Clemson University
Mechanical Engineering
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Todd Schweisinger

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Education:

2007	Ph.D.	Mechanical Engineering	Clemson University	(Clemson, SC)
2001	M.S.	Mechanical Engineering	Clemson University	(Clemson, SC)
1997	B.S.	Physics	University of California @ Irvine	(Irvine, CA)
1994		University Transfer Program	Golden West Community College	(Huntington Beach, CA)

Educational Accomplishments:

- Demonstrated excellence in safety and proven leadership in management and enrollment growth of an ABET accredited undergraduate laboratory program in the Department of Mechanical Engineering at Clemson University.
- Unified the content and delivery of the required laboratory courses by implementing a Problem-Based-Learning instructional plan with a strong technical writing component adopted by all required lab courses.
- Established a departmental training program for Teaching Assistants to improve the quality of education in the required undergraduate laboratory courses.
- Established an organizational model for the Mechanical Engineering Student Shop to provide students with access and training on precision machine equipment for completing projects.
- Established the Clemson Makerspace, with other university partners, to provide students of all disciplines, faculty, and staff access and training on state-of-the-art, low-risk machines (3-D printers, laser cutters, textiles machinery) for completing projects.

Teaching Experience & Activities:

Clemson University (Department of Mechanical Engineering)

-Senior Lecturer of Mechanical Engineering & Director of Undergraduate Programs (2018-Present)
-Senior Lecturer of Mechanical Engineering & Coordinator of Undergraduate Laboratories (2014-Present)
-Lecturer of Mechanical Engineering & Coordinator of Undergraduate Laboratories (2008-2014)

- Undergraduate Courses Instructed: Mechanics of Materials, Modeling and Analysis of Dynamic Systems, Machine Design, Manufacturing Processes and Their Application, Sophomore Seminar
- Undergraduate Laboratory Courses Instructed: Mechanical Engineering Lab I, Mechanical Engineering Lab II, Mechanical Engineering Lab III.
- Championed Excellence in Laboratories: Prioritize safety, strategically grow enrollment in lab courses, monitor laboratory operating budget and pursue external funding opportunities, advance undergraduate laboratory assessment (ABET), facility, equipment, experiments, Teaching Assistant activities and training, new lab module development, undergraduate students using laboratory resources, showcase of undergraduate program.
- Industrial Project Advising – Senior Capstone Design Course:
  - Boeing: Ultem Capable 3D Printer Design 2018
  - Parker Hannifin: Automated Packaging Process 2016

- Meritor: Controlled Process for Automatic Slack Adjuster (ASA) Assembly 2015
- BMW: Design of Portable Sound and Vibration Analysis Device 2014
- E-Z-Go: Golf Car Seat Manufacturing Process 2012
- Okuma: CNC Machine Way Cover Redesign 2011
- Rotary: Performance Study of Lawn Mower Blades 2009
- BMW: Auto-feed attachment for cordless screw gun 2008

- Supervising: Mechanical Engineering Student Shop
- Undergraduate Advising: Clemson Makerspace(2014-Present)Undergraduate Mentoring: Michelin Career Center-University Professional Internship Program
  Mentor (2012-Present)

Clemson University (College of Engineering and Science)
-Faculty Director of the Residents in Science and Engineering (RiSE) Program (July 2013-May 2015).

Recognition:

- Ted G. Westmoreland Award for Faculty Excellence, Clemson University (2018)
- A team of my student researchers received Best Overall – Student Poster Competition, American Society for Engineering Education-South East Conference (2018)
- A team of my student researchers received Second Place – Junior/Senior Student Poster Competition, American Society for Engineering Education-South East Conference (2018)
- Regional Program of the Month, National Residence Hall Honorary in Conjunction with the South Atlantic Affiliate of College and University Residence Hall (February 2015)
- James E. Bostic Housing Partner of the Year Award (2014)
- A team of my student researchers received Third Place – Junior/Senior Student Poster Competition, American Society for Engineering Education-South East Conference (2013)
- Clemson University Board of Trustees Award for Faculty Excellence (2008)

Professional Development:

