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Bringing Ideas to Life

Treating design, technology, and entrepreneurship equally, a new major equips IWU students with skills to tackle real-world problems and bring new products and services to the marketplace.

Story by KIM HILL



Karyssa Clark '20 wants to help improve peoples' lives. And she'd like to do that by inventing or designing products that work perfectly and look good, too.

Her interest began with an engineering design class in high school. During her college hunt, she googled Illinois universities using search terms like "product design" and "design major." One hit stood out: Illinois Wesleyan's Design, Technology and Entrepreneurship (DTE) program. "It wasn't a major I found at any other institution," says Clark.

IWU administrators say DTE is unique among undergraduate programs because all three of its areas — design, technology, and entrepreneurship — are given equal importance. This interdisciplinary approach equips students with the skills and knowledge for identifying problems, inventing products or services, developing those ideas, and delivering them to the marketplace.

The DTE program's origins can be traced to alumnus and former trustee Dave Petrick '67. Drawing upon his decades of experience in the business world, Petrick wanted to help IWU stand out in a continually challenging higher education landscape (see sidebar page 23). Petrick suggested that a major that included elements of design and entrepreneurship would serve students well. His startup funds for such a program provided the impetus for the faculty to develop the full-fledged DTE program that exists today — a program that is delivering experiences students describe as transformational.

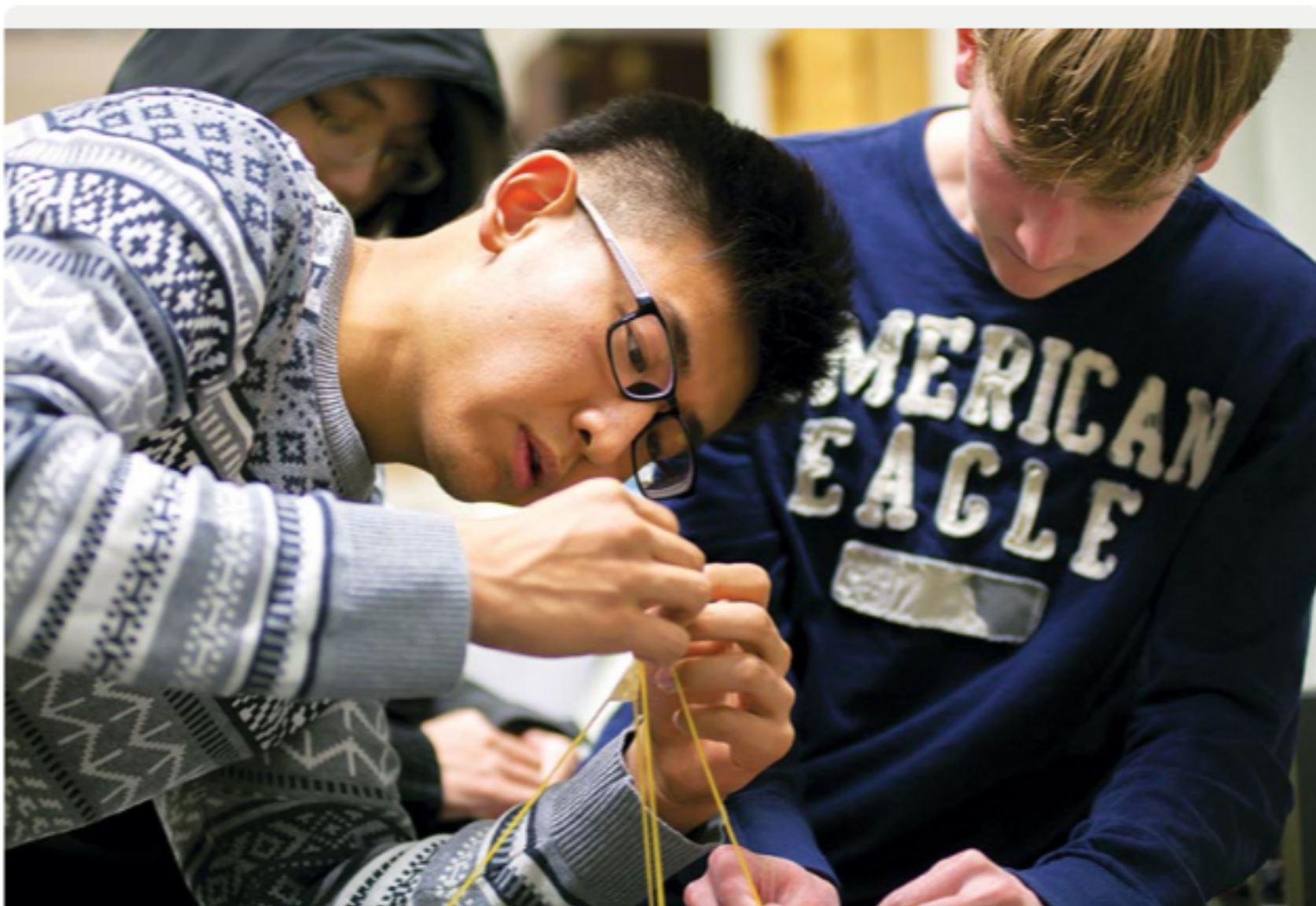
"My DTE courses have given me many ways to think," says Clark, a process she believes "fully captures the liberal arts experience." That realization is reflected in IWU's mission statement, which states that a liberal education at Illinois Wesleyan fosters creativity, critical thinking, and a spirit of inquiry.

