

- Best Oral Presentation, HVIS2005, Hypervelocity Impact Society, 2005.
- Charles Sharpe Beecher Prize, Institute of Mechanical Engineers, Aerospace Division, England, 1999 (Awarded in April 2000 for the paper entitled, "Onset of Petalling in a Thin Spacecraft Wall Perforated by an Orbital Debris Particle.")

National

- Group Achievement Award, NASA Engineering and Safety Center (NESC), 2014 (in recognition of outstanding accomplishment through the coordination of individual efforts that have contributed substantially to the success of NESC's mission).
- 3rd Place, New Engng Educators Div, Best Paper Competition, ASEE Annual Meeting, 2011.
- Honor Award, NASA Engineering and Safety Center (NESC), 2010 (for outstanding leadership, technical insight and support of micrometeoroid and orbital debris protection and damage prediction analysis for the NESC).
- Fellow, American Society of Mechanical Engineers, 2005.
- Fellow, American Society of Civil Engineers, 2003.
- Associate Fellow, American Institute of Aeronautics and Astronautics, 1998.
- Lawrence Sperry Award, AIAA, January, 1995 (Awarded for a notable contribution made by a young person to the advancement of aeronautics or astronautics.)

Regional / Local

- Young Engineer of the Year Award, AIAA, Alabama-Mississippi Section, 1990.
- Certificate of Recognition, NASA/ASEE, 1995, 1994, 1988, 1987
- Certificate of Recognition, Huntsville Association of Technical Societies, 1993.

University

- Presidential Engagement Fellow, University of Missouri, 2019 to 2021.
- Manuel T. Pacheco Academic Leadership Award, University of Missouri System, 2007 (This award honors an academic administrator who exemplifies outstanding academic leadership at one of the four institutions within the University of Missouri System.)
- Honorary Knight of St. Patrick, Missouri S&T, 2006.
- Elevated to Chapter Honor Member, Chi Epsilon, University of Missouri-Rolla, 2000.
- Outstanding Research and Creativity Award, University of Alabama Huntsville, 1992.
- Outstanding Engineering Faculty Member Award, College of Engineering, University of Alabama in Huntsville, 1990.
- Certificate of Appreciation, American Society of Civil Engineers Student Club, University of Alabama in Huntsville, 1988.

Other

- Semi-Finalist, Intel/Westinghouse Science Talent Search Competition, 1977.
- Gordon Woulff Mathematics Team Award, Bronx High School of Science, 1977.
- National Honor Roll, Mathematics Association of America Competition, 1977.
- Honorable Mention, Otto P. Burgdorf Science Conference, NY Academy of Sciences, 1977.
- Certificat d'Honneur, Concours National de Francais, Association Americaine des Professeurs de Francais, 1976.
- Bronze Medal, Greater New York Mathematics Fair, 1976.

PROFESSIONAL POSITIONS

MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY *ROLLA, MISSOURI*

- Professor, Civil, Architectural, and Environmental Engng Dept, August, 1999 to present.
- Assistant Chair for Distance Education and Remote Programs, January, 2016 to present.
- Department Chair, August 1999 to October 2015.
- Presidential Engagement Fellow for the University of Missouri, 2019 to 2021.
- Interim Chair, Interdisciplinary Engineering Department, January 2009 to August 2009.
- Interim Dean, School of Engineering, September, 2006 to May, 2007.

DEFENSE SCIENCE AND TECHNOLOGY GROUP *MELBOURNE, AUSTRALIA*

- Fulbright Distinguished Chair, Advanced Science & Technology, January 2019 to July 2019.

ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY *MELBOURNE, AUSTRALIA*

- Visiting Professor, School of Engineering, College of Engineering, Science, and Health, January, 2019 to July, 2019.

CALIFORNIA INSTITUTE OF TECHNOLOGY *PASADENA, CALIFORNIA*

- Summer Faculty Fellow, NASA/Jet Propulsion Laboratory, May, 2016 to August, 2016; and, June, 2014 to August, 2014.

UNIVERSITY COLLEGE OF THE CAYMAN ISLANDS *GRAND CAYMAN, B.W.I.*

- Visiting Professor, Department of Engineering and Computer Science, January to May, 2014.

FRAUNHOFER ERNST MACH INSTITUTE *FREIBURG, GERMANY*

- Visiting Professor, Humboldt Foundation Friedrich Wilhelm Bessel Research Award winner, June, 2007 to December, 2007.

CALIFORNIA INSTITUTE OF TECHNOLOGY *PASADENA, CALIFORNIA*

- Summer Faculty Fellow, NASA/Jet Propulsion Laboratory, June, 2006 to August, 2006.

UNIVERSITY OF ALABAMA IN HUNTSVILLE *HUNTSVILLE, ALABAMA*

- Professor, Civil and Environmental Engineering Department, Sept, 1994 to August, 1999.
- Chair, Civil and Environmental Engineering Department, September, 1995 to August, 1999.
- Associate Professor, Civil and Environmental Engineering Department, September, 1992 to August, 1994.
- Associate Professor, Civil Engineering Program, Mechanical and Aerospace Engineering Department, September, 1990 to August, 1992.
- Assistant Professor, Civil Engineering Program, Mechanical and Aerospace Engineering Department, September, 1986 to August, 1990.

GEORGE C. MARSHALL SPACE FLIGHT CENTER *HUNTSVILLE, ALABAMA*

- NASA/ASEE Summer Faculty Fellow, June 1995 - August 1995; June 1994 - August 1994.

USAF WRIGHT LABORATORIES *EGLIN AFB, FLORIDA*

- AFOSR Summer Faculty Fellow, June 1993 - August 1993; June 1992 - August 1992.

ACADEMIC LEADERSHIP AND ADMINISTRATIVE ACCOMPLISHMENTS

Administrative experience and recognition

- Nineteen years' experience as chair of two civil engineering departments, and one year of experience as interim dean of engineering. In these positions, I have
 - led the development of new and expanded degree program offerings,
 - managed and directed office staff,
 - conducted regularly scheduled, effective meetings on college level and of department faculty,
 - performed annual evaluations of large numbers of faculty and staff
 - led school-wide committees,
 - expanded and coordinated online course offerings,
 - executed a variety of administrative and academic functions, and
 - developed, streamlined, and managed budgets, resulting in increased budget stability.
- Currently serving (since 2016) as Assistant Chair for Distance Ed and Remote Programs, Civil, Architectural, and Environmental Engineering Department.
 - Updated Ft. Wood recruiting materials, and presentations
 - Streamlined advising meetings, forms, and processes for Ft. Wood students
 - Developed promotional materials for department's distance ed programs, including ads for KC and STL ASCE section newsletters and promotional flyers
 - Coordinating funds distribution for faculty teaching distance ed courses
 - Working with faculty to identify certificate program coordinators
 - Serving as advisor and/or inquiry point-of-contact for ~80 distance ed students, incl. ~15 Ft. Wood students each year
 - Helped develop data collection tool for faculty to use to provide information required by Army for its 1059-1 form for each of its students

Accreditation and assessment

- Have led program accreditation activities since the beginning of my professional academic career (fourteen on-site visits and successful program reviews to date), including
 - writing self-study documents,
 - development of continuing improvement processes and assessment tools,
 - engaging program constituents in required quantitative and qualitative data collection activities,
 - implementing data-driven curricular updates and modifications, and
 - convening alumni and industry panels to review and assess objectives.
- Led the development and accreditation of new and expanded inter-disciplinary degree program offerings at Missouri S&T based on analysis of local industry and student needs
- Certified and active ABET Program Evaluator (civil engineering and architectural).
 - Well-versed in accreditation software used for engineering program accreditation.
 - Provides excellent perspective of pedagogical innovations and curricular content improvements.