- Professional Engineer: South Carolina Registration No. 31132 (2013)
- Engineer in Training Registration (2002).
- Academic Workshops: Participate in workshops and streamed webinars (2007-present)
  - Tigers Together to Stop Suicide- Advocacy Training 4/11/2018
  - GoodTalk: Dialogue That Matters- 10week sustained multicultural dialogue 2/15/2018-4/26/2018
  - Controversial Topics and Difficult Dialogues: Effectively Engaging Students in Critical Conversations in the Classroom. 10/19/2015
  - Making the Unspeakable Speakable Workshop II: Dialogue in Action 9/29/2015
  - Making the Unspeakable Speakable Workshop I: Inviting Others Into Dialogue 9/28/2015
  - The New Science of Learning: How to Learn in Harmony with Your Brain 12/15/2014
  - Motivating and Engaging Your Students: Strategies The Peak Performing Professor: A Practical Guide to Productivity and Happiness 05/12/2014
  - Powerful Teaching with Powerpoint- Delivering Brain-Compatible Presentations 12/16/2013
  - National Science Foundation Workshop on Ubiquitous Hands-On Learning 06/26/2013
  - Clemson University Ally Diversity Training. 05/14/2013
  - How Does Technology Facilitate Learning – or does it? 05/13/2013
  - Secure Computer Testing and Automated Grade Books Using Respondus® and Blackboard®. 03/01/2013

- Webinar: High Touch Pedagogy: Strategies for Improving Online Student Engagement & Learning Outcomes. 10/16/2012
- Webinar: Teaching Critical Thinking for Academic Success, Career Readiness, and Personal Development. 10/14/2012
- Working Toward Excellence. 8 Values for Achieving Uncommon Success in Work and Life. 08/08/2012
- Flipping Your Classroom: What Does it Mean?. 07/25/2012
- Teaching Seen Anew: More Efficient and Effective Ways of Working and Creating. 05/07/2012
- Institute of HeartMath: The Heart-Brain Connection in Achieving Optimal Individual and Organizational Performance. 02/21/2012
- Webinar: Teach Students How to Learn. 03/04/2011
- "Those Who Can ... Teach". 12/14/2010
- POGIL Introductory Workshop. 12/19/2011
- Inquiry-Guided Learning. 12/13/2010
- Increasing Student and Faculty Involvement and Success in Undergraduate Research. 11/08/2010
- Teaching Sustainability Across the Disciplines. 10/08/2010
- Copyright Law in the Academy: What You Can't Afford Not to Know. 09/10/2010
- Learning Disabilities and ADHD: How Real Are They? 08/31/2010
- Where Our Students Are Coming from--and How to Reach Them. 05/27/2010
- Transforming Your Students into Self-Regulated Learners. 05/14/2010
- How the Brain Learns and How to Teach to It. 05/10/2010
- Learning Styles: Multiple Models, Multiple Teaching Methods. 04/02/2010
- Building and Sustaining Community Partnerships for Service- Learning. 02/25/2010
- Preventing Problems in Student Groups. 01/26/2010
- Ways of Understanding Teaching. 12/14/2009
- Communicating with International Graduate Students. 09/07/2009
- Creative Tools for Conflict Resolution: How to Live Peacefully with Your Students & Peers. 07/17/2009
- Using Theatre Techniques to Improve Teaching and Communication. 05/04/2009
- Incorporating Diversity and Teaching Inclusively. 04/10/2009
- Panel Discussion: Creating an Inclusive Community and Developing Culturally Competent Professionals. 04/09/2009
- Making Student Peer and Self-Assessment Work. 03/31/2009
- Academic Writing: The Process of Crafting Scholarly Prose. 03/12/2009
- Student Evaluations: What Factors Affect Them and How You Can Improve Them. 03/05/2009
- Writing Objective Test Items That Assess Thinking Skills. 01/29/2009
- A Portrait of the Student as a Young Wolf: Motivating Undergraduates. 12/15/2008
- Documenting Your Teaching Effectiveness. 10/17/2008
- Contract Grading: Melding Learning with Assessment. 08/07/2008
- Course Design and Development Made Easy and Logical. 07/17/2008
- Engaging Students in Their Classroom Learning. 07/15/2008
- Getting Your Students to Do the Readings. 07/10/2008
- Bringing out the Best in Your Students. 05/01/2008
- Fast but Fair Methods to Grade Writing -- and More. 02/21/2008
- Teaching to How the Mind Works. 02/18/2008
- The Pedagogy of Blended Learning: Complementing the Classroom. 08/09/2007
- Taking Command of Your Classroom with Kindness. 08/07/2007
- Teaching and Managing Large Classes. 08/02/2007

