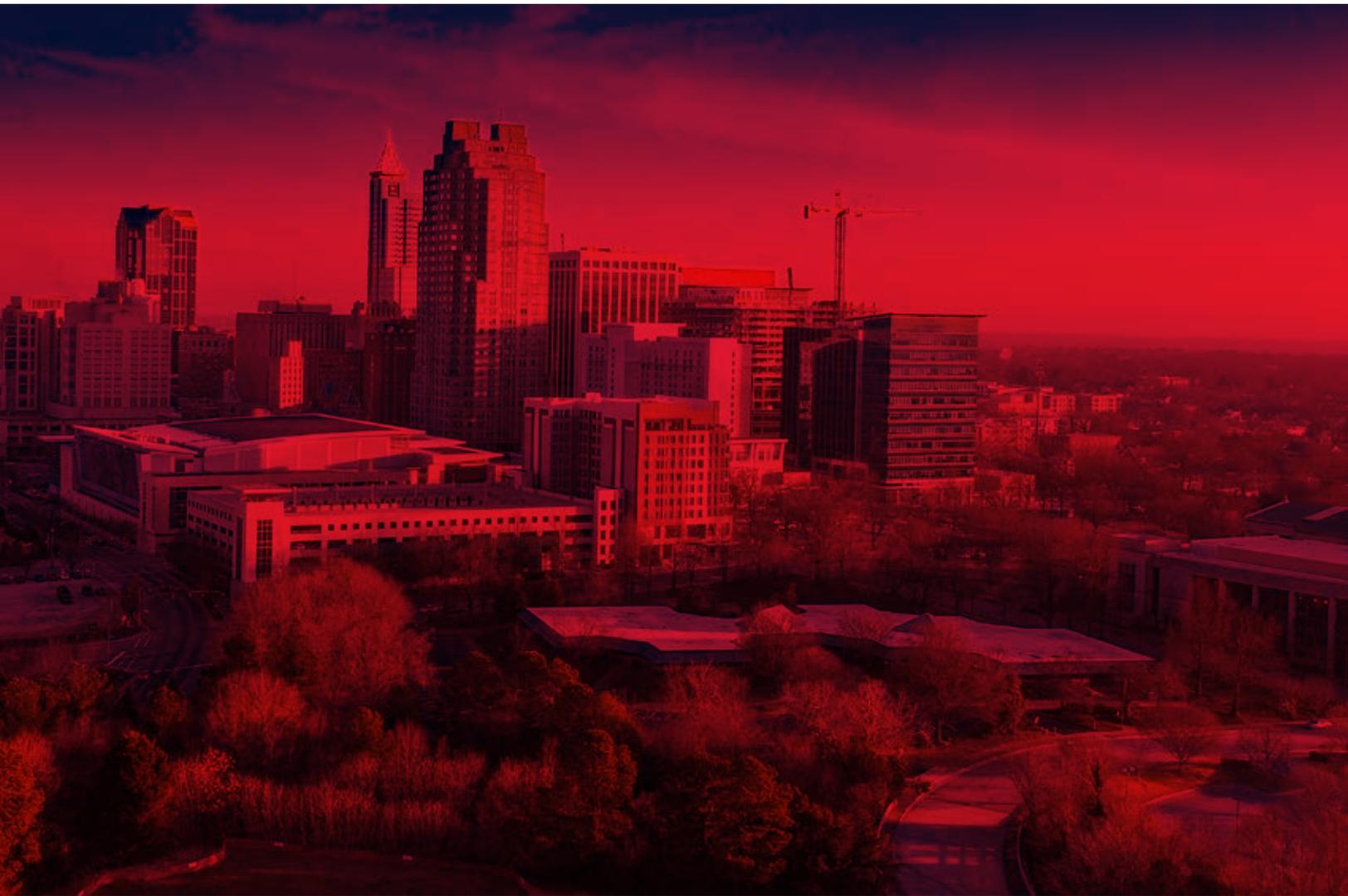


2018–19 Annual Report



IES Mission

We help engineer success for North Carolina by understanding our partners; building long term relationships; crafting meaningful, sustainable solutions and inspiring continuous learning.

