

Industrial Extension Service Research Projects 2006-07

The Industrial Extension Service (IES), a National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership-affiliated center has operated successfully since 1955. Celebrating more than 50 years of service, IES maintains regional offices in high-density manufacturing areas throughout the state of North Carolina. Field engineers and specialists from these regional offices promote IES services to more than 12,000 small- and medium-sized manufacturers across the state. These field engineers and specialists are co-located with partnering institutions and, as such, have significant technical outreach capabilities. In working with IES, North Carolina manufacturers benefit from new delivery mechanisms, in-company technical assessments, and technical training that may otherwise be inaccessible to their organizations. IES will continue with its research, technologies, and continuing education efforts. All of these programs will help North Carolina's industrial enterprises survive, grow, modernize, and maintain national and international competitiveness.

IES currently is engaged in more than 764 projects. Following are some of the projects that exceed \$10,000:

North Carolina Manufacturing Extension Partnership Program (NCMEP)

*James Daggerhart; H. Lynn Reese
National Institute of Standards and Technology (U.S.
Department of Commerce)
\$2,216,244
07/01/2006 - 06/30/2007*

The Industrial Extension Service's (IES) North Carolina Manufacturing Extension Partnership (NCMEP) is an affiliate of the National Institute of Standards and Technology (NIST) for North Carolina. IES first received MEP Center funding on May 17, 1995 and has operated successfully since that time. NCMEP focuses its services on small and medium-sized North Carolina manufacturers. The funding enables NCMEP to locate field specialists and engineers in close proximity to more than 12,000 manufacturers identified across the state. The economic impact of this project is approximately \$209M annually.

Energy Management Program

*John D. Rees, Interim
State Energy Office (NC Department of Administration)
\$636,750
03/06/2006 - 12/31/2007*

The State Energy Office has established an Energy Management Program to assist industrial, commercial, institutional, and governmental organizations in reducing their energy and maintenance costs. This program consists of workshop training to increase the skill levels of personnel and on-site surveys by experienced specialists to assist personnel in locating and developing cost reduction opportunities. The program will focus on, but will not be limited to, the following basic technical areas: Electric Systems; Energy Efficient Motors/Variable Speed Drives; HVAC Systems; Steam Traps; Preventive Maintenance; Chillers/Cooling Towers; Air Compressors/Air Systems; Energy Efficient Lighting; Boiler Steam Systems.

U.S. Coast Guard Lean Implementation Training

*Nathan Smith
U.S. Coast Guard
\$114,750
09/30/2005 - 09/29/2006*

This project will apply the principles of Lean Manufacturing throughout USCG's Elizabeth City, NC facility in order to realize the significant cost savings and productivity improvement characteristic of these proven methodologies. This project is designed to provide internal training and hands-on implementation for USCG team members in Policy Deployment, Value Stream Mapping, and Standard Work Events.

The Rural North Carolina Entrepreneur Fellows Partnership

*Gene F. Fornaro, Charles D. Lucas
NC Rural Economic Development Center
\$76,500
06/01/2005 - 12/31/2007*

The primary objective of this project is to increase the rate at which successful technology-based companies are formed in North Carolina. This will be accomplished by providing opportunities for emerging businesses and entrepreneurship's brightest students to benefit from one another's knowledge, education and experience.

Hazardous Waste Training Institute (HWTI)

*Charles Parrish/Michael McNulty/Wendy Laing
U.S. Environmental Protection Agency
\$112,509
10/01/2005 - 09/30/2006*

This project will create and train state and regional personnel on the Resource Conservation and Recovery Act (RCRA). The goal of the HWTI is to provide "real world" technical training with emphasis on practical operation and implementation of the RCRA regulations for federal and state professional staff. Training to be held in any of the Region 4 States, which are located within the southeast region.

Safety Training for the Landscaping Services Industry in North Carolina

*Wendy Laing
Occupational Safety and Health Administration (U.S.
Department of Labor)
\$128,750
09/30/2006 - 09/30/2008*

This project will develop curriculum and deliver appropriate safety training to the landscaping services industry in North Carolina. The goal of the proposed training course is to assist employers and employees in understanding the hazards associated with the work in this industry in order to reduce the frequency and severity of accidents. The training will be provided in English and in Spanish to maximize the learning of the target audience. This training program will also be videotaped and provided in DVD at our cost plus shipping and handling.