- Facilitated comprehensive curriculum reform in current department, focusing on increased flexibility to meet individual student needs.
- Served on several committees related to assessment, and strategic planning, including
 - HLC Institutional Assessment Committee
 - SACS Student Outcomes Assessment Task Force
 - Faculty Workload Task Force
 - Campus Strategic Planning Committee
 - Campus eLearning Committee
 - Administrative Reorganization Committee (External Affairs)
 - Resource Allocation Model Development Committee

Communication and interpersonal skills

- Skilled in making presentations to a variety of audiences, including advisory boards, senior university administrators, industry partners, department alumni, congressional delegations, potential donors, and at open houses.
- Often required to explain changing accreditation requirements to colleagues, peers, alumni, students, etc.
- Frequently asked to represent the university at variety of formal and informal community and industry-oriented events.
- Directed and led building/facilities tours for congressional delegations and admissions office personnel and their guests.
- Have mediated conflicts that have arisen between faculty or between faculty and staff.
- Have counseled faculty and students on career paths and growth opportunities.

Strategic planning

- Worked with faculty, staff, alumni, business leaders, and students to develop plans, initiatives, and goals that to set us apart from our competitor, as well as comparator, institutions.
- At current and previous institutions, led faculty and staff to write departments' first Five-Year Strategic Plans, including mission and vision statements, strategic goals, action items and attainment metrics.
- Recently completed new department-level strategic planning initiative that will set a course for our programs, faculty, and students through the year 2020 and beyond.
 - Faculty and alumni have a cohesive sense of purpose regarding the future of the department and its education, research, and technology transfer programs.
- Followed through on Strategic Plan development with annual progress reports to all major constituents.
- As interim dean, participated in national "Dean's Day on Capitol Hill", met with key representatives from Missouri, and worked with Advisory Council on directions, initiatives, and business trends.

Working with the entire University community

- Continually explored new methods of instruction to meet needs of both traditional and non-traditional students.
- Cooperation, unified sense of purpose, collaborative teaching and research activities now permeate the department.

- Faculty and staff operate in a working and learning environment in which all are motivated to work towards achieving their full potential.
- Alumni motivated to contribute their time, talents, and resources to support the department's programs and initiatives.
- Staff members in other parts of campus routinely seek employment opportunities in my department.
- Successfully engaged with colleagues and programs across campus.
 - Major supporter of the Missouri S&T Film Series as well as the newly established Hispanic Film Program on campus.
 - Faculty from English and Psychology departments frequent guest lecturers.
 - Primary contributor to saving Missouri S&T's Freshman Orientation Week Reading Program.
 - Thanks in great part to my leadership, the program was fully reinstated and should continue to operate in the years ahead.

The department is now a more integral part of the university community while still maintaining its leadership position on campus.
- Contributed to regional and national economic development by leading the restructuring of department curricula to render them more appropriate for the training of future engineering professionals.
- Increased the access of working professionals to our courses and degree programs using internet-based courses.
 - Developed an income-sharing arrangement with faculty and university that has resulted in a new income stream for the department.

Undergraduate students and programs

- Number of scholarships available to department students has more than doubled since my arrival at Missouri S&T, giving the department an enhanced ability to recruit exceptional undergraduate students.
- As interim dean, conducted a study regarding the feasibility of offering a biomedical engineering degree program at Missouri S&T.
- Led the development and accreditation of new and expanded inter-disciplinary degree program offerings at Missouri S&T to meet local industry and student needs, including
 - online distance-ed based MS and graduate certificate programs,
 - two new autonomous ABET-accredited undergraduate degree programs (architectural engineering and environmental engineering), and
 - one ABET-accredited undergraduate degree program at a satellite location in civil engineering.
- Worked to increase student participation in Study Abroad and co-op work programs.
 - Developing plans for required experiential learning curriculum component in accordance with Strategic Plan.
 - Active member of campus Study Abroad Advisory Committee.
- Missouri S&T undergraduate civil engineering program was ranked 24th nationally by the U.S. News and World Report in 2004, five years after my arrival.
 - This was the first time that any undergraduate engineering program in the State of Missouri had been nationally ranked.
 - As such, a very significant milestone in the growth of the department and its

programs had been reached!
I am very pleased to have been able to lead the department to this national recognition.

Graduate students and programs

- Led growth in the number of graduate student fellowships from two in 1999 to ten in 2014.
- Worked with faculty to develop distance education based courses and professional development seminars to increase the access of working professionals to our courses.
 - This has also created new income streams for the department.
- Worked with faculty to implement a revenue sharing program for tuition proceeds from distance ed courses.
- Engaged with the Engineer School at Ft. Leonard Wood to facilitate the delivery of graduate-level courses to Army personnel as part of its Engineer Captain's Career Course program.
- Developed MOUs with numerous international institutions (e.g. Ecole Centrale Nantes, University of Naples, University College of the Cayman Islands) to facilitate exchange of faculty and graduate students in several targeted areas of instruction and/or scholarship.

Faculty recruitment, retention, shared governance, and development

- Created an environment that fostered a four-fold increase in annual research awards in the department (from ~\$1.2M in 1999 to over \$5.4M in 2014).
 - Most growth came from multi- and inter-disciplinary activities involving faculty from several STEM and non-STEM departments across campus.
 - Faculty and their research programs more productive and more visible than ever before on national and international levels.
- Developed sustainable methods for providing start-up funds to new faculty, and for providing funding for faculty in support of professional development activities.
- As interim dean developed formal nomination and selection processes for faculty awards recognizing teaching excellence and innovation.
- Successful in increasing the number of full-time faculty by 50% in current department (from 16 in 1999 to 25 in 2014); have also worked diligently to increase faculty diversity.
- Regularly engaged faculty task forces to address key department-wide issues as they arise, including the development of a new
 - comprehensive promotion and tenure policy,
 - faculty workload policy that rewards high levels of scholarly productivity as well as teaching excellence,
 - faculty sabbatical leave policy,
 - graduate student handbook,
 - department-wide lab safety manual,
 - policy governing department support of graduate students of newly hired as well as recently departed faculty members,
 - graduate teaching assistant workload policy, and
 - post-tenure review policy as required by state law.
- Led the implementation of a new donor-supported Faculty Excellence Program to help reward and retain high-achieving junior faculty.
- Instrumental in securing alumni funding for three new endowed chaired professor positions.
- Successfully led the promotion and tenure process for five faculty in the department.

- Have been closely engaged in the hiring of senior as well as junior faculty in targeted strategic areas in the department.

Faculty mentoring activities

- Initiated departments' first formal mentoring activities and processes for new and junior faculty at previous and present institutions.
- Supported faculty trips to NSF and other funding agencies headquarters to meet with program directors and project managers.
- Personally review and edit proposal drafts for junior faculty when requested
- Partnered with senior faculty on proposals for graduate student support and laboratory equipment acquisitions.
- Valued and rewarded teaching excellence; nominate outstanding faculty for teaching awards.
- Nominated and supported faculty for prestigious national and international awards, programs and honoraria, including Fulbright Fellowship (three awarded so far), CAREER, Jefferson Science Fellowship, and Erskine Fellowship.
 - First to showcase faculty achievements through prominent plaque displays.

