“You tend to get told the world is the way it is, and your life is just to live your life inside the world ... that's a very limited life. Life can be much broader once you discover one simple fact, and that is ... you can change it, you can influence it, you can build your own things that other people can use. That's maybe the most important thing. It's to shake off this erroneous notion that life is there and you're just going to live it, versus embrace it, change it, improve it ... however you learn that, once you learn it, you'll want to change life and make it better, because it's kind of messed up in a lot of ways. Once you learn that, you'll never be the same again.”

— STEVE JOBS
The world’s needs and those of the business world are not mutually exclusive; joblessness, poverty, violence, pollution, and disease affect how we live and how we do business. But, what’s the most effective way to make a positive and lasting difference in both worlds? You tell us. Then, Notre Dame’s Engineering, Science, and Technology Entrepreneurship Excellence Master’s (ESTEEM) program will show you how to do it.

Developed in collaboration with the College of Science, the College of Engineering, and Mendoza College of Business, and housed at the University’s state-of-the-art Innovation Park, Notre Dame’s one-year ESTEEM program provides students with the balanced foundation of technical expertise and business knowledge necessary to master the modern marketplace and become a leading innovator among the world’s most successful start-ups and corporations. This education in the process of innovation and in professional business practices, combined with Notre Dame’s enduring commitment to the common good, prepares science and engineering students for the business world—whether working as an entrepreneur or an intrapreneur—as well as for a world where business innovation benefits people, the planet, and profits. ESTEEM graduates find their science and engineering skills more marketable because of their education and experiences at Notre Dame.
In November 1842, Father Edward Sorin arrived in northern Indiana. The Congregation of Holy Cross of which he was a member, newly formed; the 524 frozen acres in which he stood, untamed; the man himself, untested. Although he possessed just $300, the 28-year-old French priest was a man of great faith and lively imagination, so he and his seven companions set out immediately to fulfill his dream of building a great Catholic university that would not only foster in its students “those disciplined habits of mind, body, and spirit,” but also create in them “a sense of human solidarity and concern for the common good.” Just two years later, L’Université de Notre Dame du Lac was officially chartered by the Indiana legislature. Today, Notre Dame is the No. 1-ranked Catholic university in the world (Times Higher Education’s 2010–11 World University Rankings); its faculty have won more National Endowment for the Humanities fellowships in the last 12 years than that of any other university in the nation; and more than 80 percent of its undergraduates participate in service projects either here at home or around the world.

Given all that Father Sorin accomplished and all that the University continues to achieve, some might call the result of his efforts a testament to the power of the pioneer spirit of his times; others, to the entrepreneurial spirit of ours. Regardless, thinking big and doing good is what Notre Dame has done since day one, and it is what ESTEEM empowers its graduates to do in just one year.
No. 1-ranked undergraduate college producing CEOs of 100 largest U.S. financial firms (Bloomberg)

In 2012, Bloomberg Businessweek ranks Notre Dame’s Mendoza College of Business the nation’s best undergraduate business program for the third consecutive year.

FORWARD THINKING

In 1913, Knute Rockne masters the physics of throwing a football, popularizing the forward pass and forever changing the game.

First American to transmit a wireless message was Professor Jerome Green (1899)

First hand-driven wind tunnel, first three-dimensional smoke tunnel for flow visualization, and first supersonic smoke tunnel built at Notre Dame

First person to visualize Tollmien-Schlichting waves, vital to understanding and controlling turbulent flow, was a Notre Dame faculty member

First programs in law, engineering, and architecture at an American Catholic institution of higher learning established at Notre Dame

First accelerator for low-energy nuclear physics to be built in the U.S. since the 1980s installed (2012)

First synthetic rubber (Neoprene) is invented in 1930, based upon the research of Rev. Julius A. Nieuwland, C.S.C.

$70 MILLION
JORDAN HALL
OF SCIENCE
OPENS (2006)

First college in the United States to install electric lighting (1885).

Ten years before the Wright brothers’ first flight, Professor Albert Zahm presents “Stability of Aeroplanes and Flying Machines” at the First International Aeronautics Congress (1893).
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To stop tuberculosis
For a more generous world
For global justice
To rebuild communities
To beat breast cancer
For peace among religions
For breakthroughs in the treatment of autism
For human rights
To bring literacy to the world
For innovative health care
For sustainable energy
For democracy
For improved living standards
For human dignity

See videos at nd.edu/fighting-for/
The ESTEEM Curriculum

Innovation and entrepreneurship are at the heart of the Notre Dame spirit. By combining innovative classes with technical instruction and practical experience, as well as one-of-a-kind networking opportunities, ESTEEM taps into that unique spirit to empower and inspire a select group of science and engineering students to put their passions and skills to work in commercializing technology to serve the common good.

