

Jerry C. Hamann

CONTACT INFORMATION	Department of Computer Science College of Engineering and Applied Science University of Wyoming Engineering 4085 1000 E. University Avenue Laramie, WY 82071-2000 USA	Voice: (307) 766-5190 Fax: (307) 766-4036 E-mail: hamann@uwyo.edu
CURRENT POSITION	Department Head of Computer Science. Professor of Electrical and Computer Engineering. University of Wyoming.	
PERSONAL	Date of Birth: October 6, 1962 Citizenship: USA Marital Status: Married, 3 children	
EDUCATION	University of Wisconsin , Madison, Wisconsin USA Ph.D., Electrical Engineering, August 1993 <ul style="list-style-type: none">• Major Area: Automatic Control Systems• Advisor: Professor B. Ross Barmish• Minor Areas: Computer Science, Mathematics University of Wyoming , Laramie, Wyoming USA M.S., Electrical Engineering, August 1988 <ul style="list-style-type: none">• Major Area: Real-Time Signal Processing• Advisor: Professor Raymond G. Jacquot B.S., Electrical Engineering / Bioengineering Option, May 1984 <ul style="list-style-type: none">• Magna Cum Laude	
PROFESSIONAL EXPERIENCE	University of Wyoming , Laramie, Wyoming USA <i>Department Head, Computer Science</i> July 2008 to present <i>Professor, Electrical and Computer Engineering</i> July 2009 to present <i>Associate Professor, Electrical and Computer Engineering</i> July 1999 to June 2009 <i>Assistant Professor, Electrical Engineering</i> Jan. 1993 to June 1999 <i>Supply Lecturer, Electrical Engineering</i> Sept. 1987 to May 1988 University of Wisconsin , Madison, Wisconsin USA <i>Teaching Assistant / Lecturer, Electrical Engineering</i> Sept. 1991 to Dec. 1992 Hewlett-Packard , Loveland, Colorado USA <i>Product Support Engineer, DAQ Instruments</i> Sept. 1984 to June 1986	

BOOKS AND BOOK
CHAPTERS

- J. C. Hamann, "A/D and D/A Converters," R. C. Dorf, ed., *The Engineering Handbook*, CRC Press, Boca Raton, Florida, 1996.
- C. D. Ferris and J. C. Hamann, *SPICE for Electronics*, West Publishing Company, St. Paul, 1995.
- J. C. Hamann and J. W. Pierre, "Fourier Waveform Analysis," J. Whitaker, Ed., *The Electronics Handbook*, CRC Press, Boca Raton, Florida, 1996.
- J. C. Hamann and J. W. Pierre, "Fourier Waveform Analysis," J. Whitaker, Ed., *Signal Measurement, Analysis, and Testing*, CRC Press, Boca Raton, Florida, 2000.
- J. C. Hamann and J. W. Pierre, "Fourier Waveform Analysis," J. Whitaker, Ed., *Electronic Systems Maintenance Handbook*, Second Edition, CRC Press, Boca Raton, Florida, 2001.

REFEREED
JOURNAL PAPERS

- R. G. Jacquot and J. C. Hamann, "Analog Simulation on the Personal Digital Computer," *Computers in Education Journal*, Vol. 5, No. 2, April/June 1985, pp. 12–15.
- J. C. Hamann and B. R. Barmish, "Convexity of Frequency Response Arcs Associated with a Stable Polynomial," *IEEE Transactions on Automatic Control*, Vol. 38, No. 6, pp. 904–915, 1993.
- J. C. Hamann, "Graphics Oriented Tools for the Study of Parameter Uncertainty in Linear Systems," *Computers in Education Journal*, Vol. 5, No. 3, pp. 6–10, 1995.
- R. G. Jacquot, J. C. Hamann, J. W. Pierre and R. F. Kubichek, "Teaching Digital Filter Design Using Symbolic and Numeric Features of MATLAB," *Computers in Education Journal*, Vol. 7, No. 1, January/March, 1997.
- R. G. Jacquot and J. C. Hamann, "Visualization of PDE Solutions Using Implicit Methods and MATLAB," *Computers in Education Journal*, Vol. 7, No. 3, July/September, 1997.
- R. G. Jacquot, J. C. Hamann and J. E. McInroy, "Digital Control — A Setting for a Mixture of Computing Strategies: Numerics, Symbolics and Simulation," *Computers in Education Journal*, Vol. 9, No. 1, January/March, 1999.
- J. C. Hamann, J. W. Pierre, S. F. Legowski and F. M. Long, "Using Monte Carlo Simulations to Introduce Tolerance Design to Undergraduates," *IEEE Transactions on Education*, February, 1999.
- E. D. Scott, J. W. Pierre and J. C. Hamann, "A Source Tracking Sensor Array Testbed," *Microprocessors and Microsystems*, Vol. 23, pp. 207-216, 1999.
- J. W. Pierre, R. F. Kubichek and J. C. Hamann, "Enhancing the Comprehension of Signal Processing Principles using Audio Exercises with MATLAB," *Computers in Education Journal*, Vol. 10, No. 2, April/June, 2000.
- J. E. McInroy and J. C. Hamann, "Design and Control of Flexure Jointed Hexapods," *IEEE Transactions on Robotics and Automation*, Vol. 16, No. 4, pp. 372–381, August, 2000.

R. G. Jacquot, J. W. Pierre, J. C. Hamann and B. H. Chowdhury, "Computer Exercises to Incorporate Energy Concepts into the Electrical Engineering Curriculum," *Computers in Education Journal*, Vol. 11, No. 2, April/June, 2001.

S. Muknahallipatna, A. Kadkol, and J. Hamann, "Monitoring Tool for Performance Measurements of Windows NT Based LANs," *International Journal of Computers and Applications*, Vol. 24, No. 3, pp. 136–143, 2002.

X. Hu, J. Zhang, S. Muknahallipatna, J. Hamann, M. Biggs, and P. Agarwal, "Transformation and Destruction of Nitrogen Oxides - NO, NO₂, and N₂O in a Pulsed Corona Discharge Reactor," *Fuel*, Vol. 82, No. 10, pp. 1675–1684, 2003.

W. Spears, D. Spears, J. Hamann and R. Heil, "Distributed, Physics-Based Control of Swarms of Vehicles," *Autonomous Robots*, Vol. 17(2-3), pp. 137–162, September, 2004.

H. Lin, J. McInroy and J. Hamann, "Analysis and Design of Motion Control Systems with Positive Force/Torque Feedback using Robust Control Methods," *IEEE Transactions on Control Technology*, Vol. 13, No. 56, pp. 752–759, 2005.

G.-B. Zhao, S. John, J.-J. Zhang, L. Wang, S. Muknahallipatna, J. C. Hamann, J. F. Ackerman, M. D. Argyle, and O. A. Plumb, "Methane Conversion in Pulsed Corona Discharge Reactors," *Chemical Engineering Journal*, Vol. 125, Issue 2, pp. 67-79, 2006.

G.-B. Zhao, S. John, J.-J. Zhang, J. C. Hamann, S. Muknahallipatna, S. Legowski, J. F. Ackerman, and M. D. Argyle, "Production of Hydrogen and Sulfur from Hydrogen Sulfide in a Nonthermal-Plasma Pulsed Corona Discharge Reactor," *Chemical Engineering Science*, Vol. 62, No. 8, pp. 2216–2227, 2007.

E. D. Scott, C. T. Hayward, R. F. Kubichek, J. C. Hamann, J. W. Pierre, B. Comey, and T. Mendenhall, "Single and Multiple Sensor Identification of Avalanche-Generated Infrasound," *CRST (Cold Regions Science and Technology) Journal*, Vol. 47, Nos. 1–2, 159–170, January 2007.

S. F. Barrett, J. C. Hamann, D. Coon, P. M. Crips and J. Pierre, "Show Them NAND Gates and They Will Come," *Computers in Education Journal*, Vol. 17, No. 2, 26–36, April-June 2007.

T. Brothers, N. Mandagere, S. Muknahallipatna, J. C. Hamann and H. Johnson, "Microsoft Exchange Implementation on a Distributed Storage Area Network," *International Journal of Computers and Applications*, Vol. 30, No. 3, 251–264, 2008.

S. Muknahallipatna, J. Miles, J. C. Hamann and H. Johnson, "Large Fabric Storage Area Networks: Fabric Simulator Development and Preliminary Performance Analysis," *International Journal of Computers and Applications*, accepted for publication.

J. W. Pierre, F. K. Tuffner, J. R. Anderson, D. L. Whitman, A. H. M. S. Ula, R. F. Kubichek, C. H. G. Wright, S. F. Barrett, J. J. Cupal and J. C. Hamann, "A One-credit Hour Hands-on Introductory Course in Electrical and Computer Engineering Using a Variety of Topic Modules," *IEEE Transactions on Education*, Vol. 52, No. 2, pp. 263–272, May, 2009.

C. D. Ferris and J. C. Hamann, "Simulation of Electronic Oscillator Output Signals Using SPICE," *IEEE Circuits and Devices Magazine*, Vol. 12, No. 3, pp. 28–34, May, 1996.

REFEREED
CONFERENCE
PROCEEDINGS

R. G. Jacquot and J. C. Hamann, "Generalized Gain Plots for Proportional Digital Control for Second-Order All-Pole Plants," *IEEE Control Systems Magazine*, Vol. 20, No. 3, pp. 80–84, June, 2000.

R. G. Jacquot and J. C. Hamann, "Analog Simulation on the Personal Digital Computer," *ASEE Annual Conference Proceedings*, Salt Lake City, June 24–28, 1984, pp. 38–41.

F. M. Long, J. C. Hamann, N. Ula, and T. A. Estes, "An Inexpensive System for Teaching Principles of Electronic CAD," *ASEE Annual Conference Proceedings*, Portland, June 19–23, 1988, pp. 1852–1856.

R. G. Jacquot, D. L. Rickman, and J. C. Hamann, "An Analog Computer Simulator for Personal Digital Computers," *ASEE Annual Conference Proceedings*, Portland, June 19–23, 1988, pp. 1912–1915.

J. C. Hamann and B. R. Barmish, "Convexity of Frequency Response Arcs Associated with a Stable Polynomial," *Proceedings of the American Control Conference*, Chicago, June 24–26, 1992.

J. C. Hamann, "Graphics Oriented Tools for the Study of Parameter Uncertainty in Linear Systems," *ASEE Annual Conference Proceedings*, Edmonton, June 26–29, 1994, pp. 1211–1215.

