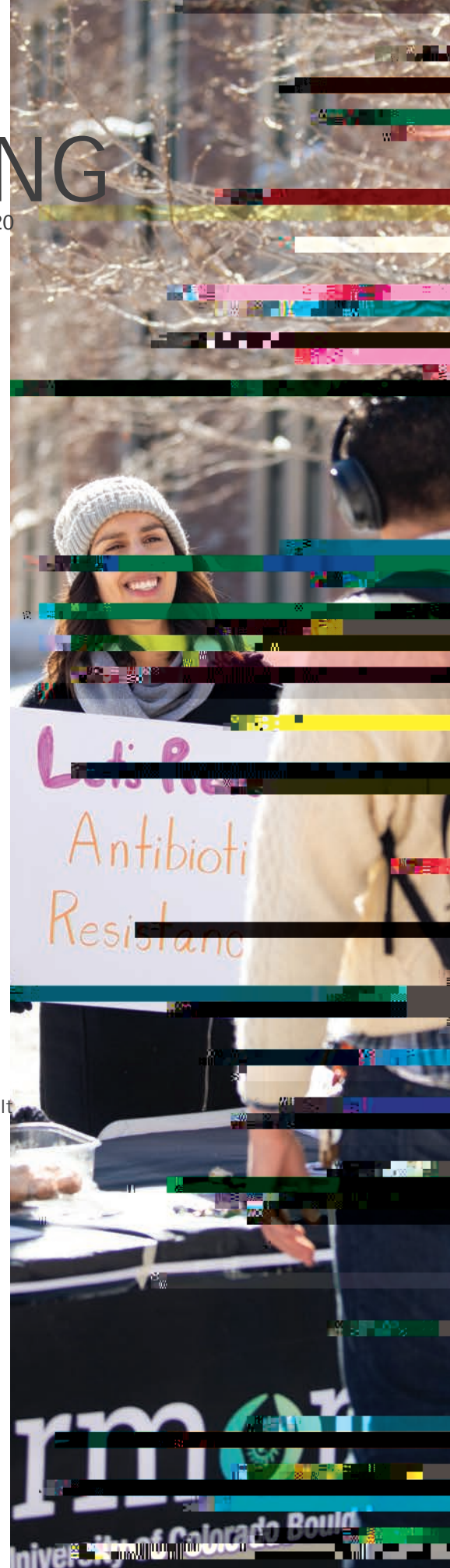
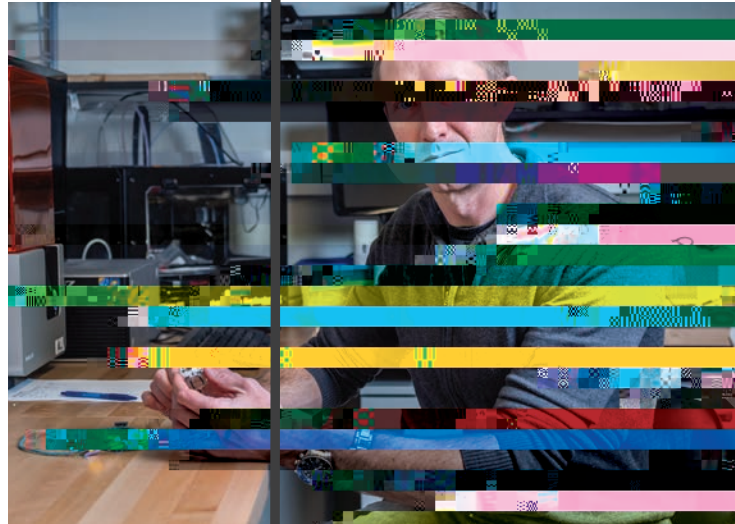




CUENGINEERING

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Biomedical boost

New degrees will be eye-opening and inspirational for students, program director says.

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DNA: Goldmine for hackers?

Security measures for genetic data storage lag behind those built into consumer products.

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Academia meets activism

ARMOR student group says we can all play a role in helping to stop superbugs.

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[@CUEng T*k3uineering](#) University of Colorado Boulder College
@KeithMolenaar

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Engineering a medical career

Problem-solving skills from her engineering education help alumna succeed as a doctor.

