

CURRICULUM VITAE

Mark D. Jacobson

Associate Professor

Department of Mathematics

Montana State University Billings

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PROFESSIONAL EDUCATION

Ph.D. in Electrical Engineering, May 1996

University of Colorado, Boulder, Colorado

M.S. in Electrical Engineering, May 1985

University of Colorado, Boulder, Colorado

B.S. in Electrical Engineering, June 1980

Montana State University, Bozeman, Montana

Teacher Certification in Secondary Mathematics and Physics, July 2005

Montana State University Billings, Billings, Montana

TEACHING EXPERIENCE

University and College Teaching

Department of Mathematics, Montana State University Billings, Billings, Montana

Associate Professor: 2010 –

(Tenured)

Assistant Professor: 2004 – 2010

(Tenure Track)

Spring 2012: teaching one M 172 Calculus course, one M 333 Linear Algebra course, and one on-line Statistics 216 course.

Fall 2011: taught one M 171 Calculus course, one M 172 Calculus course, one M 110 Mathematica course, and one on-line Statistics 216 course.

Spring 2011: taught one M 172 Calculus course, one M 333 Linear Algebra course, one EE/PHYS 206 Circuits I Lab course, one M 110 Mathematica course, and one on-line Statistics 216 course.

Fall 2010: taught one M 171 Calculus course, one Statistics 216 course, and one on-line Statistics 216 course.

Spring 2010: taught one M 172 Calculus course, one M 333 Linear Algebra course, and one EE/PHYS 206 Circuits I Lab course.

Fall 2009: taught one M 171 Calculus course, one Statistics 216 course, and one on-line Statistics 216 course.

Spring 2009: taught one Math 113 Calculus course, one on-line Statistics 241 course, and one EE/PHYS 206 Circuits I Lab course.

Fall 2008: taught one Math 112 Calculus course, one Statistics 241 course, and one on-line Statistics 241 course.

Spring 2008: taught one Math 113 Calculus course and one on-line Statistics 241 course.

Fall 2007: taught one Math 113 Calculus course, one Statistics 241 course, and one on-line Statistics 241 course.

Spring 2007: taught one Math 113 Calculus course and one on-line Statistics 241 course.

Fall 2006: taught one Math 112 Calculus course, one Math 121 Finite course, one Statistics 241 course, and one on-line Statistics 241 course.

Summer 2006: taught one on-line Statistics 241 course.

Spring 2006: taught one Math 107 Precalculus course, two Statistics 241 courses, and one on-line Statistics 241 course.

Fall 2005: taught two Math 121 Finite courses, one Statistics 241 course, and one on-line Statistics 241 course.

Summer 2005: taught one Math 202 course, and one on-line Statistics 241 course.

Spring 2005: taught one Math 121 Finite course, two Statistics 241 courses, and one on-line Statistics 241 course.

Fall 2004: taught two Math 121 Finite courses, one Statistics 241 course, and one on-line Statistics 241 course.

**Part-time instructor, Department of Mathematics, Academic Support Center,
College of Technology (COT), Montana State University Billings, Billings, Montana:**

Spring 2002 – Spring 2004: taught Math 106 College Algebra, Math 105 Intermediate Algebra, Math 101 Beginning Algebra, CTMA 122 Technical Math, CTMA 104 Business Math (in-class and on-line), tutored students in math and physics.

Other college teaching and tutoring:

Fall 2001: Mathematics Tutor, Front Range Community College, Broomfield, Colorado: tutored in the areas of math and physics.

Fall 1982 – Spring 1983: Teaching Assistant, University of Colorado, Boulder, Colorado: taught an undergraduate circuit laboratory, assisted in an undergraduate microwave laboratory.

Public School Teaching

Fall 2001: Substitute Teacher, Adams Twelve Five Star Schools, Northglenn, Colorado: taught math for secondary and middle schools.

PROFESSIONAL EXPERIENCE

Electronics and Electrical Engineering

Electronics Engineer, United States Department of Commerce, National Oceanic and Atmospheric Administration, Boulder, Colorado: Played an integral role in the design and implementation of a 400 MHz phased-array antenna for wind profiling. Supervised technicians involved in a variety of engineering activities, authored engineering and scientific papers, and performed technical presentations. Operated and maintained microwave and infrared radiometers and 13/26 MHz radars. Participated in various field experiments designed to study the atmosphere and oceans and assisted in the litigation of a lawsuit surrounding a failed procurement for a microwave antenna. Increased the understanding of the atmosphere and oceans through the implementation of microwave and infrared radiometry to measure water vapor, cloud liquid, cloud temperature, ocean surface wind speed and direction, and ocean surface temperature. Coordinated the antenna pattern measurement for a microwave airborne antenna at the National Institute of Standards and Technology's near-field range. Implemented a 10 GHz polarimetric radiometer for measuring the ocean wind vector. May 1983 – November 1999.

