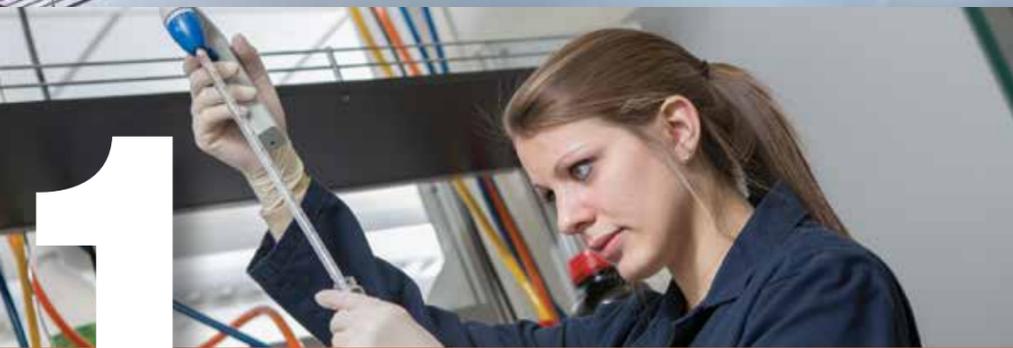


RESEARCH

Nine things you didn't know about Binghamton University



1

Binghamton undergrads learn as much outside the classroom as in it.

At many schools, undergraduates are expected to soak up knowledge while grad students and researchers produce it. At Binghamton, undergrads conduct research with real implications for environmental science, Parkinson's disease patients and more.

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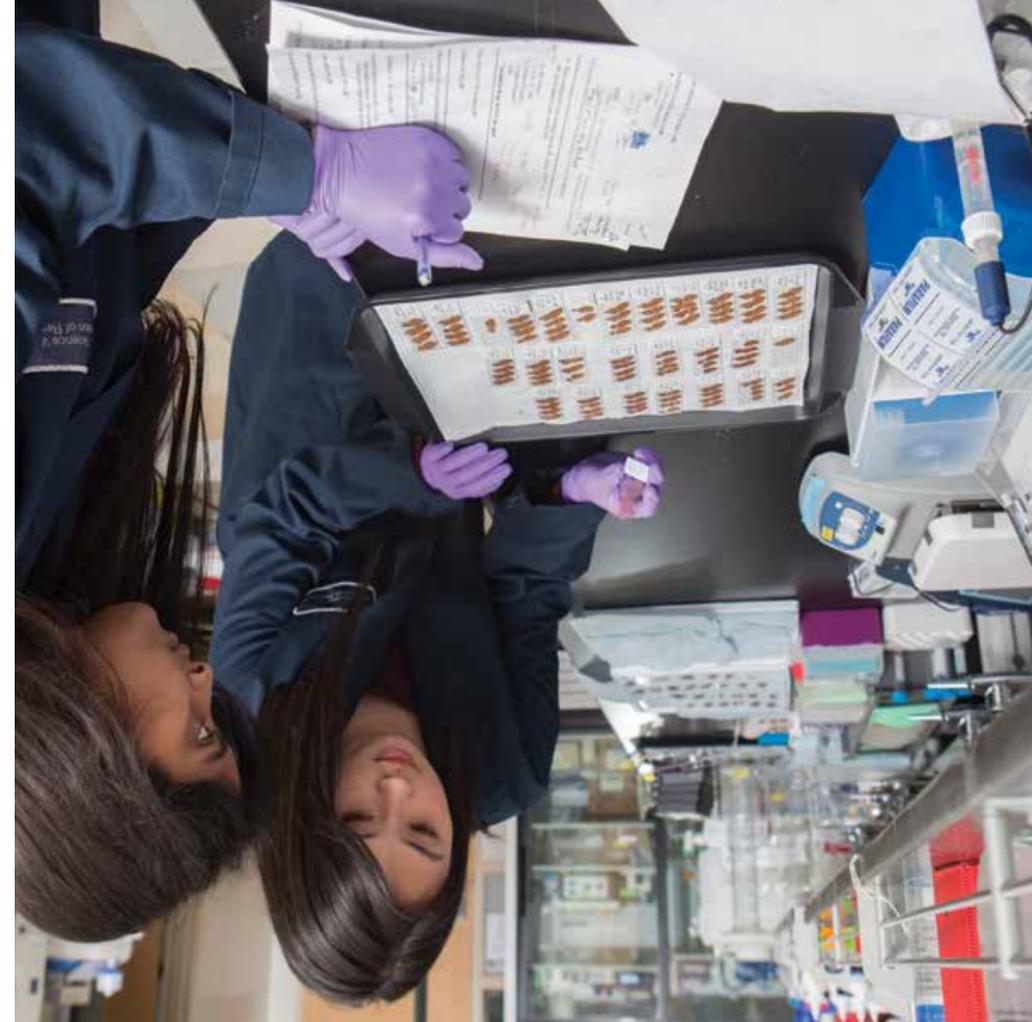
Want to hear more about Binghamton research?



