



University at Buffalo  
The Center for Industrial  
Effectiveness (TCIE)

# ANNUAL REPORT

2017-18



## Our Mission



The University at Buffalo (UB) Center for Industrial Effectiveness (TCIE) leverages assets of the UB School of Engineering and Applied Sciences (SEAS) to improve the operations of external business and industry partners, and meet critical and emerging workforce needs. We spark excellence in people, processes and technology to help you start, grow and sustain your business. Our team resolves a wide spectrum of corporate challenges through technical assistance, OpEx/continuous improvement consultation, and professional education.

## Our Values

1

**Integrity.** We build our reputation by being accountable, credible, ethical and respectful.

2

**Service.** We effectively engage partners and drive outcomes by being responsive, adding value, and facilitating collaborations.

3

**Excellence.** We exceed stakeholder expectations by achieving results, demonstrating initiative, leveraging our resources and expertise, and insisting on sustainable improvements.

4

**Innovation.** We foster a culture of creativity by embracing change, risk-taking, lifelong learning and a supportive environment.

## By the Numbers

TCIE annually assists hundreds of public and private organizations in enhancing and sustaining their strategy and execution. The performance measures at right provide a glimpse into our achievements during this past fiscal year.

228

OpEx/Continuous  
Improvement Projects

52

Undergraduate/  
Graduate Students  
Placed

26

Markets  
Served

319

Industry Partners  
Served

3,035

People Trained/Certified  
through Professional  
Education Programs

\$1,612,099

in Total Revenue

## A Year in Review

*“Alone we can do so little; together we can do so much.”*

It has been 130 years since Helen Keller originated the above inspirational quote. Despite the explosion of technology and societal advancements since then, her words still hold enormous merit and are a fitting characterization of the past year at TCIE.

Reflecting on the progress made in FY 2017-18, the word “collaboration” emerges as the dominant undercurrent. Many TCIE initiatives traditionally harness the capabilities of our vast network of partners. But this year was marked by an increase in alliance-driven work to broaden and deepen our role of nurturing professionals with knowledge and abilities that industry requires.

More specifically, we have joined forces with a diverse array of UB entities and fellow State University of New York (SUNY) institutions:

- We are managing a two-year initiative with Alfred State College – funded by a \$750,000 grant from New York State Gov. Andrew M. Cuomo’s Climate Jobs NY – to contribute to renewable energy sector growth. The Western New York Clean Energy Workforce Development Program’s aim is to close critical workforce gaps by strengthening connectivity between clean energy employers and educators in Erie, Niagara, Cattaraugus, Chautauqua and Allegany counties.
- We are building a “how-to” course that supplies faculty from any SUNY institution with tools and resources to create online courses with ease.
- We are assisting in creation of a digitally available master’s degree program in data science. The program is a collaboration between UB’s Institute for Computational and Data Sciences and Center for Computational Research.
- We are increasing our geographical reach through an agreement with Stony Brook University’s Center for Corporate Education, which is offering some of our Lean and Six Sigma professional education courses downstate.

In addition to our primary offerings, we look forward to the impact these efforts will net as TCIE continues to champion for-profit and not-for-profit organizations in their operational excellence pursuits.



**Timothy Leyh**  
Executive Director



**Liesl Folks**  
Dean

## UB School of Engineering and Applied Sciences (SEAS)

UB is a premier research-intensive public university and a flagship institution in the 64-campus SUNY system. SEAS is the largest and most comprehensive public school of engineering in New York. Annual research expenditures are \$74 million.

The engineering departments are: Biomedical; Chemical and Biological; Civil, Structural and Environmental; Computer Science; Electrical; Engineering Education; Industrial and Systems; Materials Design and Innovation; and Mechanical and Aerospace.

## Strategic Partnership for Industrial Resurgence (SPIR)

Grant funding from New York State's SPIR program subsidizes access to technical assistance, helping businesses foster breakthroughs with technological advances so they can lift their market share, create jobs and grow their business.

A program of SUNY, it supports development of new technologies with engineering resources from the Buffalo, Binghamton, Albany and Stony Brook campuses. As regional administrator for Buffalo, we provide industry partners with matching funds of up to \$25,000 for UB engineering assistance, covering up to 50 percent of a total project cost.

At right are metrics highlighting the impact of SPIR-subsidized projects in FY 2017-18.

27  
SPIR  
Projects

167  
Industry Partner  
Jobs Created\*

2,772  
Industry Partner  
Jobs Retained\*

\* Projections based on industry partner reporting.

\$49,900,000  
in Industry Partner  
Increased Revenue\*





## From short workshops to in-depth certification courses,

TCIE's professional education program elevates knowledge of and skills in world-recognized business practices, as well as emerging technologies. Traditional, blended and digital courses are available through open enrollment classes or corporate contracts that bring programs to a company location.

## Traditional courses: 2017-18 roll call

- 3-Day ISO 9001:2015 Internal Auditor Training
- 5S and Standardized Work
- Certified Lean Professional
- Certified Lean Six Sigma Black Belt Transactional
- Certified Lean Six Sigma Green Belt Transactional
- Certified Production Technician
- Certified Quality Auditor Preparation
- Certified Logistics Technician
- Finance for Non-Financial Managers
- Intro to Blockchain
- Intro to Document Control
- Intro to FMEA
- ISO 9001:2015 Transition Training
- Kaizen and VSM
- Lean Product Design Workshop
- Manufacturing Safety
- Minitab Training
- Root Cause Analysis and Corrective Action

# of unique  
courses offered:

28

# of training  
events:

66

# of industry partners  
represented by participants:

150

# of people  
trained/certified in  
traditional courses:

758

## Blended course highlight: Boosting the manufacturing pipeline

Cummins Jamestown Engine Plant adheres to a “grow from within” philosophy, offering its more than 1,500 employees a cadre of educational opportunities to evolve their skills and better support the plant’s production of diesel and natural gas-powered engines.

The five-month Certified Production Technician (CPT) program through TCIE is certainly an avenue for employees to “keep bread on the table.” It made its Jamestown debut in fall 2016, through a partnership with the Centers for Continuing Education at Jamestown Community College.

Company leaders also view CPT as a tool to enrich Chautauqua County’s manufacturing base. They tout the nationally accredited program – which distills core knowledge required of frontline manufacturing jobs via online education and classroom-based instruction – beyond company walls and throughout the community.

The reason for Cummins’ outreach is simple, per Human Resources Manager/Community Involvement Leader Lori Jafarjian: “We need to develop a talent pipeline of qualified candidates.”



## Digital courses: Going where the students are

We hear the rising demand for greater flexibility in consuming education, whether from college students who want to squeeze in more learning or working professionals who desire to upgrade their knowledge and skills. That’s why we continue to develop online programs, known as massive open online courses (MOOCs), about the world’s hottest technology topics.

A considerable portion of FY 2017-18 involved dissecting the current technological revolution. This examination culminated in packaging integral advancements into easy-to-digest blocks of digitally delivered education.

We launched the final MOOCs of a nine-part digital manufacturing and design series. In coordination with UB’s Computer Science and Engineering Department, we released four courses about the ubiquitous blockchain technology. They introduce foundational concepts, preparing learners to program on the Ethereum blockchain, design and implement smart contracts, and develop decentralized applications.

# of worldwide  
MOOC completers  
receiving a certificate:

2,277

# of worldwide  
MOOC enrollments:

27,387



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