Electrical Engineer, International Business Machines, Tucson, Arizona: Responsible for the design of analog and digital electronics for magnetic recording on computer tape drives. Improved the performance of existing low-density magnetic recording hardware

and created test reports designed to document design and test results. August 1980 – March 1982.

PROFESSIONAL ACHIEVEMENT AND GROWTH

Publications

Jacobson, M.D. Inferring Snow Water Equivalent for a Snow-Covered Ground Reflector Using GPS Multipath Signals. *Remote Sens.* **2010**, 2, 2426-2441; doi:10.3390/rs2102426.

Jacobson, M.D. Snow-covered lake ice in GPS multipath reception – theory and measurement. *Adv. Space Res.* **2010**, 46, 221 – 227, DOI: 10.1016/j.asr.2009.10.013.

Jacobson, M.D., “Dielectric-Covered Ground Reflectors in GPS Multipath Reception – Theory and Measurement,” *IEEE Geosci. Remote Sens. Lett.*, vol. 5, no. 3, pp. 396 – 399, July 2008.

Snider, J.B., D.A. Hazen, A.J. Francavilla, W.B. Madsen, and M.D. Jacobson. Ground-based radiometric observations of atmospheric water for climate research. Proc., Atmospheric Radiation Measurements Science Team Meeting, Charleston, SC, February 28 - March 4, 1994, Department of Energy, Washington, D.C. (1999).

Snider, J.B., D.A. Hazen, A.J. Francavilla, W.B. Madsen, and M.D. Jacobson. Island- and ship-based radiometric measurements of water vapor, cloud liquid, and solar flux during ASTEX. NOAA Technical Memorandum (1999).

Jacobson, M.D., and W.M. Nunnelee. Design and performance of a spinning flat reflector for millimeter-wave radiometry. *IEEE Transactions on Geoscience and Remote Sensing*, GE-35(2):464-466 (1997).

Jacobson, M.D., W.J. Emery, and E.R. Westwater. Oceanic wind vector determination using a dual-frequency microwave airborne radiometer - theory and experiment. Proc., IGARSS '96, Lincoln, NE, May 26-June 1, 1996, Institute of Electrical and Electronic Engineers, New York, NY, 1138-1140 (1996).

Jacobson, M.D., and W.M. Nunnelee. Performance evaluation of a spinning flat reflector for millimeter-wave radiometry. Proc., IGARSS '96, Lincoln, NE, May 26-June 1, 1996, Institute of Electrical and Electronic Engineers, New York, NY, 1678-1680 (1996).

Jacobson, M.D. Theory and measurement of oceanic wind vector using a dual-polarized microwave airborne radiometer. NOAA Technical Memorandum ERL ETL-270, 165 pp. (1996).

Jacobson, M.D. Theory and measurement of oceanic wind vector using a dual-frequency microwave airborne radiometer. Ph.D. Thesis, Dept. of Electrical and Computer Engineering, University of Colorado, Boulder, April 1996.

Hazen, D.A., W.B. Madsen, and M.D. Jacobson. Aircraft liquid/vapor radiometer operating at 23.87 GHz and 31.65 GHz. NOAA Technical Memorandum ERL ETL-257, 75 pp. (1995).

Snider, J.B., D.A. Hazen, A.J. Francavilla, W.B. Madsen, and M.D. Jacobson. Comparison of observed and theoretical millimeter wave emission. Implications for remote sensing of atmospheric water. Proc., IGARSS '95, Firenze, Italy, July 10-14, 1995, Institute of Electrical and Electronic Engineers, New York, NY, 1129-1132 (1995).

Shaw, J.A., J.B. Snider, J.H. Churnside, and M.D. Jacobson. Comparison of infrared atmospheric brightness temperatures measured by a Fourier transform spectrometer and a filter radiometer. *Journal of Atmospheric and Oceanic Technology*, 12(5):1124-1128 (1995).

Shaw, J.A., J.B. Snider, J.H. Churnside, and M.D. Jacobson. Equivalent filter-radiometer brightness temperatures from a Fourier Transform Spectrometer. Proc., 6th Topical Meeting on Optical Remote Sensing of the Atmosphere, Salt Lake City, UT, February 6-10, 1994, Optical Society of America, Washington, D.C., 102-104 (1995).

Jacobson, M.D., J.B. Snider, and E.R. Westwater. Radiometric observations of atmospheric attenuation at 20.6 and 31.65 GHz: The Wave Propagation Laboratory data base. Proceedings, NAPEX XVII (NASA Propagation Experimenters Meeting and ACTS Propagation Studies Mini-Workshop), Pasadena, CA, June 14-18, 1993. National Aeronautics and Space Administration/Jet Propulsion Laboratory, Hampton, VA/Pasadena, CA, 61-79 (1993).

Jacobson, M.D., L.S. Fedor, D.A. Hazen, W.B. Madsen, M.H. Francis, and D.P. Kremer. A dual-frequency mm-wave radiometer antenna for airborne remote sensing of atmosphere and ocean. *Microwave Journal* (September, 1994).