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A path back to teaching

Veteran Brodie Hoyer is on the fast track to a PhD in hope of returning to West Point.

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Western Buffs

Partnership program proves to be the best of both worlds for Gunnison students.

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Special delivery

Delivering life-saving medical treatments effectively is just as important as discovering them.

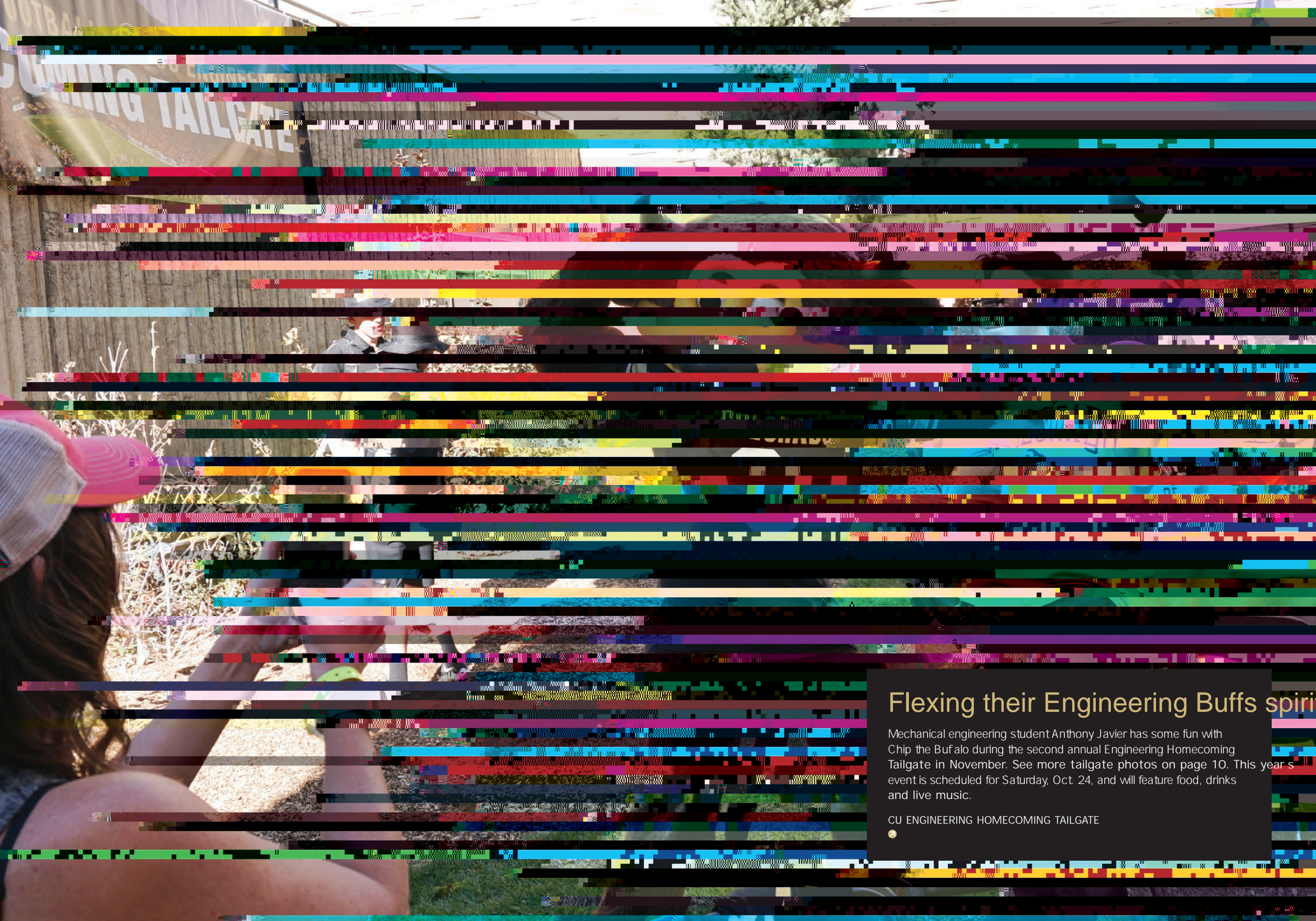
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Biomedical breakthroughs

Check out brief updates on some new CU Engineering biomedical research advances.



