

Dr. Jeffrey L. Hanson

Texas Tech University
(806) 834-8650
j.hanson@ttu.edu

Education and Post Graduate Training

Ph D, Texas Tech University, 2007.

Major: Engineering Systems Management

Supporting Areas of Emphasis: Ergonomics

Dissertation Title: Modeling Agricultural Recycling Systems for System Size and Economic Potential.

MS, Texas Tech University, 1994.

Major: Industrial Engineering

Supporting Areas of Emphasis: Ergonomics

Dissertation Title: No Thesis

BS, Texas Tech University, 1992.

Major: Industrial Engineering

Supporting Areas of Emphasis: Manufacturing

Academic and Professional Experience

Instructor, Texas Tech University. (January 1, 2008 - Present).

- Prepare and deliver lecture materials for undergraduate Industrial and Mechanical Engineering Courses
- Courses taught: Systems Management Controls, Mechanics I (Statics), Mechanics II (Solids), Dynamics, Senior Design I, Senior Design II, FE Review Course, Engineering Economics, Engineering Ethics, Material Science, and Finite Element Analysis
- Course coordinator for Departmental Statics, Finite Element Analysis classes
- Instructor for the Texas Tech Honors College, accepted fall 2009
- Continuing work towards publishing articles and grant proposals
- Taught at the University of Seville, for Texas Tech Study Abroad Program in Sevilla, Spain, summers 2013, 2014, 2015, 2016, 2017
- Bridge Program Instructor, calculus readiness program for incoming engineering students. Fall 2012, 2013, 2014, 2015, 2016, 2017

Instructor, South Plains College. (August 1, 2004 - January 1, 2008).

- Prepared lecture materials for undergraduate Engineering Graphics course
- Also prepared and taught lab sessions for this 5 semester hour course
- Taught engineering graphics to local engineering businesses after hours for the College

Engineer, Vaughn Storage Systems. (February 1, 2002 - January 1, 2008).

- Outside Sales Engineer in charge of specifying warehouse shelving, rack, lockers, mezzanines, conveyors, and other material handling equipment for customer needs. Job duties include calculating load capacities of rack systems and mezzanines, completing CAD shop drawings as well as pricing and installation of those jobs. Installation duties often required my supervision at new construction sites where I coordinated our installation with the job superintendent as well as working with the other trades on the job site.

- As well as handling all outside jobs for the home office, I also managed all of the branch offices as well. This included advising, quoting, entering purchase orders, and all invoicing for the branches.
- Also became the shipping manager where I worked with freight companies as well as logistics companies to coordinate incoming as well as outgoing freight for the home office as well as four branch offices.
- Manager over warehouse employees for the home office operation. Included managing workloads for twelve employees. This included employment interviewing as well as disciplinary action and employee documentation.

Plant Manager, Industrial Molding Corporation. (July 5, 1995 - February 1, 2002).

- Plant Manager over three production floors. Included scheduling work for 82 employees, as well as 36 injection molding machines and the secondary operations production area. I handled all supervisory duties for employees such as evaluations, training, and discipline.
- Manufacturing Engineer worked with team implementing ISO 9001 standards for the entire facility. Also worked with a team to implement Lean Manufacturing techniques throughout the production facility.
- Manufacturing Engineer in charge of setting up production floor for Lucent Technology molding operation. Included specifying and ordering new molding equipment for 18 injection molding presses. This included calculations for water cooling capacities for the plant as well as material flow calculations, as well as production capacity calculations.
- Manufacturing Engineer in charge of new medical molding operation. Included specifying clean room construction to comply with ISO 14644-1 ISO Class 8 cleanroom equipped with a 100,000 positive pressure HEPA filtration system. This also required the design, construction, and installation of all secondary operations for fabrication of product. Also invented a foam adhesive low pressure injection molding system to produce positive seal for patient breathing mask (Patent application submitted).
- Automation Engineer. Worked in automation group whose duty was to reduce the labor compliment required for the entire molding factory. By automating many processes, the automation group was able to reduce the labor force from 400 workers down to 150 employees saving approximately \$5 million dollars per year. This reduction occurred over a 5 year period of time.

