

## Curriculum Vitae

# Sergio D. Sgro, Ph.D., C.I.T.

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### OFFICE ADDRESS

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### EDUCATION

#### Iowa State University

Major: Ph.D. Industrial Education and Technology

Ames, IA  
December 2006

Dissertation: *The efficacy of teaching oxyacetylene welding prior to gas metal arc welding for introductory materials and process courses in industrial technology*

#### Iowa State University

Major: M.S. Industrial Education and Technology

Ames, IA  
May 2003

#### Millersville University

Major: B.S. Industrial Technology

Millersville, PA  
January 2001

### Certifications

Certified Industrial Technologist (C.I.T.)

National Association of Industrial Technology

### ACADEMIC/PROFESSIONAL APPOINTMENTS

#### Eastern Kentucky University

Assistant Professor – Department of Technology

Richmond, KY  
August 2006 - Present

Courses which I am currently or have previously taught

- INT 201: Metallic Material Processes (2 Lecture/2 Lab)
- INT 238: Industrial Materials (2 Lecture/2 Lab)
- TEC 161: Computer Applications in Industry (2 Lecture/2 Lab)
- TEC 190: Technical Graphics (2 Lecture/2 Lab)

#### CE&T

Owner

Denver, PA  
August 2004-Present

Small Business Consulting, Industrial & Manufacturing Engineering, & Industrial Training

Example Projects Completed

- Managed Job Hazard Analysis development for two plants (Lancaster, PA & Dallas, TX)
- Oversaw large field fabrication of crystallizer and heat exchanger in Silver Springs, NY
- Managed a Six Sigma project from beginning to termination
- Fabricated and managed various steel structures
- Designed various mechanical and structural projects using 3-D parametric solid modeling

#### Millersville University

Adjunct Instructor

Millersville, PA  
Fall 2004

Taught one section of ITEC 494 Total Quality Management

- Developed student handbook for current curriculum
- Developed curriculum in Six Sigma and Lean Manufacturing

**Millersville University**

Millersville, PA

*Full Time, One-Year Temporary Instructor*

Teaching Responsibilities:

	Fall 2003	Spring 2004
• ITEC 110 Communication Systems	2 sections	1 section
• ITEC 130 Materials and Processes	–	2 sections
• ITEC 300 Cooperative Education in ITEC	–	1 student
• ITEC 494 Total Quality Management	1 section	3 students

Service Contributions:

- NAIT Student Chapter Advisor
- Program Assessment Committee/NAIT Reaccreditation
- Epsilon Pi Tau Initiation Ceremony

**Mechanical Plus, Inc.**

Lancaster, PA

*Production and Operations Manager*

January 2003-September 2003

Responsibilities:

- Directed day to day activities of fabrication shop, quality, and safety objectives
- Estimated and created bid proposals for fabrication jobs

**Iowa State University**

Ames, IA

*Graduate Teaching Assistant: ITEC 446 Automation Systems*

June 2001-December 2002

Responsibilities:

- Developed full curriculum and taught Programmable Logic Controllers (PLC) using GE Fanuc VersaMax Micro PLCs and Mitsubishi MELFA Robots
- Designed and constructed 10 PLC/Automation Trainers for use in lab activities

**CombiSep, Inc.**

Ames, IA

*2002 Reiman Scholars in Entrepreneurship Internship Program*

May 2002-December 2002

Responsibilities:

- Researched current biotechnology and pharmaceutical markets for new marketing plan
- Developed marketing CD using Visual Basic
- Assisted with upgrade and maintenance of approximately fifteen computers

**Carpenter Specialty Alloys**

Reading, PA

*Co-op: Manufacturing – Strip Finish*

May 2000-June 2001

Responsibilities:

- Wrote Job Hazard Analysis procedures for all equipment and tasks executed by production personnel
- Created presentation for material packaging options placed on Carpenter's Intranet site
- Assisted process engineers and machine operators on Six Sigma Variation Reduction teams

**Mechanical Plus, Inc.**

Lancaster, PA

*Industrial Mechanic/Fabricator*

April 1996-January 2000

Responsibilities:

- Used standard fabrication machinery such as GMAW and SMAW welding, plasma torch, and various hand tools to fabricate and install sheet metal, stainless steel, structural steel, and aluminum
- Executed field tasks including heavy-duty rigging, millwright operations, steel erection, and piping

## PUBLICATIONS/PRESENTATIONS

### Thesis/Dissertation

Sgro, S. D. (2006). The efficacy of teaching oxyacetylene welding prior to gas metal arc welding for introductory materials and processes courses in industrial technology [Doctoral Dissertation]. Iowa State University, Ames, Iowa.

Sgro, S. D. (2003). An application of problem solving methodologies for small, low-technology firms [Master's Thesis]. Iowa State University, Ames, Iowa.

### Journal Articles (Peer-Reviewed)

Wright, J.R., Jr. & Sgro, S. (May, 2002). *Building and controlling your PLC controlled mobile robot from the workbench*. The Technology Teacher - International Technology Education Association (ITEA).