Publications:

- Hoolachan, N., McKee, H., Schweisinger, T. (2018, March 5). "Increasing the Broader Impact of the Clemson Makerspace." *Proceedings of the American Society for Engineering Education, Southeast Section*, Embry-Riddle Aeronautical University, Daytona Beach, FL (March 2018)
- Bowers, Z., King, R., Lee, H., Lewis, D., Matthews, D., Mckellips, P., Patel D., Schmidt S., Seawell, T., Severance, E., Wanish, T., Wagner, J. Schweisinger, T. "Improving the Power Output of a Savonius Wind Turbine Experiment." *Proceedings of the American Society for Engineering Education, Southeast Section*, Embry-Riddle Aeronautical University, Daytona Beach, FL (March 2018)
- Bostick, L., Knippenberg, C., Asselin, J., Wilson, H., Wagner, J, and Schweisinger, T. "Improving the Efficiency of a Savonius Wind Turbine Learning Module Experiment" *Proceedings of the American Society for Engineering Education, Zone II*, Caribe Hilton, San Juan, PR.(March 2017)
- Banaszak, B., Bullard, M.C., Clarke, R.H., Drake, T., Hoolahan, N., Hord, J.B., Jones, M., Levey, R., Phillips, O., Rogers, T., Smith, C., Weigman, P., Atiken, S., Schweisinger, T., Anderson, R. "Creating a Clemson MakerSpace" *Proceedings of the American Society for Engineering Education, Southeast Section*, University of Alabama, Tuscaloosa, AL.(March 2016)
- Phillips, O., Hord, J., Abare, S., Acosta, G., Grooms, M., White, A., Barnett, M., Ross, G., Feaster, Y. Schweisinger, T. 2016. "Undergraduate Development of Low Cost, Open-Source, Machinery Access Control & Tracking System Via the Internet of Things" *Poster presented at the annual meeting of the International Symposium on Academic Makerspaces*, Boston, MA. (November 2016)

- Hoolachan, N., McKee, H., Schweisinger, T. (2018, March 5). "Increasing the Broader Impact of the Clemson Makerspace." *Proceedings of the American Society for Engineering Education, Southeast Section*, Embry-Riddle Aeronautical University, Daytona Beach, FL (March 2018)
- Anderson, R., T. Schweisinger, and B. Speziale. "Strengthening Undergraduate Career Preparedness Through Multidisciplinary Research Projects". *2015 ASEE Annual Conference and Exposition, Seattle, Washington, (June 2015)*
- Hord J., C. Beck, D. Betz, D. Colleson, C. Smith, S. Hipp, A. Pearson, S. Abare, H. Harrison, T. Cottrell, C. Adkins, S. Pinson, T. Schweisinger. "Design of Part Ejection System for Low-Cost 3D printer vending machines," *Proceedings of the American Society for Engineering Education, Southeast Section*, University of Florida, Gainesville, FL (April 2015)
- Beach, E., T. Schweisinger, A. Edmunds, (2014, October 26), Living with Engineers and Faculty Partners: Interventions and Collaborations to Promote Retention, Presentation at ACUHO-I Living Learning Programs Conference at Sheraton Kansas City Hotel at Crown Center, Kansas City, Mo.
- Ali, G., D. Moline, T. Schweisinger, J Wagner, 2014. Energy Harvesting from Atmospheric Variations – Theory and Test. *Renewable Energy*. 74: 528-535.
- Beck C., Russell C, Tiernan D., Coroneos S., Bailey J., Hord J., Matthews R., DeLima J., Waits L., Forster M., Helmrich G., Yenawine A., Harrison H., Lewis T., McAuliffe S., Gibert J., Schweisinger T (2014, March 30-April 1), Design of Low-Cost Autonomous 3D Printer Vending Machines, Poster presented at the annual meeting of the American Society of Engineering Education – Southeast Conference at Mercer University, Macon, Ga.
- Sheen M., Tiernan D., Jansen P., Beck C. , Brunner C., Giel T., Gottschall D., Lemert-Smith R., Murphy M., Schweisinger T., Wagner J., Burg, T., Gibert J., (2013, March 10-12), Increasing 3D Printing Accessibility Through a Low-Cost, Automated Workstation, Poster presented at the annual meeting of the American Society of Engineering Education at Tennessee Technological University, Cookeville, TN.