Jacobson, M.D., and W.M. Nunnelee. A spinning flat reflector for millimeter-wave radiometry. NOAA Technical Memorandum ERL ETL-238, 20 pp. (1994).

Snider, J.B., M.D. Jacobson, R.H. Beeler, and D.A. Hazen. Comparison of OLYMPUS beacon and radiometric attenuation measurements at Blacksburg, Virginia. Proceedings, 15th NASA Propagation Experimenters Meeting (NAPEX XV), London, Ontario, Canada, June 28-29, 1991, Jet Propulsion Laboratory, Pasadena, CA and NASA, Hampton, VA 116-122 (1991).

Smith, W.L., H.E. Revercomb, H.B. Howell, H.M. Woolf, R.O. Knuteson, R.G. Decker, M.J. Lynch, E.R. Westwater, R.G. Strauch, K.P. Moran, B.B. Stankov, M.J. Falls, J.R. Jordan, M.D. Jacobson, W.F. Dabberdt, R. McBeth, G. Albright, C. Paneitz, G. Wright,

P.T. May, and M.T. Decker. GAPEX--A ground-based atmospheric profiling experiment. *Bulletin of the AMS*, 71(3):310-318 (1990).

Snider, J.B., M.D. Jacobson, and R.H. Beeler. Observations of attenuation at 20.6, 31.65, and 90.0 GHz-preliminary results from Wallops Island. Proceedings, NAPEX XIII, San Jose, CA, 29-30 June 1989, NASA/Jet Propulsion Laboratory, Pasadena, CA, 138-144 (1989).

Jacobson, M.D., J.B. Snider, and D.C. Hogg. Comparison of two multisheet transmission windows for millimeter-wave radiometers. *IEEE Transactions on Antennas and Propagation*, 36(4):535-542 (1988).

Fedor, L.S., M.D. Jacobson, A.J. Bedard, E.R. Westwater, D.C. Hogg, and R.T. Nishiyama. Dual-channel microwave radiometer for airborne meteorological applications. NOAA Technical Memorandum ERL WPL-157, 29 pp. (1988).

Snider, J.B., M.D. Jacobson, M.J. Falls, and J.R. Jordan. Comparison of temperature measured by three colocated microwave radiometers and radiosonde. NOAA Technical Memorandum ERL WPL-151, 39 pp. (1988).

Jacobson, M.D., D.C. Hogg, J.B. Snider. Wet reflectors in millimeter-wave radiometry-- Experiment and theory. *IEEE Transactions on Geoscience and Remote Sensing*, GE-24(5):784-791 (1986).

Book Reviews

Tan, S. T., (2006). Finite Mathematics, 8th edition, Thomson Brooks/Cole Publishing Co.

Schafer, D., (Prospectus), (2005) How to Evaluate Statistical Arguments, John Wiley & Sons, Inc, Hoboken, New Jersey.

Moore, D. and Notz, W., (2004). Statistics: Concepts and Controversies, 6th edition, W.H. Freeman and Company Publishers, New York.

Paper Reviews

Masaru Ozeki and Kosuke Heki (2011). GPS Snow Depth Meter with Geometry-free Linear Combinations. *Journal of Geodesy*.

Gutmann, Ethan; Larson, Kristine; Williams, Mark; Nievinski, Felipe; Zavorotny, Valery (2011). Snow measurement by GPS interferometric reflectometry: an evaluation at Niwot Ridge, Colorado. *Hydrological Processes*.

Qiang Xing, Zhen Li, Shi yin Liu, Jianmin Zhou, and Lei Huang (2011). Monitoring thickness and volume changes (1969-2000) of the Dongkemadi Ice field on Qinghai-Tibetan Plateau using multi-source remote sensing data. *Journal of Applied Remote Sensing (JARS)*.

Gleason, S. (2010). Sensing Sea Ice Concentration From Space With Reflected GPS Signals, Special Issue: Global Positioning Systems (GPS) and Applications, *Remote Sensing Journal*, MDPI.

Conferences - Presentations

Jacobson, M.D. “Estimating Snow Water Equivalent for a Snow-Covered Ground Reflector Using GPS Multipath Signals”, Poster presentation, Montana University System, Board of Regents meeting, Billings, MT, September 21 – 23, 2011.

Jacobson, M.D. “Estimating Snow Water Equivalent for a Snow-Covered Ground Reflector Using GPS Multipath Signals”, 20 minute talk using Power Point, IEEE IGARSS International conference, Vancouver, Canada, July 28, 2011.

Jacobson, M.D. “Lake Ice Thickness Estimation using GPS”, 20 minute talk using Power Point, IEEE IGARSS International conference, Honolulu, Hawaii, July 28, 2010.

Jacobson, M.D. “Lake Ice Thickness Estimation using GPS”, Poster presentation, Montana University System, Board of Regents meeting, Billings, MT, September 23 – 25, 2009.

Jacobson, M.D. “Snow Depth and Lake Ice Estimations using GPS”, 20 minute talk using Power Point, Montana Academy of Sciences meeting, Butte, MT, April 11, 2009.