Engineer, Porter Manufacturing. (June 1, 1994 - July 1, 1995).

- Project Manager for department of defense multi-million dollar contract for Trailer-Mounted Steam Cleaning Units. Managed 30 workers from 7 departments to insure that the part production met shipping deadlines. Coordinated all production efforts with quality control personnel and the governments Quality Assurance Representative (QAR). Worked with the accounting department and the shop floor to ensure that my estimation for the project met the contractual budget. Developed testing procedures and worksheets for conformance testing. Also oversaw all shipping operations.
- Project Manager for department of defense multi-million dollar contract for Trailer-Mounted Field Lubrication Service Units. Led first article testing efforts and made pre-production preparations for the units including drawings, parts lists, buying materials, creating a work order system and calculating time estimations for all operations.
- Project Manager for testing facilities' evaluation and retrofit. Provided facilities design for a wiring shop, and sandblast area, and provided a layout for the testing area. Also coordinated with contractors for completion of the project.
- Government Contract bidding. Developed parts lists, material estimations, overhead costs, etc. based on my analysis of government supplied drawings.
- Production scheduling for the entire plant were my responsibility. Coordinated the production of thousands of parts from 7 different departments including plasma cutting operations, machine centers, fabrication, welding, paint, final assembly, and wiring shops.
- Safety Coordinator for the entire plant. Responsible for insuring the availability of safety equipment and first aid kits, periodic inspections of the facilities to check fire extinguishers

and shop conditions, and planning and executing bi-monthly plant-wide safety meetings targeting specific safety issues and addressing workers' safety concerns.

Leadership Awards and Honors

Global Leadership for Study Abroad, International Cultural Center. (February 1, 2017).

Global Leadership for Study Abroad, International Cultural Center. (February 1, 2016).

Global Leadership for Study Abroad, International Cultural Center. (February 1, 2015).

Keynote Speaker - Order of the Engineer Ceremony, College of Engineering. (February 20, 2014).

Global Leadership for Study Abroad, International Cultural Center. (February 1, 2014).

TEACHING

Courses Taught

Texas Tech University

ENGR 1106, Math Fundamentals for Engineering Students, 10 courses.

ENGR 2392, Engineering Ethics and Its Impact on Society: Study Abroad- Seville, Spain, 4 courses.

IE 2311, Engineering Economic Analysis, 2 courses.

IE 2324, Engineering Economic Analysis, 2 courses.

ME 2301, Statics, 60 courses.

ME 3164, Finite Element Analysis (FEA), 17 courses.

ME 3302, Dynamics, 2 courses.

ME 3311, Materials Science: Study Abroad in Seville, Spain, 1 course.

ME 3403, Mechanics of Solids: Study Abroad- Seville, Spain, 10 courses.

ME 4000, Special Topics in Mechanical Engineering: Construction Industry Internship Review, 1 course.

ME 4100, Chemical Process Design and Simulation, 2 courses.

ME 4330, Advanced Topics In Mech Engr: Professionalism in Mechanical Engineering, 11 courses.

ME 4331, Indiv Study In Mech Engr: Microfluidic Droplet Fabrication, 7 courses.

ME 4370, Engineering Design I, 26 courses.

ME 4371, Engineering Design II, 4 courses.

ME 6331, STATICS, 1 course.

Non-Credit Instruction

Continuing Education, South Plains College, 12 participants. (June 2007 - August 2007).

Directed Student Learning

Amando Vigil, Directed Individual/Independent Undergraduate Study, "Prosthetic Mechanical Hand for Elementary Student," Mechanical Engineering. (March 1, 2017 - Present).