Commitment to diversity

- Completed the online “Academics for Black Survival and Wellness” workshop and training program
- Worked to ensure a campus environment that is supportive of all under-represented groups.
- Active mentor for students and junior colleagues from under-represented groups on various topics and professional issues, including
 - Developing professional contacts
 - Resume, job application review
 - Award nominations
 - Career path options
- Member of the Missouri S&T Coordinated Community Response Team, OVW Grant.
- Co-Chair of the Missouri S&T Title IX Curricular Development/Implementation Committee.
- Facilitated development of several efforts to help the campus achieve greater diversity.
- Served on Chancellor’s Advisory Council on African American Recruitment & Retention.
- Developed a course on professionalism and ethics that I am now sharing with other departments on campus and with other University of Missouri System institutions.
- Participated in workshops and training programs aimed at enhancing skills at facilitating diversity among faculty, staff, and students.
- Worked closely with search committees to increase diversity of faculty, staff, and students.
- Completed the Safe Space/Ally training program offered at Missouri S&T.
- Hired four female tenure-track faculty (two at Missouri S&T and two at UAHuntsville).
 - Mentored three of them through promotion & tenure processes; the fourth opted to pursue career with U.S. Army Corps of Engineers.
- Hired three Hispanic faculty (one tenure-track, one with tenure, one lecturer).
 - Mentored a fourth Hispanic faculty through the tenure and promotion process.
 - Promoted two Hispanic faculty to leadership positions in department administration.
- Helped fund Society of Women Engineers’ activities and trips.
- Sponsored new campus-wide Hispanic Film Program.

- Invited participant for Black Man's Think Tank workshop on academics and learning.
- Have hired female lecturers and adjunct faculty (ten so far at Missouri S&T) to teach graduate and undergraduate courses.
- Sponsored table for students to attend Minority in Engineering Program 40th anniversary dinner celebration.

Fundraising and marketing initiatives and achievements

- Facilitated a 400% increase in annual giving donations by the department's alumni (from ~\$30K 1999 to over \$120K in 2014).
 - This has increased stability in department's budget and annual expenditures; department operations not as susceptible to yearly budget fluctuations.
- Worked closely with University Advancement to update and follow through on my department's Fundraising Plan to reflect changing needs and priorities.
- Regularly met and worked with alumni and industry constituents to explore and capitalize on new partnership opportunities.
- Showcased alumni support through permanent plaque displays
 - *Bridges to the Future* – individual plaque displays for contributions of \$500,000+
 - *Hall of Fame* – plaque displays for alumni and industry sponsored scholarships; also listed are names of student scholarship or fellowship recipients.
- Worked with industry to secure nearly \$10M to support a planned laboratory expansion.
- Worked with administration, faculty, staff, students, and construction personnel to oversee \$23M renovation of civil engineering building at current institution.
 - Approx. 20% of the building renovation budget was provided by grants and gifts from alumni, industry, and corporations.
- Hired a communications / marketing communications specialist for my department, making it one of only two academic units on campus with an embedded communications specialist.
 - Marketing materials, communications, and public relations activities are outstanding and are very well received by all constituent groups.
 - Great variety of full-color publications mailed nation-wide to alumni, other department chairs, and engineering deans; publications include
 - *The Bridge* – our department's semi-annual newsletter
 - *Common Ground* – a new publication showcasing accomplishments of student groups and alumni support
 - *Faculty Scholarly Productivity* – a new publication highlighting faculty research and scholarly accomplishments
 - *New Faces* – a new brochure introducing new department faculty to the academic community
 - *Vision 2020* – the department's Strategic Plan
 - *By The Numbers* – a new flyer succinctly highlighting new and/or exciting departmental characteristics)

This has helped the department improve its ability to better inform alumni, constituents, and colleagues of the exciting activities and accomplishments of its faculty, students, and alumni.

Laboratory and facility management and safety initiatives

- Revitalized safety training programs for all department students.
- Participated in initial efforts aimed at securing ISO14001 designation for the campus.
- Met annually with campus Environmental Health and Safety personnel to review and maintain ISO14001 health and safety issues in department laboratories.
- Successfully mediated laboratory and other facility allocation issues.

REFEREED JOURNAL PUBLICATIONS

Berkhoff, A. Ingram, E., Rezaei, F., Smith, J., Bayless, D., Schonberg, W., and Han, D., “Kinetic Modeling of Electrostatic Transport of Lunar Regolith Particles: Case Studies for Concepts of Electrostatic Sieving”, *ASCE Journal of Aerospace Engineering*, submitted for publication consideration, December, 2022.

Schonberg, W.P., and Williamsen, J.E., “Characterizing the Largest Debris Cloud Particle Created by Thin Plate Impact”, *Journal of Spacecraft and Rockets*, accepted for publication, December, 2022.

Schonberg, W.P., “Extending the NNO Ballistic Limit Equation to Foam-Filled Dual Wall Systems”, *Applied Sciences*, Vol. 13, 2023, Article No. 800.

Schonberg, W.P., “Assessing the Predictive Capability of the NNO Ballistic Limit Equation for Low-Density Projectile Impact”, *ASCE Journal of Aerospace Engineering*, Vol. 36, No. 1, 2023, Article No. 04022119.

Schonberg, W.P., Haque, S., and Diaz-Merced, W., “Astronomy Education in the Caribbean: Conferences & Curricula”, *Caribbean Journal of Education*, Vol. 44, No. 1&2, 2022, pp. 56-72.

Hull, S., and Schonberg, W.P., “Spacecraft Passivation – An Overview of Requirements, Principles, and Practices”, *Journal of Spacecraft Safety Engineering*, Vol. 9, No. 4, 2022, pp. 553-560.

Schonberg, W.P., “Notes from Down Under: Some Thoughts from a Fulbright Distinguished Chair in Australia”, *Fulbright Chronicles*, Vol. 1, No. 2, July, 2022.

Schonberg, W.P., “A Comment on the Prediction of Metallic Plate Penetration by Fragment-Simulating Projectiles”, *Human Factors and Mechanical Engineering for Defense and Safety*, Vol. 6, March, 2022, Article No. 7.

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Schonberg, W.P., “Non-Catastrophic Perforation of a Composite Overwrapped Pressure Vessel”, *Acta Astronautica*, Vol. 174, 2020, pp. 41-47.

Schonberg, W.P., and Myers, L., “Technology as Art and Art as Technology – Educating Audiences through Artistic Endeavor”, *Caribbean Museums*, Vols. 2-3, April, 2018, pp. 24-44.

Schonberg, W.P., “Rupture of a Cryogenic Composite Overwrapped Pressure Vessel Following a High-Speed Particle Impact”, *Aerospace*, Vol. 5, 2018, Paper No. 20.

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“An Analysis of the Dynamic Response of the Space Station Freedom Due to a Module Perforation by an Orbital Debris Particle Impact”, *Future Leaders in Science and Engineering Symposium*, NASA/Marshall Space Flight Center, May, 1993.

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Schonberg, W.P., and Petersen, M.E., Predicting the Low Velocity Impact Response of Composite Beams, Final Report, University of Alabama in Huntsville Research Inst., July, 1990.