Jacobson, M.D. “Snow Depth and Lake Ice Estimations using GPS”, 20 minute talk using Power Point, American Association for the Advancement of Science, Pacific Division meeting, Waimea, HI, June 18, 2008.

Jacobson, M.D. “Snow Depth Estimation using GPS”, Poster presentation, Montana University System, Board of Regents meeting, Billings, MT, September 19 – 21, 2007.

Jacobson, M.D. “Snow Depth Estimation using GPS”, 1 hour talk using Power Point, Montana State University – Billings Fall 2007 Conference, Billings, MT, August 23, 2007.

Jacobson, M.D. “Snow Depth Estimation using GPS”, 20 minute talk using Power Point, American Association for the Advancement of Science, Pacific Division meeting, Boise, ID, June 18, 2007.

Jacobson, M.D. "Snow Depth Estimation using GPS", Poster presentation, Montana Academy of Sciences meeting, Butte, MT, April 13 – 14, 2007.

Snyder, S., W. Wickun, and M.D. Jacobson. "Borealis Project, Atmospheric Research to the Edge of Space," Poster presentation, MBR meeting, Billings, MT, September 21 – 23, 2005.

Jacobson, M.D. "An Introduction to the Global Positioning System (GPS)", Math Interview Presentation, Billings, MT, April 21, 2004.

Jacobson, M.D. "Oceanic wind direction using polarized microwave radiometers: Theory and measurement," URSI Meeting, Boulder, CO, January 4, 1999.

Jacobson, M.D., W.J. Emery, and E.R. Westwater. "Oceanic wind vector determination using a dual-frequency microwave airborne radiometer - theory and experiment," IGARSS Meeting, Lincoln, NE, May 29, 1996.

Jacobson, M.D., and W.M. Nunnelee. "Performance evaluation of a spinning flat reflector for millimeter-wave radiometr," IGARSS Meeting, Lincoln, NE, May 28, 1996.

Jacobson, M.D. "Theory and measurement of oceanic wind vector using a dual-frequency microwave airborne radiometer," Ph.D. Thesis Defense, Dept. of Electrical and Computer Engineering, University of Colorado, Boulder, April 4, 1996.

Jacobson, M.D., and W.M. Nunnelee. "Design and performance evaluation of a spinning flat reflector for millimeter-wave radiometry," URSI Meeting, Boulder, CO, January 3, 1996.

Jacobson, M.D., L.S. Fedor, D.A. Hazen, W.B. Madsen, M.H. Francis, and D.P. Kremer. "A dual-frequency mm-wave radiometer antenna for airborne remote sensing of atmosphere and ocean," URSI Meeting, Boulder, CO, January 7, 1995.

Jacobson, M.D., and W.M. Nunnelee. "A spinning flat reflector for millimeter-wave radiometry", URSI Meeting, Boulder, CO, January 6, 1994.

Jacobson, M.D., J.B. Snider, and E.R. Westwater. "Radiometric observations of atmospheric attenuation at 20.6 and 31.65 GHz, NAPEX 17 Meeting, Pasadena, CA, June 15, 1993.

Jacobson, M.D. "IR Cloud Sensing", WPL Seminar, Boulder, CO, April 28, 1987.

Jacobson, M.D., J.B. Snider, and D.C. Hogg. "Multi-Layer Windows in Millimeter-Wave Radiometry", URSI Meeting, Boulder, CO, January 12, 1987.

Jacobson, M.D., D.C. Hogg, J.B. Snider. "Polarization Effects in Microwave Radiometry Subject to Wet Reflectors", URSI/IEEE/AP-S Meeting, Vancouver, Canada, June 18, 1985.

Funded Grants and Monies

Faculty Development Award #611081, \$1800, December 1, 2011

NSF Grant # DUE-1136274, \$299,904.00, August 1, 2011, 2 – year duration at Montana State University Billings. PI: Dr. David Davison, Professor Emeritus of Mathematics and Instructional Theory and Practice; Co-PI and Education Faculty: Dr. Kenneth Miller, Professor of Instructional Theory and Practice (Science Education); Co-PI and STEM Faculty (Science): Dr. Stuart Snyder, Associate Professor of Physics; STEM Faculty (Mathematics): Dr. Mark Jacobson, Associate Professor of Mathematics; Evaluator: Dr. Michael Scarlett, Assistant Professor of Educational Theory and Practice; Project Manager: Ms. Jeanie Kalotay. It is titled, "A Plan to Prepare STEM Teachers for Rural Montana." This is under the Robert Noyce Teacher Scholarship Program.

NSF Grant # DUE-0941660, \$176,394.00, August 16, 2010. PI: Dr. James P. Becker, MSU, Electrical Engineering Department, Bozeman, MT and Co-PI: Dr. Mark D. Jacobson, MSUB, Math Department, Billings, MT. It is titled, "Student-Centered Learning Strategies for a Face-To-Face and Online Circuits Course." This proposal is within NSF's Course, Curriculum, and Laboratory Improvement (CCLI).