J. W. Pierre, J. C. Hamann, S. Legowski, and F. M. Long, "Introducing Tolerance Design to Undergraduates Using Monte Carlo Simulations," *ASEE Annual Conference Proceedings*, Edmonton, June 26–29, 1994, pp. 2564–2570.

J. C. Hamann, M. W. Schroer, and R. F. Kubichek, "A Classroom Demonstrator for Real-Time Digital Signal Processing," *ASEE Annual Conference*, Anaheim, June 25–28, 1995, pp. 93–95.

R. G. Jacquot, J. C. Hamann, J. W. Pierre, and R. F. Kubichek, "Teaching Digital Filter Design Using MATLAB and Derive," *ASEE Annual Conference*, Anaheim, June 25–28, 1995, pp. 618–620.

J. C. Hamann, "Computing Resources for Filter Design: Selecting a Properly Tuned Toolkit for the Classroom," *ASEE Annual Conference Proceedings*, Washington, D.C., June 22–26, 1996, CD-ROM.

R. G. Jacquot and J. C. Hamann, "Visualization of PDE Solutions Using Implicit Methods and MATLAB," *ASEE Annual Conference Proceedings*, Washington, D.C., June 22–26, 1996, CD-ROM.

R. G. Jacquot and J. C. Hamann, "Teaching Digital Control and Filtering Using MATLAB and VISSIM," *Proceedings of the Frontiers in Education Conference*, Salt Lake City, November 6–9, 1996, CD-ROM.

J. A. Puckett and J. C. Hamann, "A Model for Using Productivity Software in the Engineering Classroom: MAP VARS & DOC," *Proceedings of the Frontiers in Education Conference*, Salt Lake City, November 6–9, 1996, CD-ROM.

J. C. Hamann, B. R. Dewey and C. A. Hilman, "Using the Web for Supplementation and Evaluation: A View from the Front Line," *ASEE Annual Conference Proceedings*, Milwaukee, June 15–18, 1997, CD-ROM.

- R. G. Jacquot, J. C. Hamann and J. E. McInroy, "Modification of a Sophomore Linear Systems Course to Reflect Modern Computing Strategies," *ASEE Annual Conference Proceedings*, Milwaukee, June 15–18, 1997, CD-ROM.
- B. K. Johnson, D. Egolf, G. Venkataramanan, V. Gerez and J. C. Hamann, "Graduate Teaching Alliances – Experiences from a Western Experiment," *ASEE Annual Conference Proceedings*, Milwaukee, June 15–18, 1997, CD-ROM.
- R. G. Jacquot, J. C. Hamann and J. E. McInroy, "Digital Control – A Setting for a Mixture of Computing Strategies: Numerics, Symbolics and Simulation," *ASEE Annual Conference Proceedings*, Seattle, June 28–July 1, 1998, CD-ROM.
- J. C. Hamann and S. Muknahallipatna, "Distributed Instrumentation and Computation: A Look at What's Out on the End of the Internet," *ASEE Annual Conference Proceedings*, Seattle, June 28–July 1, 1998, CD-ROM.
- J. W. Pierre, R. F. Kubichek and J. C. Hamann, "Reinforcing the Understanding of Signal Processing Concepts using Audio Exercises," *ICASSP-99 Conference Proceedings*, Phoenix, March 15-19, 1999.
- J. W. Pierre, R. F. Kubichek and J. C. Hamann, "Enhancing the Comprehension of Signal Processing Principles Using Audio Exercises with MATLAB," *ASEE Annual Conference Proceedings*, Charlotte, June 20–23, 1999, CD-ROM.
- J. E. McInroy and J. C. Hamann, "Control of Flexure Jointed Hexapods," *IEEE International Conference on Decision and Control*, (Phoenix, AZ), August, 1999.
- R. G. Jacquot, J. W. Pierre, J. C. Hamann and B. H. Chowdhury, "Computer Exercises to Incorporate Energy Concepts into the Electrical Engineering Curriculum," *ASEE Annual Conference Proceedings*, St. Louis, June 18–21, 2000, CD-ROM.
- X. Li, J. McInroy and J. Hamann, "Optimal Fault Tolerant Control of Flexure Jointed Hexapods for Applications Requiring Less than Six Degrees of Freedom," *IEEE International Conference on Decision and Control*, (Sydney, Australia), pp. 3337–3338, December, 2000.
- S. Muknahallipatna, J. Kane, and J. Hamann, "Distributed Remote LAN Administration Tool for Windows NT & 2000-Based LANs: Preliminary Work," *Proceedings 26th Annual IEEE Conference on Local Computer Networks*, (Tampa, FL), pp. 59–61, Nov. 14-16, 2001.
- H. Lin, J. McInroy and J. Hamann, "Design of Motion Control Systems with Positive Force/Torque Feedback Using Mu-Synthesis," *Proceedings of the American Control Conference*, (Denver, CO), pp. 3955-3960, June 2003.
- R. Kubichek, J. Pierre, F. Tuffner, J. Hamann and J. Steadman, "Integrated Design Laboratory," *Frontiers in Education Conference Proceedings*, (Boulder, CO), November, 2003.
- J. Hamann, R. Kubichek and J. Pierre, "Interactive Fourier Concepts: Computing Tools for Building Intuition," *Frontiers in Education Conference*, (Boulder, CO), November, 2003.
- M. Stauffer, S. Muknahallipatna and J. Hamann, "NTLM and Kerberos Performance in Windows 2000 Domains," *International Conference on Computing, Communications and Control Technologies (CCCT)*, (Austin, TX), August, 2004.

- S. Muknahallipatna, T. Brothers, N. Mandagere, P. Patil and J. Hamann, “The Effect of End to End Latency in a Distributed Storage Area Network on Microsoft Exchange Server 2003 Performance – Part I,” *IEEE 29th Annual Conference on Local Computer Networks (LCN)*, (Tampa, FL), November, 2004.
- T. V. Edgar, M. Urynowicz and J. C. Hamann, “The Static Stability Factor – A Dynamic Introduction to Engineering,” *ASEE Annual Conference Proceedings*, Portland, June 12–15, 2005, CD-ROM.
- J. C. Hamann, L. Hutchison and A. Moore, “Thinking and Doing Math and Science with Engineering: A Partnership,” *ASEE Annual Conference Proceedings*, Chicago, June, 2006.
- S. F. Barrett, J. C. Hamann, D. Coon, P. M. Crips and J. Pierre, “Show Them NAND Gates and They Will Come,” *ASEE Annual Conference Proceedings*, Chicago, June, 2006.
- T. Brothers, S. Muknahalliptna, and J. C. Hamann, “Distributed Storage Area Network Simulation Compared to True Performance,” *IASTED International Conference on Wireless and Optical Communications (WOC 2007)*, Montreal, May 30 – June 1, 2007.
- T. Brothers, S. Muknahallipatna, J. C. Hamann and H. Johnson, “Distributed Storage Area Network Simulation with OPNET: Preliminary Report,” *Proceedings of OPNETWORK 2007*, Washington, D.C., Aug. 27–31, 2007.
- J. Raelin, R. Reisberg, D. Whitman and J. C. Hamann, “Cooperative Education as a Means to Enhance Self-Efficacy among Sophomores (with Particular Attention to Women) in Undergraduate Engineering,” *Frontiers in Education Conference*, (Milwaukee, WI), October, 2007.
- T. Brothers, S. Muknahallipatna, J. C. Hamann and H. Johnson, “Fibre Switch Modeling at Fibre Channel-2 Level for Large Fabric Storage Area Network Simulations Using OMNet++: Preliminary Work,” *32nd IEEE Conference on Local Computer Networks (LCN)*, Dublin, Ireland, October 15–18, 2007.
- P. M. Crips, W. Parker, S. F. Barrett and J. C. Hamann, “Discovery Project — Improving Seventh Grade Critical Thinking Skills,” *ASEE Annual Conference Proceedings*, Pittsburgh, PA, June, 2008.
- J. Raelin, R. Reisberg, D. Whitman and J. C. Hamann, “The Effect of Cooperative Education on Self-Efficacy Among Undergraduate Engineering Students,” *ASEE Annual Conference Proceedings*, Pittsburgh, PA, June, 2008.
- P. M. Maxim, S. Hettiarachchi, W. Spears, D. Spears, J. Hamann, T. Kunkel and C. Speiser, “Trilateration Localization for Multi-Robot Teams,” *Fifth International Conference on Informatics in Control, Automation and Robotics*, Special Session on Multi-Agent Robotic Systems, (ICINCO 2008, May 11–15, 2008, Madeira, Portugal).
- S. Barrett, J. Anderson, J. Hamann, R. Kubichek, S. Muknahallipatna, J. Pierre, D. Whitman, and C. Wright, “Embedded Systems Design: Responding to the Challenge,” *ASEE Annual Conference Proceedings*, Austin, TX, June, 2009.

EXTENDED
ABSTRACT
REFEREED
CONFERENCE
PROCEEDINGS

J. F. O'Brien, J. E. McInroy, D. Bodtke, M. Bruch and J. C. Hamann, "Lessons Learned in Nonlinear Systems, Flexible Structures, and Robotics Through Experiments on a Six Legged Platform," *1998 American Control Conference Proceedings*, Vol. 3, pp. 868–872, Philadelphia, June 24–26, 1998.

X. Li, J. Hamann and J. McInroy, "Simultaneous Vibration Isolation and Pointing Control of Flexure Jointed Hexapods," *SPIE International Symposium on Smart Structures and Materials*, (Newport Beach, California), March, 2001.

E. D. Scott, C. T. Hayward, R. F. Kubichek, J. C. Hamann and J. W. Pierre, "Results of Recent Infrasound Avalanche Monitoring Studies," *2004 International Snow Science Workshop (ISSW)*, (Jackson Hole, Wyoming), September 21, 2004.

W. M. Spears, J. C. Hamann, P. M. Maxim, T. Kunkel, R. Heil, D. Zarzhitsky, D. F. Spears and C. Karlsson, "Where Are You?" in *Proceedings of the Ninth International Conference on the Simulation of Adaptive Behavior*, (SAB 2006, September 25–29, 2006, Roma, Italy), LNA Volume 4095, pp. 129–143, Springer Verlag.

E. D. Scott, C. T. Hayward, T. J. Colgan, J. C. Hamann, R. F. Kubichek, J. W. Pierre and J. Yount, "Practical Implementation of Avalanche Infrasound Monitoring Technology for Operational Utilization Near Teton Pass Wyoming," *2006 International Snow Science Workshop (ISSW)*, (Telluride, Colorado), October 1–6, 2006.