Computer science celebrates 50 years, pC T*k3u

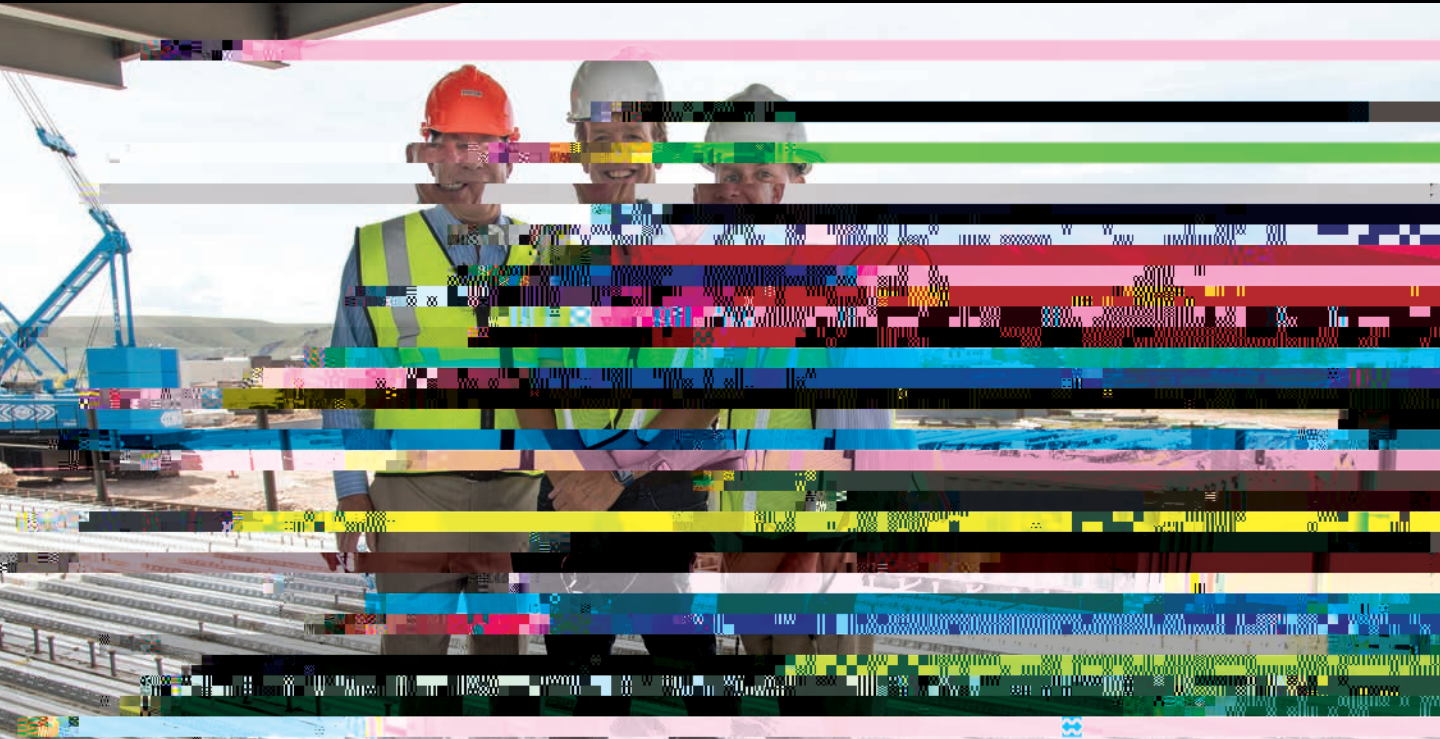


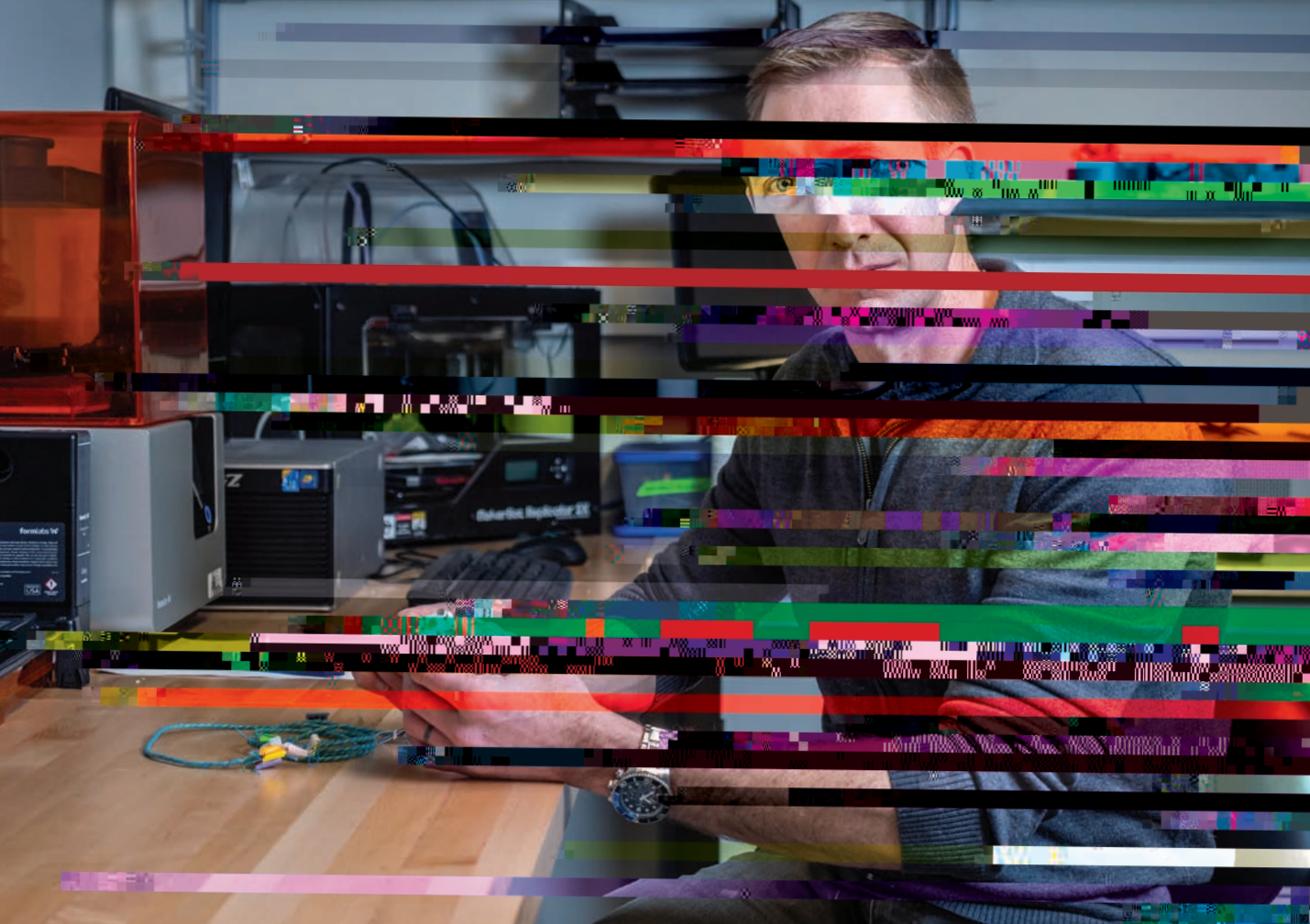
Flexing their Engineering Buffs spirit

Mechanical engineering student Anthony Javier has some fun with Chip the Buffalo during the second annual Engineering Homecoming Tailgate in November. See more tailgate photos on page 10. This year's event is scheduled for Saturday, Oct. 24, and will feature food, drinks and live music.

CU ENGINEERING HOMECOMING TAILGATE







Brodie's goal was clear in that he wants to be where people are excited to come to the lab as an instructor, Rentschler said. When you are passionate about their research, committed and know why you're doing what you're doing, you'll make it happen.

Many skills Hoyer acquired as a leader in the military translate well to his research. He said there are no shortcuts to receiving a PhD at CU Boulder. Hoyer is doing what most do in about half the time.