Faculty Development Award #611081, \$1800, January 2011

Math Department, GPS books, \$500, June 2007

CAS, Dr. Tasneem Khaleel, GPS Receiver, \$725, July 21, 2006

RACE Grant #F2006-04, Index # 630714, Snow Depth Estimation Using GPS, \$3500, November 20, 2006

RACE Grant # F2004-20, Index # 612073, The Life of an MSUB Student, \$900, December 9, 2004

Current Proposals

None

Rejected Proposals

Team member of a \$534,475.00, 5 – year, NSF proposal with MSU-Bozeman's Electrical

Engineering Department. It is titled, Montana STEM Talent Expansion Program (M-STEP). It was submitted on September 28, 2010 with NSF Proposal Number 1068324. We were informed on March 10, 2011 that this proposal did not get funded.

Team member of a \$697,657.00, 5 – year, NSF proposal with MSU-Bozeman’s Electrical Engineering Department. It is titled, Montana STEM Talent Expansion Program (M-STEP). STEM is an acronym for Science, Technology, Engineering, and/or Mathematics. It was submitted on September 29, 2009 with NSF Proposal Number 0969295. We were informed on March 29, 2010 that this proposal did not get funded.

Team member of a \$1.16 million, 5 – year, NSF proposal with MSU-Bozeman’s Electrical Engineering Department. It was titled, the Montana STEM Transfer Readiness Education Program (MSTREP). It was submitted on September 30 with NSF Proposal Number 0856614. We were informed on March 8, 2009 that this proposal did not get funded.

Conferences and Talks - Attended only

Dr. Matt Benaquista talk on Gravitational Waves and Lasers in Science Building, April 15, 2010.

MSUB Back to School Conference, Billings, MT, MSUB COT campus, August 19 – 20, 2008

Dr. Michael Havens, MSUB professor of psychology: “Neural Networks for Modeling Neurons and Brain Processing”, Rocky Mountain College, Billings, MT, February 7, 2008

MSUB Back to School Conference, Billings, MT, MSUB COT campus, August 21 – 24, 2007

Virtual meeting introducing MathXL and MyMathLab, October 30, 2006

Blackboard Content System Presentation, MSUB campus, March 13, 2006

MSUB Back to School Conference, Billings, MT, MSUB campus, August 22 – 24, 2006

Starting Student Space Hardware Programs IV: A How-To Workshop, Boulder, CO, University of Colorado campus, July 14 – 16, 2005

MSUB Distinguished Lecture Series: “Jesus in the Gnostic Gospels: How Newly Discovered Texts Are Changing Our View of Early Christianity”, Dr. Marvin Meyer (Griset Professor of Bible and Christian Studies in the Department of Religious Studies at Chapman University in Orange, California), April 22, 2005

Online Presentation, “Development of a Successful Online Model and Lessons Learned”, by Ms. Vivian Zabrocki (ASC) and Mr. Richard Pierce (COT), Billings, MT, MSUB COT campus, December 17, 2004

eCollege Workshop, Billings, MT, MSU-B campus, November 19, 2004

MSUB Science Colloquium series: “Gravitational Radiation Studies in Italy: A Physics Fulbright”, Dr. Matt Benaqista, November 17, 2004

MSUB Mathematics Colloquium series: “Cryptography and Schur’s Conjecture”, Dr. Michael Fried, October 21, 2004

Teachers Fair, Billings, MT, MSU-B campus, April 30, 2004

eCollege Workshop, Billings, MT, MSU-B campus, October 15, 2002

Curriculum Development

Fall 2011: Attended a Mathematica Seminar on October 10, 2011 at MSUB.

Spring 2011: Attended a meeting in Dr. Michael Barber’s office on February 23, 2011 about the MyLabs Plus environment. This is a Pearson Textbook Company product which is hosted in eCollege.

Fall 2010: Attended a MathXL learning session on August 19, 2009 at MSUB

Pearson Textbook Company, Sponsored trip to Spokane, WA on February 26 – 27, 2010. Two day conference on “Math Technology Professional Development Forum.” We use many of their textbooks for our Math and Statistics courses.

Fall 2009: Attended a MathXL learning session on August 25, 2009 at MSUB

Fall 2008: Attended several D2L learning sessions. D2L is replacing eCollege in 2009

July 2008 – present: Continued co-development with Dr. Maggie McBride an on-line course and assessment for STAT 241 Statistical Methods using eCollege and CourseCompass (MyMathLab/MathXL) software; began using new enhanced software in Fall 2008

June 2007 – Spring 2008: Co-developed with Dr. Maggie McBride an on-line course and assessment for STAT 241 Statistical Methods using eCollege and CourseCompass (MyMathLab/MathXL) software; began teaching course in Fall 2007

December 2002 – present: MathXL internet homework and tests for courses Math 104, 105, 107, 112, 113, 121, and 202 and STAT 241