NC Auto Salvage Storm Water Pollution Prevention Plan

*Charles R. Parrish
NC Department of Environment & Natural Resources
\$29,780
07/01/2006 - 06/29/2007*

The objective of this project will be to provide the NC Department of Environment and Natural Resources (NC DENR), Stormwater Permitting Unit (SPU), a Stormwater Pollution Prevention Plan (SPPP) “tool” for use by NC Auto Salvage yards. Included will be a training program delivered at the seven regional offices on the SPPP tool and other environmental topics associated with Auto Salvages yards. IES will also conduct training to the seven DENR regional offices to train DENR regulatory personnel on SPPP requirements and other common environmental regulatory requirements which an Auto Salvage yard might be subject to.

Hazardous Waste Operations and Emergency Response Training (2006-2009)

W. Michael Joyce
NC Department of Environment & Natural Resources
 \$102,539
 07/01/2006 - 06/30/2009

The objective of the project is to present 8-hour Hazardous Waste Operations and Emergency Response Training (HAZWOPER) to 220 North Carolina Department of Environment and Natural Resource-Division of Air Quality field personnel across the state of North Carolina. The training will be conducted annually for the next three years between July and September each year.

Food Defense ALERT Program

W. Michael Joyce
University of Nebraska-Lincoln (National Institute of Standards & Technology-U.S. DOC)
 \$15,200
 01/01/2007 - 10/31/2007

This project will develop, coordinate, and deliver information on food defense to small and medium food manufacturers. The overall goal is to help reduce the risk of tampering or other malicious, criminal, or terrorist actions on the food supply. North Carolina is one of seven states chosen to participate in the federal Food Defense ALERT program in partnership with the University of Nebraska-Lincoln.

Goulston Technologies Lean Transformation – Part A (Ga Tech)

Herbert B. Knox
Georgia Institute of Technology (Economic Development Administration – U.S. DOC)
 \$10,700
 09/20/2006 - 02/28/2007

The Industrial Extension Service (IES) will work with Georgia Institute of Technology to involve Goulston Technologies employees in lean manufacturing techniques at all levels to mold the organization and help it develop a new lean culture based on the Toyota Production System (TPS). The aim of this project is to create an organizational culture that focuses relentlessly on removal of non-value added activities from every work and business process.

Goulston Technologies Lean Transformation – Part B (Ga Tech)

Herbert B. Knox
Georgia Institute of Technology (Economic Development Administration – U.S. DOC)
 \$25,100
 03/26/2007 - 12/31/2007

The Industrial Extension Service (IES) will continue work with Georgia Institute of Technology to involve Goulston Technologies employees in lean manufacturing techniques at all levels to mold the organization and help it develop a new lean culture based on the Toyota Production System (TPS). The aim of this project is to create an organizational culture that focuses relentlessly on removal of non-value added activities from every work and business process.

Goulston Technologies Lean Transformation

Herbert B. Knox
Goulston Technologies
 \$35,787
 12/11/2006 - 12/31/2007

The Industrial Extension Service (IES) will work with Goulston Technologies employees in lean manufacturing techniques at all levels to mold the organization and help it develop a new lean culture based on the Toyota Production System (TPS). The aim of this project is to create an organizational culture that focuses relentlessly on removal of non-value added activities from every work and business process.

Charleston Forge Lean Implementation - Part A (Ga Tech)

Christopher G. McGraw
Georgia Institute of Technology (Economic Development Administration – U.S. DOC)
 \$3,000
 01/10/2007 - 02/28/2007

The Industrial Extension Service will work with Georgia Institute of Technology to provide Charleston Forge of Boone, NC with a 3-day value stream mapping event and 25 Kaizen events during the course of this project.

Charleston Forge Lean Implementation - Part B (Ga Tech)

Christopher G. McGraw
Georgia Institute of Technology (Economic Development Administration – U.S. DOC)
 \$22,500
 04/10/2007 - 12/31/2007

The Industrial Extension Service will continue work with Georgia Institute of Technology to provide Charleston Forge of Boone, NC with a 3-day value stream mapping event and 25 Kaizen events during the course of this project.

Charleston Forge Lean Implementation

Christopher G. McGraw
Charleston Forge
 \$25,000
 01/10/2007 - 07/31/2007

The Industrial Extension Service will provide Charleston Forge of Boone, NC with a 3-day value stream mapping event and 25 Kaizen events during the course of this project.