D. Zharzhitsky, D. Spears, C. Frey, C. Karlsson, W. Spears, B. Ramos, J. Hamann and E. Widder, "A Physicomimetics Control Framework for Swarms of Autonomous Surface Vehicles," *Oceans MTS/IEEE*, (Oceans 2008, September 15–18, 2008, Quebec City).

ABSTRACT-ONLY
REFEREED
CONFERENCE
PROCEEDINGS

R. G. Jacquot, J. C. Hamann, J. W. Pierre and R. F. Kubichek, "What to do About the Last Math Course in the Engineering Curriculum?: A Suggestion for Discussion," *ASEE Rocky Mountain Section Annual Meeting*, Laramie, April 14–15, 1996.

B. H. Chowdhury, S. Muknahallipatna, J. J. Cupal, J. C. Hamann, T. Dinwoodie and D. Shugar, "A 50 Kilowatt Distributed Grid-Connected Photovoltaic Generation System for the University of Wyoming," *Proceedings of the 26th IEEE Photovoltaic Specialists Conference*, Anaheim, September 29 – October 3, 1997.

B. H. Chowdhury, S. Muknahallipatna, J. J. Cupal and J. C. Hamann, "Evaluating the Performance of a 50 Kilowatt Grid-Connected Photovoltaic System," *33rd Intersociety Engineering Conference on Energy Conversion*, Colorado Springs, August 2-6, 1998.

J. Hamann, N. Peck and D. Coon, "Assessing Recruitment Activities in K-12: Tools for the Future," *2004 ASEE Rocky Mountain Division Annual Meeting*, Laramie, April 16, 2004.

G.-B. Zhao, S. John, J.-J. Zhang, M. D. Argyle, J. C. Hamann, S. Muknahallipatna, S. Legowski, "Production of Hydrogen and Sulfur from Hydrogen Sulfide in a Nonthermal-Plasma Pulsed Corona Discharge Reactor," *2005 AIChE Annual Meeting*, (Cincinnati, OH), November 3, 2005.

G.-B. Zhao, S. John, J. C. Hamann, S. Muknahallipatna, S. Legowski, J. Ackerman, and M. D. Argyle, “Decomposition of Hydrogen Sulfide in a Nonthermal-Plasma Pulsed Corona Discharge Reactor,” *2006 AIChE Annual Meeting*, (San Francisco, CA), November 16, 2006.

S. John, G.-B. Zhao, J.-J. Zhang, L. Wang, S. Muknahallipatna, J. C. Hamann, J. F. Ackerman M. D. Argyle, and O. A. Plumb, “Decomposition of H₂S and CH₄ in Pulsed Corona Discharge Reactors,” *2007 AIChE Annual Meeting*, (Salt Lake City, UT), November 7, 2007.

PATENT FILINGS

“A Novel Device for the Measurement of Gas Permeability through Membranes,” Pradeep Agarwal, John Ackerman, Ron Borgialli, Jerry Hamann and Suresh Muknahallipatna, Provisional Patent Approved 2002.

“A Novel Process For The Manufacture of Hydrogen Cyanide and Acrylonitrile with Simultaneous Recovery of Hydrogen,” Pradeep Agarwal, John Ackerman, Ron Borgialli, Steve Fischer, Jerry Hamann, Suresh Muknahallipatna and Ji-Jun Zhang, Submitted for Provisional Patent, 2002.

“A Novel Process For The Production of Ethanol and Methanol with Simultaneous Recovery of Hydrogen,” Pradeep Agarwal, John Ackerman, Ron Borgialli, Steve Fischer, Jerry Hamann, Suresh Muknahallipatna, Paul Vergnani and Linna Wang, Submitted for Provisional Patent, 2002.

WORKSHOPS PRESENTED

Hands-on Introduction to MATLAB — development and delivery of a one-day workshop presented at the 1994 ASEE Annual Conference in Edmonton, Alberta, in cooperation with Dr. Robert F. Kubichek and the Computers in Education Division of ASEE.

Introduction to MATLAB — development and delivery of a one-day workshop presented at the Frontiers in Education Conference, Salt Lake City, November 6–9, 1996.

Using MATLAB in the Engineering Classroom — development and delivery of a one-day workshop presented at the ASEE Annual Conference, Milwaukee, Wisconsin, June 15–18, 1997.

MATLAB in Engineering Education and Research — development and delivery of a one-day workshop presented at the ASEE Annual Conference, Seattle, Washington, June 27–July 1, 1998.

An Introduction to MATLAB — brief evening short-course presented for College of Engineering ESIG computer users (students, faculty and staff) (March–1994, September–1994, January–1995, September–1995, January–1996, September–1996, January–1997, September–1997, January–1998, September–1998, January–1999, September–1999, January–2000, September–2000, January–2001, September–2001, February–2002, September–2002, January–2003).

Electrical Circuits Review for Fundamentals of Engineering Exam — presented review for University of Wyoming students, Spring and Fall 1994, Spring and Fall 1995, Spring 1996, Fall 1997, Spring and Fall 1998, Spring and Fall 1999, Spring 2000.

GPS and Digital Mapping Technologies — University of Wyoming College of Engineering Continuing Education Class for Engineers. Developed in cooperation with Dr. Henry Heasler, research scientist in the college. Presented twice during the Fall 2000 (November 11 and December 9) to professional engineers from the northern Rocky Mountain region. Due to continued interest, presented again during Spring 2001, two separate workshops (March 24 and April 7).

Enhanced MATLAB Workshop for Engineering Students — Funded by the Engineering College Enhancement Fund for Spring 2002, a total of eight evenings dedicated to advanced MATLAB programming for undergraduate and graduate students in the University of Wyoming College of Engineering.

Control Systems Review for Fundamentals of Engineering Exam — presented review for University of Wyoming students, Spring 2004, Spring 2005, Fall 2005, Spring 2006, Fall 2006, Spring 2007, Fall 2007, Spring 2008.

Thinking and Doing Mathematics Through Engineering — Two week workshop for sixteen K-12 math teachers, presented during the Summers of 2004, 2005 and 2006. Directed workshops with cooperation of the University of Wyoming Science and Mathematics Teaching Center. Presented map, compass and GPS portion of activities.

Maps / Compass / GPS — Presented twice during the Fall 2004 and Fall 2005, introduction and hands-on practice with new technology for orienteering in the search and rescue mission. Provided for Albany County and Laramie County Search and Rescue groups, also Albany County Sheriff's Department.

New Engineering Faculty Workshop — Organization and presentation of materials for College of Engineering new faculty orientation, as directed by Dean Plumb. In cooperation with Steve Barrett, Dennis Coon, Charles Dolan, Thom Edgar, Dick Schmidt and Cameron Wright. August 25, 2005, August 24, 2006 and August 21, 2008. Materials can be viewed online at <http://wwweng.uwo.edu/faculty/resources/>.

PANEL
DISCUSSIONS AND
INVITED
PRESENTATIONS

University of Wyoming 1993 Colloquium for Teaching Excellence — panel presenter for session entitled "Building an Effective Teaching Community."

Energy and Natural Resources Student-Faculty Forum — panel presenter for Spring 2002 discussion of energy-related research at the University of Wyoming.

The William and Flora Hewlett Foundation Engineering Schools of the West Grants Initiative at UW — presented as a part of the Ellbogen Center for Teaching and Learning Collaborative Grants Program, February 10, 2003.

Characteristics of Faculty Who Make a Difference — presented as a part of the Ellbogen Center for Teaching and Learning Classroom Practices Series, October 23, 2003.

Best Practices: Active Learning and Assessment in the Classroom — Presented at the Ellbogen Center for Teaching and Learning, for the Education in the Technical Fields Working Group. In cooperation with Jimm Myers, Department of Geology and Geophysics, October 25, 2005.

Concept Inventories: Aligning Curriculum Design with Student Learning — Presented at the Ellbogen Center for Teaching and Learning Spring Colloquium, June 1-2, 2006.

Learning in the First-Year Courses — Panel member for discussion presented during the Fall 2007 “Pathways for Learning Conference” at the University of Wyoming (University, community colleges and K-12 schools), October 18, 2007.

The Good, The Bad and the Needed Changes in our Education System: An Honest Policy Discussion — Panel member for discussion of challenges to K-16 education during the Fall 2008 Wyoming Law Students for Equal Justice recognition of American Education Week, November 19, 2008.

GRADUATE
STUDENTS
SUPERVISED —
MAJOR
PROFESSOR ROLE

Passive Infrared Detection of Road Cover Conditions — Dan Bodtke, M.S. completed December 1995. Feasibility development of an instrumentation system for detecting surface conditions from motor vehicle. Study complements on-going effort in Department to “break into” rural IVHS (Intelligent Vehicle Highway System) research.

Electrical Vehicle Climate Control: Modeling and Efficiency Comparison of Two Implementations — Nazeer Abdunour, M.S. completed August 1997. Study of efficient electrical climate control systems for forthcoming electrical vehicles.

Analysis of Actuator Saturation in Feedback Control Systems — Daniel Bodtke, Ph.D. completed August 1998. Analytical and computational evaluation of nonlinear system characteristics associated with the Wyoming Hexapod.

Space-Time Evolutionary Fourier Analysis — Roger Green, Ph.D. completed August 1998. In cooperation with Dr. John Pierre. Involved the computational and analytical study of advanced signal processing techniques for interpolating multidimensional data.

Robust Precision Pointing and Vibration Isolation for DOD Projects — Xiaochun Li, Ph.D. completed May 2000. Fault tolerant simultaneous vibration isolation and pointing control of the UW hexapod.

Maximum Power-Point Tracking for Photovoltaic Energy Conversion — Wendong Zhang, M.S. completed August 2000. In cooperation with Dr. Stanislaw Legowski, developing novel power electronic methods for extracting maximum power from existing photovoltaic panels.

Web-Based GPS Data Archival System — Tracy Kirk, M.S. completed August 2000. Deploying a world-accessible GPS data archive for a fixed GPS atop the College of Engineering building. Data archive allows for investigation of system performance and, prior to May 1, 2000, evaluation of Selective Availability status.

Dynamic Network Address Translation — Rashmi Jagadish, M.S. completed December 2000, in cooperation with Dr. Suresh Muknahallipatna. Windows NT implementation of an IP number conservation tool for small intranets.