Our Vision

To make North Carolina #1 in every market IES serves.

Our Values

Integrity

Do the right thing—always!

Innovative Solutions

We foster creative talent to deliver high impact solutions to drive success.

Client First

We uphold a culture of exceptional service.

Pursuit of Excellence

We partner to achieve measurable economic impacts for North Carolina and beyond.





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Executive Summary

NC State Industry Expansion Solutions (IES) is seen as a key contributor to the state's economic development inventory of business solutions. We leverage state and federal resources to provide engineering and professional programs in support of business growth primarily throughout the state and nationally, where appropriate.

Our primary objectives for 2018–2019 were to enhance recognition of industrial extension through better outreach practices and to develop extension personnel in ways that ensure effective business communication.

We accomplished this by establishing a new training methodology for field staff in order to advance business engagement efforts using the “Trusted Advisor” model. IES also provided staff training on a Core Value business assessment tool for use in evaluating clients for service needs and introduced a Competitiveness Review business assessment tool. This approach positions IES to deliver on more complete and long-term solutions towards accelerating business development opportunities.

Innovation and strategic partnerships remain critical to attaining the IES mission and to our role as an applied technology unit of the NC State College of Engineering. Over the past year, we have realized new partnership opportunities to better position efforts to address a myriad of new challenges our clients are facing. For example, significant time and resources have been secured and dedicated to raising awareness of and compliance with the newly-established cybersecurity

requirements that determine a company's eligibility to conduct business within certain sectors.

We continue to administer federal grant awards, focusing on identifying, assessing, and providing solutions to manufacturers and defense contractors that serve to improve profitability and long-term growth.

Active federal awards included:

- › NIST Manufacturing Extension Partnership
- › DoD Office of Economic Adjustment
- › NIST MEP Digital Supply Chain Enhancement

IES is committed to being a recognized leader in continuous improvement services, professional development and independent project evaluation. We have learned that market leadership requires constantly rethinking our engagement methods and program solutions. We continue to monitor and improve with a focus on four primary goals from the IES strategic plan:

- › Employee Development and Engagement
- › Systems and Processes
- › Financial Systems
- › Clients and Stakeholders

Goal 1: Employee Development & Engagement

In 2018–19, we continued to support the development and engagement of IES employees through:

1. Enhanced awareness of and support for the IES mission and values, providing opportunities for staff input, innovation and shared decision making
2. Advancing a culture of employee engagement and community: improved communication, generating opportunities for collaboration and greater awareness of progress towards shared goals
3. Enhanced support for IES staff development

We invested strategically in resources to support a culture of leadership, learning, communication and collaboration:

- › Continued to deliver weekly “In the Loop” emails designed to streamline internal communications and ensure everyone has access to timely, critical information
- › Served as facilitator and event planner for IES summer and winter All Hands Meetings

Facilitated IES Wellness Annual Report Updates.

- › Met regularly to foster employee development and engagement, with initiatives like community

service activities and staff training and development advocacy and promoting revised IES values

- › IES was awarded the well wolfpack certification ‘gold standard’ for our efforts towards building a wellness culture
- › Developed and deployed an interest survey to effectively implement the six dimensions of university wellness across IES including: physical, emotional, social, community, career and financial
- › Formed a wellness subcommittee to lead, develop and implement initiatives, community outreach and wellness workshops
- › Participated in the races, biking tours and 10 workshops
- › Volunteered (as a group) to serve five organizations. Individually, 50% of organization has accumulated over 350 hours of community service. The organization participated in three financial wellness workshops related to banking service options, retirement and budgeting tools
- › Updated staff portal and developed new employee on-boarding materials, including an IES onboarding online course. We continued to post this content in a central repository on the IES staff portal



Over the next twelve months, we aim to cast our net further and engage even more stakeholders with news about our work. We intend for our efforts to lead to new ideas for collaboration. We will continue to encourage employees to develop Professional Development Plans that enable—and inspire—they to access training that will be of the most benefit to them and to our organization.