In addition to the IES applied research projects listed above, IES conducted the following service projects for North Carolina industry:

Quality & Standards

*Steve Swain
BB&T - Winston Salem
\$95,000
5/22/2006 - 9/1/2006*

IES will provide on-site Six Sigma Black Belt Training.

Lean Implementation

*Brent Lindsey
AGI Schutz
\$54,300
5/1/2006 - 10/31/2006*

IES will provide Lean Leader training and lean implementation.

Lean Implementation

*Brent Lindsey
United Southern Industries Inc
\$48,142
10/11/2006 - 6/30/2007*

IES will provide Lean Leader training and lean implementation.

Lean Implementation

*Brent Lindsey
AGI Schutz
\$48,142
11/27/2006 - 6/30/2007*

IES will provide continued Lean Leader training and lean implementation.

Quality & Standards

*Ken Hoover
Sealy Mattress Co
\$47,226
5/14/2007 - 6/7/2007*

IES will provide on-site Six Sigma Green Belt Training

Quality & Standards

*Alex Reed
Elkay Southern Corp
\$44,637
10/16/2006 - 11/9/2006*

IES will provide on-site Six Sigma Green Belt Training.

Lean Implementation

*Chris McGraw
Columbia Carolina Corp
\$40,000
5/15/2006 - 10/31/2006*

IES will provide various Lean projects.

Quality & Standards

*Buster Knox
Windsor Window Co
\$38,860
9/25/2006 - 10/12/2006*

IES will provide Six Sigma Green Belt Training.

Lean Implementation

*Chris McGraw
Brushy Mountain Bee Farm Inc
\$38,250
1/1/2007 - 12/31/2007*

IES will provide Lean facilitation and mentoring.

Lean Implementation

*Chris McGraw
Paxar Printed Labels Group
\$38,250
4/10/2006 - 6/30/2007*

IES will provide Kaizen facilitation and mentoring.

Lean Implementation

*Chris McGraw
K-T Feldspar Corp
\$38,250
7/31/2006 - 3/31/2007*

IES will provide Lean training.

Quality & Standards

*Alex Reed
Mountaire Farms Inc
\$37,000
1/31/2007 - 1/31/2008*

IES will provide ISO 22000 Certification preparation.

Customizable Product

*Buster Knox
Sandoz, Inc
\$37,000
8/7/2006 - 12/31/2006*

IES will provide high level existing capacity planning model.

Lean Implementation

*Brent Lindsey
Kyocera Industrial Ceramics
\$36,125
4/1/2006 - 8/31/2006*

IES will provide Lean training and implementation.

Environmental

*Steve Swain
Grass America Inc
\$36,010
7/1/2006 - 3/31/2007*

IES will provide consulting services to optimize the plant's safety program.

Lean Implementation

Chris McGraw
Mills Manufacturing Corp
 \$35,800
 11/12/2006 - 7/17/2007

IES will provide Lean Leader training.

Lean Implementation

Brent Lindsey
United Southern Industries Inc
 \$35,800
 4/1/2006 - 9/30/2006

IES will provide on-site Lean assessment and Lean Leader training.

Quality & Standards

Ken Hoover
High Point Regional Health
 \$35,000
 10/12/2006 - 11/14/2006

IES will provide initial Six Sigma introduction and training.

Quality & Standards

Ken Hoover
High Point Regional Health
 \$33,000
 1/24/2007 - 2/23/2007

IES will provide Six Sigma Green Belt Training.

Quality & Standards

Ken Hoover
High Point Regional Health
 \$33,000
 4/25/2007 - 6/15/2007

IES will provide Six Sigma Green Belt Training.

Environmental

Mitch Poteat
Tekelec Inc.
 \$32,000
 4/1/2007 - 12/31/2007

IES will provide environmental & safety assessment.

Lean Implementation

Rex Raiford
Fountain Powerboat Industries
 \$30,475
 9/12/2006 - 11/30/2006

IES will provide Lean Implementation - Phase 3.

Lean Implementation

Rex Raiford
Fountain Powerboat Industries
 \$30,475
 12/1/2006 - 2/28/2007

IES will provide Lean Implementation - Phase 4.

Lean Implementation

Rex Raiford
Camfil Farr Company
 \$30,000
 1/22/2007 - 5/25/2007

IES will provide Lean Implementation - Phase 5.

Lean Implementation

Steve Swain
Carolina Narrow Fabric Co Inc
 \$29,220
 2/12/2007 - 12/31/2007

IES will provide Lean Implementation.

