



# HPU's ACADEMIC INNOVATION

The university has invested more than \$250 million in state-of-the-art STEM facilities and programs.

What university provides the opportunity to consistently learn from Apple Co-Founder Steve Wozniak and Netflix Co-Founder Marc Randolph?

It's a question with only one answer:  
**High Point University.**

So Dr. Angela Bauer, founding dean of the Wanek School of Natural Sciences, wasn't surprised when she had the opportunity to interview Randolph, HPU's Entrepreneur in Residence, during a campuswide Q&A session. Neither was Dr.

Michael Oudshoorn, founding dean for the Webb School of Engineering, when he had the chance to interview Wozniak, HPU's Innovator in Residence.

Bauer is a scientist, and Randolph is a Silicon Valley veteran. Students from all majors filled the Callicutt Auditorium for the big event.

It represented Bauer's favorite teaching method—an interdisciplinary approach. She knows that in every industry—including science—experts in one field must work with and learn from experts in another.

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Collaborating and communicating well are life skills HPU works to instill in students. Bauer asked Randolph about the importance of life skills that day, including the ability to adapt, problem solve and take risks.

“Let’s say you’re mentoring a young entrepreneur, and they have resistance going into the risk-taking exploration of their personal growth,” said Bauer to Randolph. “How do you advise them to engage in an opportunity — to seek out, expand and grow in that respect?”

“Every person has a dream in their head,” answered Randolph. “But when they think about what is required to take that risk, they also think of a big problem. They think, ‘I don’t know how to raise money for it,’ or, ‘I don’t know how to get distribution.’ Scale the risk back to something you’re comfortable taking.

“That,” Randolph said, “is the real skill of being a risk-taker.”

## SCIENCE OPPORTUNITIES INCREASE EXPONENTIALLY

Bauer knows HPU is a real-life example of having the courage to turn big dreams into reality.

She joined the university in 2013 as chair of the Department of Biology because she appreciated HPU’s commitment to high-impact educational experiences. She was named founding dean of the Wanek School of Natural Sciences in 2019. Now, she’s leading science faculty and students inside a new, 128,000-square-foot facility.

“We are on the precipice of great transformation within the undergraduate sciences,” says Bauer. “The innovative, holistic classroom approaches that have always been a hallmark of the HPU education now take place in one of the most unique, state-of-the-art undergraduate science facilities.”

The Wanek School of Natural Sciences is home to HPU’s biology, chemistry, physics, neuroscience and biochemistry programs — all of which have experienced an influx of students. The facility’s four stories gleam with new instrumentation, lab space and faculty offices with inviting glass windows.

The school’s list of experiential learning opportunities is long. It includes research projects funded by the National Science Foundation and National Institutes of Health; the HPU Mobile Lab, which students and faculty take into the community to foster science education; a Science Advantage Camp for minority and underrepresented students; and a partnership with the future Nido and Mariana Qubein Children’s Museum that will allow HPU students to create engaging science activities for children.

At the core of the curriculum and mission for these academic schools are student experiences and student outcomes. From gaining acceptance to medical, dental and veterinary schools, to other high-level graduate programs, Bauer has seen graduates achieve success.

“We have many opportunities to engage in what we are passionate about and what first lit our fire in the field of science,” says Bauer. “We have different labs, classrooms and faculty offices interwoven throughout this facility because that’s how science is conducted. It’s important for our students and faculty to discuss their work and learn from one another.”



Dr. Angela Bauer, founding dean of the Wanek School of Natural Sciences, leads faculty and students in a new, 128,000-square-foot facility.

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## NSF-FUNDED RESEARCH

Below is a glimpse of projects the National Science Foundation has funded in the sciences at HPU:

- Dr. Brad Barlow, assistant professor of astrophysics, received nearly \$350,000 to investigate the effects that small objects like planets might have on the future evolution of stars similar to the sun. Several students assist Barlow with the research.
- Dr. Pamela Lundin, assistant professor of chemistry, received an instrumentation grant for nearly \$300,000 to purchase an NMR spectroscopy. Her students use the high-level instrument to observe a specific element's nuclei and the overall structure of molecules.
- Dr. Andrew Wommack, assistant professor of chemistry, received a \$172,000 grant, which supports nine HPU students as they investigate biochemical signaling related to how peptides and proteins use disulfide bonds.
- Wommack is also part of a \$418,000 NSF-funded project in collaboration with professors at UNC-Chapel Hill and Mississippi State University. The project focuses on how plants react to internal and external stressors to maintain and adapt their physiology on a cellular and biochemical level.
- Dr. Niky Hughes, assistant professor of biology, received \$205,000 to examine the effects of cloud immersion, sunlight and temperature on the physiology and productivity of high altitude conifer species, in order to model tree-line migration and seedling survivorship in the context of global climate change. Hughes' research project was completed with the help of HPU students.

## BUILDING FUTURE ENGINEERS

Oudshoorn joined HPU in 2018 and has three decades of experience. Since 2004, he's been a member of ABET, the non-governmental organization that accredits college and university programs in applied and natural science, computing, engineering and engineering technology.

"During an ABET conference I recently attended, they emphasized the importance of communication and collaboration skills," said Oudshoorn. "HPU engineering students benefit from HPU's focus on life skills."

Thanks to Oudshoorn's experience, he knows the Webb School of Engineering has competitive advantages that students won't find elsewhere.

"At a large research university, first-year engineering classes are incredibly large and instructed by teaching assistants," says Oudshoorn. "At HPU, however, engineering majors benefit from small class sizes and faculty mentors."

Students also learn in a completely renovated Couch Hall, updated with the latest technology.

And there's Wozniak — HPU's Innovator in Residence and the genius behind the Apple computer who worked alongside Steve Jobs.

"He's a good example of someone who understands that whatever your discipline is, you don't accomplish things alone," says Oudshoorn. "It's a team effort that uses people with very complimentary skill sets to make it happen."



Through HPU's Mobile Lab, students foster an appreciation for the sciences throughout the community.

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Oudshoorn arrived at HPU after the university received a major gift from Mark and Jerri Webb, successful business owners and strong HPU advocates, to establish the school. Many more milestones have since been achieved.

The school strengthened HPU's existing computer science degree by adding a concentration in cybersecurity — a field that Oudshoorn says is “off the charts in terms of demand.”

In March, HPU received approval from the Southern Association of Colleges and Schools (SACS) to begin implementing degrees in computer engineering and electrical engineering.

This fall, HPU welcomed the first cohort of engineering majors who can choose between those two degree paths.

Through the Webb School of Engineering, HPU students will benefit from HPU's focus on life skills and graduate into a job market that is in need of them.

“Our graduates will have the ability to work in fields that are experiencing up to a 28% increase in demand in the coming years,” says Oudshoorn. “Their work will be fulfilling, and their salary will be great. They will have endless upward mobility.” ▲



Dr. Michael Oudshoorn (center), founding dean of the Webb School of Engineering, and faculty help students develop the competitive edge needed to succeed in the marketplace.

**The Webb School of Engineering** is named in honor of Mark and Jerri Webb, successful business owners and strong HPU advocates. Mark Webb is a 1983 alumnus and native of High Point. He owns and operates Interstate Foam and Supply Inc. in Conover, North Carolina. The Webbs live in Charlotte, North Carolina, and their son, Connor Mosack, is a student at HPU.

The school offers the following majors:

- Computer science with an optional concentration in cybersecurity
- Computer engineering
- Electrical engineering
- First-year curriculum with flexible migration for new students as they decide on the best path