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Director of the Office of Student Services
George W. Woodruff School of Mechanical Engineering
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I. Earned Degrees

- Doctor of Philosophy, Mechanical Engineering, Georgia Institute of Technology, 1996
- Master of Science in Civil Engineering, Massachusetts Institute of Technology, 1987
- Bachelor of Science, United States Military Academy, 1979

II. a. Academic Employment

- Senior Academic Professional, Director of the Office of Student Services, George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, 2003-present
- Full and Associate Professor, Department of Civil and Mechanical Engineering, United States Military Academy, West Point, New York, 1998-2003
 - Mechanical Engineering Program Director (June 2001-March 2003)
 - Mechanical Engineering Thermodynamics/Aerodynamics Group Director (June 2000-June 2001)
 - Mechanical Engineering Design Group Director (June 1998-June 2000)
- Assistant Professor, Department of Civil and Mechanical Engineering/Department of Mechanics, United States Military Academy, West Point, New York, 1988-1990
- Instructor, Department of Mechanics, United States Military Academy, West Point, New York, 1987-1988

II. b. Other Employment

General Manager (U.S. Army Engineer Battalion Commander)

Fort Wood, Missouri

1995-1997

- Executive supervisor of a 660 person diverse engineering organization.
- Planned, directed, and controlled the operation and maintenance of all engineering activities. Resulted in developing top-notch subordinates and achieving superior readiness ratings while performing challenging missions in support of national defense.
- Managed human resources and the formulation of organizational strategies and policies. Positive results achieved while acting as the approving executive for placement, merit promotion, and performance management programs.
- Accounted for and maintained over \$200M of equipment and managed annual operating budgets over \$1.5M. Implemented much needed quality assurance measures that reduced inventory and enhanced routine visibility and accountability of resources thereby saving substantial amounts of money.
- Conducted the majority of engineering construction and maintenance skill training for the entire U.S. Army, Navy, Air Force, and Marines resulting in a highly trained, quality work force.

Director of Engineering Operations (U.S. Army Engineer Battalion Operations Officer)

Fort Drum, New York

1991-1993

- Directed daily engineering operations and maintenance for a 500 person organization with operations that included work throughout the United States and parts of Africa. Extensive infrastructure repair was completed in Somalia, Africa to include significant road and airfield upgrades.
- Developed training programs and an operational readiness status that resulted in units able to respond with engineering services anywhere in the world within 18 hours of notification
- Conducted disaster relief operations in southern Florida after Hurricane Andrew. The results were significant, timely debris cleanup and temporary housing for the homeless in Florida.
- Identified resources, scheduled, and integrated all engineering work

Project Manager Positions (U.S. Army Engineer Company Commander)

Republic of Korea and Fort Meade, Maryland

1980-1985

- Executive supervisor of a 100 person engineering organization
- Leadership, operational, and maintenance responsibility, along with fiscal accountability for engineering projects and activities in the Republic of Korea.
- Project manager for several engineering projects in Maryland.
- Conducted project scheduling and on-site inspections.
- Limited design and as-built drawing experience.
- Budgeting responsibility and logistics coordination for construction engineering projects.

III. Honors and Awards

- 2015 Continuing Education Faculty Award for UPCEA South Region
- Anderson D. Smith Administrator of the Year Award, 2012-2013
- CETL Undergraduate Educator Award, 2011
- Faculty Excellence in Teaching Award sponsored by Women in Engineering (WIE), Georgia Tech and Kimberly Clark Corporation, 2004
- Pi Tau Sigma, Honorary Member, 2005
- Tau Beta Pi, Eminent Engineer, 2002
- Sigma Xi Research Honor Society, 1987
- The Honor Society of Phi Kappa Phi, 1979
- Distinguished Cadet, United States Military Academy, 1979
- Dean's List, United States Military Academy, 1975-1979

IV. Research, Scholarship, and Creative Activities

Areas of Research

Major interests in the areas of nonlinear dynamics, vibration, and mechanical design. Additional interests lie in engineering education with emphasis on teaching and learning initiatives.

A. Referred Publications and Submitted Articles

A1. Published and Accepted Journal Articles:

Whiteman, W.E., "EC 2000 Impact on Mechanical Engineering Curricula: A Follow-up Study," *The International Journal of Mechanical Engineering Education*, July 2011, 39/3, 185-194.

