

## CURRICULUM VITAE OF MARTIN A. HEBEL

### I. PROFESSIONAL AFFILIATION AND CONTACT INFORMATION

#### A. Present University Department or Unit:

School of Information Systems and Applied Technologies  
College of Applied Sciences and Arts

#### B. Office Address:

College of Applied Sciences and Arts  
Mail Code 6614  
1365 Douglas Drive, Room 106  
Carbondale, Illinois 62901-6614  
Email: [mhebel@siu.edu](mailto:mhebel@siu.edu)

### II. EDUCATION

#### A. Formal Education:

M.S.	Master of Science in Education Southern Illinois University Carbondale	1998
B.S.	Bachelor of Science, Electronics Management Southern Illinois University Carbondale	1996
A.A.S	Associate of Applied Arts, Electronics Technology Southern Illinois University Carbondale	1995

#### C. Continuing Education:

June, 2006	ZigBee Wireless Sensor Training, Chicago, IL.
January, 2006	Propeller multi-core processor training, Rocklin, CA.
October 2003	VB.Net Seminar, St. Louis, MO
July 2002	Microcontroller/Robotics Training, Carbondale, IL
March 2002	Microcontroller Java Training, San Francisco, CA

### III. PROFESSIONAL EXPERIENCE

**Southern Illinois University (Carbondale, IL)** 2002 - Present  
School of Information Systems and Applied Technologies  
College of Applied Sciences and Arts  
Assistant Professor

- Teach Undergraduate courses: *DC\_AC Circuit Analysis lecture and laboratory, Process Control lecture and laboratory, LAN Installation and Administration, Application of Microcontrollers lecture and laboratory, Current Trends in Electronics Management.*
- Conduct research on applications of wireless sensor networks in collaboration with: Citrus and Education Research Center, University of Florida; Agricultural Systems and Informatics, Southern Illinois University Carbondale; Department of Pharmacology, University of Sassari, Italy.
- Author and distribute text and materials on embedded programming and data acquisition and control.
- Develop and teach off-campus undergraduate courses at five military bases on *Application of Microcontrollers, Optical Electronics and Communications Management.*
- Perform service and committee work including leading modifications to EST curriculum and integration of networking curriculum with IST.

**Southern Illinois University (Carbondale, IL)** 1998 - 2002  
School of Information Systems and Applied Technologies  
College of Applied Sciences and Arts  
Visiting Lecturer

- Teach Undergraduate courses: *Industrial Control lecture and laboratory, LAN Installation and Administration, Internet Services Administration, Introduction to Programming, Advanced Application Development.*
- Develop and teach off-campus undergraduate courses at five military bases on *Application of Digital Electronics, Application of Microcontrollers, Optical Electronics and Communications Management.*

**Southern Illinois University (Carbondale, IL)** 1996 - 1998  
School of Information Systems and Applied Technologies  
College of Applied Sciences and Arts  
Teaching Assistant (25%)

- Teach Undergraduate courses: *Industrial Control lecture and laboratory, Digital Electronics Lecture and Laboratory.*

**Southern Illinois University (Carbondale, IL)**

1996 - 1998

School of Information Systems and Applied Technologies

College of Applied Sciences and Arts

Graduate Assistant (25%)

- Perkins Students Services office, Collage of Applied Sciences and Arts, managing tutoring, developing tutoring database software and teaching basic study skills course.

**IV. RESEARCH AND CREATIVE ACTIVITY**

**A. Research Interests and Specialties:**

Embedded control with data acquisition and control.

Data Communications and Wireless Sensor Networks.

Electronics and programming education through robotics.

**B. Current Projects:**

Wireless monitoring in agricultural fields in collaboration with USDA's Conservation and Applications Research Laboratory, Bushland, TX..

Wireless monitoring in agricultural fields in collaboration with SIU's Agricultural Systems and Informatics Dept. of Plant, Soil and Agricultural Systems

Wireless monitoring of citrus in collaboration with researchers at the University of Florida.

Wireless biomedical monitoring with researchers in the Department of Pharmacology Medical School, University of Sassari, Italy.

**C. Grants Applied for:**

Woodward, B., Hebel, M. (2007). *Cisco CAIG Equipment donation for Security/Information Assurance Education.* Funded by Cisco Systems.