"Our society needs creative people who can actually implement their ideas," says President Eric Jensen. "With elements of design, technology, and entrepreneurship, the DTE curriculum gives each student the tools to tackle challenging problems — whether the solution might be a new consumer product or some remediation of a societal issue like sustainability or energy efficiency."

And while questions about the relevance of the liberal arts periodically rear their heads in the public sphere, Jensen notes leaders in business and government are predominantly liberal arts graduates precisely because of critical thinking and problem-solving skills honed at colleges like Illinois Wesleyan — and which programs like DTE accentuate.

“Ultimately, we want to create and nurture a culture for innovators that goes beyond the classroom,” says Bruno deHarak, director of the DTE program and associate professor of physics. “We want to build and support an environment that rewards students who take risks.”

The DTE major includes coursework from the natural sciences, business, and the arts, taught by professors across the academic spectrum and in several instances, co-taught by faculty from a range of disciplines. Students are introduced to the creative ideation process and taught to render their product concepts using technical drawing skills and computer-aided design (CAD) software. They learn how to fabricate prototypes using the University’s 3-D printers, computer-controlled routers, and other machinery. They also become knowledgeable in business processes, accounting and marketing for entrepreneurs, and how to write grants and raise funds for new ventures.



Students tackle the marshmallow challenge on the first day of the "Engineering Design" class.

Each DTE major chooses a concentration: Engineering Design, Entrepreneurship, or Product Design. Entrepreneurship and Product Design minors are also offered.

DTE’s interdisciplinary focus helps Clark and her classmates find their strengths and weaknesses. So far Clark’s favorite class is “Design Processes,” which acts as a kind of research methods course for the major and through which Clark learned an essential lesson: to “challenge orthodoxies.”

“Professor deHarak taught us to think deeply to find a solution that’s specific to the problem at hand,” she says. “We have to peel back the layers of the issue to find the root problem so we can solve it.” She gives a simple example. If a workplace supervisor asks a designer to create a product, the designer shouldn’t reply, “Sure, let me make that for you.” Instead, says Clark, the designer should ask questions in order to determine if the request is really the right solution to a given problem.

“We want to know if the solution — the design or new product — will solve the root problem,” Clark explains, “or if it’s just getting at a symptom.”

This kind of design thinking, which raises questions and challenges assumptions, lies at the core of the program, according to deHarak. “DTE students are being taught to be problem solvers,” he says.

These problems are wide-ranging and often linked with students’ desire to design something that will make the world a better place. It’s a sentiment encouraged by DTE faculty. In the course “Beginning 3D Design,” Visiting Assistant DTE Professor Mark Genrich ’83 — an art major at Illinois Wesleyan who is an installation artist and maker — spent time discussing world events, including the European migrant crisis.

“He challenged us by asking what we could design for people in transit,” says Clark, who took the course her first semester in college. “Our solution didn’t have to be for refugees, but that’s the first thing we all thought of — people who were displaced from their homes, who were in transit.”

Clark designed a type of wheelchair that also folded into a bed. She learned to use the computer-controlled router and other power tools to craft her prototype, which she modestly describes as a “very basic, kindergarten-level type of design.” Several classmates also fashioned versatile pieces that would be useful for a family in transit. “That was a big theme,” Clark recalls. “Everyone made something that could be used for multiple uses.”

Another of Clark’s ideas, in collaboration with Amor Diazdeleon ’20, was born from the “Design Processes” course. Borrowing elements from the card game Slapjack, Clark and Diazdeleon created ChemSlap, designed to help players memorize the periodic table. ChemSlap made such a positive impression that deHarak believes it should be developed further.

Once a promising idea such as ChemSlap is developed through coursework, Tara Gerstner ’01, coordinator of Entrepreneurial Activities and adjunct instructor of business administration, considers those ideas for her course “Management for Entrepreneurs.” In this class, students act as consultants for all aspects of getting a product or business off the ground.

Encouraging a spirit of entrepreneurship at her alma mater is exciting for Gerstner, who majored in business at IWU and earned an M.B.A. in marketing before working as the executive director of the Peoria Promise Foundation. “For any student who has an idea and wants to pursue it further, I work to connect them with faculty, alumni, and friends of the University,” says Gerstner. “We have already mentored numerous student-run businesses in the short year DTE has been up and running.”

She adds that many Titan alumni have expressed interest in helping students on such projects, and she encourages even more to become involved. In fact, several alumni have already gotten involved in the IWU Entrepreneurship Society, a group of like-minded alumni, friends of the University, and students, with networking and professional development opportunities.



Through the DTE program and other initiatives, Illinois Wesleyan strengthens its appeal to the entrepreneurial spirit and sense of purpose that are defining characteristics of Generation Z. Recent studies indicate more than 70 percent of young Americans envision starting a business or pursuing an entrepreneurial endeavor as adults.

One of those young adults might be Clark. She uses the example of a simple drinking straw to illustrate the scope of her experiences in IWU's Design, Technology and Entrepreneurship program.

"With what we learn, you could go into designing straws, or designing the machine that makes the straws, or you could own the company that manufactures the straws," Clark says. "The range of possibility is expansive."