Ferri, A.A., and Whiteman, W.E., "Free response of a system with negative viscous damping and displacement-dependent dry friction damping," *Journal of Sound and Vibration*, Vol. 306(3-5), 9 October 2007, pp. 400-418.

Whiteman, W.E., "Mechanical Engineering Curricula: A Baseline Study for the Future Effects of ABET EC2000," *The International Journal of Mechanical Engineering Education*, Vol. 31, No. 4, October 2003.

Whiteman, W.E., and Berman, M.S., "Fatigue Failure Results for Multiaxial versus Uniaxial Stress Screen Vibration Testing," *Shock and Vibration*, Vol. 9, No. 6, 2002.

Whiteman, W.E., and Berman, M.S., "Inadequacies in Uniaxial Stress Screen Vibration Testing," *Journal of the IEST*, Vol. 44, No. 4, Fall 2001.

Whiteman, W.E., and Nygren, K.P., "Achieving the Right Balance: Properly Integrating Mathematical Software Packages in Engineering Education," *Journal of Engineering Education*, Vol. 89, No. 3, July 2000.

Whiteman, W.E., and Ferri, A.A., "Suppression of Bending-Torsion Flutter Through Displacement-Dependent Dry Friction Damping," *AIAA Journal*, Vol. 37, No. 1, January 1999.

Whiteman, W.E., and Ferri, A.A., "Multi-Mode Analysis of Beam-Like Structures Subjected to Displacement-Dependent Dry Friction Damping," *Journal of Sound and Vibration*, Academic Press Limited, Vol. 207, No. 3, October 1997.

Whiteman, W.E., and Ferri, A.A., "Displacement-Dependent Dry Friction Damping of a Beam-Like Structure," *Journal of Sound and Vibration*, Academic Press Limited, Vol. 198, No. 3, December 1996.

Whiteman, W.E., "Experimental Analysis of Lightly Damped Structures," *Experimental Techniques*, Society of Experimental Mechanics, Vol. 15, No. 6, 1991.

A2. Conference Presentation with Proceedings (Refereed):

Whiteman, W.E., "A Survey of Distance Learning Programs that offer a Master of Science in Mechanical Engineering Degree," *Proceedings of the 2012 ASEE Annual Conference on Engineering Education*, San Antonio, Texas, June 10-13, 2012.

Whiteman, W.E., Wepfer, W.J., and Donnell, J., "Study of a Teaching Practicum in an Engineering PhD Curriculum," *Proceedings of the 2011 ASEE Annual Conference on Engineering Education*, Vancouver, British Columbia, June 26-29, 2011.

Valle, C., and Whiteman, W.E., "Combined BS/MS Programs in Mechanical Engineering: A Benchmark Study," *Proceedings of the 9th Annual ASEE Global Colloquium on Engineering Education*, Singapore, October 18-21, 2010.

Valle, C., and Whiteman, W.E., "Combined BS/MS Programs in Mechanical Engineering: A Benchmark Study," *Proceedings of the 2010 ASEE Annual Conference on Engineering Education*, Louisville, Kentucky, June 20-23, 2010.

Whiteman, W.E., "Sustainable Assessment and Beyond," *Proceedings of the 2009 ASEE Annual Conference on Engineering Education*, Austin, Texas, June 14-17, 2009.

Whiteman, W.E., "Mechanical Engineering Curricula: A Follow-up Study for the Future Effects of ABET EC2000," *Proceedings of the 2008 ASEE Annual Conference on Engineering Education*, Pittsburg, Pennsylvania, June 22-25, 2008.

Whiteman, W.E. and Brian Mathews, "Is it Real or is it Memorex?: A Distance Learning Experience," *Proceedings of the 2007 ASEE Annual Conference on Engineering Education*, Honolulu, Hawaii, June 24-27, 2007.

Whiteman, W.E., "Leveraging Information Technology to Enhance the Management of Graduate Education Programs," *Proceedings of the 2006 ASEE Annual Conference on Engineering Education*, Chicago, Illinois, June 18-21, 2006.

Whiteman, W.E., "How Long Does it Take to Earn a Ph.D. in Engineering?: A Case Study," *Proceedings of the 4th ASEE/AaeE Global Colloquium on Engineering Education*, Sydney, Australia, September 26-30, 2005.