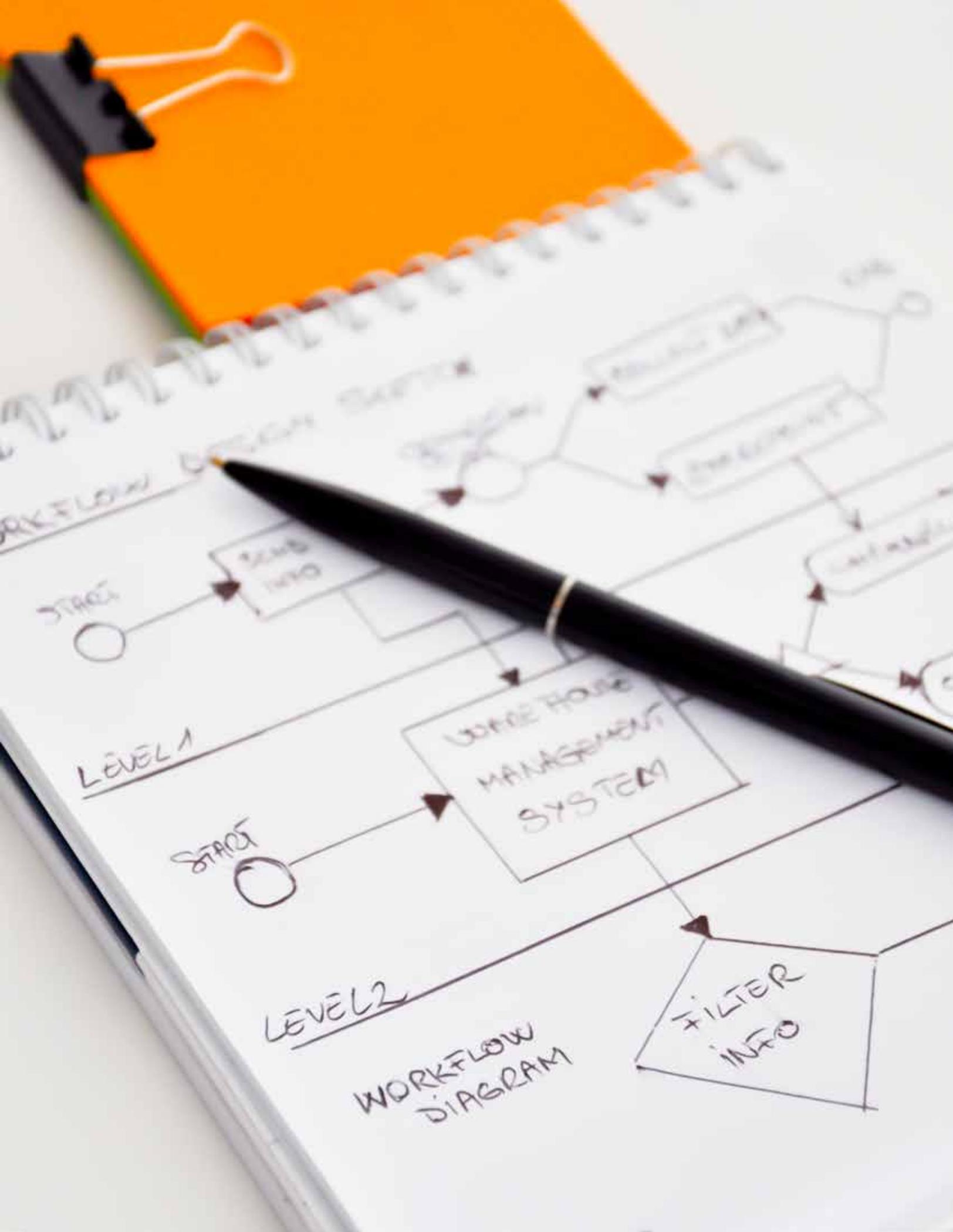
Goal 2: Business Systems & Process Improvement

We continue to look for ways to strengthen our internal business systems and processes, auditing activities to create a more efficient infrastructure. By focusing on internal improvement, IES can better serve both our internal and external clients with greater depth and veracity. The end goal of our efforts will be greater client and stakeholder satisfaction.