Students have the freedom to focus on a particular area of technology and service that most interests them. In addition, a series of core courses designed specifically for the program complement students’ technical studies. Core courses include technology business fundamentals such as:

- Business Law
- Technical Marketing
- Accounting and Finance
- Ethics
- Statistical Methods
- Research and Development Management
- Supply Chain Management
- Leadership
- Commercialization Analytics
- Entrepreneurship Boot Camp
- Technical Business Presentations

In addition to their studies, ESTEEM participants also attend workshops, seminars, and career fairs.

Finally, through a capstone thesis project, students develop a high-tech or research innovation from the embryonic seed concept through commercialization. Past thesis projects have focused on health, social programs, energy, the environment, chemicals and pharmaceuticals, manufacturing, national security, and general technologies.

Each ESTEEM student works directly with a technology advisor (usually a professor from the Colleges of Engineering or Science) to explore the depth of their idea and its potential to be commercialized and brought to market. Each student “deep-dives” into the engineering, science, technology, and/or analytics of their project, the background of its discovery, and the potential for translation to applications for solving real-world problems.

With the guidance of a commercialization advisor (usually a successful entrepreneur or CEO/senior executive), each ESTEEM student applies the breadth of business knowledge gained in coursework to the development of an overall business model and a go-to-market strategy for their product or service offering. This includes creating a fully developed business plan inclusive of IP strategy, market and commercialization analysis, human capital development, and a robust financial model as part of their capstone thesis work.

Through ESTEEM’s team-based approach, students receive valuable mentorship and complementary skills critical to launching successful technology-based entrepreneurial ventures, either as stand-alone start-ups or as part of an innovation ecosystem within already-established enterprises.
“ESTEEM does more than just prepare you to be an entrepreneur. I have been fortunate to continue pursuing social entrepreneurship with the enFocus Fellowship in South Bend. My ESTEEM education along with enFocus has prepared me to work on innovative initiatives focused on bettering the region. The entire experience has instilled a desire to continue a career that incorporates the social responsibility a business owes to the world.”

—Daniel Lewis, ’12
enFocus Fellow

“I found ESTEEM of particular value in working cross functionally across multiple disciplines. The program emphasizes technical depth with industry breadth. This core skill set is of tremendous value to anyone with a background in a technical field.”

—Courtney Parry, ’10
Deloitte

“ESTEEM not only enabled me to expand upon what I had already learned, but opened my mind to a variety of other forms of knowledge that greatly increased my awareness of the power and complexity of the entrepreneurial commercialization of cutting-edge technology.”

—Michael Dean, ’11
Arteriocyte

“The ESTEEM program provided me the opportunity to combine my technical background with business entrepreneurship. This enabled me to understand how ideas transition into products and technologies that can be brought to market.”

—Torrie Sleeper, ’10
Booz Allen Hamilton
Home to ESTEEM, Innovation Park advances the University’s research mission to connect aspiring innovators with Notre Dame faculty, students, and resources; to collaborate with industry experts, including those in Notre Dame’s vast alumni network; and to support entrepreneurs to commercialize their ventures.

Situated on a 12-acre campus, the 55,000-square-foot structure houses high-tech conference rooms and collaborative areas, administrative offices, incubation facilities, and state-of-the-art lab space. Innovation Park’s services include entrepreneurial consulting, business networking with industry experts, leadership talent assessment, and introductions to professional service providers and potential customers.

Providing a unique environment for collaboration and innovation implementation that is the core of the ESTEEM program, students have the opportunity to interact with other entrepreneurs, Notre Dame faculty and researchers, alumni, and commercial mentors as they observe and participate in technology development and validation, business plan fundamentals, financial processes, manufacturing, and marketing.

innovationparknd.com
The ESTEEM program is part of a larger ecosystem capable of taking ideas all the way from concept to market.

**INNOVATION**

World-class centers, labs, and institutes act as engines of innovation.

**INCUBATION**

Incubators and support services exist to foster promising ideas.

**INVESTMENT**

A network of investors and alumni is available to help launch ventures.
Almost 70 percent of all jobs are secured through networking. In fact, career counseling professionals estimate that more than 50 percent of jobs filled are never advertised. The University’s network of 267 alumni clubs—including 64 international clubs—is the most extensive in higher education. And, Notre Dame alumni are some of the most loyal in the world (there’s a reason why graduates are referred to as family). So, while ESTEEM can help give students a distinct advantage over their peers in a very competitive marketplace, Notre Dame’s alumni network certainly doesn’t hurt.

