

# Driving U.S.-Japan Innovation: The Honda-Ohio State Partnership

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## U.S.-JAPAN HIGHER EDUCATION ENGAGEMENT STUDY (USJP HEES)

This case study is part of a larger study by the American Council on Education (ACE). This case study and the accompanying live, interactive database, real-time analysis, fact sheet, and infographics provide a foundation to capture U.S.-Japan higher education institutional partnership activities.

The goals of USJP HEES are to improve mutual understanding and cooperation within the U.S.-Japan higher education community and to capitalize on its strengths within the global higher education context.

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Visit [www.acenet.edu/usjp-hees](http://www.acenet.edu/usjp-hees) to learn more about the project.

The Honda-Ohio State partnership is an initiative that is noteworthy for its support of faculty research, student learning, corporate innovation and workforce development. The collaboration is guided by a memorandum of understanding (MOU) codified in 2000 and reaffirmed in 2015. This case study examines the partnership history, outlines key initiatives and projects and identifies the resulting benefits for Ohio's workforce and the global mobility industry.

## Building the Partnership

The Honda Motor Company, Ltd. is a Japanese public multinational conglomerate corporation primarily known as a manufacturer of automobiles, motorcycles, and power equipment. In 1986, as a part of its strategy to establish itself as a self-reliant motor vehicle company with resources to compete in the world market, Honda looked at East Liberty, Ohio as a site for a second auto plant and a local R&D center for product development.<sup>1</sup> Honda's partnership with The Ohio State University began in 1988 with the purchase of state land, which included the purchase of The Transportation Research Center (TRC), operated by The Ohio State University, College of Engineering. Honda provided the College of Engineering with an endowment of \$6 million to operate the facility for Honda as an independent proving ground for transportation research—where surplus funds from the operation would be reinvested in transportation research and facilities upgrades and to fund other endowments at the College of Engineering.

In 2000, Honda and The Ohio State University formalized their partnership to support research, talent creation, and community development in an MOU. The Honda-Ohio State partnership's significant milestones include the establishment in 2008 of the Honda/OSU Mobility Innovation Exchange (MIX), a multi-disciplinary collaborative research and development initiative (Honda and The Ohio State University 2020). MIX engaged faculty across a broad research portfolio including mechatronics, dynamics, simulation, safety, and materials (The Ohio State University 2013).

Three years later, then newly appointed dean of the College of Engineering (COE), David B. Williams, sought to deepen the partnership with Honda, leading to creation of joint research centers on the university's campus. The first of these, a 2012 Driving Simulation Laboratory, measures distraction and other factors affecting driver behavior and road safety. Subsequently, in 2014, Honda assisted COE's launch of the Simulation Innovation and Modeling Center (SIMCenter) in support of research and application of computer-aided engineering techniques for the design and manufacturing of advanced products and production concepts.

**“Honda (has been) an integral partner in research, education, and outreach. The company continues to invest in faculty and students to help advance the field of engineering. Honda also funds six endowed chairs, which help to recruit top talent to the university. The Honda-Ohio State partnership supports the teaching of engineering as well as the research of our faculty.”**

**David B. Williams, Dean, College of Engineering, The Ohio State University**

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1 Honda's roots in Ohio go back to the 1970s, led by Ohio Governor Jim Rhodes's economic development efforts, which included conversations with Honda Motor Company founder Soichiro Honda and Honda Motor Company President Kiyoshi Kawashima. An outcome of the governor's leadership was establishment of a Honda motorcycle plant near Marysville, Ohio, in 1979, followed by the Marysville Auto Plant in 1982.

Honda and Ohio State reaffirmed their partnership through the creation of a new MOU agreement in 2015, strengthening the mutual commitment to better serve the community through the development of innovative business practices and creation of new research initiatives focused on increasing driver safety. A key element of this renewed commitment was the development of a new business model for the TRC and new innovation business practices, facilities, and capabilities of TRC Inc. that could better support the future needs of Honda, Ohio State, and the mobility industry. This resulted in the creation of the Center for Design & Manufacturing Excellence (CDME) at Ohio State, which serves as the manufacturing port of entry into the university. The TRC is now the largest independent proving ground and vehicle testing organization in North America, contributing to innovative business practices and capabilities better able to support Honda, Ohio State, and the mobility industry (Transportation Research Center 2020). Honda R&D Americas and COE recently signed the Aerodynamic Research Collaboration Agreement, which supports aeroacoustic research aligned with Honda's new North American Wind Tunnel facility located at the TRC. This facility is slated to open in 2021.

To help achieve the goal of fostering relationships and enhancing the student experience, Honda associates take an increasingly active role in mentoring Ohio State students, including advising student groups, networking events, guest lectures, industry panels, resume reviews, and job shadowing. As a result, students develop a better understanding about careers from those already working in the industry, emerging as the next generation of engineering leaders.