July 2005 – present: Co-developed with Dr. Maggie McBride an on-line course and assessment for STAT 241 Statistical Methods using eCollege software; began teaching course in Spring 2006

December 2002 - January 2003: Developed an on-line course and assessment for CTMA 104 Business Mathematics using CourseCompass and eCollege software; taught the course from Spring 2003 – Spring 2004. This course is currently being taught by Ms. Andrea Payne of the ASC

COMMUNITY SERVICE

Memberships

Institute of Electrical and Electronics Engineers (IEEE)

Geoscience and Remote Sensing Society (GRSS)

Professional Engineer (PE) in Colorado

Sub-Commission 4.6: GNSS Reflectometry & Applications, IAG commission 4
“Positioning and applications” 2011 – 2015

Montana Academy of Sciences 2007 and 2009

National Academy of Science, National Research Council, Committee on Radio Frequencies, 1998 – 1999

United States National Committee, International Union of Radio Science Commission F, 1997 – 1999

Tau Beta Pi Engineering Honorary Society

University Non-Teaching Activities

Fall 2011 Serving on the Search committee for the Full time, Tenure Track, Assistant Professor of Sociology/Criminology position. The close date was November 30

Attended and contributed to a New and Untenured Faculty meeting on October 26

Served on the Search committee for the Full time, Tenure Track, Assistant Professor of Health and Human Performance position. The close date was October 24

Attended a College of Arts and Sciences meeting with Dr. Mark Pagano on October 17

Served as an outside member for the Biological and Physical Sciences Department for Retention and Tenure Committee (DRTC) for Assistant Professor, Dr. Matthew Marlow's second year extended review. We met on October 13

Attended the Inauguration of Dr. Rolf Groseth on September 20

Attended the 2011 Chancellor's Scholarship Reception on September 12

Mentor for Cassandra Darlinton. She received the Haynes Foundation Merit Scholars award

I am chair of Sub-Commission 4.6: GNSS Reflectometry & Applications IAG commission 4 "Positioning and applications" for WG 4.6.4 Soil and Cryosphere detection by GNSS-R for 2011 – 2015. This is an international committee. I accepted this position on September 2

Summer 2011 Worked with Dr. Jim Becker (Associate Professor in Electrical Engineering at MSU Bozeman) and Jacob Scott (MSUB student). NSF grant: Student-Centered Learning Strategies for a Face-To-Face and Online Circuits Course.

Spring 2011 Attended the Eighty-third Annual Commencement for MSU-B graduates, April 30

Attended the College of Arts & Sciences Convocation on April 29

Member, Committee (Dr. Jim Barron, Dr. Mark Fenderson and myself) selected a student to receive the College of Arts & Science Alumni Excellence Award Scholarship of \$500, March 15

Member, Committee (Dr. Maggie McBride, Dr. John Hoover, Mr. Rick McIntyre and myself) selected a student to receive the Oliver W. Peterson Math Endowed Scholarship of \$1,000, March 15

Served on the Search committee for the Tenure Track, Assistant Professor of Math position. This position was filled by Dr. Don Gayan Wilathgamuwa. He starts in Fall 2011.

Served on the Search committee for the Fixed-term, Assistant/Associate Professor of Finance position.

- Fall 2010 Attended the 2010 Chancellor's Scholarship Reception on September 20
- Mentor for Jenna Breshears. She received the Haynes Foundation Merit Scholars award
- Donor, Donated some money to MSUB Foundation
- Outside member for approval of Tenure and Promotion of Dr. Kurt Toenjes and Tenure for Dr. Thomas Lewis. Both are in the department of Biological and Physical Sciences
- Completed NSF survey of Doctorate Recipients
- Summer 2010 Worked with Dr. Kristine Larson, University of Colorado, Aerospace Department, Boulder, Colorado. GPS reflection research. May 17 - 19
- Spring 2010 Recipient of the ASMSUB 2010 Outstanding Faculty Award for the College of Arts and Sciences, March 11
- Member, Committee (Dr. Jim Barron, Ms. Tami Haaland and myself) selected a student to receive the College of Arts & Science Alumni Excellence Award Scholarship of \$500, February 16
- Member, Committee (Dr. Maggie McBride, Dr. John Hoover, Dr. Jerzy Czyz and myself) selected a student to receive the Oliver W. Peterson Math Endowed Scholarship of \$1,000, February 16
- Attended the Eighty-third Annual Commencement for MSU-B graduates, May 1
- Attended the College of Arts & Sciences Convocation on April 30
- Attended talk by Dr. Waded Cruzado, the President of the Montana State University at the COT's HSB, January 26
- Selected to serve on the Search committee for the Tenure Track, Assistant Professor of Chemistry position. This position was filled by Dr. Matthew Marlow. He starts in Fall 2010.
- Selected to serve on the Noel-Levitz Retention Committee for the CAS, January 8
- Fall 2009 Attended the 2009 Chancellor's Scholarship Reception on September 21

Mentor for Amy Tackett. She received the Haynes Foundation Merit Scholars award

Appointed to serve on the Undergraduate Curriculum Committee, for term 2009 – 2012