LabVIEW Implemented Control of Actuators for a Movable-Bed Flume — Justin Yockey, M.S. completed December 2002, in cooperation with Dr. Gregory Wilkerson (Civil and Architectural Engineering). Providing controls for hydrology laboratory facility in UW College of Engineering.

Application of Prony Analysis to Characterize Pulsed Corona Reactor Measurements — Satnam Singh, M.S. completed August 2003. Analysis of pulsed corona reactor voltage and current measurements using Prony techniques. Toolbox of MATLAB Prony Analysis methods made available through College of Engineering website.

Design and Implementation of an Advanced Web-Based Graphical User Interface for Geographic Databases – Anuja Rasane, M.S. completed May 2004. Providing GUI access to spatial database query server for advanced database studies, in cooperation with Dr. Byunggu Yu in Computer Science.

A Novel System for Self-Location of Cooperative Robots — Rodney Heil, M.S. completed August 2004. Design and construction of a novel ultrasound/RF system to allow inexpensive robots to locate one another in cooperative swarms, in cooperation with Dr. William Spears and Dr. Diana Spears in Computer Science.

Performance Analysis of the Disk Subsystem and Interconnects in a DSAN — Nagapramod Suryanaray Mandagere, M.S. completed August 2005. In cooperation with Dr. Suresh Muknahallipatna. Benchmarks and analysis of storage area networks on unique artificial traffic network design.

Sensor Synthesis for Cooperative Robot Swarms — Thomas Kunkel, M.S. completed December 2006. Continuation of ultrasound/RF localization scheme for cooperative robots, with associated sensors for detection of chemical plumes. In cooperation with Dr. William Spears and Dr. Diana Spears in Computer Science.

Instrumentation, Timing Coordination and Signal Processing for Detection of Snow Avalanches Via Infrasonic Signatures — Timothy Colgan, M.S. May 2007. Application of array signal processing to the detection of snow avalanches for transportation corridor closure and snow recreation facility safety. In cooperation with Ernie Scott (Inter-Mountain Labs) and Dr. John Pierre and Dr. Robert Kubichek.

Failures in the Inter-Integrated Circuit Bus (I^2C or IIC) Due to Noisy Power Signals Caused by Faulty Motors — Caleb Speiser, M.S., completed Fall 2008. Continuation of localization for cooperative robots, with associated sensors for navigation and detection of targets. In cooperation with Dr. William Spears and Dr. Diana Spears in Computer Science.

Relative Self-Localization Systems — Lee Frey, Ph.D. in progress. Adaptation and extension of trilateration schemes for localization of cooperative, mobile sensors, with applications to include mobile oceanic sensor arrays.

GRADUATE
STUDENT
COMMITTEE
MEMBERSHIP

Lisa Torvik, “Modification of the Back-Propagation Algorithm for Faster Convergence in Neural Networks,” M.S. in EE, completed Summer 1994, under supervision of B. Wilamowski.

Freddy Engineer, “An In-Circuit Emulator for MSI Chips/ASICs Using Verilog HDL,” M.S. in EE, completed Fall 1994, under supervision of J. Cupal.

Thomas Andersen, “Numerical Synthesis of Passive Filters,” M.S. in EE, completed Spring 1995, under supervision of B. Wilamowski.

Kunyu Wang, “Fault Detection and Classification in Power Systems Using Artificial Neural Networks,” M.S. in EE, completed Spring 1995, under supervision of B. Chowdhury.

Christina Yearous, “A Comprehensive Analysis Tool for Dynamic Stability Studies,” M.S. in EE, completed Spring 1995, under supervision of B. Chowdhury.

Yaser Abdelkader, “Nonlinear Discrete Feedback Control for One and Two Degree-of-Freedom Robot Manipulators,” M.S. in EE, completed Summer 1995, under supervision of R. Jacquot.

Chiyi Jin, "Ouput-Based Objective Speech Quality Using Vector Quantization Techniques," M.S. in EE, completed Fall 1995, under supervision of R. Kubichek.

Baskin Tapkan, "Active Microwave Remote Sensing of Road Surface Conditions," M.S. in EE, completed Spring 1996, under supervision of R. Kubichek.

Lilburn (Scott) Shaw, "Design of an Automated Respiratory Instrumentation System using LabVIEW to Create a Graphical User Interface," M.S. in BioE, completed Summer 1996, under supervision of C. D. Ferris.

Yasuhiro Ota, "CMOS Realization of Voltage-Mode and Current-Mode Fuzzy Min-Max Systems," Ph.D. in EE, completed Fall 1996, under supervision of B. Wilamowski.

Richard Lee, "Instrumentation for Remote Data Acquisition on Grid Connected Photovoltaic Systems," M.S. in EE, completed Fall 1996, under supervision of J. Cupal.

Eric Brown, "Spatial to Temporal Conversion of Images Using a Pulse-Coupled Neural Network," M.S. in EE, completed Spring 1997, under supervision of B. Wilamowski.

Javeed Ghazali, "Evaluation of the Performance of a Modified LMS Algorithm," M.S. in BioE, Plan B, completed Spring 1997, under supervision of C. Ferris.

John O'Brien, "Development of Fault Tolerant and Nonlinear Multivariable Analysis Tools for Application to Active Stewart Platforms," M.S. in EE, completed Spring 1997, under supervision of J. McInroy.

Michael Bruch, "A General Platform for Generating Small Scale 6 D-O-F Vibrations from 0 to 100 Hz," M.S. in EE, completed Spring 1998, under supervision of J. McInroy.

Jayakrishnan Macharivilakathu, "Image Processing Techniques in Particle Image Velocimetry," M.S. in ME, completed Spring 1998, under supervision of P. Dellenback.

Canan Bilen, "Wavelet Based Outlier Detection," Ph.D. in Statistics, completed Summer 1998, under supervision of S. Huzurbazar and R. Anderson-Sprecher.

Chad Espenscheid, "Optimal Regulation of River Flows Using Neural Networks," M.S. in CE, completed Fall 1998, under supervision of M. R. Junna.

Sangsung Choi, "Acoustic Plug Detection in Abandoned Boreholes," Ph.D. in EE, completed Spring 1999, under supervision of R. Kubichek.

Richard Wies, "Estimating Low-Frequency Electromechanical Modes of Power Systems Using Ambient Data," Ph.D. in EE, completed Spring 1999, under supervision of J. W. Pierre.

Anup Kadkol, "Performance Monitoring Tool for Windows NT Based Ethernet Networks," M.S. in EE, completed Spring 1999, under supervision of S. Muknahallipatna.

Zheng Ma, "Precision Pointing Control for Satellite Communication Using Hexapod and Position Sensitive Detector," M.S. in EE, completed Spring 1999, under supervision of J. E. McInroy.

Saleela Yadavalli, "Implementation of a LAN Manager for Windows NT Based Ethernet Networks," M.S. in EE, completed Summer 1999, under supervision of S. Muknahallipatna.

Yixin Chen, "Estimation of a Hexapod's Joint Space Mass-Inertia Matrix," M.S. in EE, completed Fall 1999, under supervision of J. McInroy.

Bela Kagalwala, "A Novel Power Electronic System for Harmonic Reduction and Power Factor Correction of Single-Phase Rectifiers," Ph.D. in EE, completed Spring 2000, under supervision of S. Legowski and S. Ula.

Haomin Lin, "Adaptive Sinusoidal Disturbance Cancellation Strategy in Pointing Control Using Hexapods," M.S. in EE, completed Summer 2000, under supervision of J. E. McInroy.

Uditha Piyasena, "Initial Target Acquisition Using a CCD Camera System for the UW Hexapod," M.S. in EE, completed Summer 2000, under supervision of J. E. McInroy.

Vishwanathan Sankararam, "Transparent Proxy Server for Windows NT Using a Layered Service Provider," M.S. in EE, completed August 2000, joint supervision with S. Muknahallipatna.

Nadim Wahid, "Plan B: Performance Comparison of Windows NT Internet Messaging APIs," M.S. in EE, completed December 2000, under supervision of S. Muknahallipatna.

Scott Clark McDaniel, "Authorized Access Only: Designing and Implementing Secure Networking and Authorized Remote Access to NASA's Countermeasures Evaluation and Validation Project Data," M.S. in COSC, completed May 2001, under supervision of R. Gantenbein.

Yixin Chen, "Decoupling Control of Flexure Jointed Hexapods," Ph.D. in EE, completed Summer 2001, under supervision of J. E. McInroy.

Timothy Olson, "Biologically Based Machine Vision: Modelling the L1, L2, and L4 Neurons of the Housefly (*Musca domestica*) Vision," M.S. in EE, completed Summer 2001, under supervision of S. F. Barrett.

Welby Peters, "Analysis of Naturally Occurring Stresses in Frameless Photovoltaic Modules," M.S. in EE, completed Summer 2001, under supervision of S. Ula.

Khaleel Abdul Razak, "Functional Organization of the Pallid Bat Auditory Cortex," Ph.D. in Zoology and Physiology, completed Summer 2001, under supervision of Z. Fuzessery.

Srinivasan Sankaranarayanan, "Internet Security Agent for Windows NT Using a Layered Service Provider," M.S. in EE, completed Fall 2001, under supervision of S. Muknahallipatna.

Yong Yi, "Over-Constrained Rigid Multibody Systems: Differential Kinematics and Fault Tolerance," M.S. in EE, completed Fall 2001, under supervision of J. E. McInroy.

Jenny Newton, "Biologically Based Machine Vision: Signal Analysis of Monopolar Cells in the Visual System of *Musca Domestical*," M.S. in EE, completed Spring 2002, under supervision of S. F. Barrett.

John J. Kane, "Distributed Administration Tool for Windows Based Enterprise Networks," M.S. in EE, completed Summer 2002, under supervision of S. Muknahallipatna.

Shahriyar Rizvi, "A Comparative Study of Finite State Machines Implmented in Explicit and Implicit Style Verilog HDL and a Methodology to Make Them Operate Identically After Synthesis," M.S. in EE, completed Fall 2002, under supervision of J. Cupal.

Sumeet Aphale, "An Algorithm to Resolve the Redundancy in Robotic Manipulators Using Frequency Response of the Actuators," M.S. in EE, completed Spring 2003, under supervision of J. E. McInroy.

Dustin Ludwig, "Performance Monitoring on a Windows 2000 LAN," M.S. in EE, completed Summer 2003, under supervision of S. Muknahallipatna.