Garrett Cormier, Directed Individual/Independent Undergraduate Study, "Automated Skin Lance for Diabetic Patients," Mechanical Engineering. (March 1, 2017 - Present).

Tito Babatunde, Directed Individual/Independent Undergraduate Study, "Sensory Feedback for Prosthetics on Amputees," Mechanical Engineering. (March 1, 2017 - Present).

Grayson Smith, Directed Individual/Independent Undergraduate Study, "Autonomous Drone Delivery Systems for Munitions," Mechanical Engineering. (March 1, 2017 - Present).

Siva Chaivichitmalakul, Dissertation Committee Member, "Economic Model of Biomass Gasification for Electricity in a Group of Twenty Countries," Industrial, Manufacturing, and Systems Engineering. (January 1, 2007 - May 5, 2011).

Pelin Altintas, Dissertation Committee Member, "Taguchi Method and Principle Component Analysis Application for Yarn White Speck Quality Defect," Industrial, Manufacturing, and Systems Engineering. (January 1, 2005 - May 5, 2010).

Teaching Awards and Honors

Most Influential Professor, College of Engineering. (December 15, 2017).

Best Lecture to Potential Incoming Students, XFAB - Semi Foundation. (October 14, 2017).

Most Influential Professor, College of Engineering. (May 15, 2017).

Outstanding Faculty of the Month - April, Eta Omicron Nu. (April 30, 2017).

Outstanding Professor, Mortarboard and Omicron Delta Kappa. (January 2017).

Best Lecture to Potential Incoming Students, XFAB. (November 2016).

Best Professor, Pi Beta Phi. (October 20, 2016).

Most Influential Professor, College of Engineering. (May 15, 2016).

Professing Excellence Award, Campus Housing. (April 2016).

Most Influential Professor, College of Engineering. (December 15, 2015).

Best Instructor Award, Pi Tau Sigma. (May 2015).

Best Professor, Pi Beta Phi. (May 2015).

Most Influential Professor, College of Engineering. (May 19, 2015).

Mechanical Engineering Teaching Award, Mechanical Engineering Dept. (December 20, 2014).

Most Influential Professor to Student Athletes, Texas Tech Athletic Department. (May 7, 2014).

Most Influential Professor, College of Engineering. (May 5, 2014).

Most Influential Professor, College of Engineering. (December 5, 2013).

Most Influential Professor to Student Athletes, Texas Tech Athletic Department. (May 7, 2013).

Most Influential Professor, College of Engineering. (May 5, 2013).

Most Influential Professor, College of Engineering. (December 5, 2012).

Best Professor, Pi Beta Phi. (May 2012).

Most Influential Professor to Student Athletes, Texas Tech Athletic Department. (May 7, 2012).

Most Influential Professor, College of Engineering. (May 5, 2012).

Professor of Excellence, Tau Beta Pi. (March 30, 2012).

Most Influential Professor, College of Engineering. (December 5, 2011).

Most Influential Professor, College of Engineering. (May 5, 2011).

Best Instructor Award, Pi Tau Sigma. (March 27, 2011).

Most Influential Professor, College of Engineering. (December 5, 2010).

Most Influential Professor, College of Engineering. (May 5, 2010).

Most Influential Professor, College of Engineering. (December 5, 2009).

Most Influential Professor, College of Engineering. (May 5, 2009).

RESEARCH

Published Intellectual Contributions

Journal Article, Professional Journal

Hanson, J., Sweeney, M., Campbell, L., Pantoya, M., Christopher, G. (2017). Characterizing the feasibility of processing wet granular materials to improve rheology for 3D printing. *Journal of Material Science/Springer Publishing*, 52, 13040-13053.

Presentations Given

Hanson, J., Resumating Resume Critiquing, Tau Beta Pi, Mechanical Engineering. (February 2, 2018).