In 2018–19, IES:

- › Broadened the services of our client care team
- › Continued to focus our engagement strategy on becoming our clients’ “trusted advisor” with service and support
- › Enhanced internal performance metrics to strengthen our focus on efficiency and effectiveness in serving client needs
- › Continued to strengthen our expertise and functionality around our Client Relationship Management (CRM) tool Salesforce, making it the centerpiece of our data support and information including housing and managing our 3rd party vendor contracts

Our plans are to continue refining our processes, working towards world class client engagement, adding velocity through our sales cycle, while nurturing our client requests and needs.



Goal 3: Financial Systems

The finances of an organization such as ours can be complicated; our sales-generated revenue is supplemented by state appropriations, fee for service contracts and federal grants and contract sponsors. Keeping up with the financial side is aided by streamlining our financial management processes with new technology.

In 2018–19, IES:

- › Salesforce modifications resulted in two new apps: one for managing requests for independent contractors which came online July 2018, and one for managing purchase request which came online January 2019
- › Utilized data analytics and reports in Salesforce to monitor financial performance
- › NC State's OIT Enterprise Application Services addition to several key financial system tools in Peoplesoft Modules, such as grants and the voucher center, created new opportunities for oversight on financial data



Goal 4: Clients & Stakeholders

At the heart of it all is you—our clients and stakeholders. Every day we come to work with a single question in mind: how can we better serve you and the multiple industries across the state of North Carolina?

In 2018–19, IES:

- › Utilized internal resources to work more closely with colleagues at the College of Engineering to better execute the mission of the university
- › Supported a Client Engagement Team, applying best practices around client interactions
- › Implemented Client Care Initiatives to ensure effective preventive or corrective action response to the voice of the client from survey or course evaluations
- › Delivered approximately 350 industry fee-for-service projects, utilizing 30 IES Extension Specialists and Regional Managers
- › Delivered 113 open enrollment courses, and workshops for a total of 30,810 contract hours, serving 1,500 students
- › Offered nine online courses serving 71 virtual students

In all, IES recognized approximately **\$1.95M** in fees for services and **\$913,305** in open enrollment and professional learning state appropriated receipts.

Sales Performance

Product Area	
Management Systems and Quality:	\$677,640
Business Growth and Innovation:	\$82,396
Open Enrollment and Online Courses:	\$913,305
Environmental Health and Safety:	\$405,967
Process Optimization-Manufacturing and Related for Profit:	\$210,527
Process Optimization-Health Care, Government, NonProfit:	\$281,331
Evaluation Services and Resource Development:	\$147,855
Minerals Research Lab:	\$140,800

Federal Grants and Contracts

IES was also awarded the following federal grants and contracts during the 2018–2019 calendar year, including:

Government Entity	Year Awarded	Award Amount	Award Type	Project Duration
Susan B. Harwood Training Grant, Disaster Preparedness				
Occupational Safety & Health Administration	2018	\$232,000	Grant	9 Months
Manufacturing Extension Partnership Center for the State of North Carolina				
National Institute of Standards & Technology	2018	\$3,036,183	Cooperative Agreement	1 yr
United States Department of Defense Office of Economic Adjustment				
UPGRADE	2019	\$2.6M	Cooperative Agreement	1.5 yr



Organizational Structure

2018–19 IES External Advisory Board

Chris Trevey, CEO/President, Carlton Scale, Chair of IES Advisory Board

David Catt, Plant Manager, Keihin Carolina System Technology

John Chaffee, President & CEO, North Carolina's Eastern Region

Larry Hall, Secretary, North Carolina Department of Military & Veteran Affairs

Michele Holbrook, Plant Manager, Corning Optical Communications

Martin Kegel, Fabrications Operations Manager, Caterpillar

Michael Marlowe, Managing Director Emeritus, Automation Federation

Byron Murphy, Controller, Package Craft

Jerry Pedley, President, Mertek Solutions, Inc.