- Patel, R., J. Wagner, R. Collins, A. Gramopadhye, T. Schweisinger, and M. Hanna. 2012. A Multi-Disciplinary Mechatronics Course with Assessment – Integrating Theory and Application through Laboratory Activities. *International Journal of Engineering Education,* 28 (5): 1141-1149.
- Schkoda, R., T. Schweisinger, and J. Wagner, 2012. An Improved Undergraduate Mechanical Engineering Laboratory Structure and Curriculum: Design and Assessment, *International Journal of Mechanical Engineering Education*, 40 (3): 182-196.
- Schweisinger, T., E. Svenson, L. Murdoch. 2011. Hydromechanical Behavior During Constant-Rate Pumping Tests in Fractured Gneiss, *Hydrogeology Journal* 19 (5): 963-980.
- Shirley, J., J. Wagner, R. Collins, A. Gramopadhye, T. Schweisinger, and M. Hanna. 2011. A Mechatronics and Material Handling Systems Laboratory – Experiments and Case Studies, *International Journal of Electrical Engineering Education*, 48 (1): 92-103.
- Schweisinger, T., E. Svenson, and L.C. Murdoch. 2009. Introduction to Hydromechanical Well Tests in Fractured Rock Aquifers. *Ground Water* 47 (1): 69-79.
- Schweisinger, T., L.C. Murdoch, and C.O. Huey, Jr. 2007. Design of a Removable Borehole Extensometer. *Geotechnical Testing Journal* 30 (3): 202-211.
- Svenson, E., T. Schweisinger, and L.C. Murdoch. 2007. Analysis of the Hydromechanical Behavior of a Flat-Lying Fracture During a Slug Test. *Journal of Hydrology* 347 (1-2): 35-47.
- Svenson, E., T. Schweisinger, and L.C. Murdoch. 2007. Field Evaluation of the Hydromechanical Behavior of Flat-Lying Fractures During Slug Tests. *Journal of Hydrology* 359 (1-2): 30-45.

Patents:

- Walford, D., T. Schweisinger, et al. 2012. Pediatric Arm Restraint for Hospital Treatment Room. Provisional U.S. patent filed April 13, 2012.
- Murdoch, L.C., T. Schweisinger, and C.O. Huey, Jr. 2008. Device to measure axial displacement in a borehole. U.S. patent # 7347003 B2 issued March 25th, 2008.

Research:

- Co-PI for Collaborative Undergraduate Research, Creative Inquiry: ME X900-819 (Spring 2018-Present): Students from the College of Engineering, Computing, and Applied Sciences researching the development of a system to incentivize litter collection in developing areas.
- Co-PI for Collaborative Undergraduate Research, Creative Inquiry: ME X900-719 (Spring 2017): Students from the College of Education, and Engineering Computing and Applied Sciences researching strengthening communities in academic makerspace and shops.
- Co-PI for Collaborative Undergraduate Research, Creative Inquiry: ME X900-519/CS 4810 (Spring 2016): Students from the College of Engineering, and School of Computing researching spatially varying properties of 3-D printed parts using computer models
- Co-PI for Collaborative Undergraduate Research, Creative Inquiry: ME X900-619/ (Fall 2016-Present): Students from the College of Engineering, Computing, and Applied Sciences, researching the development of a mobile Savonius wind turbine experiment
- PI for Collaborative Undergraduate Research, Creative Inquiry: ME X900-219 (Fall 2016-Present): Students from the College of Engineering, Computing, and Applied Sciences researching Makerspace safety and operations.
- Co-PI for Collaborative Undergraduate Research, Creative Inquiry: ME X900-219/MGMT 2970 (Fall

2015-Spring 2016): Students from the College of Engineering, Business and Behavioral Sciences, Arts and Architecture, researching business models for developing a makerspace enterprise on campus.