Hanson, J., Success for Probation Students, "Success for Probation Students," College of Engineering, IMSE Building. (January 20, 2018).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?,"" College of Engineering, Student Union Building, Texas Tech. (October 9, 2017).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?,"" College of Engineering, Student Union Building, Texas Tech. (March 9, 2017).

Hanson, J. (Presenter & Author), Order of the Engineer Ceremony, College of Engineering, Lubbock, TX. (February 22, 2017).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?,"" College of Engineering, Student Union Building, Texas Tech. (February 15, 2017).

Hanson, J., Resumating Resume Critiquing, Tau Beta Pi, Mechanical Engineering. (February 2, 2017).

Hanson, J. L. (Presenter & Author), TSPE Meet your Future Presentation, "Meet Your Future," Texas Society of Professional Engineers, Lubbock TX. (February 1, 2017).

Hanson, J., International Mechanical Engineering Congress and Exposition, "Student Programming Committee Update," Phoenix, AZ. (November 15, 2016).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (November 15, 2016).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (October 28, 2016).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (September 15, 2016).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (April 20, 2016).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (March 25, 2016).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (November 15, 2015).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (September 25, 2015).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (March 12, 2015).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (February 15, 2015).

Hanson, J., Mock Lecture for Potential Students, ""What is an Engineering Class Like?," College of Engineering, Student Union Building, Texas Tech. (October 15, 2014).

Hanson, J. (Presenter & Author), Order of the Engineer Ceremony, College of Engineering, Lubbock, TX. (February 20, 2014).

Hanson, J. (Presenter & Author), TA/GPTI Training, "How to Be a Better Teacher," Mechanical Engineering Department, Lubbock, TX. (January 20, 2014).

Hanson, J. (Presenter & Author), Red Raider Orientation, "Preparing for Success in College," Texas Tech, Lubbock, TX. (September 2, 2011).

Hanson, J. (Presenter & Author), ICASALS Conference on Water in Arid and Semi-arid Lands, "Preliminary Study Examining a Systemic Approach to Recycling Water and Biomass for Rural Economic Development.," ICASALS, Lubbock, TX. (November 15, 2006).

Hanson, J. (Author Only), ASEE Gulf-Southwest Annual Conference, "The Chunking of Course Material Delivery and Evaluation: A Case for Information Processing Management and Evaluation.," ASEE, Lubbock, TX. (September 2, 2004).

Media Contributions

Internet

College of Engineering, Texas Tech University. (December 2017).

Texas Tech University Website. (December 2016).

Magazine

Texas Techsan. (April 2017).

Texas Techsan. (March 2016).

College of Engineering Fall Magazine. (October 2015).

Molding Digest. (June 2000).

Newspaper

Lubbock Avalanche-Journal. (December 2016).

Lubbock Avalanche Journal. (April 2014).

TV

Fox 34 Lubbock. (December 2016).

KCBD, NBC Lubbock, NewsChannel 11. (December 2016).

Vietnamese Television. (May 2013).

Contracts, Grants and Sponsored Research

Grant

Hanson, J. (Principal), "Environmental Test Chamber for Pilot Testing to API Standards Project," Sponsored by Halliburton, \$50,000.00. (March 17, 2015 - December 31, 2017).

Christopher, G. (Co-Principal), Pantoya, M. (Principal), Hanson, J. (Co-Principal), "Testing of Special Additive Manufacturing (AM) Materials," Sponsored by DOE/Consolidated Nuclear Security, LLC-PANTEX, Federal, \$151,889.00. (March 10, 2016 - December 31, 2017).

Intellectual Contributions in Submission

Research Report

Hanson, J., Fedler, C., Beruvides, M., Simonton, J., Lyford, C. *Utilizing Agricultural Biomass in Energy Production and Economic Development.*

SERVICE

University Service

Faculty Advisor, All-Wheel Tech. (January 20, 2017 - Present).

Faculty Advisor, Solar Race Team. (August 1, 2016 - Present).

Faculty Advisor, Texas Tech Bass Fishing Club. (August 1, 2016 - Present).