Lean Implementation

Rex Raiford
Camfil Farr Company
 \$27,798
 7/10/2006 - 9/30/2006

IES will provide Lean Implementation - Phase 3.

Lean Implementation

Rex Raiford
Camfil Farr Company
 \$27,798
 10/16/2006 - 12/31/2006

IES will provide Lean Implementation - Phase 4.

Minerals Research

Bob Carland
Barton Mines
 \$27,500
 11/1/2006 - 4/30/2007

IES will provide spiral & magnetic work for re-engineering.

Minerals Research

Bob Carland
Barton Mines
 \$27,000
 7/5/2006 - 9/30/2006

IES will provide re-engineering and process assistance.

Lean Implementation

Rex Raiford
Motion Sensors Inc
 \$26,858
 1/22/2007 - 3/16/2007

IES will provide Lean Manufacturing work events.

Lean Implementation

Rex Raiford
PCB Piezotronics Inc.
 \$26,850
 1/8/2007 - 3/9/2007

IES will provide Lean Manufacturing Kaizen Events.

Quality & Standards

Gene Beneduce
Consolidated Metco Inc
 \$26,678
 3/19/2007 - 3/23/2007

IES will provide Six Sigma Black Belt Training - Session 1 of 4.

Quality & Standards

Gene Beneduce
Consolidated Metco Inc
 \$26,678
 4/23/2007 - 4/27/2007

IES will provide Six Sigma Black Belt Training - Session 2 of 4.

Quality & Standards

Gene Beneduce
Consolidated Metco Inc
 \$26,678
 6/4/2007 - 6/8/2007

IES will provide Six Sigma Black Belt Training - Session 3 of 4.

Quality & Standards

Gene Beneduce
Consolidated Metco Inc
 \$26,678
 6/25/2007 - 6/29/2007

IES will provide Six Sigma Black Belt Training - Session 4 of 4.

Minerals Research

John Schlanz
i-Minerals, LLC
 \$26,500
 8/14/2006 - 9/8/2006

IES will provide pilot plant planning and set-up to test K-Spar - Phase 1.

Lean Implementation

Gene Beneduce
Michelin Aircraft Tire Corp
 \$25,835
 6/1/2006 - 3/30/2007

IES will provide Lean Implementation.

Lean Implementation

Steve Swain
JIT Manufacturing Inc
 \$24,345
 2/1/2007 - 12/1/2007

IES will provide Lean Implementation - Phase 1.

Minerals Research

John Schlanz
Micro-Lite, LLC
 \$24,300
 6/26/2006 - 7/31/2006

IES will provide pilot plant testing of micro-lite phlogopite ore production.

Quality & Standards

Gene Beneduce
NC National Guard
 \$23,740
 3/26/2007 - 7/13/2007

IES will provide Six Sigma Black Belt Training - 1 of 3.

Quality & Standards

Gene Beneduce
NC National Guard
 \$23,740
 3/26/2007 - 7/13/2007

IES will provide Six Sigma Black Belt Training - 2 of 3.

Quality & Standards

Gene Beneduce
NC National Guard
 \$23,740
 3/26/2007 - 7/13/2007

IES will provide Six Sigma Black Belt Training - 3 of 3.

Lean Implementation

Rex Raiford
Fountain Powerboat Industries
 \$22,950
 7/1/2006 - 10/31/2006

IES will provide Lean Implementation - Phase 2.

Quality & Standards

Doug Hummer
Patriot Performance Materials
 \$21,900
 1/8/2007 - 12/31/2007

IES will provide ISO 9000 Implementation Program.

Quality & Standards

Gene Beneduce
William Goodyear Co
 \$21,900
 11/6/2006 - 11/6/2007

IES will provide ISO 9001 Certification Preparation Program.

Quality & Standards

Joe Sauve
Shelby Elastics Inc
 \$21,900
 3/1/2007 - 3/31/2008

IES will provide ISO 9000 Implementation Program.

Quality & Standards

Dick Oates
Innovative Laminations Company
 \$21,900
 4/2/2007 - 5/2/2008

IES will provide ISO 9001 Preparation Support.

Quality & Standards

Ken Hoover
SynTec, Incorporated
 \$21,900
 8/3/2006 - 6/20/2007

IES will provide ISO 9001:2000 Technical Assistance.