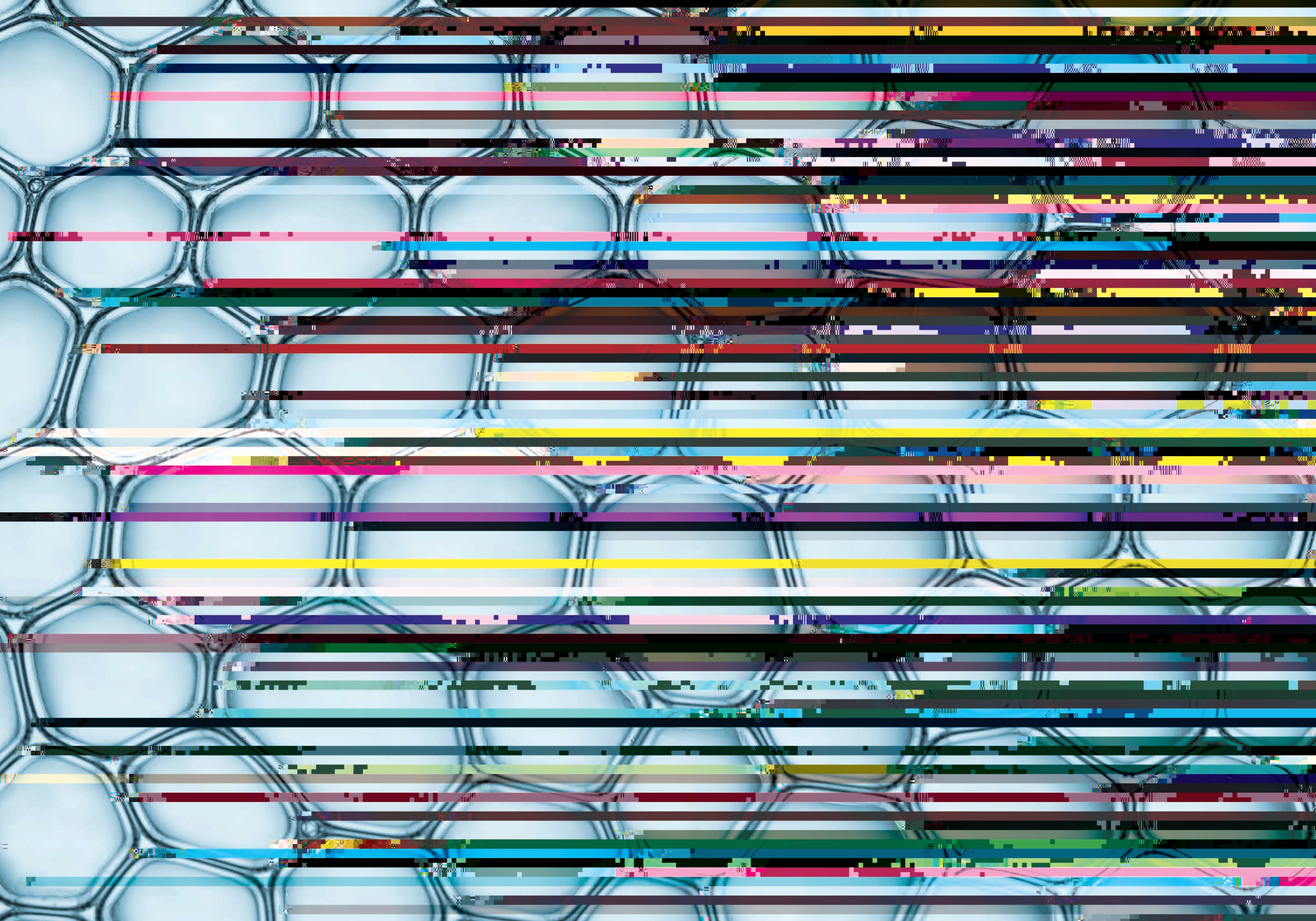
Bill Doe, a research development officer with the College of Engineering and Applied Science, went through a very similar program 30 years ago and also graduated from West Point. He said Hoyer is a clear leader among his peers, an intelligent, diligent and humble engineer of deep character.