Michael Stauffer, "Performance Analysis of NTLM and Kerberos Authentication in Windows 2000 Domains," M.S. in EE, completed Summer 2003, under supervision of S. Muknahallipatna.

Seaghan UiBreaslain, "Software Engineering and Free Software: a Small Evaluation," M.S. in Computer Science, completed Summer 2003, under supervision of R. Gantenbein.

Radhika Balasubramani, "Calorimetric Investigation of the Kinetics of Low Temperature Oxidation of Dry Coal," M.S. in ChE, completed Summer 2003, under supervision of G. Harris (P. Agarwal).

Yi Shi, "Autonomous Wall-Following Robot with Obstacle Avoidance," M.S. in EE, completed Fall 2003, under supervision of S. F. Barrett.

Gaurav Talwar, "Output-Based Objective Quality Measure of Speech Using Discrete Hidden Markov Models," M.S. in EE, completed Fall 2003, under supervision of R. Kubichek.

Lance Riley, "Feasibility Study of a Digital Measurement Control Algorithm for Maximum Power Point Tracking of Photovoltaic Arrays," M.S. in EE, completed Fall 2003, under supervision of S. Legowski.

Irene Legowski, "An Analysis of the Computational Burden of an Algorithm to Identify Electromechanical Modes," M.S. in EE, completed Spring 2004, under supervision of J. W. Pierre.

Thomas Rice, "Design of a Reactionless Strut for Precision Pointing Devices," M.S. in EE, completed Summer 2004, under supervision of J. E. McInroy.

Jeffrey Anderson, "A Seed-Based Semi-Autonomous Segmentation Method for Serial Section Images," Ph.D. in EE, completed Summer 2004, under supervision of S. F. Barrett.

Yong Yi, "Fault Tolerant N-DOF Gough-Stewart Platforms: Kinematics, Dynamics and Design," Ph.D. in EE, completed Summer 2004, under supervision of J. E. McInroy.

Diana Strickland, "Structural and Geochronologic Evidence for ca. 1.6 Ga Reactivation of the Cheyenne Belt, Southeastern Wyoming," M.S. in Geology, completed Summer 2004, under supervision of K. R. Chamberlain.

Haomin Lin, "Disturbance Attenuation in Precise Hexapod Pointing Control Using Positive Force Feedback," Ph.D. in EE, completed Fall 2004, under supervision of J. E. McInroy.

Pamela Beavis, "A Robotics-Based Teaching Platform for Microprocessor and Embedded Controls Labs," M.S. in EE, completed Spring 2005, under supervision of S. Barrett.

Sumeet Aphale, "Designing Orthogonal Gough-Stewart Platforms with Robust Fault Tolerance," Ph.D. in EE, completed Summer 2005, under supervision of J. E. McInroy.

Hongkong Liang, "Statistics of Nonlinear Averaging Spectral Estimators and Speech Quality Estimation Using Hidden Markov Models," Ph.D. in EE, completed Summer 2005, under supervision of R. F. Kubichek.

Georgerene Russell, "Cultural Elements of Applied Mathematics in the Middle School Native American Classroom," M.S. in Natural Sciences Education, completed Summer 2005, under supervision of L. Hutchison.

Ning Zhou, "Subspace Methods of System Identification Applied to Power Systems," Ph.D. in EE, completed Fall 2005, under supervision of J. W. Pierre.

David Bishop, "Thermoplastic Resin Impregnation onto Fiberglass Tows Using Spreading Pins," M.S. in Mechanical Engineering, completed Fall 2005, under supervision of D. Walrath.

Robert Gilchrist, "Experimental Study of Incompressible Jets with Different Initial Swirl Distributions," M.S. in ME, completed Fall 2005, under supervision of J. Naughton.

Chandrasekar Venkatraman, "Hill Climbing Digital Control Algorithm for Maximum Power Point Tracking of Photovoltaic Arrays," M.S. in EE, completed Fall 2006, under supervision of S. Legowski.

Kala Meah, "Robust Controller Applications with HVDC Links," Ph.D. in EE, completed Summer 2007, under supervision of S. Ula.

Hillary E. Brown, "Crustal Rupture, Creation, and Subduction in the Gulf of California, Mexico and the Role of Gas Hydrate in the Submarine Storegga Slide, Offshore Norway," Ph.D. in Geology/Geophysics, completed Fall 2007, under supervision of Steve Holbrook.

Timothy Brothers, "A Discrete Event Simulator Model of a Fibre Channel Switch at the Fibre Channel 2 Level," Ph.D. in EE, completed Fall 2007, in cooperation with S. Muknahallipatna.

Chinmay-Shreekrishna Ukidve, "Quantifying Optimum Fault Tolerance of Manipulators and Robotic Vision Systems," Ph.D. in EE, completed Fall 2007, under supervision of J. E. McInroy.

Brett Roesler, "Industrial Controls with the ATMEL ATMEGA16 Microcontroller," M.S. Plan B in EE, completed Spring 2008, in cooperation with S. Barrett.

Luke Hollmann, "An Optimal Control System for Rudder Roll Stabilization," M.S. Plan B in EE, completed Spring 2008, in cooperation with J. O'Brien.

Yawei Yang, "Kinematics, Singularity and Design of Parallel Robots," Ph.D. in EE, completed Spring 2008, under supervision of J. F. O'Brien and J. E. McInroy.

Dimitri Zarzhitsky, "A Physics-based Approach to Chemical Source Localization Using Mobile Robotic Swarms," Ph.D. in COSC, completed Summer 2008, under supervision of D. Spears and D. Thayer.

Sanil John, "Decomposition of Hydrogen Sulfide and Methane in Pulsed Corona Discharge Reactors," Ph.D. in ChE, completed Fall 2008, under supervision of M. Argyle.

Paul Maxim, "An Implementation of a Novel Localization Framework for Robots and its Application to Multi-Robot Swarms," Ph.D. in COSC, completed Fall 2008, under supervision of W. Spears.

Joseph A. Miles, "Large Fabric Storage Area Networks: Fabric Simulator Development and Preliminary Results," M.S. in EE, under supervision of S. Muknahallipatna.

David Rahn, "Forcing and Structure of the 22–25 June 2006 Coastally Trapped Wind Reversal Using Aircraft Observations and Numerical Simulations," Ph.D. in Atmospheric Science, completed Fall 2008, under supervision of T. Parish.

Antons Rebguns, "Using Scouts to Predict Swarm Success Rates," M.S. in COSC, completed Fall 2008, under supervision of D. Spears.

Chad E. Hager, "HDL Based Design Problems for Computer Architecture," Plan B M.S. in EE, completed Spring 2009, under supervision of S. Barrett.

Daniel McCarthy, "New Laboratory Exercises for the Digital Systems Design Class at The University of Wyoming," Plan B M.S. in EE, completed Spring 2009, under supervision of C. Wright.

Zach Ruble, "68HC12 Architecture," Plan B M.S. in EE, completed Spring 2009, under supervision of S. Barrett.

Stephen Bailey, M.S. in Science Education, ongoing, in collaboration with Alan Buss.

Luke Dosiek, Ph.D. in EE, ongoing, under supervision of J. W. Pierre.

Steven Fletcher, M.S. in EE, ongoing, under supervision of S. Ula.

Dana Gale, M.S. in Math Education, ongoing, under supervision of L. Hutchison.

Zhijiang Guo, Ph.D. in EE, ongoing, under supervision of J. E. McInroy.

Dawn Hedges, M.S. in Natural Sciences Education, ongoing, under supervision of L. Hutchison.

Karla Hill, M.S. in Math Education, ongoing, under supervision of Lynn Ipiña.

Zhen Qi, Ph.D. in EE, ongoing, under supervision of J. E. McInroy.

Anthony Wallace, Ph.D. in COSC, ongoing, under supervision of J. Cowles and R. Gantenbein.

Yu Wan, Ph.D. in EE, ongoing, under supervision of S. Ula.

UNDERGRADUATE STUDENT ADVISING

Departmental Advising: Advised minimum of 12 and maximum of 33 undergraduates during each of the preceding semesters.

EPSCoR Undergraduate Student Fellowship Advising

- Csaba Rozgonyi, Senior in EE, Spring 1996, collaborated on study of parametric uncertainty in analog filter designs.

- Scott Neu, Junior in EE, Fall 1996, collaborated on simulation of harmonic content in pulse width modulated electronic inverter output.
- Michelle Colgan, Junior in Math/French/EE, Spring 1997, collaborated on simulation and digital hardware implementation of logic “games” developed with Dr. Les Shader, Department of Mathematics.
- Arthur Mills, Senior in EE, Fall 1997. collaborated on study of microelectronics technology and industrial needs for precision pointing and alignment.
- Ella Wellman, Junior in Computer Science, Spring 2005, collaborated on communication schemes and behavior concepts for assistive cooperative robot swarms.

PROFESSIONAL
SOCIETY
ACTIVITIES

Assistant to technical program committee chairman for the American Control Conference, Control Systems Society, IEEE, 1992.

Paper reviewer and Session Moderator for “Digital Signal Processing” Session at 1994 ASEE Annual Conference.

Paper reviewer and Session Moderator for “Digital Signal Processing” Session at 1995 ASEE Annual Conference.

Paper reviewer and Session Moderator for “CIM Laboratory Development” Session at 1996 ASEE Annual Conference.

Workshop Presenter for Computers in Education Division of ASEE, 1994–98.

Program Chairman, Computers in Education Division of ASEE, 2001.

Program Chairman, Computers in Education Division of ASEE, 2002.

Division Chairman, Computers in Education Division of ASEE, 2003.

Division Chairman, Computers in Education Division of ASEE, 2004.

Paper reviewer and Helen Plants Award evaluator for 2003 Frontiers in Education Conference.

Paper reviewer for 2004 Frontiers in Education Conference.

ASEE Campus Representative for the University of Wyoming, 2004 to current.

Paper reviewer for 2004, 2005, 2006, 2007 and 2008 Educational Research Methods and Computers in Education Divisions of ASEE.

JOURNAL AND
TEXT REVIEWS

Automatica

IEEE Transactions on Automatic Control

IEEE Transactions on Education

International Journal of Computers and Their Applications

Mathematics of Control, Signals and Systems

Energy and Fuels

The Electrical Engineering Handbook, 2nd Ed.

Microcontroller Embedded Systems Design and Applications (Barrett/Pack) — Prentice Hall proposed text.

Automatic Control Systems (Kuo/Golnaraghi) — John Wiley and Sons proposed 8th edition of text.