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Schonberg, W.P. and Taylor, R.A., Oblique Hypervelocity Impact Response of Dual-Sheet Structures, NASA TM-100358, Marshall Space Flight Center, February, 1989.

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Schonberg, W.P., Dynamic Impact of Beams: A Correlation of Experimental Results and Analytical Theories, Final Report, U. of Alabama Huntsville Research Inst, February 1988.

Schonberg, W.P., Taylor, R.A., and Horn, J., An Analysis of Penetration and Ricochet Phenomena in Oblique Hypervelocity Impact, NASA TM-100319, Marshall Space Flight

Center, February, 1988.

CONTRACTS AND GRANTS SUMMARY

NASA/BIG Idea Challenge, “Lunar In-Situ Aluminum Production through Molten Salt Electrolysis (LISAP-MSE)”, Co-Faculty Advisor; \$160,676; February to December, 2023; W.P. Schonberg: \$5,903.

NASA/LuSTR Program, “Regolith Beneficiation System for Production of Lunar Calcium and Aluminum”, Co-Principal Investigator; \$1,984,160; May 2022 to May 2024; W.P. Schonberg: \$198,416.

Missouri Department of Transportation (pooled funding project), “Assessment and Repair of Over-height Truck Impact with Prestressed Concrete Bridge Girders”; Co-Principal Investigator; \$770,000; January 2021 to December 2023; W.P. Schonberg: \$38,500.

Missouri Department of Transportation, “Using TDA for Bridge Applications”; Co-Principal Investigator; \$170,066; October 2019 to December 2021; W.P. Schonberg: \$8,503.

Missouri Department of Transportation, “Assessment and Repair of Corroded Steel H-Piles”; Co-Principal Investigator; December 2017 to July 2020; \$227,498; W.P. Schonberg: \$11,375.

Missouri Department of Transportation, “Field Implementation of Rubberized Chip Seal”; Co-Principal Investigator; September 2017 to December 2018; \$54,167; W.P. Schonberg: \$2,708.

Missouri University of Science & Technology, Online Course Development Grant; Principal Investigator; September 2016 to September 2017; \$5,000.

Missouri Department of Transportation, “Characterization and Performance of Zero-Cement Concrete for Longer Service Life of Bridges”; Co-Principal Investigator; October 2016 to April 2018; \$100,000; W.P. Schonberg: \$5,000.

U.S. Army Research Laboratory, “Compendium of Hypervelocity Impact Phenomena Research”; Principal Investigator; April 2015 to September 2015; \$24,801.

U.S. Army Research Office, “HVIS2015: The 2015 Hypervelocity Impact Symposium”; Principal Investigator; May 2015 to December 2015; \$7,500.

Missouri Department of Transportation, “Nondestructive Evaluation of MoDOT Bridge Decks - Pilot Study”; Co-PI; August 2013 to March 2014; \$53,089 (W.P. Schonberg: \$2,124).

Missouri Department of Transportation, “Recycled Concrete Aggregate (RCA) for Infrastructure Elements”; Co-Principal Investigator; October 2012 to May 2014; \$129,999 (W.P. Schonberg: \$6,500).

U.S. Department of Transportation/NUTC, “Adding Faculty in Transportation Areas”; Co-Principal Investigator; July 2012 to December 2013; \$433,920 (W.P. Schonberg: \$216,960).

U.S. Department of Transportation/NUTC, “Advanced Moisture Modeling of Polymer Composites”; Co-Principal Investigator; February 2012 to August 2013; \$50,000 (W.P. Schonberg: \$12,500).

Missouri Department of Transportation, “Polyurethane Foam Infill for Fiber-Reinforced Polymer (FRP) Bridge Deck Panels”; Co-Principal Investigator; December 2011 to May 2014; \$119,999; W.P. Schonberg: \$4,800).

Gulf University for Science and Technology, Kuwait, “Collaboration in Development of Programs in the New GUST College of Engineering”; Co-Principal Investigator; August 2008 to July 2013; \$1,956,700; (W.P. Schonberg: \$97,835; other S&T Co-PIs: \$1,858,865).

U.S. Army Research Office, “HVIS2007: The 2007 Hypervelocity Impact Symposium”; Principal Investigator; November 2006 to December 2007; \$9,950.

U.S. Department of Transportation/UTC, “Adding Faculty in Transportation Areas”; Principal Investigator; June 2006 to July 2008; \$468,878 (DOT: \$300,000; UMR Cost-Share: \$168,878).

National Science Foundation, “International Research Experience for Students (IRES) in Emerging Construction Technologies”; Co-Principal Investigator; April 2006 to March 2009; \$126,672 (W.P. Schonberg: \$27,868; other UMR Co-Principal Investigators: \$98,804).

21st Century Systems, Inc., “AmmoSIM Rubble Characterization Model”; Principal Investigator; May 2005 to December 2005; \$55,046 (W.P. Schonberg: \$22,018; other UMR Co-Principal Investigators: \$33,028).

U.S. Army Research Office, “HVIS2005: The 2005 Hypervelocity Impact Symposium”; Principal Investigator; July 2005 to December 2005; \$9,750.

Department of Transportation/UTC, “Enhancing Student Awareness and Faculty Capabilities in Transportation Engineering”; Principal Investigator; July 2004 to June 2006; \$150,121 (W.P. Schonberg: \$15,012; other UMR Co-Principal Investigators: \$135,110).

State of Missouri Research Board, “Acquisition of an Integrated Testing System for Civil Infrastructure Engineering Research and Education”; Co-Principal Investigator; August 2001 to July 2002; \$32,477 (W.P. Schonberg: \$3,248; other UMR Co-Principal Investigators: \$29,229).

National Science Foundation/Major Research Instrumentation Program, “Acquisition of an Integrated Testing System for Civil Infrastructure Engineering Research and Education”; Co-Principal Investigator; August 2001 to July 2002; \$483,321 (NSF: \$338,325; UMR Cost-Share: \$144,996; W.P. Schonberg: \$33,833/NSF + \$14,450/UMR).

Universal Technology Corporation/U.S. Air Force, "Structural Monitoring of Aircraft"; Co-Principal Investigator; August 2000 to December 2001; \$641,600 (W.P. Schonberg: \$64,160; other UMR Co-Principal Investigators: \$577,440).

Missouri Research Board, "Increasing the Safety of Manned Space Operations"; Principal Investigator; October 2000 to September, 2001; \$16,000.

U.S. Department of Transportation, "Operation of the UTCA Branch Office at the University of Alabama in Huntsville", Principal Investigator, January 1999 to August 1999; \$81,842 (USDOT: \$41,636; UAH: \$40,206 Cost Share).

Sandia National Laboratory, "HVIS98-SNL", Principal Investigator, July-Dec. 1998; \$10,250.

Army Research Office, "HVIS98", Principal Investigator, July 1998 to December 1998; \$5,000.

Alabama Space Grant Consortium, "1998 Hypervelocity Impact Symposium", Principal Investigator, July 1998 to December 1998; \$5,000.

NASA/Marshall Space Flight Center, "Characterization of Orbital Debris Impact Ejecta", Principal Investigator; August 1997 to August 1998; \$24,590.

NASA/Marshall Space Flight Center, "High Speed Impact Analysis II"; Principal Investigator; May 1996 to July 1997; \$16,313.

NASA/Graduate Student Researchers Program, "Space System Design Considerations of the Orbital Debris Environment: Year III"; Faculty Advisor; Sept 1994 to August 1995; \$22,000.