Quality & Standards

Alex Reed
Axigor, Incorporated
 \$21,899
 1/19/2007 - 9/29/2007

IES will provide ISO 9001 Certification Preparation Program.

Lean Implementation

Rex Raiford
Patch Rubber Co
 \$21,050
 8/14/2006 - 3/30/2007

IES will provide Lean Implementation - Phase 2.

Quality & Standards

Michael Joyce
Simon Industries
 \$21,000
 6/15/2006 - 6/15/2007

IES will provide ISO-9001:2000 Technical Assistance Program.

Lean Implementation

Michael Joyce
Tri County Industries Inc
 \$21,000
 7/1/2006 - 1/31/2007

IES will provide a series of four Lean events.

Quality & Standards

Buster Knox
ATI Allvac
 \$20,970
 9/25/2006 - 10/12/2006

IES will provide on-site Six Sigma Green Belt Training.

Quality & Standards

Mitch Poteat
Lenovo
 \$20,884
 5/7/2007 - 6/7/2007

IES will provide on-site Six Sigma Green Belt Training.

Minerals Research

John Schlanz
Baker Hughes Drilling Fluids
 \$20,000
 6/19/2006 - 10/31/2006

IES will provide Spiral Testing To Recover & Concentrate Barite.

Lean Implementation

Alex Reed
L L Building Products Co.
 \$18,750
 4/2/2007 - 10/1/2007

IES will provide Lean Manufacturing Training, Facilitation And Mentoring.

Lean Implementation

Alex Reed
Hog Slat Inc
 \$18,090
 1/17/2007 - 4/22/2007

IES will provide Lean Manufacturing Facilitation And Mentoring.

Minerals Research

Bob Carland
Barton Mines
 \$18,000
 10/1/2006 - 12/31/2006

IES will provide re-engineering and process assistance.

Lean Implementation

Rex Raiford
Patch Rubber Co
 \$17,950
 5/12/2006 - 7/21/2006

IES will provide Lean Implementation - Phase 1.

Quality & Standards

Alex Reed
Columbus Industries
 \$17,900
 4/18/2006 - 12/31/2006

IES will provide ISO 9001 Technical Assistance Program.

Lean Implementation

Ken Hoover
Loparex Inc.
 \$17,900
 8/22/2006 - 4/30/2007

IES will provide Lean Leader Training.

Quality & Standards

Brent Lindsey
Genie Products Inc
 \$17,900
 8/8/2006 - 6/30/2007

IES will provide ISO 9000 Implementation Program.

Lean Implementation

Chris McGraw
W.P. Hickman Co.
 \$17,900
 9/1/2006 - 12/31/2007

IES will provide Lean Mentoring And Facilitation.

Energy

Jim Parker
Oracle Packaging
 \$17,600
 5/15/2006 - 10/31/2006

IES will provide energy assessments for Plant 604 and Plant 200.

Quality & Standards

Joe Sauve
CompAero
 \$16,900
 7/5/2006 - 6/30/2007

IES will provide ISO 9001:2000 Certification Support.

Minerals Research

Bob Carland
Barton Mines
 \$16,674
 10/1/2006 - 11/15/2006

IES will provide Hutton Bay Product Evaluation.

Quality & Standards

Gene Beneduce
Windsor Window Co
 \$16,625
 3/20/2007 - 3/23/2007

IES will provide Six Sigma Green Belt Training (session 1 of 2).

Quality & Standards

Gene Beneduce
Windsor Window Co
 \$16,625
 4/2/2007 - 4/5/2007

IES will provide Six Sigma Green Belt Training (session 2 of 2).

Quality & Standards

Gene Beneduce
Carnes-Miller Gear Co
 \$15,495
 9/28/2006 - 7/30/2007

IES will provide ISO 9001 Certification Preparation Program.

Lean Implementation

Gene Beneduce
Preformed Line Products Co
 \$15,375
 11/16/2006 - 1/31/2007

IES will provide 7 Day Lean Leader Event.

Quality & Standards

Michael Joyce
New Phoenix Aerospace
 \$15,000
 6/15/2006 - 5/30/2007

IES will provide AS-9100 Certification Technical Assistance.

Quality & Standards

Alex Reed
Precision Machine Technologies
 \$14,995
 8/17/2006 - 5/8/2007

IES will provide ISO 9001:2000 Certification Preparation.

Quality & Standards

Mitch Poteat
Lenovo
 \$13,922
 5/7/2007 - 6/7/2007

IES will provide Six Sigma Green Belt Training.

