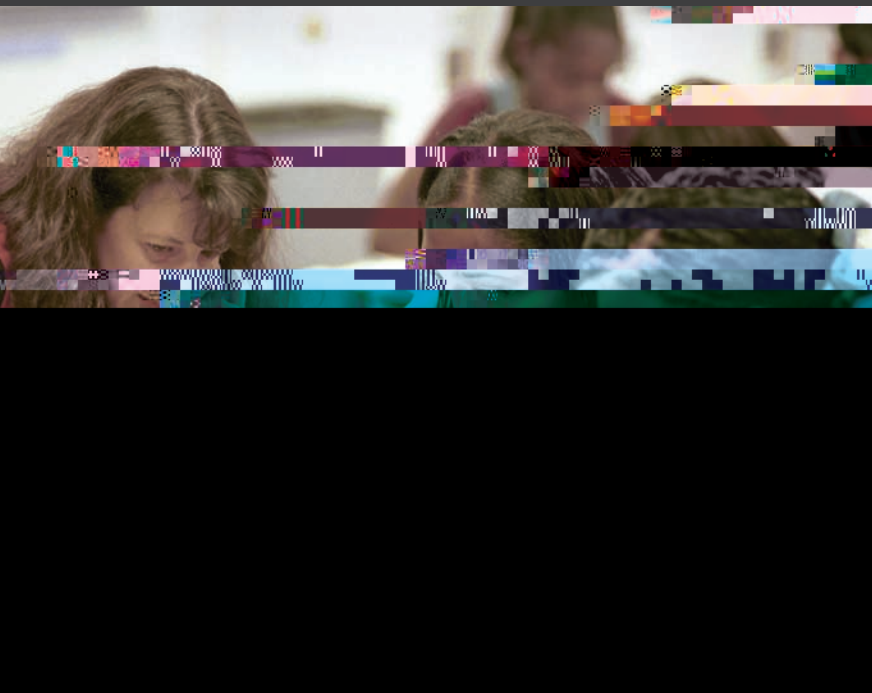
Department stats today

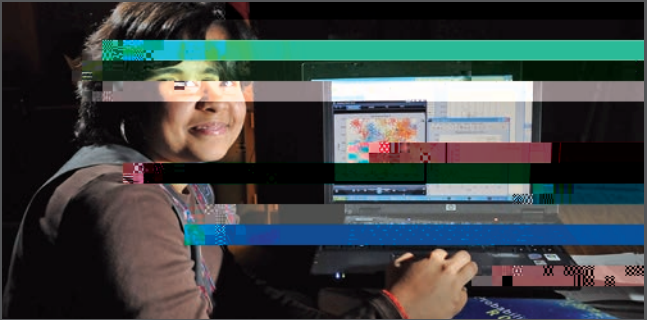
2,080 undergrads

335 graduate students

70+ faculty

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A LOOK AT JUST A FEW OF THE IMPORTANT EVENTS THAT HAVE SHAPED COMPUTER SCIENCE AT CU BOULDER

1980

» CS moves to the College of Engineering and Applied Science

1962

» Institute for Computing Science is founded, pulling faculty from psychology, sociology, physics and electrical engineering

1983

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1970

» Regents approve a Department of Computing Science, soon adjusted to Computer Science

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1988

» First BS degree awarded

1971

- » Undergraduate-level courses are introduced
- » CS follows the lead of the math department and joins the College of Arts and Sciences

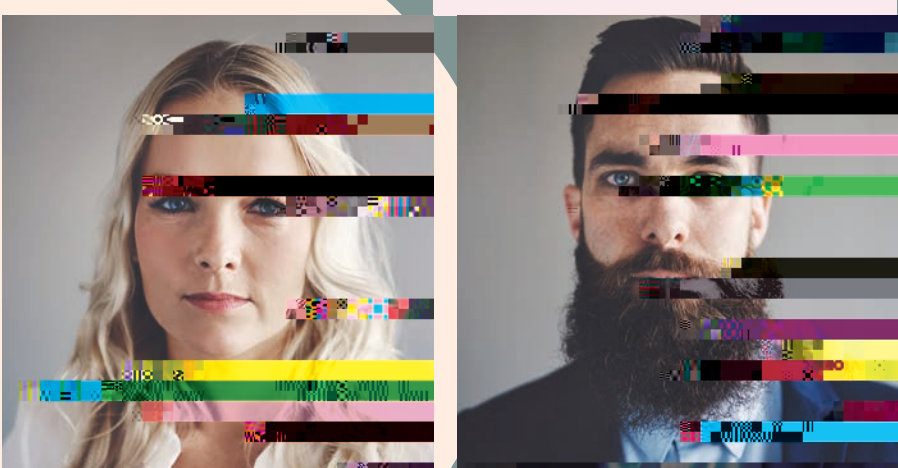
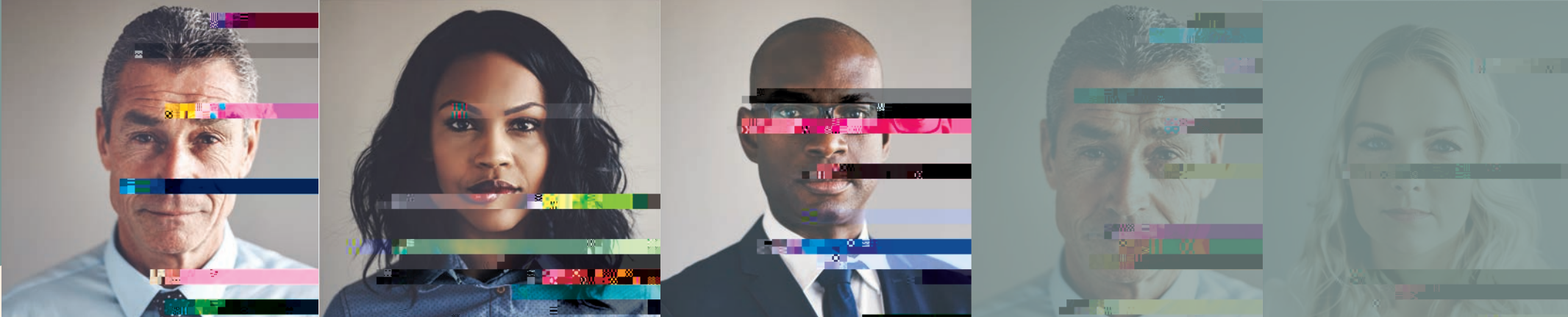
2013

