

THINGS YOU DIDN'T KNOW ABOUT BINGHAMTON UNIVERSITY RESEARCH

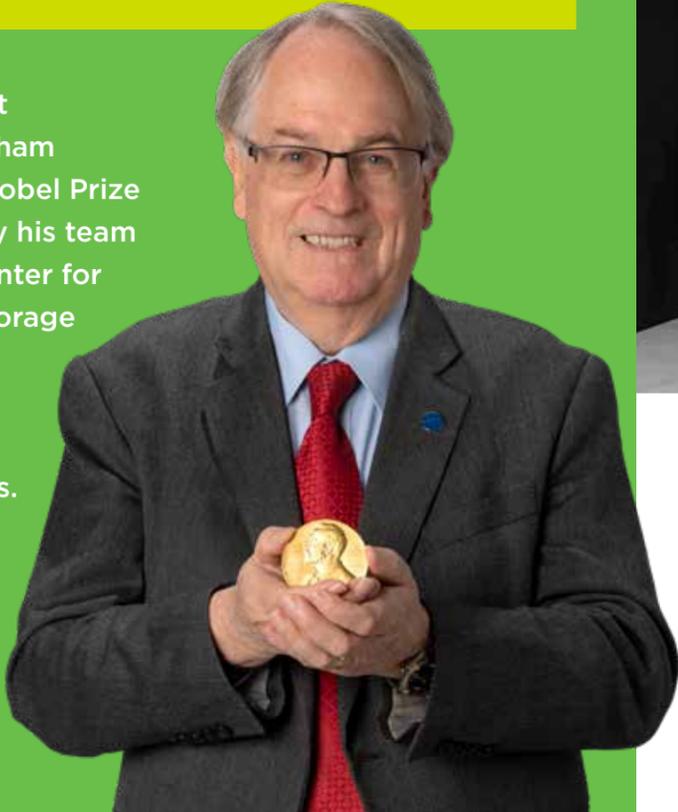
6



1

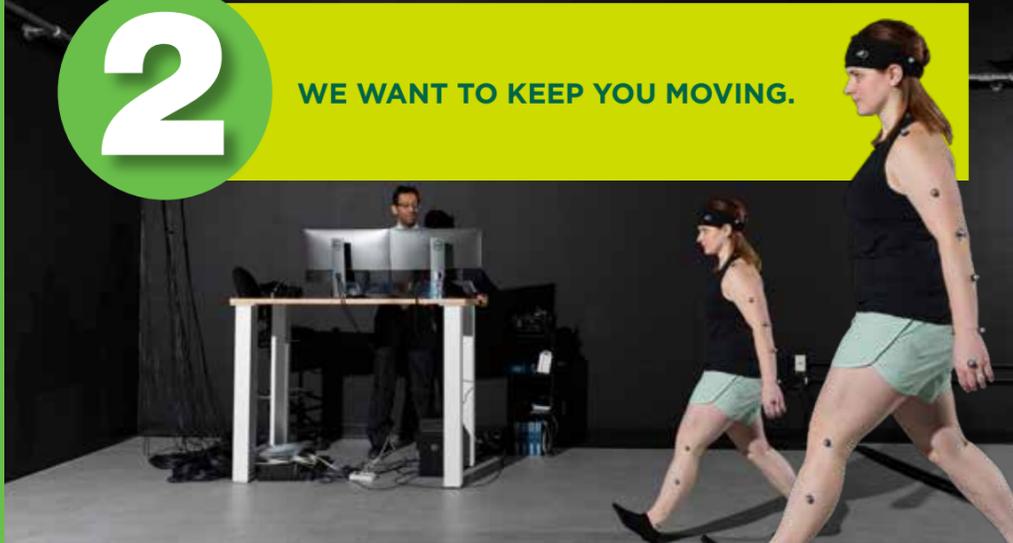
THE NOBEL LAUREATE WHO INVENTED THE LITHIUM-ION BATTERY? YEAH, HIS LAB IS ON CAMPUS.

Binghamton chemist M. Stanley Whittingham received the 2019 Nobel Prize for Chemistry. Today his team at the NorthEast Center for Chemical Energy Storage (NECCES) takes a holistic, ambitious approach to making and testing batteries. "We only work on things that can power a million cars," Whittingham says.



2

WE WANT TO KEEP YOU MOVING.



Binghamton's new 1,600-square-foot Motion Analysis Research Lab has some of the most sophisticated equipment available for conducting human-movement research focused on improving people's health and quality of life. The lab, led by Associate Professor Vipul Lugade, brings together faculty and students from physical therapy and occupational therapy programs as well as engineering.

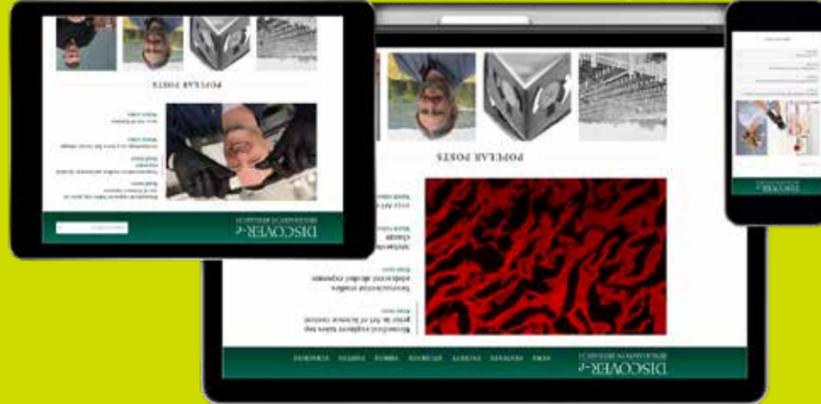
3

OUR RESEARCH MAKES ELECTRONIC DEVICES FASTER, SMALLER AND GREENER.