Hoyer's research investigates how microtextured surfaces interact with soft tissue, particularly useful in improving the efficiency of medical robots inside the gastrointestinal tract.

Imagine treads on a small mobile robot, Hoyer said. We're trying to predict what qualities those treads need in order to move efficiently and without damaging tissue."

The lab group aims to model how these treads create traction, so they can predict how a robot will move inside the body.

It's always energizing to be in an environment





AT THE DOCTOR'S OFFICE

Keep in mind that antibiotics can treat only bacterial infections.



Women s Group in Bend, Oregon, where
wondrous mountains are never far away. If

Imaging technique allows earlier diagnoses of osteoarthritis

Associate Professor Corey Neu | Mechanical Engineering

Neu is working with colleagues at the University of Colorado Anschutz Medical Campus to detect early osteoarthritis, allowing younger patients to seek treatment earlier and possibly ward off the most severe treatment plans. To do this, his team is determining whether functional imaging methods which focus on assessment of cartilage health and elasticity in the knee can predict osteoarthritis in humans. Early prediction would allow patients to begin treatments like physical therapy or minimally invasive arthroscopy long before something as serious as joint replacement is their only option. To do the work, Neu will be leveraging a state-of-the-art MRI scanner and focusing on patients younger than 45 who will be undergoing ACL reconstruction. That is because those with ACL



Real-time imaging of living tissue

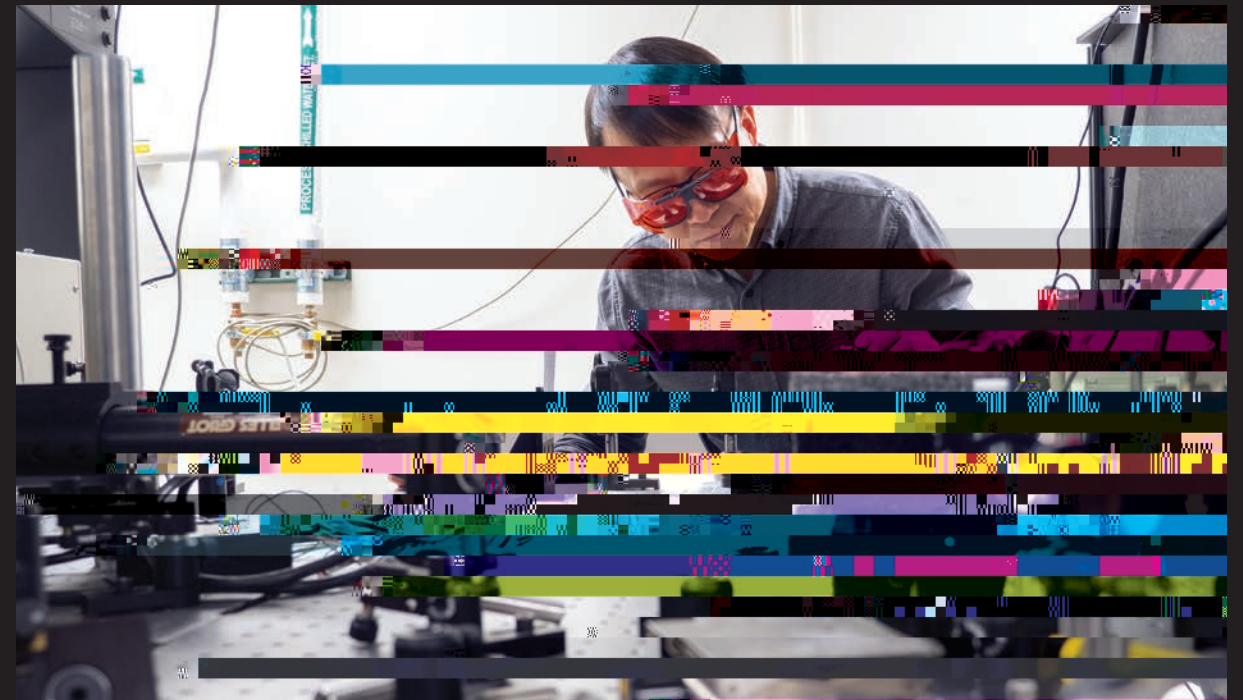
Professor Rafael Piestun | Electrical, Computer
and Energy Engineering