Whiteman, W.E., "How Long Does it Take to Earn a Ph.D. in Engineering: A Case Study," *Proceedings of the 2005 ASEE Annual Conference on Engineering Education*, Portland, Oregon, June 12-15, 2005.

Ferri, A.A., and Whiteman, W.E., "Stability Analysis of a Vibrational System Subject to Negative Viscous Damping and Displacement-Dependent Dry Friction Damping," *Proceedings of the ASME 2003 Design Engineering Technical Conferences and Computers and Information in Engineering Conference*, Chicago, Illinois, September 2-6, 2003.

Whiteman, W.E., and Albert, B., "Integrating Dynamic Systems, Vibration, and Control," *Proceedings of the 2003 ASEE Annual Conference on Engineering Education*, Nashville, Tennessee, June 22-25, 2003.

Whiteman, W.E., "A Unique Approach to Teaching Dynamic Systems and Control," *Proceedings of the 2002 ASEE Annual Conference on Engineering Education*, Montreal, Canada, June 16-20, 2002.

Whiteman, W.E., and Berman, M.S., "3-D versus Uniaxial Vibration Testing of a Notched Cantilever Beam," *The 72nd Annual Shock & Vibration Symposium*, Destin, FL, 12-16 November 2001.

Whiteman, W.E., and Hitt, J., "EC2000 Impact on Mechanical Engineering Curricula," *Proceedings of the 2001 ASEE Annual Conference on Engineering Education*, Albuquerque, NM, June 24-27, 2001.

Whiteman, W.E., "Multiaxial versus Uniaxial Vibration Testing: A Research Plan for Comparison," *IMAC-XIX: A Conference & Exposition on Structural Dynamics*, Kissimmee, Florida, February 5-8, 2001, pp 445-449.

Whiteman, W.E., and Homsy, S.C., "A Teaching and Learning Initiative at the United States Military Academy," *Proceedings of the 2000 ASEE Annual Conference on Engineering Education*, St. Louis, MO, June 18-21, 2000.

Whiteman, W.E., and Nygren, K.P., "Basic Vibration Design to Which Young Engineers Can Relate: The Washing Machine," *Proceedings of the 1999 ASEE Annual Conference on Engineering Education*, Charlotte, NC, June 20-23, 1999.

Whiteman, W.E., and Nygren, K.P., "Achieving the Right Balance: Properly Integrating Mathematical Software Packages in Engineering Education," *Proceedings of the ASEE Mid-Atlantic Section Conference*, Monmouth University, NJ, April 16-17, 1999.

Whiteman, W.E., and Ferri, A.A., "Stability and Forced Response of Beam-Like Structures Having Negative Viscous Damping and Displacement-Dependent Dry Friction Damping," *ASME International Mechanical Engineering Congress and Exposition*, Atlanta, GA, DE-Vol. 90, November 17-22, 1996, pp. 47-55.

Whiteman, W.E., and Ferri, A.A., "Suppression of Bending-Torsion Flutter Through Displacement-Dependent Dry Friction Damping," *37th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, Salt Lake City, Utah, April 15-17, 1996, pp. 1578-1584.

Whiteman, W.E., and Ferri, A.A., “Analysis of Beam-Like Structures with Displacement-Dependent Friction Forces: Part I: Single-Degree-of-Freedom Model,” *15th ASME Biennial Conference on Mechanical Vibration and Noise*, Boston, MA, September 17-21, 1995, DE-Vol. 84-1, Vol. 3, Part A, pp. 1093-1100.

Whiteman, W.E., and Ferri, A.A., “Analysis of Beam-Like Structures with Displacement-Dependent Friction Forces: Part II: Multi-Degree-of-Freedom Model,” *15th ASME Biennial Conference on Mechanical Vibration and Noise*, Boston, MA, September 17-21, 1995, DE-Vol. 84-1, Vol. 3, Part A, pp. 1101-1108.

Whiteman, W.E., “Adaptation of an Industrial Application for an Instructional Laboratory in Mechanical Vibrations,” *Proceedings of the Annual Conference on Engineering Education*, Toronto, Canada, June 24-28, 1990.

B. Other Publications and Creative Products

Technical Reports (not refereed):

Whiteman, W.E., Frydman, A.M., and Berman, M.S., “Stress Screen Vibration Testing of Military Hardware and Equipment: Initial Tri-axial Results on Notched Cantilever Beams,” Technical Report, *Proceedings of the Tenth Annual ARL/USMA Technical Symposium (AUTS)*, West Point, NY-Aberdeen, MD, November 6-8, 2002.