**enFocus**

The enFocus fellowship program was created in May 2012 by the University of Notre Dame’s ESTEEM program and local business and community leaders to help build and then advance an ecosystem of entrepreneurship and innovation that creates a new paradigm for economic and community development. Funded by private, public, and nonprofit organizations (enFocus fellows, initially all ESTEEM graduates, receive a paid stipend and rent subsidy for their one-year fellowship), the fellows are catalysts for change and work on a variety of challenging problems for their clients (private industry, city/regional government, and nonprofit institutions). They deliver real, measurable results in the form of cost savings, revenue generation and social/environmental impact.

The fellows are doers … rolling up their sleeves and diving in; building their network and their brand; having access to the highest levels of leadership in the community to ensure that they can bring meaningful and lasting innovation and entrepreneurial thinking to the client and to the broader community. They are entrepreneurs and intrapreneurs … bringing the future closer and changing the long-term trajectory of economic and community development in the areas where they live and work.
It is good to be home. ► Having graduated from Notre Dame in 1980 and worked for or started up more than 14 companies—from multinationals to early stage ventures to start-ups (spanning eight industries in seven states and in Europe)—I have been given the opportunity to return to Our Lady’s University to promote and advance a spirit of innovation and entrepreneurship that began 170 years ago with our founder, Father Edward Sorin, C.S.C. A 28-year-old French priest who created a vision of what Notre Dame would someday be, Father Sorin saw in Notre Dame not only the potential for a great institution of learning, but that it would be a “powerful force for good in the world.”

That vision still drives us forward today; it is in our DNA. Starting companies, creating innovative products and services in larger organizations and getting them “first to market,” opening up new markets and creating opportunities through the commercialization of research; creating jobs and wealth—we are all of this. But we strive to be more—and certainly our graduate students in the ESTEEM program (a Master’s with a Mission) also seek to use technology and innovation to change the world for the least among us.

Ten years ago I helped create a for profit social venture: Better World Books (originally a Business Plan Competition submission). This was raw start-up with tons of adversity and challenges along the way. Today, this profitable enterprise is approaching $70M in revenue, is the third-largest online seller of used books in the world and employs hundreds of people. Better World Books has also received many social and environmental impact awards as one of the leading social enterprises in the United States and in the world, and is often cited as an example of how business can do well by doing good. A force for good in the world.

But Better World Books did not find success on the merits of good intentions alone. We were able to scale our enterprise in a brutally competitive online retail world because of our ability to create and deliver superior technology, logistics, and predictive data analytics. We recognized very early on how critical this unique skill set combining technical, business and entrepreneurial thinking was in our leadership team and across the organization, and we went after it with a vengeance.

Better World Books is not an isolated case. Increasingly today, start-ups are founded by tech-savvy visionaries whose keen grasp of the technical—combined with essential business skills learned along the way—has allowed them to reach further faster and accelerate the successful scaling of their enterprises. Larger, established companies are also seeking leaders with technical skills who can create a culture of innovation and intrapreneurship, resulting in more new products and services being delivered more rapidly and with more success in the global marketplace.

This trend speaks directly to the primary purpose of the ESTEEM program: provide an unparalleled opportunity for STEM-educated talent to learn the business skills they need to commercialize research, launch a business and learn to think, and act—entrepreneurially. This is not just reading and analyzing—this is “innovation by doing.” And we continue to bring innovation to ESTEEM. We are launching our multi-million dollar Irish Innovation Fund in the spring of 2013 so that students have the necessary capital to take their ideas to market (upon approval of the fund’s advisory board). Every ESTEEM student will also serve as a judge of any business plan from the University requesting funding, with the experience included in the core curriculum. More learning by doing.

Discover the entrepreneur that may be inside you. No matter what your tolerance for risk, challenge yourself to build on all of your technical skills and learn to innovate, to think entrepreneurially, to create real meaning—to rise to the challenge of Father Sorin to create a “powerful force for good in the world.” There are endless possibilities and opportunities.

It is good to be home.

David W. Murphy
Associate Dean of Entrepreneurship / Director, ESTEEM Graduate Program
In just one year, ESTEEM can make your science and engineering skills more marketable, while helping you to be the change you want to see in the world. Learn more today by visiting esteem.nd.edu.

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Early acceptance and merit-based scholarships available.