Our research makes electronic devices faster, smaller and greener.

Binghamton's Center of Excellence in Small Scale Systems Integration and Packaging (S³IP), which recently moved into a new \$30M facility, has contributed to breakthroughs in flexible glass and solar cells and to advances that make mobile phones more robust. S³IP's Center for Energy-Smart Electronic Systems, a National Science Foundation Industry/University Cooperative Research Center, partners with leading technology companies to develop "green" data centers.

2



3

The guy who invented the lithium-ion battery? Yeah, his lab is on campus.

Chemist M. Stanley Whittingham, father of the lithium-ion battery, teaches at Binghamton, where he directs a federally funded Energy Frontier Research Center focused on perfecting the next generation of batteries. "Within 10 years, every vehicle will be hybrid or electric," he recently told *Newsweek* magazine.

Experts at Binghamton are changing the way people think about teenage drinking.

The Developmental Exposure Alcohol Research Center, led by neuroscientist Linda Spear and funded by the National Institutes of Health, has advanced our understanding of the effects of alcohol on brain development. Spear's research reveals that alcohol changes the young brain in ways that may cause problems throughout a person's life.



One of our labs is among the quietest places on earth.

Binghamton has an anechoic chamber (a room without echo) built to the specifications of acoustics researcher Ronald Miles, who has pioneered the development of tiny microphones inspired by the ears of a fly. The specialized lab in the Engineering & Science Building is one of the quietest places on earth. "If you got locked in, you could scream and no one would ever hear you," Miles says.



If you have the right algorithm, you can predict the future.

Our scientists can predict the future using nothing more than social media posts — and really powerful algorithms. Binghamton systems scientists Sarah Lam and Sang Won Yoon have been working with alumnus Nathan Gnanasambandam, a senior researcher at Xerox's Palo Alto Research Center. They used 500 million tweets to develop algorithms that paint a picture of everyday human dynamics — and can predict an individual's behavior hours in advance.



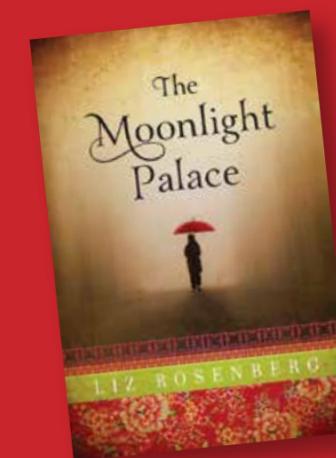
Our biologists are working on research that could lead to a cure for acne.

Binghamton boasts some of the world's foremost experts in biofilms. (You can think of them as the Sleuths of Slime.) These scientists say that the stability and invulnerability of biofilms — that is, communities of single-cell bacteria — may hold the key to treating chronic diseases and conditions such as sinusitis, acne, Crohn's disease and atherosclerosis.



Faculty novelist Liz Rosenberg just became a best-selling author!

Liz Rosenberg's latest novel, *The Moonlight Palace*, enjoyed a period atop the Kindle best-seller charts. Thanks in part to a special "Kindle First" promotion, it reached more than 100,000 readers in the first month of pre-publication in fall 2014. The book, set in 1920s-era Singapore, is a departure for Rosenberg, better known for novels set in modern-day New York state as well as poetry and children's books.



Do we have a culture of innovation? Let's just say that even freshmen are doing research.

The Freshman Research Immersion program introduces undergraduates to research from the time they arrive at Binghamton. The first FRI students are pursuing research in biofilms, neuroscience or smart energy. "What we offer students through the Freshman Research Immersion is a deeper educational experience that gets them beyond textbook knowledge and helps them learn about the excitement of discovery," Provost Donald Nieman says.