- PI for Collaborative Undergraduate Research, Creative Inquiry: ME X90-119 (Spring 2013-Fall 2014): Students from the College of Engineering, Business and Behavioral Sciences, Arts and Architecture, researching innovative applications of low-cost 3-D printers.
- Co-PI for Collaborative Undergraduate Research, Creative Inquiry: ME X900-319 (Spring 2012-Fall 2013): Students from the College of Engineering, and Agriculture, Forestry, and life Sciences researching design of a squirrel feeder for contraceptive delivery.
- Co-PI for Collaborative Undergraduate Research, Creative Inquiry: ME X90-119 (Spring 2012-Fall 2013): Students from the College of Engineering, researching innovative applications of low-cost 3-D printers.
- Co-PI for Collaborative Undergraduate Research, Creative Inquiry: ME X90-019/Nurs 398 (Fall 2010-Present): Students from the College of Engineering, and School of Nursing, researching the development of a pediatric arm stabilizer for the Greenville Hospital System University Medical Center Children's Hospital.
- Advisor for Independent Undergraduate Student Research (Spring2011): Analysis of the feasibility for a net-zero energy consumption laboratory room and accompanying laboratory module for ME laboratory course.
- Advisor for ME Undergraduate Research: ME 415 (Spring 2010): Design of a system to quantify sound quality of mobile phones and networks.
- Graduate Research Assistant (2000-2005)- *Clemson University (School of the Environment)* Coordinated a diverse multidisciplinary team working to identify hydromechanical properties and in situ behavior of fractured rock in geologic structures. Activities included:
  - Field Testing/Data Acquisition
  - Theoretical Analysis
  - Computer Modeling
  - Instrumentation Development — -Design -Fabrication -Experimental Testing/Evaluation
- Graduate Research Assistant (1999)- *Clemson University (Department of Mechanical Engineering)* Modeled, using Ideas-CAD/FEM, the stresses on a composite naval helicopter hangar bay door.
- Graduate Research Assistant (1997-1999)- *Clemson University (Department of Mechanical Engineering)* Designed using Cadkey & fabricated a prototype system to process and test delicate textile fibers.

Expert Witness and Consulting:

- Engineering Consulting: researched safety of car hauler egress/doorways/openings/steps involved in litigation for personal injury (2016)
- Engineering Consulting: analyzed mechanism of failure of a boat trailer winch system involved in litigation for personal injury (2016)
- Engineering Researcher: investigated behavior of framing nailer for Cecil O. Huey, Jr. PhD, PE 2007-2008
- Engineering Researcher: measured geometric dimensions of exercise equipment involved in litigation for manufacturing quality for Cecil O. Huey, Jr. PhD, PE 2007
- Patent Artist: drafted patent drawings for Stephen R. Chapman, PhD, JD 2007

Service:

- SSMC Student Shop Managers Consortium: Founding President. 2018-2019
- ASEE-SE Committee: Vice President (Chair of Publications and promotions Unit). 2018-2019
- ASEE-SE Committee: Chair for the Research Division. 2015-2016
- ASEE-SE Committee: Secretary for the Research Division. 2014-2015
- Departmental Committee: ad hoc member of Laboratory Committee. 2014-2015.
- Departmental Committee: lead member of ad hoc committee to streamline mechanical systems curriculum sequence, ME 2010-ME 3060. 2013-2014.
- Departmental Committee: member of ad hoc committee advising Chair on development and use of teaching and research space. 2012-2013.
- Faculty Senate Committee: member of ad hoc Committee on the Status of Lecturers. 2011.
- Departmental Committee: ad hoc member of Curriculum, International, Laboratory Committee. 2010-2014.
- Departmental Committee: ad hoc member Laboratory Committee. 2008-2010.
- Diversity Education Programming: One Clemson Facilitator. 2008-2010.
- Freshman Move-in Day Orientation: member of move-in and coordination crew. 2008-present.

Updated: October 2, 2018