Woodard, B., Hebel, M., Tate, R. (2006). *Revitalizing the Heartland Through Network Technology Intellectual Exchange.* Funded by NSF, CPATH grant.

Hebel, M. (2005). *Application and Analysis of ZigBee® Wireless Mesh Networks in Soil Monitoring of Irrigated Corn*. Funded by ORDA, Southern Illinois University Seed Grant.

**D. Grants Received:**

None.

**E. Other Funding:**

Hebel, M. (2007). *Wireless Monitoring of Agricultural Fields*, Cooperative Agreement, USDA Conservation and Production Research Center, Bushland, TX. (\$13,000).

Hebel, M., Devenport, W. (2002). *Development of On-Line Materials for Teaching Microcontroller Programming and Electronics*. Funded as gift-in-kind by Parallax Inc., Sacramento, CA. (\$15,000).

**F. Papers and Presentations at Professional Meetings:**

Hebel, M., Tate, R., Watson, D. (2007, June). *Results of Wireless Transceiver Testing for Agricultural Applications*. Proceedings of the 2007 Annual Meeting, American Society of Agricultural and Biological Engineers.

Hebel, M., Tate, R. (2007, March). *Reinforcing Control System, Data Communications and RF Theory using Wireless Sensor Network Devices*. Refereed presentation at the American Technical Educator's Association, National Conference, Atlanta, GA.

Hebel, M. (2006, July) *Meeting Wide-Area Agricultural Data Acquisition and Control Challenges through ZigBee Wireless Network Technology*. Proceedings of the 4<sup>th</sup> World Congress, July 2006. 234 – 239, American Society of Agricultural and Biological Engineers.

Hebel, M. (2006, March) *Follow-Up Study of EST Graduates and Program Changes*. Refereed presentation at the American Technical Educator's Association, National Conference, Louisville, KY.

Hebel, M. (2005, October) *Follow-Up Study of EST Graduates*. Refereed presentation at the American Technical Educator's Association, Great Lakes Regional Conference, Peoria, IL.

Hebel, M. (2005, October) *Educational Robotics in Technical Education*. Refereed presentation at the American Technical Educator's Association, Great Lakes Regional Conference, Peoria, IL.

Hebel, M. (2003, October). *Getting started in robotics - 1st year experiences*. Refereed presentation at the American Technical Educator's Association, Northern Plains Regional Conference, Sioux City, IA

Devenport, W., & Hebel, M. (2000, October). *The Direction of the State's Electronics Technology Programs: Keeping up with change while holding on to our roots*. Paper and refereed presentation at the American Technical Education Association Great Lakes Regional Conference, Champaign, IL.

Hebel, M., & Devenport, W. (2000, October). *Revitalizing Core Electronics Curriculum with Microcontrollers*. Paper and refereed presentation at the American Technical Education Association Great Lakes Regional Conference, Champaign, IL.

Devenport, W., & Hebel, M. (2000, March). *Meeting SCANS Competencies in a Technical Laboratory Course*. Paper and refereed presentation at the American Technical Education Association National Conference, Louisville, KY.

Devenport, W., & Hebel, M. (1998, October). *Meeting SCANS Competencies in a Technical Laboratory Course*. Refereed presentation at the American Technical Education Association Regional Conference, Cincinnati, OH.

Devenport, W., & Hebel, M. (1997, October). *SELMA - An Exciting Data Acquisition Project That Spans Your Curriculum*. Presentation at the Illinois Association of Electricity/Electronics Educators Annual Technical Conference, Decatur, IL.

#### **G. Invited Presentations:**

Hebel, M., Serra, P. A. (2007, September - Invited). *Development of a parallel-computing embedded telemetry system for voltammetric microsensor and biosensor application*. NATO Advanced Studies Institute on Sensors for the Environment: Security, Advanced Materials and Technologies. Vichy, France.

## V. PUBLICATIONS AND CREATIVE WORKS

### A. Books:

Hebel, M., & Devenport, W. (2006). "Process Control." Rocklin, CA: Parallax Inc.

Gavlik, J., Hebel, M. (2004). "Experiments with Renewable Energy." Rocklin, CA: Parallax, Inc.

Hebel, M., & Devenport, W. (2002). "Industrial Control (2<sup>nd</sup> ed.)." Rocklin, CA: Parallax Inc.

Hebel, M., & Devenport, W. (1999). "Industrial Control." Rocklin, CA: Parallax Inc.