Lean Implementation

Steve Swain
JIT Manufacturing Inc
 \$12,900
 6/30/2007 - 12/1/2007

IES will provide Lean Implementation - Phase 2.

Lean Implementation

Rex Raiford
PCB Piezotronics Inc.
 \$12,800
 10/9/2006 - 10/26/2006

IES will provide Lean Introduction.

Lean Implementation

Mitch Poteat
Santa Fe Natural Tobacco Co
 \$12,729
 10/15/2006 - 12/15/2006

IES will provide 9-Day Value Stream Map Project.

Quality & Standards

Chris McGraw
Isothermal Community College
 \$12,000
 2/21/2007 - 3/28/2007

IES will provide Six Sigma Green Belt Training.

Quality & Standards

Jan Pridgen
High Point Regional Health
 \$11,600
 4/5/2007 - 10/31/2007

IES will provide North Carolina Awards For Excellence - Level 4.

Lean Implementation

Chris McGraw
Gardner Glass Products
 \$11,200
 10/9/2006 - 10/12/2006

IES will provide Lean 100 Training.

Lean Implementation

Dennis Atkins
Bepco Inc
 \$11,000
 6/12/2006 - 11/1/2006

IES will provide new facility layout based on Lean principles.

Quality & Standards

Jan Pridgen
High Point Regional Health
 \$10,600
 5/16/2006 - 10/31/2006

IES will provide North Carolina Awards For Excellence - Level 4.

Kevin Grayson; kevin_grayson@ncsu.edu; Manager, Continuous Improvement Services; 704-480-9653 W, 704-480-6176 F; Certified Quality Engineer (CQE), Certified Quality Auditor (CQA), ISO 9000 Maintenance Management Software, Environmental Coordination Plant Maintenance, Six Sigma Black Belt, Malcom Baldrige Examiner, RAB Auditor, Certified Plexus Trainer-Coach.

Cynthia Hodges; cindy_hodges@ncsu.edu ; Extension Specialist – Economic Impact; 919-515-8582 W, 919-515-8585 F; Computer Integrated Manufacturing, Data Collection and Control, Control and Data Acquisition (SCADA) software, Economic Impact.

Ken Hoover; ken_hoover@ncsu.edu; Extension Specialist – Account Manager; 336-362-5170 W, 336-235-0896; Six Sigma, ISO, Lean Manufacturing, Safety, Quality, Energy.

Sonja Hughes; sonja_hughes@ncsu.edu; Extension Specialist – Delivery; 336-669-9629 W, 336-235-0896 F; Lean Manufacturing, Quality Management Systems Registration.

Doug Hummer; doug_hummer@ncsu.edu; Extension Specialist – Account Manager; 919-515-4381 W, 919-515-6159 F; Internal Client Services.

Michael Joyce P.E; michael_joyce@ncsu.edu ; Extension Specialist – Account Manager; 919-515-5439 W, 919-515-8585 F; Sales, Wastewater, Water Quality, Safety, ISP-14001.

Buster Knox; buster_knox@ncsu.edu ; Director, Extension Services; 704-987-8753 W, 704-602-4139 F; Industrial Engineering, Plant Layout, Material Handling, Work Measurement, Cost Estimating, Production Control Systems, Strategic Planning.

Dhirendra Kumar, PhD; dhirendra_kumar@ncsu.edu; Senior Extension Specialist - Delivery; 919-515-5439 W, 919-515-6159 F; Six Sigma, Quality and Standards.

James Kurian; jim_kurian@ncsu.edu; Extension Specialist - Delivery; 252-902-4063 W, 252-522-1765 F; Lean Manufacturing, Manufacturing Process Improvement.

Wendy Laing, CSP; wendy_laing@ncsu.edu; Extension Specialist - Delivery; 919-515-9430 W, 919-515-8585 F, Environmental, Health, and Safety.

Steve Laton; steve_laton@ncsu.edu; Extension Specialist - Delivery; 828-251-6155 W, 828-251-6381 F; Lean Manufacturing.

Debbie Manzo, PhD; deb_manzo@ncsu.edu; Extension Specialist - Delivery; 919-513-1892 W, 919-513-4529 F; North Carolina Awards For Excellence, Malcolm Baldrige National Quality Award, Shingo Prize.