Controlling the process by which light waves travel

Improving cancer detection and therapy

Professor Wounghang Park | Electrical, Computer and Energy Engineering

Park's lab is using plasmonic nanostructures



Western) \ H Z

Partnership program helps students engineer their own CU experience

In 2018, the CU Boulder College of Engineering and Applied Science launched a partnership program with Western Colorado University's Paul M. Rady School of Computer Science and Engineering. The program allows students to earn Bachelor of Science degrees in computer science or mechanical engineering as graduates of CU Boulder. They complete their first two years as Western students, and the balance of their education as CU Boulder students, all while remaining on the Western campus in Gunnison, Colorado.

Forty students enrolled in the inaugural class in fall 2019, and they're already making their mark.

We are fortunate to have these talented students as part of our CU Engineering community, Interim Dean Keith Molenaar said. "We look forward to working with them on their journey to becoming professional engineers and scientists."

Here is a look at two of the stand-out students of the Class of 2023 who are taking advantage of the opportunity to get their CU Boulder degrees in a small-school atmosphere.



Working in aerospace has been at the top of Victoria Bowen's list for a while.

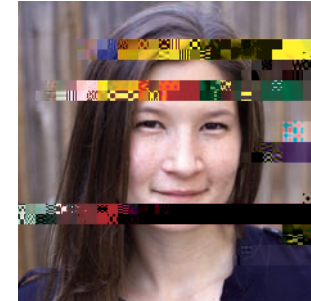
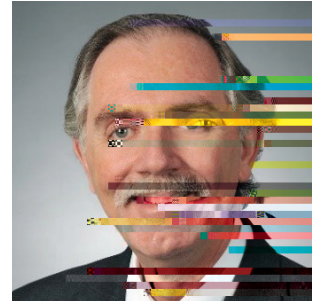
While searching for the right college to get

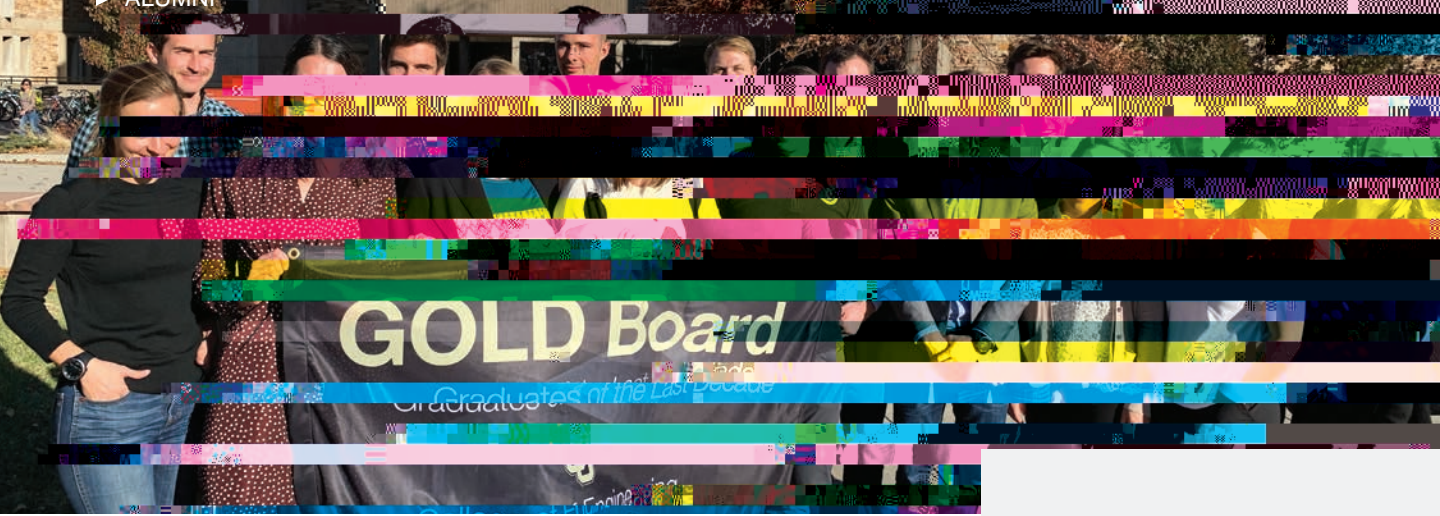


David Gupta
(ArchEngr'85)