### B. Chapters in Professional Books:

Davis, D. & Hebel, M. (2001). Group Project on Creating an E-commerce site. *Best Practices in Business Instruction.* Little Rock: DPE National Publications.

### C. Articles in Professional Journals:

Scanlan, D., Hebel, M. (In Press) Programming the 8-core propeller chip. *Journal for Computing Sciences in Colleges.*

Hebel, M. (2006). Follow-up study of EST graduates and program changes. *ATEA Journal.* 34(1). 28-30.

Hebel, M., Miller, M. (2004). Data mining – part 3. *American Tool, Die & Stamping News.* 32(6). 26-27.

Hebel, M. (2004). Data mining – part 2. *American Tool, Die & Stamping News,* 32(4), 62-63.

Devenport, W., & Hebel, M. (2001). Laboratory Curriculum-A Turnkey Approach. *Community College Journal,* 72 (1), 17-21.

### D. Copyrighted Software:

Hebel, M. (2007). *PLX-DAQ Serial Data Acquisition.* Rocklin, CA: Parallax, Inc.  
[http://www.parallax.com/html\\_pages/downloads/index.asp](http://www.parallax.com/html_pages/downloads/index.asp)

Hebel, M., & Devenport, W. (2004). *StampPlot Pro Plotting Graphical Drawing Software, Version 3*. Carbondale, IL. SelmaWare Solutions: <http://www.selmaware.com>

Hebel, M., & Devenport, W. (2002). *StampPlot Pro Plotting Graphical Drawing Software, Version 2*. Carbondale, IL. SelmaWare Solutions: <http://www.selmaware.com>

Hebel, M. (2002). *StampDAQ-Excel Serial Data Acquisition*. Rocklin, CA: Parallax, Inc. [http://www.parallax.com/html\\_pages/downloads/index.asp](http://www.parallax.com/html_pages/downloads/index.asp)

Hebel, M., & Devenport, W. (2000). *StampPlot Pro Plotting Graphical Drawing Software*. Carbondale, IL. SelmaWare Solutions: <http://www.selmaware.com>

Hebel, M., & Devenport, W. (1999). *StampPlot Lite Plotting Software*. Carbondale, IL: SelmaWare Solutions, <http://www.selmaware.com>

#### **E. Popular and Creative Writing:**

Walton, J., Hebel, M. (2004, August). The MCUtracer part 1. *AudioXpress*, 35(8), 40-45.

Walton, J., Hebel, M. (2004, September). The MCUtracer part 2. *AudioXpress*, 35(9), 63-69.

#### **F. Book Reviews**

Mazida, A., et al. (2006). "The 8051 and Embedded Systems – Using Assembly and C." Upper Saddle River, NJ: Prentice Hall.

Lindsay, A. (2004). "What's a Microcontroller." Rocklin, CA: Parallax, Inc.

#### **F. Other**

Hebel, M. (2003). *What's a microcontroller presentations*. [Computer Software]. Parallax, Inc. Rocklin, CA. Available at [http://www.parallax.com/html\\_pages/edu/downloads/wam\\_pres.asp](http://www.parallax.com/html_pages/edu/downloads/wam_pres.asp)

Hebel, M., Devenport, W. (2002). *BASIC stamp programming tutorial*. [Computer Software]. Parallax, Inc. Rocklin, CA. Available at [http://www.parallax.com/html\\_pages/edu/downloads/downloads.asp](http://www.parallax.com/html_pages/edu/downloads/downloads.asp)

Hebel, M., & Devenport, W. (1999). *Applications of Microcontrollers Manual*.  
Carbondale, IL: Locally Printed. Available on-line:  
[http://www.parallax.com/html\\_pages/downloads/apps/third\\_party\\_articles.asp](http://www.parallax.com/html_pages/downloads/apps/third_party_articles.asp)

## **VI. TEACHING EXPERIENCE**

### **A. Teaching Interests and Specialties:**

Wireless Sensor Networks  
Data Communications  
Embedded Control  
Data Acquisition and Control Systems  
Educational Robotics

### **B. Teaching and Training Grants:**

Development of on-line presentations for the teaching of microcontroller programming and electronics. Parallax, Inc, \$15,000. 2002 (Principal Investigators: Hebel, M and Devenport, W.)