NASA/Marshall Space Flight Center, "High Speed Impact Analysis"; Principal Investigator; September 1994 to May 1995; \$53,961.

U.S. Army/Missile Command, "Projectile Impact Investigations in Analog Test Specimens: Phase II"; Principal Investigator; May 1993 to December 1993; \$25,000.

NASA/Marshall Space Flight Center, "Vulnerability of Space Station Freedom Modules: A Study of the Effect of a Module Perforation on Crew and Equipment"; Co-Principal Investigator; September 1993 to August 1994; \$253,464 (W.P. Schonberg: \$39,759; G.R. Hough: \$213,705).

NASA/Graduate Student Researchers Program, "Space System Design Considerations of the Orbital Debris Environment: Year II"; Faculty Advisor; Sept 1993 to August 1994; \$22,000.

Air Force Office of Scientific Research, "Characterizing the Solid Fragment Population in a Debris Cloud Created by a Hypervelocity Impact"; Principal Investigator; January 1993 to December 1993; \$25,074 (AFOSR: \$19,991; UAH: \$5,083 Cost-Share).

NASA/Graduate Student Researchers Program, "Space System Design Considerations of the Orbital Debris Environment, Year I"; Faculty Advisor; Sept 1992 to August 1993; \$22,000.

NASA/Graduate Student Researchers Program, "Hypervelocity Impact of Habitable Spacecraft Modules: Year III"; Faculty Advisor; June 1992 to May 1993; \$22,000.

U.S. Army/Missile Command, "Projectile Impact Investigations in Analog Test Specimens: Phase I"; Co-Principal Investigator; August 1991 to September 1991; \$25,000 (W.P. Schonberg: \$11,586; T.A. Neely: \$13,414).

NASA/Graduate Student Researchers Program, "Hypervelocity Impact of Habitable Spacecraft Modules: Year II"; Faculty Advisor; June 1991 to May 1992; \$22,000.

NASA/Graduate Student Researchers Program, "Hypervelocity Impact of Habitable Spacecraft Modules: Year I"; Faculty Advisor; June 1990 to May 1991; \$22,000.

NASA/Marshall Space Flight Center, "Nodes and Airlocks - Meteoroid/Debris Protection"; Principal Investigator; March 1990 to December 1992; \$116,977.

Engineering Foundation/American Society of Mechanical Engineers, "Predicting the Response of Space and Aerospace Structures to Hypervelocity Debris Particle Impact"; Principal Investigator; September 1989 to May 1991; \$20,000.

NASA/Marshall Space Flight Center, "Hypervelocity Impact Data Analysis for the Design of Space Station Meteoroid and Space Debris Protection Systems"; Principal Investigator; January 1989 to March 1990; \$76,988.

UAH/Research Institute, "Predicting the Impact Response of Composite Beams"; Principal Investigator; January 1989 to December 1989; \$2,485.

UAH/Research Institute, "Failure Analysis for Beams through the Study of Internal Stress Fields"; Principal Investigator; January 1988 to December 1988; \$1,492.

NASA/Marshall Space Flight Center, "Stress and Fatigue Study of Formed Metal Bellows"; Co-Principal Investigator; October 1987 to March 1989; \$186,561 (W.P. Schonberg: \$64,669; G.R. Guinn: \$121,892).

UAH /Research Institute, "Dynamic Impact of Beams - A Correlation of Experimental and Analytical Theories"; Principal Investigator; March 1987 to February 1988; \$1,237.

RESEARCH AWARDS AND FELLOWSHIPS

- Fulbright Specialist Program Award, U.S. State Department, 2019 – 2024 (\$TBD).
- Fulbright Distinguished Chair Award, U.S. State Department, 2018 (\$42,125).
- NASA/ASEE Summer Faculty Fellowship Program, Jet Propulsion Laboratory, 2016 (\$17,550).
- NASA/ASEE Summer Faculty Fellowship Program, Jet Propulsion Laboratory, 2014 (\$13,500).

- Friedrich Wilhelm Bessel Research Award, Humboldt Foundation, 2007 (€40,000).
- NASA/ASEE Summer Faculty Fellowship Program, Jet Propulsion Laboratory, 2006 (\$12,000).
- NASA/ASEE Summer Faculty Fellowship Program, Marshall Space Flight Center, 1995 (\$11,000).
- NASA/ASEE Summer Faculty Fellowship Program, Marshall Space Flight Center, 1994 (\$10,000).
- Air Force Office of Scientific Research/Summer Faculty Research Program, Wright Laboratory, Eglin Air Force Base, 1993 (\$13,080).
- Air Force Office of Scientific Research/Summer Faculty Research Program, Wright Laboratory, Eglin Air Force Base, 1992 (\$12,760).
- NASA/ASEE Summer Faculty Fellowship Program, Marshall Space Flight Center, 1988 (\$8,000).
- NASA/ASEE Summer Faculty Fellowship Program, Marshall Space Flight Center, 1987 (\$8,000).
- Walter P. Murphy Fellowship, Northwestern University, 1981; \$5000.

PANELS AND WORKSHOPS

- “Arecibo Observatory Options Workshop”, NSF (*by invitation only*), June, 2021.
- “Space Futures Forum / Space: Education for All”, Yuri’s Night 2021, Caribbean Space Society, Jamaica, April, 2021 (Virtual/Online).
- “Fulbright Scholar Showcase”, Canberra, Australia, February, 2019.
- “A Conversation on Learning”, Black Man’s Think Tank, Missouri S&T, May, 2015.
- “Gender and Tertiary Education”, University College of the Cayman Islands, March, 2012.
- “Leadership in Education”, University College of the Cayman Islands, March, 2011.
- “Effect of Technology on Higher Education”, Panel Member, Princeton University, June, 2006.

PODCASTS / V-LOGS / ETC RECORDED

Guest Appearance on “Exploring Our Universe”, IE-TV (with S. Haque), Trinidad & Tobago, June, 2019.

“Space Junk and Shield Technology”, Australian Research Council Center of Excellence for Mathematical and Statistical Frontiers, Ep 13 (with S. Ryan), February, 2019. <https://acems.org.au/podcast/episodes12-13-space-junk-shield-tech>

GUEST LECTURER

“Professionalism and Ethics in Engineering Practice – Global Issues and Case Studies”, *Senior Seminar (CivE 4010)*, Missouri S&T, Rolla, Missouri, November, 2021.

“Ethics in Professional Engineering Practice”, *Senior Seminar (CivE 4010)*, Missouri S&T, Rolla, Missouri, October, 2022, October, 2021; September, 2020; October, 2019.

“Living and Working in Low Earth Orbit: The Looming Danger of Space Debris”, *IllinoisX Space Technology (MOOC)*, University of Illinois, Urbana, Illinois, February 2021.

“Ethics in Professional Engineering Practice”, *Senior Seminar (CivE 4010)*, Missouri S&T, Rolla, Missouri, September, 2020.

“Professionalism and Ethics”, *Current Topics and Professionalism in Geological Engineering (GeoE 4010)*, Missouri S&T, Rolla, Missouri, April, 2020.

“How to Presentation: In-Person vs Online”, *Management Capstone Project (MGT 450-1)*, University College of the Cayman Islands, Grand Cayman, March, 2020.

“How to Presentation: In-Person vs Online”, *Strategic Management and Marketing (MGT 431-1)*, University College of the Cayman Islands, Grand Cayman, March, 2020.