Jan Phillips, Chief Nursing Officer, Central Carolina Hospital at Duke Lifepoint Hospital

IES Services & Solutions

Standards & Regulatory Services

We offer a multitude of solutions that prepare organizations to consistently focus on improving their operations and meeting their client requirements. We coach our clients to implement processes to ensure their objectives are achieved and to provide exceptional value to their clients. This is accomplished through ISO-based services, Performance Excellence Coaching, Industrial Systems Engineering and Student Projects.

Environmental, Health & Safety

Our full line-up of environmental, health and safety services includes training, customized solutions and certificate programs designed to support environmental stewardship, worker safety, and compliance with federal, state and local health, safety and environmental standards and regulations. This year we introduced a new technical assistance service for ISO 45001 Occupational Safety and Health Management systems, an Excavation and Trenching training solution and Respiratory Protection training for employers and workers.

Process Optimization

We offer a suite of Lean and Six Sigma continuous improvement solutions, tailored to your specific organization, that help improve performance and reduce variation. Our hands-on training, coaching and mentoring can guide your team through the journey.

Lean is a practice that improves processes by reducing waste through harnessing the drive of the total organization. When rigorously applied, it can have positive impacts on cost, quality and delivery of services.

We also offer Six Sigma solutions (DMAIC) that utilize statistically driven methodology for reducing variation and eliminating defects in both products and processes.

**We also craft solutions to meet specific needs.
If you have a challenge, we can find a solution.**



Evaluation Services & Resource Development

IES designs and delivers a comprehensive approach to evaluation, ensuring high-quality, rigor and client-focus for all of our projects in North Carolina and beyond. Our resource development services include comprehensive program evaluation, organization agility assessments and research and evaluation capacity building. We also offer scouting and reviewing potential grant opportunities, developing proposal concepts, facilitating the proposal development process and playing as active a role as desired in writing the proposal. All of these services leverage our evaluation expertise in order to ensure that proposals contain a rigorous evaluation component that is most attractive to funding sources.

Open Enrollment & Professional Learning

We offer a broad range of strategic development, training and learning solutions for a wide variety of organizations. This year, we introduced a new online toolkit to assist employers with conforming to an important Cybersecurity standard. We also developed new educational materials to understand the learning preferences of youth workers under the age of 25.

Affiliate Programs

NCMEP

The North Carolina Manufacturing Extension Partnership (NCMEP) is the official representative of the MEP National Network™ and NIST MEP in North Carolina. The MEP National Network™ is a unique public-private partnership that delivers comprehensive, proven solutions to U.S. manufacturers, fueling growth and advancing U.S. manufacturing. NCMEP is a proven resource as a public-private operating alliance of state supported programs, working together to help manufacturing companies become operationally efficient and well positioned to grow profitably.

Industry Expansion Solutions serves as the administrator for NCMEP and is joined by partners from the North Carolina Community College System, NCWorks Customized Training; the Economic Development Partnership of NC; the Polymers Center of Excellence; the Manufacturing Solutions Center and North Carolina A&T State University.

NCMEP offers multiple networking opportunities through programs like Manufactured in North Carolina (MNC), the premiere searchable supply chain directory for North Carolina manufacturers, and the membership-based MNC Connections. In 2018, IES partnered with Business North Carolina to host the fourth mfgCON Conference, delivering two days of keynotes, presentations and breakout sessions and attracting more than 400 attendees in Durham, North Carolina.









Minerals Research Laboratory

The Minerals Research Laboratory (MRL) is a world leader in research, development, and implementation of mineral processing techniques. The MRL is part of the North Carolina State University College of Engineering, under the management of the NC State Industry Expansion Solutions (IES). The MRL serves state, regional and international clients.

NCAfE Program

IES serves as the administrator for the North Carolina Awards for Excellence (NCAfE) program, the top state level recognition presented to an organization that has demonstrated, through its practices and achievements, the highest level of performance excellence by applying the principles of the Baldrige Excellence Framework—the Criteria for Performance Excellence.