Rights to have department Microcontroller manual on website of Parallax, Inc, California. \$1000/year. 2000-2002. (Principal Investigators: Hebel, M and Devenport, W.)

Rights to have department microcontroller manual on website with Virtual Micro Design, France. \$5000 in software licenses. 2001. (Principal Investigators: Hebel, M)

### **C. Teaching Awards and Honors**

Awarded "Departmental Teacher of the Year, 2006" School of Information Systems and Applied Technologies, Southern Illinois University.

Nominated "Outstanding Educator of the Year, 2006" American Technical Educators Association.

### **D. Other:**

#### **1. Indirect Teaching**

Coordinator for EST-343 delivered through Off-Campus Programs at up to seven military bases. (1999 - 2007).

2. Curriculum Development/Revision

Developed EST 305 Data Communications Course, Fall 2004.

Developed on-line material in support of EST-343 off-campus. 2003.

Developed IST 405 Internet Server Administration course. Spring 2001.

Developed the ELM 343 Microcontroller Laboratory Course for Off-Campus Students, 1998-1999.

**VII. UNIVERSITY EXPERIENCE**

**A. Department Committees:**

1. Student Related Service

Member, Scholarship Committee, 2007

Faculty Advisor, Electronics Associations, University RSO, 2005 – 2007

Chair, Department Recruitment and Outreach Committee, 2003- 2006

2. Curriculum Related Service

Chair, EST curriculum committee for re-alignment of courses, 2005 - 2006.

Chair, Ad-hoc committee for integration of EST and IST networking curriculum, 2005 - 2006.

Member, Equipment Committee, 2002 - 2005

3. Outreach Service

Mentor, “IMS Connection” Student Mentoring Program, Information Management Systems, 1997 - 2002

Website development of IMS student information pages. Student volunteer ‘webmaster’ coordinator for site.

Administrator for departmental Internet Server. Used for instructors, courses and student projects. 1999-2004.

Assisted department students in development of national Web Site for Tru-Value. 2000.

4. Other

EST Program Lead Instructor, 2004 - 2006.

**B. College and University Committees and Councils:**

1. Committee Service

Member, SIUC Elections Committee, 2005 – 2007.

Member, Dean's Faculty Advisement Committee, 2006 – 2007.

Member, ASA Research Committee, 2005 – 2007.

2. Outreach Service

Advisor to private preparatory high school robotics team for national FIRST competition.

Mentor to public high school robotics team for national VEX FIRST competition, 2006.

Mentor to public high school robotics team for national BEST competition, 2006.

Representative, Open House for Southern Illinois University, Carbondale, IL, 2002-2006.

Faculty mentor for the development and operation of DawgZooka for public relations events. Events attended:

Marion Junior High School, 2007

SIU Men's Basketball games at home, 2004 - 2007.

DuQuoin and Springfield State Fairs, 2004 – 2006.

Carbondale Community High School visit, 2006.

WFBM High school Basketball Shootout, Springfield 2005.

3. Off-Campus Academic Programs Service

Faculty Member, Ad Hoc Off-Campus Academic Programs Hiring Committee,  
2000 – 2007.

**VIII. PROFESSIONAL SERVICE**

**A. Membership in Professional Associations:**

American Society of Agricultural and Biological Engineers, 2005 – 2007.  
Member, IET-245, Emerging Information Technology Committee.  
Elected as Chair for the 2008 Wireless Technologies Session.

American Technical Educator's Association, 2004 – 2007.  
Member, Partnership & Alliances Committee, 2006-2007

Robotics Curriculum Clearinghouse (RCC): Reviewer for NASA organization for  
distribution of robotic educational material. 2004 - 2005

RoboEducators. National NSF funded organization. 2002 – 2007.

**B. Consultantships:**

Paid consultant to industry:  
BioTech International, 2007  
Belco Glass Company, 2005  
BioTech International, 2003  
Morris Communications, 2002  
EMAC Inc., Carbondale, IL, 2001

**IX. COMMUNITY SERVICE**

Electronics and Robotics Workshops, Carbondale Boys & Girls Club, 2006.

Coordinator, junior high and high school robotics camps. Summer, 2003 - 2007.

Coordinator, Teen Technology Camp. Summer, 2002.

Computer Laboratory Assistant for 1<sup>st</sup> grade children, Unity Point School. 1998.