Donor, Donated some money to MSUB Foundation

Spring 2009 Met with Dr. Jim Peterson, Dr. Jim Becker, Dr. Rob Maher, Dr. Tom Gibson and other MSUB personnel on May 11, 2009 to discuss items relating to the debriefing of EE/PHYS 206 Circuits I course. We also discussed offering the following two EE courses at MSUB in 2010: EE/PHYS 207 Circuits II and EE/PHYS 261 Introduction to Logic Circuits

Attended the Eightieth Annual Commencement for MSU-B graduates, May 2

Attended the College of Arts & Sciences Convocation on May 1

Attended the Faculty Excellence Awards dinner on March 13, 2009 to receive my 5 years of Service Certificate of Recognition at MSUB

I agreed to serve on the search committee for the math faculty position at MSUB COT for Fall 2009. The position was not approved as a tenure track position, so no search occurred. Six other COT personal were on this committee including Barb Pedula as the chair

Member, Committee (Dr. Jim Barron, Ms. Tami Haaland and myself) selected a student to receive the College of Arts & Science Alumni Excellence Award Scholarship of \$500, February 20

Met with Dr. Jim Peterson, Dr. Jim Becker, Dr. Rob Maher, Dr. Tom Gibson and other MSUB personal on January 9, 2009 to discuss items relating to the upcoming EE/PHYS 206 Circuits I course

Fall 2008 Donor, Donated some money to MSUB Foundation

Nominated, Applied for the Winston and Helen Cox Fellowship

Met with Dr. Jim Peterson on November 12 to transfer MSU-Bozeman EE circuit equipment to MSUB and to discuss other items related to the upcoming EE/PHYS 206 Circuits I course

Met with Dr. Jim Peterson and other MSUB personal, former EE professor from MSU-Bozeman, on September 15 to discuss items for the Spring 2009 EE/PHYS 206 Circuits I course

Attended the 2009 Chancellor's Scholarship Reception on September 15

Mentor for Brook Murphy and Toby Wahl. They both received the Haynes Foundation Merit Scholars award

Attended the Montana Palladium Research Initiative at MSUB on August 14

Elected to serve as the Chair on the Undergraduate Curriculum Committee, for term 2008 – 2009

Spring 2008 Attended the Eighty – First Annual Commencement for MSU-B graduates, May 3

Attended the College of Arts & Sciences Convocation on May 2

Attended the dedication and community celebration of the Montana State University Billings College of Technology Health Sciences Building on March 13

Member, Committee (Dr. Jim Barron, Ms. Tami Haaland and myself) selected a student to receive the College of Arts & Science Alumni Excellence Award Scholarship of \$500, February 22

Member, Committee (Dr. Maggie McBride, Dr. John Hoover, Dr. Jerzy Czyz and myself) selected a student to receive the Oliver W. Peterson Math Endowed Scholarship of \$1,000, February 14

Selected to serve on the Search committee for the Tenure Track, Assistant Professor of Physics position. This position was not funded

Fall 2007 Member, Committee (Dr. Mike Fried, Dr. David McGinniss, Dr. Christy Low and myself) on Assessment-Retention at MSUB. Began discussions on assessment and retention at MSUB. Discussions with this committee ended in January 2008

Selected to serve on the Math Dual Credit mentoring staff

Selected to serve on Salary Compression Task Force

Appointed to serve on the Academic Computing and Allied Technology Committee, for term 2007 – 2009

Elected to serve as the Alternate Chair on the Undergraduate Curriculum Committee, for term 2007 – 2008

Spring 2007 Attended the Eightieth Annual Commencement for MSU-B graduates, May 5

Attended the College of Arts & Sciences Convocation on May 4

Member, Committee (Dr. Maggie McBride, Dr. John Hoover, Dr. Jerzy Czyz and myself) selected a student to receive the Oliver W. Peterson Math Endowed Scholarship of \$1,000, February 23

Member, Committee (Dr. Jim Barron, Ms. Tami Haaland and myself) selected a student to receive the College of Arts & Science Alumni Excellence Award Scholarship of \$500, February 27

Fall 2006 Attended the 2006 Chancellor's Scholarship Reception on September 13

Mentor for Logan Eaton. He received the Haynes Foundation Merit Scholars award

Received \$3500 from RACE for proposal "Snow Depth Estimation Using GPS" on November 20

Appointed to serve on CQI's Retention Task Force Committee, for term 2006 – 2008

Appointed to serve on the Undergraduate Curriculum Committee, for term 2006 – 2009

Summer 2006 Received \$725 from Dr. Tasneem Khaleel for proposed GPS research on July 21, 2006

Spring 2006 Attended the Seventy-Ninth Annual Commencement for MSU-B graduates, May 6

Attended the College of Arts & Sciences Convocation on May 5

Attended the Faculty Excellence Awards on March 30

Member, Committee (Dr. Maggie McBride, Dr. John Hoover, Dr. Jerzy Czyz and myself) selected a student to receive the Oliver W. Peterson Math Endowed Scholarship of \$1,000, February 23