College Workload Policy Committee (1996-1999) — worked with committee members and Dean to draft College policy compliant with University Workload Committee, follow-up work on workload report process.

Engineering Science Committee (1995-1999) — college advocate and technical support for MATLAB in the ESIG laboratory. Initiated equipment purchases to upgrade ES 2210 Circuits Laboratory. Pursued definition and modifications of ES 2250 curriculum. Participated in initiation of “Design Integration Throughout the Curriculum” effort to advance curriculum planning in step with ABET design expectations.

Engineering Science Circuits and Systems Coordinator (1994-1996) — pursued curriculum planning for “Design Integration Throughout the Curriculum” in ES 2210 and ES 2250.

University Housing Review Committee (1995-1996) — College of Engineering faculty representative on the committee assigned to complete the mandated ten-year review of the University Housing Division, final report completed August 1996.

Engineering Dormitory Floor Committee — Electrical Engineering faculty representative on the advisory committee for the Engineering Theme Floor, White Hall (Spring 1996 to Spring 2008).

Search Committee for the Associate Vice President for Enrollment Management and Director of Admissions (Spring and Summer 1999) — University-wide committee, responsible for conducting search, interviewing candidates and making summary recommendation to administration.

Faculty Senate Student Interaction Committee — Review of policies and actions involving students and student groups (Fall 1999 to Spring 2005).

University Studies Program Review Committee — University-wide committee charged with reviewing and recommending restructuring of the general education requirements. Served as Subgroup Chairman for Writing and Communications (Fall 1999 to Spring 2001).

University Studies Program Standing Committee — University standing committee, evaluates applications for new coursework submitted to the University Studies program (Fall 2000 to Spring 2002).

College of Engineering Communications Committee — Instructed by Dean to evaluate all channels of College communication, including brochures, newsletters and the web (Fall 2000 to Spring 2002).

Review Committee for John Steadman, Head of Electrical and Computer Engineering — Instructed by Dean to assist colleagues in gathering review information, formulating confidential as well as final open review for Department Head (Fall 2001).

College of Engineering Tenure and Promotion Committee — Department of Electrical and Computer Engineering Representative on College Tenure and Promotion Committee (Fall 2001 to Spring 2004).

Department of Electrical and Computer Engineering Hiring Committee — Committee activities to draw up advertisement, examine applications, conduct telephone interviews and host candidates on campus for open assistant professor position (Fall 2002 to Spring 2003).

Department of Mathematics Information Theory Position Hiring Committee — Committee activities to examine applications and host candidates for open tenure track position (Fall 2003 to Spring 2004).

College of Engineering H.T. Person Chair Committee — Assist Dean in utilization of H.T. Person Chair resources (Spring 2004 to current).

University of Wyoming LeaRN Advisory Council — Member of University committee providing advice and direction for LeaRN initiatives and programs, in cooperation for the Ellbogen Center for Teaching and Learning (Summer 2004 to current).

Department of Mathematics Information Theory Position Hiring Committee — Committee activities to examine applications and host candidates for open tenure track position (second in two years) (Fall 2004 to Spring 2005).

Department of Electrical and Computer Engineering Hiring Committee — Committee activities to draw up advertisement, examine applications, conduct telephone interviews and host candidates on campus for open assistant professor position (Fall 2004 to Spring 2005).

College of Engineering New Educator Workshop Development Committee — Ad hoc committee appointed by Dean to develop beginning of semester forum to introduce new classroom educators (new faculty, adjuncts, lecturers) to their role and local resources. Efforts are programmed to continue with extended workshops during the semesters to cover appropriate topics (Spring 2005 to current).

College of Engineering Ad hoc Committee for Engineering Design Education Space Allocation — Committee appointed by Dean to evaluate available space for undergraduate engineering design education. Efforts include identification of space, re-design alternatives, objectives identification (Fall 2005 to current).

Science Literacy in STEM Education — Working group established by Academic Affairs to investigate the definition and assessment of science literacy in higher education. Efforts working toward University-level standards for science literacy (Spring 2008 to current).

STUDENT
ORGANIZATION
ADVISING

ISHM/IMAPS Student Chapter Advisor — Advisor for local student chapter of the International Microelectronics and Packaging Society (Fall 1995 to Fall 1999).

ANSA Student Chapter Advisor — Advisor for reintroduction of the local chapter of the Association for Norwegian Students Abroad (Fall 1996 to Fall 1999).

OUTREACH
ACTIVITIES

1994 Duracell Innovation Contest — Technical advisor for Laramie High School Senior Physics students designing and constructing battery powered devices for scholarship award contest.

Spring and Fall 1997, Spring and Fall 1998, Spring and Fall 1999: Career Day at Laramie Junior High School — Conducted brief introductions to Engineering and Electrical Engineering for Junior High students interested in science and technical careers.

On-Site School Outreach to State — — (Fall 1999) Visited Casper Kelly Walsh and Douglas High Schools, presenting overview of academic programs in engineering at the University of Wyoming. Audiences included sophomore through senior students in each school, as well as associated mathematics and science instructors. (Fall 2000) Visited Cheyenne East High School to present similar program. (Spring 2002) Visited Cheyenne East and Cheyenne Central High Schools to present similar program. (Spring 2003) Visited Powell, Greybull and Tongue River High Schools to present similar program. (Fall 2003) Visited Star Valley and Jackson High Schools to present similar program. (Spring 2004) Visited Sheridan and Tongue River High Schools to present similar program. (Fall 2005) Cheyenne East and Sheridan Wright Place. (Fall 2006) Cheyenne East, Cheyenne Central and Mountain View.

Movin' Up — (Fall 2000, Fall 2001, Fall 2002, Fall 2003, Fall 2008) Volunteer staff for assisting students in their move into the residence halls.

Freshman Outdoor Experience — (Fall 2000) Group leader, directed two incoming freshman groups on dayhikes and activities over first full weekend of Fall 2000 semester (in cooperation with the Outdoor Adventure Program). (Fall 2002 and 2003) Group leader, assisted two incoming freshman groups on technical rock climbing outings to Vedauwoo over first full weekend of Fall 2002 and 2003 semesters. (Fall 2004, 2005, 2006, 2007 and 2008) Group leader, provided technical and emergency medical expertise for resident group of incoming freshman on weekend climbing outing to Vedauwoo. (In cooperation with the Outdoor Adventure Program).

MATHCOUNTS Competition — (2004, 2005, 2006, 2007 and 2008) State Coordinator for Wyoming. Providing direction for National Society of Professional Engineers MATHCOUNTS competitions at school, local and state levels. Responsible for scheduling and completion of Wyoming State Competition and coordination of Wyoming State Team travel to national contest.

Middle School Girls Summer Camp — (2004, 2005, 2006, 2007 and 2008) Directing week long summer resident camp providing middle school girls with an exposure to math, science and engineering through workshops including LOGO Programming, 3D Computer Aided Design, Geophysics and Seismology, and Math in the Mountains.

Enhancement of Undergraduate Engineering Education — Project was initiated via response to a restricted call for proposals issued by the William and Flora Hewlett Foundation. Cooperative efforts of Dr. Sally Steadman, Dr. Dennis Coon, Dr. Nancy Peck and Dr. Linda Hutchison. The University of Wyoming College of Engineering received a grant of \$1.15M to investigate and implement “best practices” for recruitment, retention and enhanced education of undergraduate engineering students. Funded period began September 2003 and continues five funding periods (five years extended by parallel projects and sources). As the director of Wyoming’s efforts in this endeavor from 2003 to 2008, I was responsible for the day-to-day activities, including local and state programming as well as continued pursuit of funding for future programs. Cohort of nine “Engineering Schools of the West” funded by the Hewlett Foundation continued to work cooperatively through subgroups of participants across all schools. My responsibilities included participation in the ESWI Recruitment and Retention Subcommittee, the Faculty Development Subcommittee and the Assessment Subcommittee. Funding has been supplemented to extend activities via grants from the Department of Education, the State of Wyoming, and the National Science Foundation.

Nonthermal Plasma Applications for Chemical Processing — Initiated with Dr. Pradeep Agarwal in Chemical Engineering. In partnership with Dr. Suresh Muknahallipatna and Mr. Ron Borgianni, adapted a commercially available pulsed corona reactor to reaction and measurement scenarios for determining the NO_x and SO_x destruction mechanisms of gas flows in a nonthermal plasma. Our participation increased with the design and development of a new reactor assembly and accompanying electronics to address hydrogen production scenarios in pulsed coronas. Following the death of Dr. Agarwal, our activities continued with Dr. Gus Plumb, Dr. John Ackerman and Dr. Morris Argyle. Funding sources included NSF, the Department of Energy and a private oil refining concern. Laboratory facilities include a specialized laboratory located adjacent the Laramie Regional Airport. Graduate student participation includes completion of one MS in EE (application of Prony Analysis techniques to pulsed corona reactor remote sensing) and cooperative efforts with two ChE MS, three ChE PhD, and three ChE post-docs.

Electronic Relative-Locating and Sensing Systems for Cooperative Robotic Swarms — Based in the robotics laboratory developed by Dr. William Spears and Dr. Diana Gordon Spears, originally in Computer Science. Funding for the activities have been obtained under the DoD NUSE2 program as well as NSF and Harbor Branch Oceanographic Institute. Responsibilities include the development of a novel instrumentation system using acoustic and radio frequency signals to provide localization information for each robot in the swarm, as well as development of a hybrid architecture for robot control and sensor interfacing for tasks including chemical plume tracing and cooperative manipulation. Graduate student participation includes completion of three MS in EE. Cooperative support provided for three COSC PhDs and one COSC MS.

Infrasonic Sensing of Snow Avalanches — Supporting SBIR effort of Wyoming based company (Intermountain Labs, Sheridan) with funding from Department of Commerce, Wyoming Department of Transportation, National Science Foundation, and private sources. One MS EE supported and completed.

Analysis and Modeling of Storage Area Networks — Initiated by Dr. Suresh Muknahallipatna and funded by McData Corporation (now known as Brocade). My responsibilities have included cooperative supervision of one PhD and two MS students as they develop benchmarks for assessing performance in large storage area network systems.

Stereo-Scopic Vision System for Firefighting — Initiated with Dr. John McInroy, Dr. John O’Brien and Dr. Cameron Wright. Design, implementation and testing of a novel stereo-scopical vision system for automated firefighting in Air Force applications.