» CS introduces a Bachelor of Art option

1974

» First PhD awarded

2017



Taking Ownership

By Grace Wilson

ETHICAL TECHNOLOGY REQUIRES
NEW APPROACHES TO EDUCATION,
RESEARCH AND INCLUSION

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age, computers were monolithic machines
in big places, out of reach for most of the
general public.

When personal computers came along, everything
changed, according to CU Boulder's DC /TT10g /ENGpanS
in big42SIONLanghi inCi f Q Ed inCi f Q Ed inCi f Q Ed inCi f EO cers came along, everything en--3.807 -pMC /1med, acco EMn,

When it comes on. We don't think about whether the electricity is made by solar power or fossil fuels. We don't think about the distance it travels across power lines to be delivered to our homes. And we certainly aren't thinking about what our neighbors have on and how the combined req

We just expect the bill to shine bright

But cities or international goals—like transitioning to 100 percent renewable energy—have any hope of being met that

journey will have to be streamlined while also accounting for things like our habits, weather conditions, market costs and other variables.

That kind of optimization work is a key aspect of addressing climate change on a large scale. I graduated in electrical engineering, worked on

to optimize the amount of renewable energy used in the power grid, which decreases the amount of fossil-fuel-based electricity generation needed to satisfy the demand at any given time. In one recent project, he designed an algorithm to reduce the amount of power produced by large wind farms far away from city centers by temporarily and safely increasing the capacity of large transmission power lines at key times

That allows the power lines to transport a larger amount of wind power from where it is created to areas of higher population density and electrical demand, instead of using fossil

that may strain the energy grid.



For mechanical engineering PhD candidate Michael Miles, participating in the national Serranean Challenge robotics competition has provided real-world experience he might not otherwise have gotten during his graduate studies.



able careers (he also inspired the cut
out and hog it inside her locker). After learning
basic programming from a female math teacher,
she either might be studying computer science
at CU Boulder, there she was one of just a
handful of women in the major. Before joining
NCWIT in 2012, Hogan had a successful career
in industry working for U.S. West, MediaOne
and Gartner Group, among others.

Sanders grew up around computing in
Louisiana, where her father worked in the early
data centers of Western Electric. She, too,

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Gregory Whiting Paul M. Rady Department of Mechanical Engineering
Robert McLeod Department of Electrical, Computer
& Energy Engineering

Across vast areas of land and crops, hundreds of sensors reporting crop data such as nutrient or water intake are becoming what researchers refer to as the Internet of Living Things. The sensors create a network that can help growers make better decisions about what crops need to grow. Researchers are using 3D printing to make electronic sensors small enough to embed in a plant, cheap enough to produce and replace, and stable for use in a variety of outdoor conditions. If you build sensors in the conventional way, you would potentially have thousands



Mark Borden

Director, Biomedical Engineering Program

Mark Borden, professor in the PalUM. Rady Department of Mechanical Engineering, is the inaugural director for the college's Biomedical Engineering 7YVNYHT /L SLK faculty from across four departments in launching the program in August 2020.

Borden has served as the director of the biomedical engineering minor since 2018 and has been a member of the mechanical engineering faculty since 2010. He is also a fellow of the Materials Science and Engineering Program. Borden is a leading expert in engineering for biomedical applications, and his lab has already launched to biotech companies in Boulder.

Borden received a BS from the University of Arizona and PhD from the University of California, Davis, both in chemical engineering. Before joining CU Boulder, he was an assistant professor of chemical engineering at Columbia University.



Christy Bozic

Director, Engineering Management Program

Christy Bozic has been named the new faculty director of the Engineering Management Program. She joined CU Boulder in 2015 as a scholar in residence and EMPS associate faculty director of undergraduate education.

In her academic career, Bozic has held faculty and administrative positions at Purdue University. Her corporate experiences include global business manager at TDK Corp. of America and sales engineer for Federal Mogul Automotive.