Whiteman, W.E., Frydman, A.M., and Berman, M.S., “Stress Screen Vibration Testing of Military Hardware and Equipment: Final Uniaxial Results on Notched Cantilever Beams,” Technical Report, *Proceedings of the Ninth Annual ARL/USMA Technical Symposium (AUTS)*, West Point, NY-Aberdeen, MD, November 5-7, 2001.

Whiteman, W.E., and Frydman, A.M. “Multiaxial Vibration Testing of Military Hardware and Equipment: Preliminary Uniaxial Results on Simple Cantilever Beams,” Technical Report, *Proceedings of the Eighth Annual ARL/USMA Technical Symposium (AUTS)*, West Point, NY-Aberdeen, MD, November 1-3, 2000.

C. Presentations

- Invited Presentation, Whiteman, W.E., “A Web-based Tool for Course-Level Assessment of Student Learning Outcomes,” 2015 ABET Symposium, Atlanta, GA, April 23-24, 2015.
- Invited Panelist, Whiteman, W.E., “Does On-Demand Content Mean On-Demand Professors? Instructor Engagement in Open Courses ” Coursera Partner’s Conference, Newport Beach, California, March 2-3, 2015.
- Invited Panelist, Whiteman, W.E., “Interactions in MOOCs/Online Learning” France Atlanta-Digital Learning in 21st Century Universities: A French American Perspective, Atlanta, Georgia, October 20, 2014.

- Invited Presentation, Whiteman, W.E., “MOOCs,” Educational Technology Cooperative Conference, Southern Regional Education Board, Tampa, Florida, September 24, 2013.
- Lead Facilitator, George W. Woodruff Teaching Fellows Program for Faculty Development. 2012-present. Served as the senior mentor in a semester long workshop attended by faculty peers on improving teaching and learning techniques in engineering education.
- Invited Peer Reviewed Presentation, Whiteman, W.E., “Web-Based Tools for Program-Level and Course-Level Assessment of Student Learning Outcomes,” *112th Annual Meeting of the Commission on Colleges of the Southern Association of Colleges and Schools*, New Orleans, Louisiana, December 8-11, 2007.
- Guest Lecturer, Woodruff School of Mechanical Engineering Teaching Practicum, 2004-present. Each term, I present a seminar on effective teaching principles to the Woodruff School PhD students in the Teaching Practicum course.
- Senior Mentor, Department of Civil and Mechanical Engineering Instructor Summer Workshop, Summer 2000, Summer 1999, Summer 1998. Served as a senior mentor in the departmental summer workshop that focuses on teaching skills and improving the learning environment.
- Teaching Teachers to Teach Engineering Workshop, West Point, July 1998. Served as a senior mentor in a week-long conference attended by engineering faculty from across the country on improving teaching techniques in engineering education.

D. Grants and Projects

Title of Project: Massive Open Online Course Offering (awarded)

Agency/Company: Georgia Tech

Total Dollar Amount:

\$19,305 – MOOCs (2D Dynamics)– Spring 14

\$21,815 – MOOCs (3D Dynamics) - Fall 14

\$44,125 – MOOCs (Mechanics of Materials) –Fall 15/Spring 16

Role: Principal Investigator

Title of Project: Minimizing Cognitive Load in Statics Education (submitted)

Agency/Company: Georgia Tech

Total Dollar Amount:

\$5408 – Year 1 – ½ month salary

Role: Co-Principal Investigator

V. Teaching

A. Courses Taught

Courses Previously Taught or Subjects Studied in Depth:

- Vibration Engineering
- System Dynamics and Control
- Mechanical Engineering Design
- Computer Aided Design
- Statics
- Dynamics
- Engineering Mechanics
- Mechanical Engineering Capstone Design
- Mechanics of Materials
- Thermodynamics
- Special Projects in Mechanical Engineering

Mechanical Engineering Curriculum and Course Development:

- Extensive experience as Mechanical Engineering Program Chair, United States Military Academy, West Point, NY

B. Individual Student Guidance

B1. Service on Ph.D. dissertation committees

Ph.D. Student, James Potter, "Dynamics and Command-Shaping Control of Helicopter Sling Loads," graduated Fall 2013, Committee Member