INTERNAL GRANTS

Date	Description (and degree of involvement)	Requested	Status	Duration
1/93	1993 College of Engineering Faculty Development Award — <i>Research and Instructional Focus in Real-Time Control Applications of Digital Signal Processors</i>	\$1020.00	Awarded \$1020.00	Start 5/93 End 6/93
1/94	1994 College of Engineering Faculty Development Award — <i>Critical Equipment Acquisition for Digital Signal Processing of Audio Signals</i>	\$1715.00	Awarded \$1000.00	Start 5/94 End 12/94
1/94	Spring 1994 Center for Teaching Excellence Innovative Teaching and Instructional Improvement Grants — <i>Development of a Classroom Demonstrator for Real-Time Digital Signal Processing: (70% involvement) with R. F. Kubichek</i>	\$950.00	Awarded \$950.00	Start 2/94 End 12/94
2/94	1994 Provost's Faculty Grant-in-Aid Program — <i>Intelligibility Problems in Persons with Communication Disorders: (20% involvement) with R. F. Kubichek and D. Ingrisano</i>	\$3430.00	Awarded \$3000.00	Start 3/94 End 6/94
9/96	UW PaSS Graduate Fellowship — <i>Nano-radian to Milli-radian Pointing Aboard the Space Shuttle: (40% involvement) with M. Bruch and J. McInroy</i>	\$12,834.00	Awarded \$12,834.00	Start 10/96 End 8/97

EXTERNAL
PROPOSALS AND
AWARDS

Date	Description (and degree of involvement)	Requested	Status	Duration
11/93	NSF Instrumentation and Laboratory Improvement Program — <i>Development and Implementation of a Moderate Cost Signals and Systems Design Environment</i> : (30% involvement) with R.G. Jacquot and J.W. Pierre	\$10,000.00	Denied	
12/93	NSF EPSCoR Preproposal — <i>Cluster for Real Time On-Vehicle Information Systems for Winter Driving</i> : (10% involvement) with nine others	\$1,450,874.00	Denied	
1/94	NSF Research Initiation Award — <i>Basic Research in Geometric Properties of Frequency Response Functions</i>	\$102,821.00	Denied	
4/94	NSF EPSCoR Proposal #9550477-04 — <i>Fundamental Research in Western Coal Utilization</i> : (5% involvement) with PI P. Agarwal and six others	\$1,196,271.00	Awarded	Start 9/95 End 8/98
5/94	NSF Undergraduate Faculty Enhancement Proposal — <i>A MATLAB Workshop to Enhance Undergraduate Engineering Faculty</i> : (25% involvement) with R. Jacquot, A. Peck and D. Smith	\$32,399.00	Denied	
1/95	DOE EPSCoR Proposal — <i>Methods for Assessing Adverse Effects of Increased Efficient Utilization of Electrical Energy</i> : (10% involvement) with eight others	\$408,282.00	Awarded	Start 9/95 End 8/97
9/95	DOD EPSCoR Proposal — <i>High Precision Pointing and Vibration Isolation for DOD Applications</i> : (40% involvement) with John McInroy	\$296,764.00	Awarded	Start 5/96 End 8/99
9/95	NASA EPSCoR Proposal — <i>High Precision Pointing and Isolation Technology</i> : (40% involvement) with John McInroy	\$260,047.00	Denied	
1/96	NSF EPSCoR Proposal — <i>Intelligent Systems for Rapid, Low Cost Design, Prototype Development, and Manufacturing Process Optimization</i> : (5% involvement) with David Walrath and seven others	\$900,000.00	Denied	
10/96	NSF EPSCoR Proposal — <i>Power Systems Stability and Control</i> : (20% involvement) with Badrul Chowdhury and two others	\$277,272.00	Denied	

EXTERNAL
PROPOSALS AND
AWARDS (CONT.)

Date	Description (and degree of involvement)	Requested	Status	Duration
1/97	DOE EPSCoR Renewal Proposal — <i>Methods of Assessing Adverse Effects of Increased Efficient Utilization of Electrical Energy</i> : (20% involvement) with Badrul Chowdhury and three others	\$398,812.00	Awarded	Start 9/97 End 8/99
5/97	DOD EPSCoR/BMDO Proposal — <i>Space-Based, Long-Distance Laser Pointing and Tracking</i> : (30% involvement) with John McInroy and two others	\$340,611.00	Awarded	Start 11/97 End 12/00
8/97	Rocky Mountain Hazardous Substance Research Center Proposal — <i>Remote Real-Time Monitoring and Characterization of Contaminated Sites</i> : (30% involvement) with Suresh Muknahallipatna and two others	\$570,164.68	Denied	
8/97	Wyoming Ag. Exp. Station Comp. Grants Proposal — <i>Cyber Network Based Research Stations to Sustain Wyoming's Agricultural Industry, Phase I: Goshen County</i> : (15% involvement) with K.J. Reddy and four others	\$60,000.00	Denied	
9/97	NSF Proposal — <i>Remote Real-Time Monitoring and Characterization of Surface and Ground Water Contaminants</i> : (30% involvement) with Suresh Muknahallipatna and two others	\$353,524.00	Denied	
5/98	NSF KDI/NCC Proposal — <i>Computer Networking Technology for Distributed Data Acquisition, Distribution and Analysis</i> : (30% involvement) with Suresh Muknahallipatna and four others	\$763,305.00	Denied	
1/99	DOE EPSCoR Renewal Proposal — <i>Methods of Assessing Adverse Effects of Increased Efficient Utilization of Electrical Energy</i> : (25% involvement) with Sadrul Ula and three others	\$243,269.00	Awarded	Start 9/99 End 8/01
8/99	DOD EPSCoR/BMDO Proposal — <i>Fault Tolerant High Precision Pointing, Vibration Isolation, and Vibration Absorption Using Flexured Parallel Kinematic Machines</i> : (33% involvement) with John McInroy and Nancy Peck	\$340,674.00	Awarded	Start 4/00 End 8/03

EXTERNAL
PROPOSALS AND
AWARDS (CONT.)

Date	Description (and degree of involvement)	Requested	Status	Duration
1/00	NSF Directorate for Engineering Proposal — <i>Networks and Communications Infrastructure for Computer Engineering Curriculum and Professional Enrichment</i> : (25% involvement) with two EE and one COSC faculty	\$348,127.00	Denied	
10/02	Hewlett Foundation ESWI Proposal — <i>The University of Wyoming Center for Excellence in Engineering Education: Recruiting, Retaining and Educating “The Best in the West”</i> (50% involvement) with S. Steadman, D. Coon, N. Peck, L. Hutchison	\$1,115,000.00	Awarded	Start 9/03 End 8/08 Extended 8/10
4/01	Proprietary Oil Refining Concern — <i>Application of Pulsed Corona Reactors in Commercial Oil Refining</i> : (25% involvement) with G. Plumb, S. Muknahallipatna, John Ackerman and R. Borgialli (original PI P. Agarwal)	Confidential	Multiple Payments	Financial details and period of project known by G. Plumb
8/03	DOE EPSCoR Wyoming Pre-Proposal — <i>Characterization and Abatement of Nonthermal Plasma Reactor Radiated and Conducted Emissions</i> : (30% involvement and PI) with F. Jafari, S. Muknahallipatna, D. Thayer and R. Borgialli	\$900,000.00	Selected	Team declined to continue due to next proposal
7/02	Department of Energy Basic Sciences — <i>A Novel Device for Testing Membranes in Pulsed Corona Environments</i> : (10% involvement) with M. Argyle, S. Legowski, S. Muknahallipatna and J. Ackerman (Original PI team: P. Agarwal, J. Ackerman, S. Muknahallipatna, J. Hamann)	\$489,982.00	Awarded	Start 9/03 End 8/06
2/04	Wyoming Department of Education — <i>Thinking and Doing Mathematics</i> : (30% involvement) with L. Hutchison, S. Parker, P. Killebrew, L. MacCarty and K. Kinsey	\$324,469.00	Awarded	Start 3/04 End 9/05
6/04	Department of Defense, Joint Robotics Program, NUSE2 (National Unmanned Systems Experimentation Environment) — <i>Autonomous Data Exchange in Multi-Robot Collectives</i> : (30% involvement) with W. Spears and D. Spears	\$274,514.00	Awarded	Start 1/05 End 12/08

EXTERNAL
PROPOSALS AND
AWARDS (CONT.)

Date	Description (and degree of involvement)	Requested	Status	Duration
12/04	Wyoming Department of Education — <i>Thinking and Doing Mathematics and Science</i> : (40% involvement) with L. Hutchison, S. Parker	\$192,778.00	Awarded	Start 2/05 End 9/06
10/05	Engineering Information Foundation — <i>Cooperative Education as a Means to Enhance Self-Efficacy Among Women in Undergraduate Engineering</i> : (25% involvement) with J. Raelin and R. Reisberg (Northeastern Univ), D. Whitman (UW).	\$24,709.69	Denied	Seeking other funds
02/06	Wyoming Department of Education — <i>Active Learning in Science and Math</i> : (40% involvement) with P. Crips and S. Parker	\$230,000.00	Awarded	Start 4/06 End 9/07
06/06	National Science Foundation Program NSF 06-536 — <i>Development of a WWW Accessible Hydromachinery Laboratory Facility</i> : (25% involvement) with M. R. Reddy, F. Ogden and V. Bershinsky	\$150,000.00	Denied	
09/06	Department of Energy Wyoming EPSCoR — <i>Non Thermal Plasma Reactors for Optimal Hydrogen Production: System Modeling, Separation Membrane Characterization, Development and Control</i> : (5% involvement) with M. Stefanovic, M. Argyle, S. Muknahallipatna, R. Kubichek, F. Jafari and D. Thayer	\$723,127.00	Denied	
12/06	National Science Foundation Program NSF 06-427 — <i>UW S-STEM 2</i> : (30% involvement) with D. Coon and R. Schmidt	\$437,500.00	Denied	
12/06	Sub-Contract with Harbor Branch Oceanographic Institute, Office of Naval Research Proposal — <i>Bioluminescence Truth Data Measurement, Phase 5</i> : (40% involvement) with D. Spears and W. Spears	\$75,088.00	Awarded	Start 1/07 End 12/07 Extended 5/08

EXTERNAL
PROPOSALS AND
AWARDS (CONT.)