Terry Mayes; terry_mayes@ncsu.edu; Extension Specialist - Account Manager; 704-507-1288 C, 704-602-4139 F; Six Sigma, ISO, Lean, Safety, Quality, Energy.

Chris McGraw; chris_mcgraw@ncsu.edu; Extension Specialist - Account Manager; 828-651-9454 W, 828-651-9454 F; Process Improvement, Metalworking, Product Marketing.

Mac McNulty; mac_mcnulty@ncsu.edu; Extension Specialist - Delivery; 919-515-4656 W; 919-515-8585 F; Environmental, Health, and Safety, Hazardous Waste Operations.

IES EXTENSION SPECIALISTS

Dennis Atkins; dennis_atkins@ncsu.edu; Extension Specialist – Account Manager; 336-401-8038 W, 336-401-8048 F; Six Sigma, ISO, Lean Manufacturing, Safety, Quality and Standards, Energy.

Gene Beneduce; gene_beneduce@ncsu.edu; Extension Specialist – Account Manager, 704-369-9019 W, 704-602-4139 F; Six Sigma, ISO, Lean Manufacturing, Safety, Quality and Standards, Energy.

Bob Carland; bob_carland@ncsu.edu; Director, Minerals Research Lab; 828-251-6155 ext. 222 W, 828-251-6381 F; Minerals Research.

James A. Daggerhart, PhD; jim_daggerhart@ncsu.edu; Director, NCMEP; 919-515-5377 W, 919-515-8585 F; Engineering Design, ISO 9000, Manufacturing Engineering, Quality Initiatives.

Joseph R. Davis, PhD, P.E.; joe_davis@ncsu.edu Extension Specialist - Delivery; 919-515-8584 W, 919-515-8585 F; Industrial/Manufacturing Engineering, Production Simulation and Optimization, Automation/Robotics Practical Usage, Design for Assembly/Manufacture, Facilities Layout and Optimization, Quality Engineering and ISO 9000, Economic Analysis/Justification, Industrial Ergonomics.

Gene F. Fornaro, P.E.; gene_fornaro@ncsu.edu; Director, Marketing; 919-515-5422 W, 919-515-8585 F; Software Applications CAD/CAM, Networking.

Steve Forrest; steven_forrest@ncsu.edu; Extension Specialist - Delivery; 704-278-9341 W, 704-201-9579 F; Lean Manufacturing.

Clarice Garrett; clarice_garrett@ncsu.edu; Extension Specialist - Delivery; 336-362-0283 W, 336-275-2016 F; Environmental, Health, and Safety, Lean Manufacturing.

Nora Milley; nora_milley@ncsu.edu; Extension Specialist - Delivery; 919-513-4530 W, 919-515-6159 F; Quality Management Systems; Plexus Quality System certified instructor for ISO 9001:2000 and ISO/TS16949:2002.

Phil C. Mintz; phil_mintz@ncsu.edu; Manager, Continuous Improvement Services; 336-202-8256 W, 336-235-0896 F; RAB Quality Management Systems Auditor (QMS-A), Plexus Quality System Trainer for ISO 9001:2000, QS 9000 and ISO/TS 16949.

Dick Oates; dick_oates@ncsu.edu; Extension Specialist – Account Manager; 252-523-1404 W; Six Sigma, ISO, Lean Manufacturing, Safety, Quality, Energy.

Margaret O'Brien; margaret_obrien@ncsu.edu ; Director, Extension Services; 919-515-3940 W, 919-515-8585 F; Six Sigma, American Society for Quality, Team Building, Facilitation.

Charles (Charlie) R. Parrish, P.E.; charles_parrish@ncsu.edu; Extension Specialist - Delivery; 919-515-4266 W, 919-515-8585 F; Air Quality Permits Air Emissions Testing, Air Emissions Inventories Compliance Strategies, Industrial Hygiene Testing Boiler Efficiency Testing, Waste Minimization Surveys Energy Assessments.

Deborah R. Porto; deborah_porto@ncsu.edu; Director, Applied Research; 828-452-3794 W, 828-452-3353 F; Quality Systems Development Process Improvement, Quality Tools Team Development, Malcolm Baldrige National Quality Award, North Carolina Quality Leadership Award, ISO 9000 and QS 9000.

James Mitchell Poteat; mitch_poteat@ncsu.edu; Extension Specialist – Account Manager; 919-424-4422 W, 919-515-8585 F; Lean Manufacturing, Manufacturing Process Improvement.

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