“Ethics in Professional Engineering Practice”, *Senior Seminar (CivE 4010)*, Missouri S&T, Rolla, Missouri, October, 2019.

“An Introduction to the Modelling of High-Speed Impact Phenomena”, *Impact Dynamics (ZEIT 4014)*, University of New South Wales (Canberra), Australia, May, 2019.

“Engineering Ethics and Professionalism”, *Professional Practice and Ethics (ChemE 2310)*, Missouri S&T, Rolla, Missouri, February 2018.

“Engineering Ethics and Professionalism”, *Professional Practice and Ethics (ChemE 2310)*, Missouri S&T, Rolla, Missouri, February, 2017.

“Engineering Ethics and Professionalism”, *Professional Practice and Ethics (ChemE 2310)*, Missouri S&T, Rolla, Missouri, February, 2016.

“Engineering Ethics and Professionalism”, *Professional Practice and Ethics (ChemE 2310)*, Missouri S&T, Rolla, Missouri, January, 2015.

SEMINARS

“Living and Working in Low Earth Orbit: The INCREASING Danger of Space Debris”, Missouri S&T Astronomical Research Society, Rolla, MO, March, 2022.

“The Sky is Falling! The Sky is Falling! A Brief Primer on the Problem of Space Debris”, AIAA Sydney Section, Sydney, October, 2021 (see also, <https://aerospaceamerica.aiaa.org/bulletin/december-2021-aiaa-bulletin/> and https://youtu.be/hZggVfwz_6s).

“The Sky is Falling! The Sky is Falling! A Brief Primer on the Problem of Space Debris”, Australia New Zealand Space Law Council, Adelaide, Australia, July 2021 (<https://youtu.be/txn9pl9UZpw>).

“Heavens, What a Mess! The Looming Danger of Space Debris”, Missouri S&T Astronomical Research Society, Rolla, MO, February, 2021.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Civil Air Patrol, St. Louis Squadron, St. Louis, MO, November, 2020.

“Living and Working in Low Earth Orbit: The Looming Danger of Space Debris”, Space Week 2020, Missouri S&T, Rolla, MO, November, 2020.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Special Lecture, University of Missouri System Engagement Week, October 2020.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Digital Lunch and Learn, Division of Cont Education, Missouri S&T, Rolla, Missouri, October, 2020.

“STEM for Everybody! The Importance of Universal Technological Education”, Crawford Country Extension Council, Annual Meeting, Steelville, Missouri, March, 2020.

“Improved Prediction of Terminal Ballistic Events Using Advanced Penetration Algorithms”, U.S. Army Research Lab, Aberdeen, Maryland, October, 2019.

“L’armour! Toujours L’armour!”, We Dig Research Presentation, Missouri S&T, Rolla, MO, September, 2019.

“Improved Prediction of Terminal Ballistic Events Using Advanced Penetration Algorithms”, Fulbright Seminar, Defense Science and Technology Group, Melbourne, Australia, July, 2019.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Special Lecture, Australian Youth Aerospace Association, Melbourne, Australia, July, 2019.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Special Seminar, Physics Department, University of Melbourne, Melbourne, Australia, June, 2019.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Mt. Stromlo Observatory, Canberra, Australia, 2019.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Special Seminar, RAAF Air Power Development Center, Canberra, Australia, May, 2019 (<https://www.youtube.com/watch?v=3382msvD0C8>).

“Deterministic Analysis in a Stochastic World: Some Comments on Spacecraft Risk by Orbital Debris Impact”, NUMBAT Special Seminar, Monash University, Australia, May, 2019 (*joint presentation with Dr. S. Ryan*).

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Fulbright Public Lecture, University of Tasmania (Hobart), Australia, April, 2019.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Fulbright Public Lecture, Australian Maritime College, University of Tasmania (Launceston), Australia, March, 2019.

“Can the Rupture of a Composite Overwrapped Pressure Vessel Following an Orbital Debris Particle Impact Be Predicted Using A Simple Equation?” Special Seminar, Australian Maritime College, University of Tasmania (Launceston), Australia, March, 2019.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Special Seminar, Mechanical Engineering Department, Swinburne University, Australia, March, 2019.

“Heavens, What a Mess! Understanding and Dealing with the Problem of Space Debris”, Black Box Lecture Series, Defense Science and Technology Group, Department of Defense, Australia, March 2019.

“FE Exam Review: Ethics, Professionalism, and Licensure”, Civil, Architectural, and Environmental Engineering Department, Missouri S&T, Rolla, Missouri, April, 2018.

“The Ethics of Engineering Design and Risk”, Chi Epsilon Chapter Meeting, Missouri S&T, Rolla, Missouri, October, 2016.

“Studies of Hypervelocity Impact Phenomena as Applied to the Protection of Spacecraft Operating in the MMOD Environment”, The Aerospace Corporation, El Segundo, California, July, 2016.

“Heavens, What a Mess!”, Special Seminar, Physics Department, University of the West Indies, St. Augustine, Trinidad & Tobago, November, 2015.

“Engineering Ethics and Sustainable Design”, Special Seminar, College of Engineering, University of Missouri, Columbia, Missouri, April, 2015.

“Heavens, What a Mess! How to Deal with the Problem of Space Debris”, St. Louis Academy of Science, St. Louis, Missouri, October, 2014 (<https://www.youtube.com/watch?v=Liv3uD7Nh1E>, starting at 3:09).

“The Ethics of Risk in Engineering Design”, Stonehenge Brigade, Army ROTC, Missouri S&T, Rolla, Missouri, October, 2014.

“The Ethics of Sustainable Design”, Chi Epsilon Chapter Meeting, Missouri S&T, Rolla, Missouri, September, 2014.

“The Ethics of Engineering Design and Risk”, NASA/Jet Propulsion Laboratory, Pasadena, California, August, 2014.

“Heavens, What a Mess!”, Special Seminar, Department of Aeronautics and Astronautics, Stanford University, Palo Alto, California, July, 2014.

“Space Junk”, Cayman Society of Architects, Surveyor, and Engineers, Georgetown, Grand Cayman, April, 2014.

“Heavens, What a Mess!”, Chi Epsilon Chapter Meeting, Missouri S&T, August, 2013.

“MMOD Risk Assessment: Some Recent Developments and Some Suggestions for the Future”, NASA/Jet Propulsion Laboratory, Pasadena, California, December, 2012.

“Heavens, What a Mess!”, Special Seminar, Physics Department, University of Illinois at Urbana-Champaign, November, 2012.

“Heavens, What a Mess!”, Rockwood School District, Partners in Education Program, May, 2012.

“Heavens, What a Mess!”, MAE Department Graduate Seminar Series, Missouri S&T, September, 2011.

“Heavens, What a Mess!”, Chi Epsilon Chapter Meeting, Missouri S&T, February, 2010.

“Heavens, What a Mess!”, Linda Hall Library Seminar Series, Kansas City, Missouri, October, 2009.

“Space Debris – An Overview of Key Issues and Satellite Insurance Considerations”, Swiss Re, Kansas City, Missouri, October, 2009.

“Orbital Debris – aka Space Junk”, Missouri Society of Professional Engineers, 72nd Annual Convention, Branson, Missouri, June, 2009.

“Sustainable Lunar Habitat Protection against Damage by Meteoroid Impacts”, Sigma Gamma Tau Chapter Meeting, Missouri S&T, February, 2008.