Ph.D. Student, Eric Smit, "Shock and Vibration Isolation Concepts Through Use of Dynamic Mult-Degree-of-Freedom Mechanical Systems," proposed Spring 2015, Committee Member

B2. Service on M.S. thesis committees

M.S. Thesis Student, Byron E. Van Gorp, "Firat with Improved Dynamics and Detection Range," graduated Spring 2007, Co-Advisor with Dr. Levent Degertekin

M.S. Thesis Student, Jon Danielson, "Mobile Boom Cranes and Advanced Input Shaping Control," graduated Summer 2008, Committee Member

M.S. Thesis Student, John William Dykes, "Projectile Linear Theory for Aerodynamic Asymmetric Configurations," graduated Fall 2011, Committee Member

M.S. Thesis Student, Daichi Fujioka, "Tip-Over Stability analysis for Mobile Boom Cranes with Single- and Double-Pendulum Payloads," graduated 2012, Committee Member

M.S. Thesis Student, Arnoldo Castro Castro, "Dynamics of Two-Wheeled Inverted Pendulum Style Personal Transporters," graduated Summer 2012, Committee Member

VI. Service

A. Professional Contributions

- SMART (Science, Mathematics, & Researcher for Transformation) Scholarship Evaluation Panel Member, 2014
- ASME Committee on Engineering Accreditation (CEA), Member 2013-present
- ASME/ABET Mechanical Engineering Program Evaluator, 2006-present
- International Fulbright Science & Technology Selection Committee Member, 2011
- SMART (Science, Mathematics, & Researcher for Transformation) Scholarship Evaluation Panel Member, 2011
- Program Chair, Mechanical Engineering Division, American Society for Engineering Educators (ASEE), 2009-2010
- Program Chair-Elect, Mechanical Engineering Division, American Society for Engineering Educators (ASEE), 2008-2009
- Secretary-Treasurer, Mechanical Engineering Division, American Society for Engineering Educators (ASEE), 2007-2008
- Member at large, Mechanical Engineering Division, American Society for Engineering Education (ASEE), 2006-2009
- Reviewer, Mechanical Engineering Division, American Society for Engineering Education (ASEE) Annual Conference Proceedings, 2007-2008
- Campus Representative, American Society for Engineering Education (ASEE), 1998-2002
- Visiting Researcher, Experimental Mechanics Section, Composite and Lightweight Structures Branch, Weapons and Materials Research Directorate, U.S. Army Research Laboratory, Adelphi, Maryland, December 1998-2003
- Service Academy Research Associate, Dynamics Testing Section (Vibrations Laboratory), Los Alamos National Laboratory, New Mexico, Summer 1989, Summer 1990.

B. Public and Community Service

Scientific and Professional Societies

- American Society of Mechanical Engineers (ASME)
- American Society for Engineering Education (ASEE)

Professional Engineer Registration

- State of Georgia, 2006, PE031006
- Commonwealth of Virginia, 1983, 14494

Other Professional Activities

- Served as the Mechanical Engineering Program Evaluator for a Mock ABET visit to Texas A&M Qatar campus, January 2008
- ABET consulting visit to Pontificia Catolica University, Santiago, Chile, December 2014

C. Institute Contributions

- Faculty member, Georgia Tech Center for 21st Century Universities, 2013-present
- Faculty partner, Georgia Tech CETL LearnTech Collaboratory (LT3), 2015-present
- Member, Executive Board, General Faculty Assembly and Academic Senate, representing the College of Engineering, 2007-2010
- Member, ex-officio, Graduate Committee, Woodruff School of Mechanical Engineering, 2003-present
- Member, ex-officio, Undergraduate Committee, Woodruff School of Mechanical Engineering, 2003-present
- Member, Woodruff School Strategic Plan Steering Committee, 2009-2010
- Faculty Advisor, Georgia Tech Engineers for a Sustainable World, 2010-present
- Faculty Advisor, Pi Tau Sigma Mechanical Engineering Honor Society, 2009-present
- Faculty Advisor, Alpha Gamma Delta Sorority, 2009-present
- Faculty Advisor, Society of Military Engineers (SAME), 2013-present
- Member, General Faculty Assembly, Georgia Tech, 2004-2007
- Member, Executive Round Table, Georgia Tech, 2006-present