Southeastern OSHA Training Institute Education Center

Industry Expansion Solutions serves as the lead organization of The Southeastern OSHA Training Institute Education Center in partnership with The University of Tennessee Center for Industrial Services. Since 2008, we have partnered to offer OSHA training throughout the states in Region IV. We are an OSHA-authorized provider of trainer courses, standards and technical courses as well as two safety certificate programs. We provide the US Department of Labor OSHA Outreach Training Train-the-Trainer Program, OSHA's primary means of training employees in the basics of occupational safety and health. Courses are available for construction, general industry, food and beverage manufacturing and disaster site safety. Our organization has authorized more than 2,400 OSHA Outreach Trainers, who subsequently teach more than 24,000 workers each year.

Total Impact for Manufacturing

In the past four quarters (2018Q1–2018Q4), manufacturing clients of IES or IES' NCMEP affiliates returned surveys to NIST's third-party survey company, reporting the following results they attributed to work done by NCMEP affiliates: \$694M in economic impact; 1,470 jobs created; 3,837 jobs retained; \$122M retained sales; \$171M increased sales and \$20M cost savings.

We continued to diligently collect data about our clients' needs and restructured the use of our resources so we could develop solutions to meet those needs more efficiently and effectively.

Here are some of the accomplished highlights:

- › Hosted a successful 2018 mfgCON manufacturing conference with Business North Carolina; highlights included a 12 percent growth in attendance and 2018 Manufacturing Leadership Awards were recognized by Governor Roy Cooper
- › Rebranded mfgNC Connections to MNC Network and hosted two program events: Information Security and Disaster Preparedness
- › Served as a panelist for Business NC magazine Manufacturing Roundtable and participated in National Manufacturing Day as a speaker on advanced manufacturing technology applications at Make it in Union County event in Monroe, NC
- › Dispatched ambassadors to events across the state in honor of National Manufacturing Day
- › Piloted a Training Within (TWI) educational program
- › Updated the North Carolina Awards for Excellence (NCAfE) program
- › Grew federal grant awards through continued recognition of team's broad capabilities
- › Expanded industry training programs through better leverage of college expertise and technology
- › Made our professional learning solutions more accessible with the introduction of webinars and online workshops
- › Enhanced awareness of Baldrige Examiner classes
- › Launched a new course evaluation process in our CRM (Salesforce) that includes a new client case model to elevate client feedback into an action team for resolving opportunities for improvement.
- › Created a podcast blueprint and recorded three podcasts to launch in July 2019
- › Refined video production capabilities, delivering multiple product and client reference videos. Learned a new product demo/animation app: Vyond
- › Delivered 171,184 campaign/promotion emails with an average 21.77% open rate + 10.69% click rate

Our Impact on Manufacturing

Manufacturing Extension Partnership

- › Attracted 110K users to the IES website of which approximately 108K were new users. These users engaged in 146K session for an average time per session of 1.42 minutes and 273,809 page views. IES Twitter: Approximately 324 tweets over the past 12 months, 104,705 impressions
- › Manufactured in North Carolina (MNC), our online supply chain database, attracted 148,055 visitors, 456,000 page views and 1990 inquiries to companies
- › Participated on the advisory board for planning the 2018 IndustryWeek Manufacturing & Technology Conference
- › Hosted several NC legislators at plant tours across the state to highlight the importance of manufacturing
- › Improved our understanding of the DoD supply chain in North Carolina and its impact to the state

But even with our long list of accomplishments, we're not done!

In the coming 2019-2020 year, we'll continue to explore alternate avenues of communication with our clients, including virtual contact and informal learning groups. We'll pursue grant opportunities that align with the College of Engineering and North Carolina Manufacturing Extension Partnership priorities.

\$1.89B Total Impact for Manufacturing in NC

(2016–2018)



12,011 jobs retained



\$587M retained sales



\$196M cost savings



4875 jobs created



\$187.8M increased sales



\$922M investments

And, as always, we'll listen and learn from you, to discover how we can best work together to make North Carolina industry strong and prosperous.

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Industry Expansion Solutions (IES) is the engineering-based, solutions-driven, client-focused extension unit of NC State's College of Engineering. Our broad portfolio and deep industry expertise help organizations grow, innovate and prosper. Our extensive partnerships with business, industry, education and government generate a unique culture of collaboration that provides access to cutting-edge expertise, research, and technology.