“Assessing and Reducing the Vulnerability of Future Earth-Orbiting and Lunar Missions”, Fraunhofer Ernst Mach Institute, Freiburg, Germany, December, 2007.

“Protecting Lunar Habitats against Meteoroid Impact Damage”, European Space Agency, Science, Technology, and Engineering Center, Noordwijk, The Netherlands, November, 2007.

“Filling the Pipeline: Providing Engineering Graduates to Meet National Needs”, TL07: The 2007 Transmission Line Symposium, Kansas City, Missouri, April, 2007.

“Heavens, What a Mess!”, Adler Planetarium, Chicago, Illinois, April, 2006.

“The Mysteries of Stonehenge”, University of Missouri-Rolla, Freshman Seminar, Rolla, Missouri, February, 2006.

“Faculty Licensure: Pros and Cons”, American Society of Civil Engineers Annual Meeting, Baltimore, Maryland, October, 2004.

“Heavens, What a Mess!”, American Institute of Aeronautics and Astronautics, Missouri Section Meeting, March 2004.

“Heavens, What a Mess!”, Society of American Military Engineers, Mid-Missouri Chapter Meeting, February, 2004.

“Space Debris and Space Junk”, Sigma Xi, Rolla Chapter Meeting, February 2003,

“Space Debris and Space Junk”, Missouri Society of Professional Engineers, Lake Ozark Section Meeting, September, 2002.

“Space Debris and Space Junk”, UMR Mechanical and Aerospace Engineering Department Seminar Series, January, 2001.

“Dealing with the Problem of Space Debris”, Chi Epsilon Luncheon Meeting, ASEE Annual Convention, St. Louis, Missouri, June, 2000.

“Heavens, What a Mess!”, UMR Civil Engineering Department Seminar Series, September 1999; .

“Heavens, What a Mess!”, UAH ElderHostel Session, May, 1997.

“Heavens, What a Mess!”, UAH Lifelong Learning Academy, Huntsville, Alabama, Oct, 1996.

“Space Station Crew Risk Assessment”, University of Alabama System Board of Trustees Meeting, Huntsville, Alabama, April, 1996.

“Cracking Characteristics of a Habitable Module Pressure Wall Following Orbital Debris Penetration”, NASA/Marshall Space Flight Center, Alabama, August, 1994.

“The Status and Use of the UAH Aerophysics/Propulsion Facility”, Co-Speaker with Gerald R. Guinn and Roy A. Taylor, Mechanical Engineering Seminar Series, University of Alabama in Huntsville, March, 1990.

“Hypervelocity Impact Testing for Space Station Applications”, Department of Mechanical Engineering Seminar Series, University of Alabama in Huntsville, November, 1988.

“Further Investigation of Oblique Hypervelocity Impact Phenomena”, NASA/Marshall Space Flight Center, August, 1988.

“Hypervelocity Impact Studies for the Space Station”, American Society of Civil Engineers, Alabama Section, Annual Conference, Huntsville, Alabama, April, 1988.

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (*Fellow*); American Society of Mechanical Engineers (*Fellow*); American Institute of Aeronautics and Astronautics (*Associate Fellow*); American Society of Engineering Education (Member); Chi Epsilon (*Honor Member*, Missouri S&T); Hypervelocity Impact Society (*Distinguished Scientist*); Caribbean Astronomy for Inclusivity (Member)

DOCTORAL STUDENTS SUPERVISED

- Asareh, Mohammad-Amin, Dynamic Behavior of Operational Wind Turbines Considering Aerodynamic and Seismic Load Interaction, May, 2015.
- Minggang Zhou, Further Studies of Non-Hertzian Contact and Low Velocity Impact Phenomena, December, 1999.
- Mohamed Tarek Sayyah, A New Failure Criterion for the Space Shuttle Main Engine High Pressure Turbopump, August, 1999.
- Ahmed Ebrahim, Analytical Modeling of the Oblique Hypervelocity Impact of Thin Plates, June 1998.
- Patrick Tobbe, Substructure Modal Selection for Multi-Body Dynamic Simulations, June 1995.
- Thomas Howsman, Dynamics of Geometrically Non-Linear Multi-Body Systems, June 1993.

MASTERS THESIS STUDENTS SUPERVISED

- Madhukar Singh, Adhesively Bonded Patch Repair of Aircraft Fuselages with Simultaneous Cracking and Corrosion Damage, August, 2002.
- Paresh Kumar, Adhesively Bonded Patch Repair of Corroded Aircraft Fuselages under Fatigue Loads, August, 2002.
- Kuifeng Hu, Ballistic Limit Curves for Non-Spherical Projectiles Impacting Dual-Wall Structures, June, 2002.
- Dominik Depczuk, Modelling Oblique Hypervelocity Impact Phenomena, June, 2001.
- Gregory Kruse, Modelling Micro-Debris Created in a Hypervelocity Impact on a Complex Target, June, 1999.
- Hill, Ashley, A Structural Dynamic Analysis of the METEOR Rocket Post-Launch Failure, December, 1996.
- Toby Norris, A Finite Element Study of Linear and Non-Linear Effects for a Two-Dimensional Surface Contact Problem, June, 1995.
- Matthew Triplett, Static and Dynamic Finite Element Analysis of Honeycomb Sandwich Structures, June, 1995.
- Mohamed Tarek Sayyah, Effect of Setback Distance on Steel T-shaped Connection Response, December, 1994.
- Robert Vaughan, An Inelastic Analysis of a Welded Aluminum Joint, June, 1994.
- William Jolly, Analytical Prediction of Hole Size due to Hypervelocity Impact of Spherical Projectiles, December, 1993.
- Gregory Olsen, Crack Growth Initiation in a Habitable Spacecraft Module due to an On-Orbit Hypervelocity Impact, June, 1993.
- Eve Walker, Hypervelocity Impact of Habitable Spacecraft Modules, December, 1992.

- Minggang Zhou, Further Studies in the Analysis of Contact and Low Velocity Impact Phenomena, December, 1992.
- John Celestian, Dynamic Response of Space Station Freedom Caused by a Module Perforation from a Hypervelocity Impact, June, 1992.
- F-W Yang, Response of Space Structures to Orbital Debris Particle Impact, December, 1991.
- Jeff Peck, Asymmetric Indentation of a Finite Elastically Supported Beam, December, 1991.
- Edmond Limoge, Optimum Ringframe Size and Spacing to Inhibit Yielding in Short Cylindrical Sections, June, 1990.
- Philip Beasley, Stress Analysis of U-Shaped Formed Metal Bellows, December, 1990.

EXTERNAL GRADUATE STUDENT COMMITTEE SERVICE

- Brooke Myers, PhD Committee Member, University of Denver, 2008.
- Shannon Ryan, PhD Committee Member, Royal Melbourne Institute of Technology, 2007.
- Timothy Maclay, PhD Committee Member, University of Colorado-Boulder, 1996.

NON-THESIS MASTERS STUDENTS SUPERVISED

- Deidra Rodgers, Missouri S&T (on-campus) December, 2021.
- William Hess, University of Alabama in Huntsville, June, 1996.
- 51 non-thesis MS students graduated since 2016 as part of distance ed program (avg ~13 students per year)
- 64 non-thesis MS students graduated since 2016 as part of cooperative program with the DoD through Ft. Leonard Wood (avg ~13 students per year)

JOURNAL EDITORIAL BOARD MEMBERSHIPS

International Journal of Impact Engineering (Elsevier Publishers)

- Associate Editor, 2021 – present.
- Member, Editorial Advisory Board, 2011 – 2020.
- Guest Editor, Special Issues: Proceedings of the 2005 (*IJIE Vol. 35*), 2007 (*IJIE Vol. 35*), 2010 (*IJIE Vol. 38*), and 2012 (*IJIE Vol. 56*) Hypervelocity Impact Symposia.