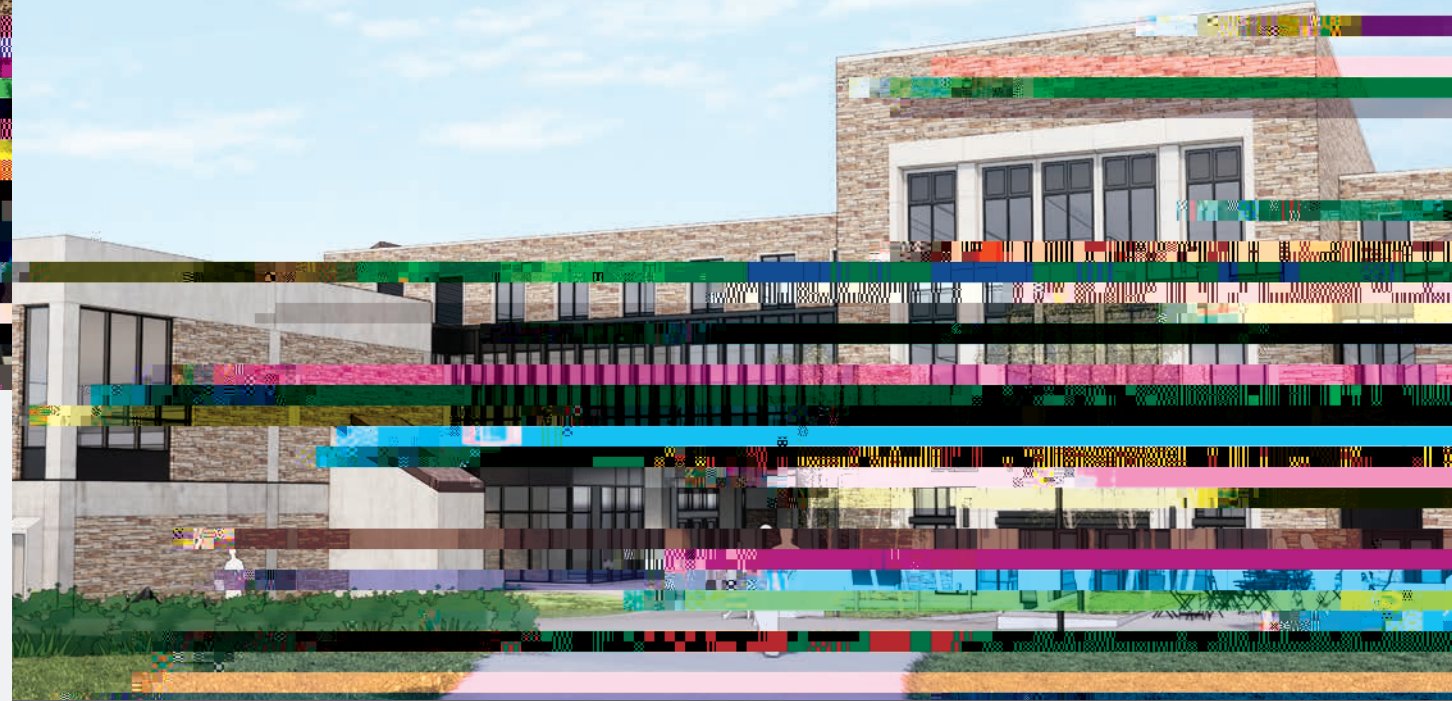
CEO, SDI
DEAA: Industry & Commerce

David A. Gupta founded IT consultancy and managed services provider SDI Presence in 1996 and today continues to lead the firm as chief executive officer. The company





Steven Vogel (MechEngr'12) credits the College of Engineering and Applied



U.S. News & World Report 2020

Among public universities, our graduate programs ranked in the top



Aerospace

Environmental

#10 Chemical Engineering | #18 Mechanical Engineering

#16 Civil Engineering