### Presentations (Peer-Reviewed)

Kuperavage, J., & Sgro, S. (2005). [National Presentation] Transferring the skills acquired through NAIT student chapter involvement to academics and industry. 2005 National Association of Industrial Technology Conference, St. Louis, Missouri.

Sgro, S. (2003). [National Presentation] Statistical thinking in low-technology small businesses to increase growth and profitability. 2003 National Association of Industrial Technology Conference, Nashville, Tennessee.

Wright, J.R., Jr. & Sgro, S. (2001). [National Presentation] Is relay ladder logic obsolete? State logic reduces novice programming times by 70%. 2001 National Association of Industrial Technology Conference, Dearborn, Michigan.

Sgro, S. & Wright, J.R., Jr. (2000). [National Presentation] The nuts and bolts of organizing and developing a national solar/electric race team. 2000 National Association of Industrial Technology Conference, Pittsburgh, Pennsylvania.

Sgro, S. & Williams, D. (2000). [National Presentation] State-of-the-art fiberglass design techniques. 2000 National Association of Industrial Technology Conference, Pittsburgh, Pennsylvania.

Wright, J.R., Jr. & Sgro, S. (2000). [National Presentation] Double RF controlled PLC robots: taking the PLC off-board. 2000 National Association of Industrial Technology Conference, Pittsburgh, Pennsylvania.

Wright, J.R., Jr. & Sgro, S. (2001). [Invited Technical Session] Designing PLC driven mobile robots with double RF control. The Society of Manufacturing Engineers, Chapter 89, Millersville University of Pennsylvania, Millersville, Pennsylvania.

## SERVICE/PROJECT CONTRIBUTION

### Community Service

*Lancaster Christian and Missionary Alliance Church*

- Digital Video Editing of various staff and student events using Adobe Premiere 6.5 and Microsoft Moviemaker for use in classroom teaching and congregational meetings

### University Committee Contributions

*Millersville University*

- NAIT reaccreditation self-report
  - Compiled and analyzed data from student surveys
  - Reported on the status of partial-compliance issues addressed in NAIT reaccreditation report
- Served as the National Association of Industrial Technology (NAIT) Millersville University

- Student Chapter Advisor (Fall 2003 - Spring 2004)
- Provided assistance on the Program Assessment Committee (Fall 2003 - Spring 2004)
  - Development and deployment of student surveys
  - Organized brown-bag forum for undergraduates in Industrial Technology

## PROFESSIONAL ACTIVITIES

### Supervised Undergraduate Independent Studies

*Iowa State University*

- Bullington, A., *Independent study in robotics* (Spring 2002)
- Figueroa, M., *Independent study in robotics* (Spring 2002)
- Thompson, C., *Independent study in robotics and PLC integration* (Fall 2002)

### Supervised Robotics Lab Upgrade

2001-2002

*Iowa State University*

- Managed upgrade, acquisition, installment, and curriculum development for 2 new robots, 10 new PLCs, and 20 new computer stations
- Supervised 2 undergraduate assistants with assembly of new equipment

### President

1999-2000

*National Association of Industrial Technology – Millersville University Student Chapter*

- Founded and organized the NAIT Student Chapter acquiring over 25 members during the first 2 months
- Submitted budget for 2000/2001 academic year to Student Senate with approximately \$7,000 of approved funding

### Project Manager

1999-2000

*Tour de Sol Electric Motorcycle Research Team*

- Initiated and organized team to plan, research, fabricate, program, and run the TROU<sup>TE</sup>v for Millersville University's first electric vehicle and entry into a national solar/electric race competition (American Tour de Sol)
- Wrote proposal for the electric motorcycle team that was submitted to the Dean of Education, corporate sponsors, and private donors that obtained over \$24,000 of funding for the team

## SELECTED CONSULTING & TRAINING ACTIVITIES

### Attachment Technologies Inc., Delhi, Iowa

June 2003

- Assisted in new design of PLC wiring and programming for new industrial mower attachment of sensors and actuator

### Fabral/Euromax

October 2004-January 2006

- Managed a variation reduction project (Six Sigma) for a roll-forming line
- Analyzed data for new MRP system and developed model for optimal reorder
- Developed and analyzed simulation of floor space utilization scenarios using ProModel software
- Developed Job Hazard Analyses for operators

### Iowa State University

June 2005

- Trained instructor on GE Fanuc Micro PLCs and VersaPro programming software and provided complete PowerPoint lectures and labs that accompany current automation boards

**Mechanical Plus, Inc**

May 2005- February 2006

- Estimated and helped manage installation of pan/evaporator at a salt processing plant in Silver Springs, NY
- Developed complete set of detailed working drawings for fabrication and installation of new oxidizer system in Baltimore, MD

**PROFESSIONAL & HONORARY AFFILIATIONS**

- Epsilon Pi Tau (EPT)
- National Association of Industrial Technology (NAIT)
- Society of Manufacturing Engineers (SME)
- Association for Forming & Fabricating Technologies of SME (AFFT/SME)
- American Society for Quality (ASQ)
- Institute of Industrial Engineers

*1/06*