Faculty Advisor, Texas Tech Longboard Club. (September 1, 2015 - Present).

Texas Tech Aeronautical Engineering Club. (August 1, 2015 - Present).

Faculty Advisor, Society of Automotive Engineers. (September 2012 - Present).

Faculty Advisor, Tau Beta Pi. (September 2008 - Present).

Faculty Advisor, American Society of Mechanical Engineers. (September 2007 - Present).

Faculty Advisor, Solar Race Car Team. (August 2009 - May 2012).

Faculty Advisor, Tech Offroad. (September 2010 - May 2011).

Faculty Advisor, Texas Tech Shotgun Club. (September 2010 - May 2011).

College Service

Committee Member, GPTI Training Class for New Instructors. (September 28, 2017).

Judge, International Cook Off Judging Committee. (February 22, 2017).

Speaker, Lecture on Engineering Career Paths. (February 1, 2017).

Faculty Mentor, Recruiting - Mock Lecture Tech Prep. (September 20, 2016).

Judge, International Cook Off Judging Committee. (February 22, 2016).

Guest Lecturer for incoming recruits, Mock Lecturer for potential students. (February 4, 2016).

Speaker, Lecture on Engineering Career Paths. (February 1, 2016).

Judge, International Cook Off Judging Committee. (February 22, 2015).

Department Service

Special Project or Assignment. (August 2012 - Present).

Event Organizer, Statics Departmental Test Review. (December 12, 2017).

Event Organizer, Statics Departmental Test Review. (December 2, 2017).

Event Organizer, Statics Departmental Test Review. (November 15, 2017).

Event Organizer, Mechanical Engineering Department Picnic. (October 28, 2017 - October 30, 2017).

Event Organizer, Statics Departmental Test Review. (October 11, 2017).

Faculty Mentor. (February 2017 - May 2017).

Event Organizer, Statics Departmental Test Review. (May 10, 2017).

Event Organizer, Mechanical Engineering Department Picnic. (April 28, 2017 - April 30, 2017).

Event Organizer, Junk Yard Wars. (April 1, 2017 - April 30, 2017).

Event Organizer, Statics Departmental Test Review. (April 29, 2017).

Event Organizer, Statics Departmental Test Review. (March 27, 2017).

Event Organizer, Statics Departmental Test Review. (February 22, 2017).

Faculty Mentor. (September 2016 - December 2016).

Event Organizer, Statics Departmental Test Review. (December 5, 2016).

Event Organizer, Statics Departmental Test Review. (December 1, 2016).

Event Organizer, Statics Departmental Test Review. (November 15, 2016).

Event Organizer, Mechanical Engineering Department Picnic. (October 20, 2016 - October 23, 2016).

Event Organizer, Statics Departmental Test Review. (October 10, 2016).

Faculty Mentor. (February 2016 - May 2016).

Event Organizer, Junk Yard Wars. (April 1, 2016 - April 30, 2016).

Event Organizer, Mechanical Engineering Department Picnic. (April 20, 2016 - April 23, 2016).

Competition Adjudicator/Juror, TAME South Plains Math and Science Competition. (January 15, 2016 - January 21, 2016).

Faculty Mentor. (September 2015 - December 2015).

Faculty Advisor, ASME. (November 12, 2015 - November 17, 2015).

Event Organizer, Mechanical Engineering Department Picnic. (October 20, 2015 - October 23, 2015).

Event Organizer, Junk Yard Wars. (April 1, 2015 - April 30, 2015).

Event Organizer, Mechanical Engineering Department Picnic. (April 20, 2015 - April 23, 2015).

Competition Adjudicator/Juror, TAME South Plains Math and Science Competition. (January 15, 2015 - January 21, 2015).

Competition Adjudicator/Juror, volunteer judges. (January 15, 2015 - January 21, 2015).

Faculty Advisor, ASME. (November 12, 2014 - November 17, 2014).