S3IP, Binghamton's New York State Center of Excellence, partners with companies to improve devices ranging from smartphones to wearable medical monitors and from autonomous vehicles to sensors powering the internet of things. That takes new technology to construct 3-D stacks of microchips, print electronic devices on rolls of flexible plastic and glass, use less energy in data centers, and grow efficient solar cells out of cheap, abundant materials.

Want to hear more about Binghamton research?



# 4

## OUR EXPERTS ARE HELPING TO CONFRONT HEALTH CRISES.

What strategies can we deploy today to ensure better access to life-saving tools tomorrow? Pharmacy researcher William Eggleston hopes to expand the use of naloxone — a nasal spray designed to reverse an opioid overdose — and increase public awareness of its benefits. He's one of many Binghamton scientists focused on improved health outcomes.



# 5

## WE'RE PUTTING DRONES TO WORK FOR THE GOOD OF PEOPLE AND THE PLANET.

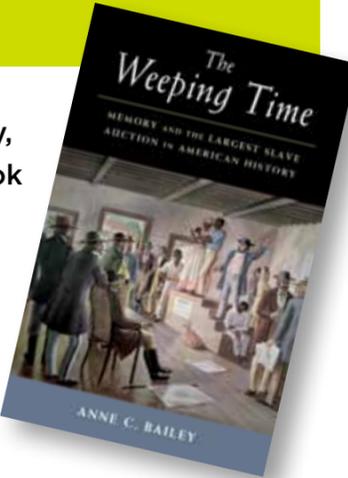
First Binghamton geophysicists Alex Nikulin and Tim de Smet combined specialized cameras and metal-detecting technology with drones to spot unexploded landmines. More recently, they realized the same approach would help locate abandoned gas wells, which pose an environmental threat. They have launched a startup company called Aletair to develop the technology further.

# 6

## THIS HISTORIAN CONNECTS PAST AND PRESENT.



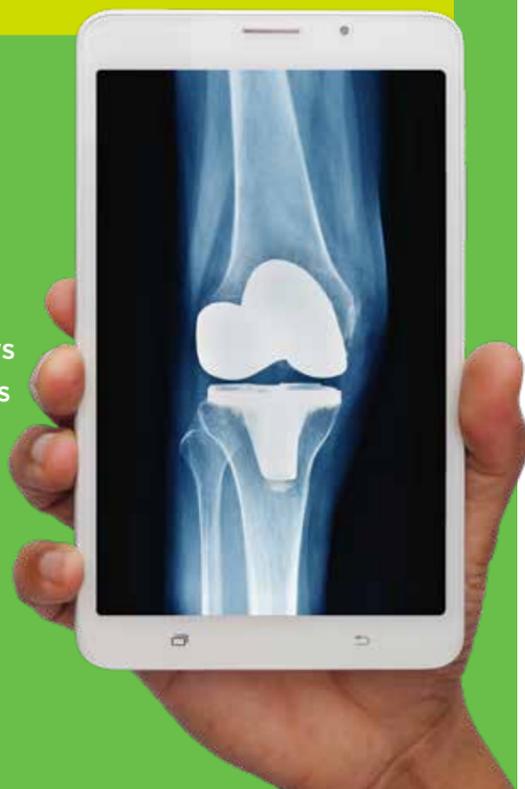
Historian Anne C. Bailey, author of a recent book about the largest slave auction in U.S. history, has also written about the push for reparations for Black Americans. She directs Binghamton's new Harriet Tubman Center for Freedom and Equity.



# 7

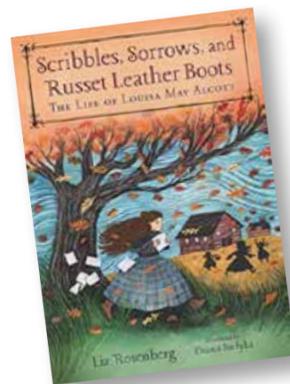
## TAKE A KNEE — AND KEEP AN EYE ON IT.

Most knee replacements last 20 years or more, but what happens when patients live longer or have surgery when they're young? Mechanical engineer Shahrzad "Sherry" Towfighian is developing ways to monitor knee replacements using sensors that generate their own power through movement. Her plan includes a smartphone app that lets patients track the performance of their implants.



# 8

## FIND A FRESH TAKE ON A FAMOUS WRITER'S LIFE.



Faculty author Liz Rosenberg brings two beloved writers to life in recent biographies for young readers. *Scribbles, Sorrows, and Russet Leather Boots: The Life of Louisa May Alcott* draws on the author's journals and letters, illuminating the life of the writer who gave us *Little Women*.

Meanwhile, *House of Dreams: The Life of L. M. Montgomery* introduces fans of *Anne of Green Gables* to the complicated life of the woman behind that masterpiece.



# 9

## DO WE HAVE A CULTURE OF INNOVATION? LET'S JUST SAY THAT EVEN FIRST-YEAR STUDENTS DO RESEARCH.

The First-year Research Immersion program introduces undergraduates to research from the time they arrive at Binghamton.



Participants in the FRI program tackle weighty world issues, build relationships and set a course for college and career success. It's all part of our mission as an R1 Doctoral University with "very high research activity" in the Carnegie Classifications!