Date	Description (and degree of involvement)	Requested	Status	Duration
02/07	Wyoming Department of Education — <i>The Discovery Project: Investigative Learning Across Science, Math and Language Arts</i> : (40% involvement) with P. Crips and L. Ipina	\$255,073.00	Awarded	Start 4/07 End 9/08
04/07	National Science Foundation Program 07-501 — <i>Pathways to Work Self-Efficacy and Retention of Women in Undergraduate Engineering</i> : (15% involvement) with R. Reisberg, J. Raelin, D. Whitman, M. Bailey, S. Waddia-Fascetti and C. Berger (NEU, UW, RIT and VTU)	\$299,999.00	Denied	
10/07	Department of Defense 2008 DEPSCoR — <i>Adaptive and Self-Organizing Smart Robotic Mobile Ad-Hoc Networks for Urban Battlefield Communications</i> : (20% involvement) with M. Stefanovic, S. Muknahallipatna, and J. O'Brien	\$985,411.58	Denied	
04/08	Department of Defense, Joint Ground Robotics Program — <i>Real-Time Flame Recognition and Understanding Using a Mobile, High Performance, Stereoscopic Computer Vision System</i> : (30% involvement) with J. McInroy, J. O'Brien, C. Wright, F. Jafari and S. Morton	\$1,550,134.00	Awarded	Start 10/08 End 9/13
02/08	National Science Foundation Program 07-578 — <i>Pathways to Work Self-Efficacy and Retention of Women in Undergraduate Engineering</i> : (10% involvement) with R. Reisberg, J. Raelin, D. Whitman, M. Bailey, S. Waddia-Fascetti and C. Berger (NEU, UW, RIT and VTU)	\$499,000.00	Awarded	Start 10/08 End 9/11

SBIR AND
ECONOMIC
DEVELOPMENT

Date	Description (and degree of involvement)	Requested	Status	Duration
7/99	Wyoming SBIR Phase 0 Proposal — <i>Earth Science Data Warehousing</i> : (33% involvement) as collaborator with Chinook Engineering, Sheridan, WY	\$4957.00	Awarded	Start 6/99 End 7/99
7/99	NASA SBIR FY 1999 Phase 1 Proposal — <i>Earth Science Data Warehousing: Innovative Collection, Archival and Retrieval Systems for Remote Environmental and Natural Resource Data Monitors</i> : (33% involvement) as collaborator with Chinook Engineering, Sheridan, WY	\$63,703.00	Denied	
1/00	DOC SBIR FY 2000 Phase 1 Proposal — <i>Infrasonic Avalanche Detection</i> : (15% involvement) as consultant with Chinook Engineering, Sheridan, WY	Confidential	Awarded	Start 9/00 End 5/01
12/00	NSF EPSCoR Proposal — <i>Dominant Discharge in Rivers</i> : (20% involvement) with Greg Wilkerson and Richard Anderson-Sprecher	\$30,000.00	Awarded	Start 6/01 End 5/02
2/01	DOC SBIR FY 2000 Phase 2 Proposal — <i>Infrasonic Avalanche Detection</i> : (10% involvement) as consultant with Chinook Engineering, Sheridan, WY	Confidential	Awarded	Start 9/01 End 9/03
3/03	NSF SBIR FY 2003 Phase 1 Proposal — <i>Infrasonic Avalanche Detection and Array Processing</i> : (10% involvement) as consultant with Chinook Engineering / IML Air Sciences, Sheridan, WY	Confidential	Awarded	Start 9/03 End 12/04
12/04	NSF SBIR FY 2005 Phase 2 Proposal — <i>Infrasonic Avalanche Detection and Array Processing</i> : (10% involvement) as consultant with IML Air Sciences, Sheridan, WY	Confidential	Awarded	Start 06/05
12/05	IML Air Sciences — <i>Graduate Assistant Funding for Infrasonic Avalanche Detection and Array Processing</i> : (40% involvement) with J. Pierre and R. Kubichek, Sheridan, WY	\$10,694.55	Awarded	Start 01/06 End 05/06
11/06	DoD SBIR FY 2006 Phase 1 Proposal — <i>Cooperative Robot/Human Teams for Two Tactical Maneuvers: Navigating Tunnels and Finding the Source of a Chemical Leak</i> : (25% involvement) with D. Spears and W. Spears and ADA Technologies of Laramie, WY	Confidential	Denied	

DONATION
PROCUREMENT

Description	Requested	Status
Intel Corporation — Software and data book support for Advanced Microprocessors Course offering, Spring 1994 (multiple copies)	\$750.00 X 29	Donated \$22,500.00
	\$28.95 X 28	Donated \$810.60
Texas Instruments — Digital signal processing hardware and software for use in student labs (multiple copies), in cooperation with R. F. Kubichek and J. W. Pierre, 2000.	\$2000.00	Donated \$2000.00
Texas Instruments — More digital signal processing hardware and software for use in student labs (multiple copies), in cooperation with R. F. Kubichek and J. W. Pierre, 2001.	\$10,425.00	Donated \$10,425.00
Rockwell — Benchtop hardware for signals and systems undergraduate laboratories, in cooperation with J. W. Pierre, R. F. Kubichek and J. W. Steadman, 2001.	\$15,000.00	Donated \$10,500.00

HONORS AND
AWARDS

Senior Member — Institute of Electrical and Electronics Engineers (IEEE), 2005.

University of Wyoming Mortar Board “Top Prof” — Selected by Senior Class during Fall 2005 semester.

Ellbogen Center for Teaching and Learning Senior Scholar — Selected to initial cohort of University of Wyoming faculty (seven awarded) recognized for initiative efforts in the scholarship of teaching and learning, Spring 2005.

ASEE Rocky Mountain Division Outstanding Teacher Award — Awarded at the Spring 2005 Division Meeting.

University of Wyoming Mortar Board “Top Prof” — Selected by Senior Class during Fall 2004 semester.

Tau Beta Pi Outstanding Undergraduate Classroom Teaching Award — University of Wyoming Alpha Chapter award presented during Spring 2002.

IEEE Outstanding Faculty Award — presented by Wyoming student chapter at College of Engineering Awards Banquet, Spring 1999.

ASEE DOW Outstanding New Faculty Member — For the Rocky Mountain Division, presented at the Spring 1998 Division Meeting and the 1998 ASEE Annual Conference.

John Curtis Lecture Award — For best paper presentation in the Computers in Education Division Program of the 1996 ASEE Annual Conference.

University of Wyoming Excellence in Advising Award — Annual award initiated by nomination from advisees, selected through Center for Academic Advising, Spring 1996.

US West Excellence in Education Faculty Award — University of Wyoming, 1995.

Tau Beta Pi Outstanding Undergraduate Classroom Teaching Award — University of Wyoming Alpha Chapter award presented during Spring 1995.

John P. Ellbogen Meritorious Classroom Teaching Award — University award for classroom teaching (one of six university-wide), presented at 1994 Spring Commencement.

Honorary Member of the Golden Key Honor Society — inducted as an honorary member, November 1993, University of Wyoming Chapter. Nominated for excellence in classroom instruction.

COMMUNITY
ACTIVITIES

Medicine Bow Nordic Ski Patrol — National Patroller #10218, 2005. Senior Patroller, 2004. Completed Outdoor Emergency Care (OEC) Training 1996, Nordic Ski and Toboggan Training (Basic 1997, Senior 2004), Alpine with Telemark Ski and Toboggan Training (Basic, 2007), Mountain Travel and Rescue Training (Level 1 1997, Level 2 2002), Avalanche (Level 1 1997, Level 2 1998). Instructor of OEC and Mountaineering. Maintainer of Patrol's WorldWide Web site. Patrol Director, 1999–2001.

Snowy Range Ski Patrol — Patroller, 2006–current, Auxiliary Patroller, 1996–2006. Maintain patrol VHF radios.

Emergency Medical Technician — Wyoming Registered EMT-B, 1999–current.

Medicine Bow Nordic Association — Trail grooming and maintenance, timing and race coordination for various nordic skiing and mountain bike races, including events for the Laramie High School Nordic Ski Team and the University of Wyoming Nordic Ski Team, 1994–2008.

Laramie Community Recreation Center Volunteer — Maintenance and operation of timing and audio systems for the eight-lane competitive swimming and diving venue, 2007–current.

COURSES TAUGHT

- COSC 1030 *Computer Science I* (4 hrs with lab)
- Fall 2000, Spring 2001, Fall 2001, Fall 2008, Spring 2009
- EE 2220 *Circuits and Signals* (4 hrs with lab)
- Spring 2003
- EE 2250 *Linear System Analysis* (3 hrs with lab)
- Fall 1999, Spring 2000
- EE/COSC 2390 *Digital Systems Design* (4 hrs with lab)
- Spring 1997, Fall 2001, Spring 2002, Fall 2002, Spring 2004
- EE 3310 *Introduction to Electronics* (4 hrs with lab)
- Spring 1993
- EE 3320 *Network Analysis* (4 hrs with lab)
- Spring 1996, Fall 1996
- EE 4220 *Probabilistic Signals and Systems* (3 hrs)
- Fall 1999, Spring 2001, Spring 2002
- EE 4240 *Digital Signal Processing* (2 hrs)
- Spring 1994, Spring 1995
- EE 4250 *Network Synthesis* (3 hrs)
- Fall 1993, Fall 1994, Fall 1995, Spring 2006
- EE 4620 *Automatic Control Systems* (4 hrs with lab)
- Fall 1997, Spring 1998, Fall 1998, Spring 2003 (3 hrs no lab)
- EE 4800 *Advanced Microprocessors* (3 hrs)
- Spring 1994, Spring 1995
- EE 5210 *Systems Theory* (3 hrs)
- Fall 1993, Spring 1995, Fall 1996, Spring 1998
- EE 5250 *Advanced Active Synthesis* (3 hrs)
- Fall 1994, Spring 1996
- EE 5880 *Robust Control Systems* (3 hrs)
- Fall 1995
- ES 1000 *Orientation to Engineering Study* (1 hr)
- Fall 1994, Fall 1996, Fall 2003, Fall 2004, Fall 2005, Fall 2006, Fall 2007, Fall 2008
- ES 1060 *Introduction to Engineering Computing* (3 hrs with lab)
- Spring 2005, Fall 2005, Spring 2006, Fall 2006, Spring 2007, Fall 2007, Spring 2008
- ES 2210 *Electric Circuit Theory* (3 hrs with lab)

- Spring 1993, Spring 1997, Fall 1997, Fall 1998, Spring 1999, Spring 2007

ES 3070 *Numerical Methods with C* (3 hrs)

- Fall 2000

ME 4474 *Numerical Methods with MATLAB* (3 hrs)

- Spring 1999, Spring 2000 (as EE 4800)