- Member, Committee (Dr. Jim Barron, Ms. Tami Haaland and myself) selected a student to receive the College of Arts & Science Alumni Excellence Award Scholarship of \$500, March 2
- Fall 2005 Assisted professors and students in various electrical engineering aspects of the Borealis High Altitude Balloon Program
- Attended the 2005 Chancellor's Scholarship Reception on September 14
- Mentor for Austin Duncan. He received the Haynes Foundation Merit Scholars award
- Appointed to serve on the Academic Computing and Allied Technology Committee, for term 2005 – 2007
- Summer 2005 Assisted professors and students in various electrical engineering aspects of the Borealis High Altitude Balloon Program
- Participated in a joint MSU Bozeman-Billings Borealis high altitude balloon launch at Big Timber on July 9
- Spring 2005 Attended the Seventy-Eight Annual Commencement for MSU-B graduates, May 7
- Attended the College of Arts & Sciences Convocation on May 6, 2005
- Lectured for half a period in Dr. Jerzy Czyz's Math 113 Calculus II class concerning Fourier Series analysis as pertaining to music, April 21
- Lectured for two days in Dr. John Hoover's Math 113 Calculus II class concerning first-order differential equations as pertaining to electric circuits, March 25 and 26
- Nominated myself to the Arts and Sciences Curriculum Council
- Designed, built and tested a circuit that converts temperature, humidity and pressure to Transistor Transistor Logic (TTL) voltage levels (0 – 5 volts), this is for the Borealis High Altitude Balloon Program
- Assisted professors and students in various electrical engineering aspects of the Borealis High Altitude Balloon Program
- Member, Committee (Dr. Maggie McBride, Dr. John Hoover, Dr. Jerzy Czyz and myself) selected a student to receive the Oliver W. Peterson Math Endowed Scholarship of \$1,000, March 4

Member, Committee (Dr. Jim Barron, Ms. Tami Haaland and myself) selected a student to receive the College of Arts & Science Alumni Excellence Award Scholarship of \$500, February 25

Project Director, RACE funded proposal, College of Education/
Department of Business/Department of Mathematics

Fall 2004 Project Director, RACE funded proposal, College of Education/
Department of Business/Department of Mathematics

Member, committee examines current contractual descriptions for requirements for teaching, service, and research for retention and tenure

Member, What Do You Know? Mathematics Colloquium

Member, Continuous Assessment Office

Member, Instructional and Developmental guidelines for online teaching,
Department of Mathematics

Member, Campus Selection Committee for selecting recipients to
College of Arts & Sciences Alumni Excellence Scholarship

Member, Campus Selection Committee for selecting recipients to
Oliver W. Peterson Math Scholarship

Donor, Donated some money to Math Scholarship Fund

Nominated, Applied for the Winston and Helen Cox Fellowship

Assisted parents whose daughter is a prospective MSU-B student with a
pre-engineering plan

Assisted professors and students in various electrical engineering aspects
of the Borealis High Altitude Balloon Program

Assisted (as necessary) a Ph.D. candidate in physical therapy under the
direction of Professor Russell Lord

Non-University Activities

Fall 2011 None

Spring 2011 Participated in judging the Billings Clinic Research Center Science Expo,
March 25

Fall 2010	None
Spring 2010	Participated in judging the Billings Clinic Research Center Science Expo, March 26
Fall 2009	None
Spring 2009	Participated in judging the Billings Clinic Research Center Science Expo, March 27
Fall 2008	Attended an orientation meeting for being a juror in the Billings Municipal Court on August 25. I was called to report on September 11 and November 20. The trials were settled before the court date, so I did not serve
Spring 2008	Attended Barack Obama's town hall meeting at Billings West High School on May 19 Attended the 40 th Annual Inter-Tribal Indian Club Pow Wow at the Billings Outlaw Sports Plex, April 12 Participated in judging the Billings Clinic Research Center Science Expo, March 28 Participated in manning the Math booth for the "Chicks in Science" event on the MSUB campus on February 16. This event introduces Billings-area girls from 4 th through 8 th grades and their moms to various scientific professions
Fall 2007	None
Spring 2007	Participated in judging the Billings Clinic Research Center Science Expo, March 23 Gave statistical consultation to Andrew Bobst, Hydrologist for the United States Bureau of Land Management in Miles City, MT, for his report: "Water Year 2006 Overview of Surface Water Monitoring Data for SC, SAR and Flow in the Tongue River Watershed"
Fall 2006	Guided Melissa Norman, a senior attending Buffalo High School in Wyoming, on some pre-engineering items
Spring 2006	Participated in judging the Billings Clinic Research Center Science Expo, March 17

Fall 2005 Mentored Ken Aycock, senior at Skyview High School, on GPS project for upcoming Science Expo

Spring 2005 Participated in judging the Deaconess Billings Clinic Research Center Science Expo, March 18