Event Organizer, Mechanical Engineering Department Picnic. (October 20, 2014 - October 23, 2014).

Event Organizer, Mechanical Engineering Department Picnic. (April 20, 2014 - April 23, 2014).

Committee Chair, SPDC Planning Committee. (September 1, 2013 - April 20, 2014).

Competition Adjudicator/Juror, TAME South Plains Math and Science Competition. (January 15, 2014 - January 21, 2014).

Faculty Advisor, ASME. (November 12, 2013 - November 17, 2013).

Event Organizer, Mechanical Engineering Department Picnic. (October 20, 2013 - October 23, 2013).

Event Organizer, Mechanical Engineering Department Picnic. (April 20, 2013 - April 23, 2013).

Event Organizer, Mechanical Engineering Department Picnic. (October 20, 2012 - October 23, 2012).

Event Organizer, Mechanical Engineering Department Picnic. (April 20, 2012 - April 23, 2012).

Public Service

Member, STEM Advisory Committee, Lubbock ISD, Lubbock, TX. (October 31, 2016 - Present).

Member, Lubbock High School Choir Booster Club, Lubbock, TX. (September 1, 2014 - Present).

Judge, South Plains Science Fair, Lubbock, TX. (February 1, 2008 - Present).

Committee Member, Lubbock ISD Choir Booster, Lubbock, TX. (February 20, 2017).

CHAMP--Children's Ambulatory Mobility Platform, Lubbock, TX. (January 2016 - December 2016).

Committee Member, Lubbock ISD Choir Booster, Lubbock, TX. (February 20, 2016).

Task Force Member, Roots Community Development Project, Lubbock, TX. (January 2014 - December 2014).

Chairperson, South Plains College Industry Advisory Committee, Levelland, TX. (September 1, 2006 - May 5, 2010).

Service/Performance Partnerships

CHAMP--Children's Ambulatory Mobility Platform, Credit Courses and Programs, Service Learning, Texas. (January 18, 2016 - December 2016).

American Society of Mechanical Engineers, Public Programs, Events and Resources, Service on Boards, Committees, and Commissions, Chairman of the Board for Student Programs Globally, All. (June 1, 2014 - Present).

Service Awards and Honors

Service, Professional

District E Advisor of the Year, ASME. (April 20, 2013).

International Advisor of the Year, ASME - IPTI. (April 20, 2011).

GENERAL

Consulting

For Profit Organization, Pearson Publishing, Boston, MA. (January 1, 2010 - Present).

For Profit Organization, Vaughn Storage Systems, Lubbock, TX. (May 28, 1991 - Present).

Non-Governmental Organization (NGO), Excel Energy, Lubbock, TX. (January 19, 2016 - March 1, 2016).

For Profit Organization, McGraw Hill Publishing, New York, New York. (May 1, 2012 - March 1, 2013).

Professional Memberships

Student Section Advisor, Society of Automotive Engineers. (September 1, 2013 - Present).

Student Section Advisor / International Student Design Competition Committee, American Society of Mechanical Engineers. (September 1, 2008 - Present).

Development Activities Attended

Workshop, "Wiley Plus Online Resources," Wiley Publishing, Orlando, FL, USA. (March 11, 2016 - March 13, 2016).

Workshop, "Mastering Engineering Summit," Pearson Publishing, Boston, MA, USA. (February 25, 2016 - February 28, 2016).

Workshop, "Mastering Engineering Summit," Pearson Publishing, Austin, TX, USA. (February 25, 2014 - February 27, 2014).

Workshop, "Connect Development Summit," McGraw Hill Publishing, Dallas, TX, USA. (January 20, 2014 - January 23, 2014).

Continuing Education Program, "Ethics in Action," ASME, Houston, TX, USA. (April 2012).

Workshop, "Mastering Engineering Summit," Pearson Publishing, Boston, MA, USA. (February 25, 2012 - February 28, 2012).