

RESEARCH FOR THE COMMON GOOD.

Collaborating with Emerson on an ice machine simulator designed to help achieve the U.S. Department of Energy's target of reducing energy in ice machines. Working side-by-side with GE Aviation engineers. Filing a patent with Hobart. Creating new technology that launched startup Prixarc. University of Dayton researchers, faculty and students partner with industry to solve real-world problems every day.

"We're focused on research for the common good," said John Leland, vice president for research and executive director of the University of Dayton Research Institute. "We are solving real and urgent problems for industry. We have developed a holistic industry relationship that benefits the companies, the community, the University and our students."

On land owned by the University, two Fortune 500 companies — GE Aviation and Emerson — established major research and development centers. They were attracted to the University's top-tier engineering talent and strength of the region's innovation infrastructure.

GE could have built its Electrical Power Integrated Systems Center (EPISCenter) anywhere in the world; it chose Ohio because of a grant from the state, won competitively in collaboration with UDRI.

"We toured 11 other possible sites, but being next to the University of Dayton was what clinched it for us," said Vic Bonneau, president of Electrical Power Systems for GE Aviation. "We are

always on the lookout for new talent. UD and the University of Dayton Research Institute are excellent sources of this kind of talent."

In addition to collaborating on R&D, researchers at the GE EPISCenter have been working closely with faculty in the School of Engineering to develop new programs in aerospace electronic systems.

The collaborative nature of the University's culture nurtured its relationship with Emerson. In The Helix, Emerson's premier innovation center, UD students and faculty work with Emerson engineers and industry leaders to develop innovations in the climate technologies industry.

"This facility fills a real and critical need for the HVACR industry today," said Ken Monnier, chief technology officer for Emerson. "Nowhere else will you find a similar facility where academic researchers and industry participants can come together under one roof to discuss, develop and test technology solutions through various real-world applications."

The University's partnership with Emerson extends beyond just research. An Emerson grant was instrumental in establishing the School of Engineering's Design and Manufacturing Clinic, which evolved into the current Innovation Center. Through this center, approximately 3,000 undergraduates have conducted more than 1,000 projects for more than 200 companies, meeting or exceeding expectations at an 85 percent rate.

As a result of working on an Innovation Center project with Hobart, a global leader in the manufacturing and service of commercial food equipment, seven UD students will be listed on a nonprovisional patent filing for an innovation that assists in trapping heat in commercial dishwashers often found in cafeterias and restaurants.

"Hobart has been a strong supporter of our Innovation Center," said Director Becky Blust. "The opportunity Hobart has given our students to be part of this patent process is one not many get as an undergraduate."

These hands-on projects provide tremendous value to the educational experience for students — and improve student outcomes. The real-world opportunities they receive help contribute to a 96 percent placement rate for graduates. Partnerships also help University researchers and faculty stay connected with the industries and provide opportunities for growth.

Companies benefit from the partnerships, as well, with new talent and new ideas. In the case of Hobart, it led to a new invention. With Spectral Energies, it led to a whole new company. A soon-to-be-patented ceramic module developed in part by a pair of University of Dayton researchers is the catalyst for a startup company — Prixarc LLC — and new jobs in the region.

"We're happy to generate high-tech, advanced manufacturing jobs for Ohio and provide internship opportunities for students close to campus," associate professor Vamsy Chodavarapu said. "Startup companies enabled by technologies created at universities are relevant to students because they can see the work they do in labs getting into the marketplace."

Successful industry partnerships benefit more than just the companies and university, however. They also positively impact the entire region.

"I think getting GE on campus was really a turning point for the local economy," Leland said. "It was an indicator of the rebirth of the high-tech industry locally and was pivotal for the city and the growth path it is on. ♦

5 WAYS UNIVERSITIES CAN SUCCEED IN INDUSTRY PARTNERSHIPS

While industry partnerships have some inherent challenges, there are a few things universities can do to avoid common pitfalls.

- 1 Develop a shared vision — and an arrangement that provides value for both sides.
- 2 Make intellectual property agreements and publishing policies both transparent and flexible.
- 3 Be expedient in negotiating contractual agreements with companies — industry often moves at a faster pace than academia.
- 4 Stay agile and keep an open mind. Flexibility by faculty members and researchers alike is key in meeting the partner's needs.
- 5 Think — and act — collaboratively. Look through the lens of what's best for the company — not just what's best for the university.

UNIVERSITY of
DAYTON

CONTACT
John Leland
jleland1@dayton.edu