For example in 2018, a discussion between Honda and former and current students from The Ohio State's Center for Innovation Strategies (CIS) led to creation of OnRamp, a 10-week program for students from multiple disciplines to work to transform early-stage ideas into startup projects for Honda R&D. Honda has also invested in COE's Industrial Automation & Industrial Robotics Lab, which provides students with

**"99P creates a place for our researchers to stretch their ideas, and to try something they might not have tried before. . .and students benefit from the real-world expertise of Honda's research and development team. It's a win-win."**

**Morley Stone, Senior Vice President for Research, The Ohio State University**

hands-on learning about automation, robotics and programmable logic controllers (PLCs). In addition, 99P Labs, created by Honda and Ohio State in 2019, is supporting collaborative seed projects that extend beyond the traditional engineering side of mobility through better understanding of customer preference, data science and business improvement. Beginning before enrollment, Honda and Ohio State are also providing opportunities for graduating seniors from public and private high schools through its annual Honda-Ohio State STEM Award program. In addition, students interested in an engineering career can apply for the Honda Scholarship Program in the COE. Established in 2005, the program has recently expanded to

provide scholarship support for students entering Ohio State's Fisher College of Business. In the 2019–20 academic year, Honda reached out to more than 1,500 women and under-represented minorities at Ohio State by providing financial and programmatic support, clearly demonstrating a commitment to workforce diversity (Honda and The Ohio State University 2020).

The Honda-Ohio State Partnership is also striving to create a seamless learner experience regardless of discipline, the mode of learning, demographic characteristics, and specific academic program. Honda and Ohio State recently began a study that tests, reviews, and provides recommendations regarding future mobility

products and services for older adults and individuals with disabilities.<sup>2</sup> The project is comprised of an interdisciplinary team of faculty, students, and community members and will be digitally documented through branded storytelling.<sup>3</sup>

## Celebrating Two Decades of Collaboration and Future Path

### 20 Years of Impact: Honda-Ohio State Partnership

- Honda/OSU Mobility Innovation Exchange (MIX, 2008)
- Driving Simulator Lab (2012)
- Simulation and Modeling Center (SIM Center, 2014)
- Center for Design and Manufacturing Excellence (CDME, 2015)
- OnRamp accelerator program (2018)
- 99P Labs (2019)
- Aerodynamic Research Collaboration Agreement (2019)
- Industrial Automation & Industrial Robotics Lab (2019)

In 2020, the Honda-Ohio State partnership celebrated its 20th anniversary. This event provided an excellent opportunity to reflect on the collaboration's impact on transforming Ohio's higher education, economy, and workforce. Participants included Ohio State President Kristina M. Johnson, Ohio's Lieutenant Governor John Husted, and leaders from Honda, COE, TRC, and One Columbus.

In total, Honda has directly invested more than \$68 million to Ohio State in support of projects benefiting researchers, students, and the mobility industry. Over the last five years, the top Ohio State majors hired by Honda, full-time and intern/co-op, include: mechanical engineering (188), electrical and computer engineering (51), and industrial and systems engineering (51). Honda has also engaged with some 200 Ohio State undergraduates as interns or through co-op arrangements, and there have been approximately 470 Ohio State undergraduates involved in project-based coursework during this same time frame. In the years ahead, increased collaboration between Honda and Ohio State is expected to drive more faculty research innovation and allow greater numbers of students to gain hands-on experience in research and business.

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2 This project is led by Ohio State College of Social Work Associate Professor Holly Dabelko-Schoeny.

3 Such storytelling is a strategy that weaves together a narrative based on emotions evoked by a brand product.

## Honda's Contributions to Research, Teaching, and Community Engagement at The Ohio State University

### Honda funds:

- 120 Honda Scholars annually
- Six endowed chairs
- Six endowed programs that support transportation, diversity, and student engagement and outreach

### Top areas of philanthropic giving include:

- College of Engineering
- Scholarship and Student Support
- WOSU Public Media
- Fisher College of Business
- College of Food, Agricultural, and Environmental Sciences

### Students hired by Honda, past five years, by major:

- Mechanical Engineering (188)
- Electrical and Computer Engineering (51)
- Industrial and Systems Engineering (51)

The celebration event honoring 20 years of the Honda-Ohio State partnership included comments by Ohio State President Kristina M. Johnson, who noted that the agreement between Ohio State and Honda benefits both organizations in the critical areas of research, philanthropy and talent development. Combined, they represent the main reasons for the partnership's past and continued success, underscoring her "excitement about what the next 20 years is going to look like" (Booker 2020).

## References

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