TECHNICAL CONFERENCE ACTIVITIES

Conferences Organized

- *2015 Hypervelocity Impact Symposium*, Boulder, Colorado, 2015; Symposium Co-Chair.
- *2007 Hypervelocity Impact Symposium*, Williamsburg, Virginia, 2007; Technical Program Co-Chair.
- *2005 Hypervelocity Impact Symposium*, Squaw Valley, California, 2005; Technical Program Co-Chair and Symposium Treasurer.
- *1998 Hypervelocity Impact Symposium*, Huntsville, Alabama, 1998; Symposium Chair.

Technical / Conference Program Committee Membership

- *Towards a Corruption-Free Caribbean: Ethics, Values, Trust, and Morality*, 2014 (Grand Cayman, BWI).
- *Hypervelocity Impact Symposium*, 2000 (Houston, TX), 2003 (Noordwijk, The Netherlands), 2005 (Squaw Valley, CA), 2007 (Williamsburg, VA), 2010 (Freiburg, Germany), 2012 (Baltimore, MD), 2019 (Destin, FL).
- *Computational Ballistics 2005*, Spain, 2005.
- *Structures under Shock and Impact VIII*, Greece, 2004.
- *20th International Ballistics Symposium*, Orlando, FL, 2002.
- *12th International Conf on Shock Compression of Condensed Matter*, Atlanta, GA, 2001.
- *SPIE Symposium on the Characteristics and Consequences of Orbital Debris and Natural Space Impactors*, Denver, CO, 1996.
- *AIAA Space Pgms and Technologies Conf and Exhibit*, Huntsville, AL, 1994 to 1996.
- *Young Faculty Research Symposium*, UAH, Huntsville, Alabama, 1996.

Sessions Organized

- *Survivability*, AIAA SciTech Forum and Exposition, Orlando, FL, 2020.
- *Orbital Debris Impact Modeling and Impact Effects*, AIAA Space Programs and Technologies Conference and Exhibit, Huntsville, AL, 1996.
- *Lethality Code Validation for Civilian and Military Space Applications*, AIAA Space Programs and Technologies Conference and Exhibit, Huntsville, AL, 1994 and 1995.

PROFESSIONAL/TECHNICAL COMMITTEES

International

- Hypervelocity Impact Society Board of Directors; Member, 2000 to 2007, 2012 to 2022; President, 2000 to 2003, 2017 to 2019; Past-President 2003 to 2005, 2019 to 2022; Secretary / Treasurer, 1998 to 2000.
- Publications Committee, Hypervelocity Impact Society; Member, 2003 to 2005; Chair, 2005 to 2012.
- Educational Outreach Committee, Hypervelocity Impact Society; Member, 1994 to 1996.

National

- Mars Sample Return (MSR) Micrometeoroid and Orbital Debris Protection Review, NASA Engineering and Safety Center, April 2021 to present.
- Survivability Technical Committee, American Institute of Aeronautics and Astronautics (AIAA), July 2018 to present.
- Standards Development Committee for Structures, Structural Components, and Structural Assemblies, American Institute of Aeronautics and Astronautics, 2019 to 2021.
- MMOD Pressure Vessel Failure Criteria Independent Review and Assessment, NASA Engineering and Safety Center, September 2015 to 2021.

- Assessment of Spacecraft Passivation Techniques, NASA Engineering and Safety Center, October 2018 to 2020. Team Lead, Pressure Vessel Analysis Sub-Team.
- JPSS MMOD Assessment, NASA Engineering and Safety Center, May 2014 to May 2015.
- Committee for the Assessment of the U.S. Air Force's Astrodynamics Standards, NAE / National Research Council; Member, September 2011 to June 2012.
- Committee on the Assessment of NASA's Orbital Debris Programs, NAE/National Research Council; Member, November 2010 to June 2011.
- Lightweight Installable MMOD Shield Concepts for ISS Modules, NASA Engineering and Safety Center, January 2010 to February 2011.
- Independent Review of US and Russian PRAs for MRM-2 MMOD Risk Calculations, NASA Engineering and Safety Center, November 2009 to December 2009.
- Independent Review of Constellation (Cx) MMOD Risk Analysis Committee, NASA Engineering and Safety Center, August 2008 to April 2009.
- Standards Development Committee for Structures, Structural Components, and Structural Assemblies, AIAA/U.S.A.F. Space and Missile Systems Center, August 2004 to July 2005.
- Independent Meteoroid/Orbital Debris Risk Assessment Tool Validation and Verification Committee, NASA Engineering and Safety Center, August 2004 to June 2005.
- Committee on Space Shuttle Meteoroid/Orbital Debris Risk Management, NAE/National Research Council; Member, April 1997 to October, 1997.
- Weapons System Effectiveness Technical Committee, American Institute of Aeronautics and Astronautics; Charter member, 1995 to 1998.
- NASA/Boeing Space Station Freedom Meteoroid/Debris Working Group; 1988 to 1993.

Regional

- Associate Fellows Nominations Review Committee, AIAA / St. Louis Section, 2007 to 2018.
- Missouri Transportation Institute; Board of Directors, 2006 to 2007.
- Missouri Department of Transportation Peer Review Program; Committee Member, 2001.
- Missouri Transportation Research and Education Council; Executive Committee Member; 1999 to 2004.
- State of Alabama University Transportation Center; Board of Directors, 1998 to 1999.
- American Society of Civil Engineers, Huntsville Branch, Treasurer and Member of the Board of Directors, 1990 to 1992.
- Impact Mechanics Working Group, Aerophysics Research Center; Chair; 1990 to 1991.

MAJOR UNIVERSITY COMMITTEES

Missouri University of Science and Technology (formerly University of Missouri – Rolla) (1999-present)

- ADVANCE Program Faculty Advocate; CArE Engineering Department; 2023 to present.
- Faculty Senate; Department Representative; 2019 to present.
- Student Success in Mechanics Courses Task Force; Member; CArE Engineering Department; 2020 to present.

- Non-Tenure Track Faculty Promotion Policy Review Committee; Member; CArE Engineering Department; 2020 to present.
- ABET Resource Person; Campus and Department; 2019 to 2020.
- Faculty Post-Tenure Policy Task Force; Member; CArE Engineering Dept; 2019 to 2020.
- Promotion and Tenure Review Policy Task Force; Member; CArE Engineering Dept; 2020.
- Faculty Workload Policy Task Force; Member; CArE Engineering Dept; 2019 to 2020.
- COVID-19 Rapid Response Course Transition Task Force; Chair; CArE Engineering Department; 2020.
- Budget & Planning Task Force; Member; CArE Engineering Department; 2020.
- Study Abroad Committee; Member, 2009 to 2020.
- Coordinated Community Response Team, OVW Campus Grant; Member; 2016 to 2018.
- Ad Hoc Committee on Distance and Remote Programs, College of Engineering, Co-Chair; May 2018 to October 2018.
- Faculty Workload Policy Task Force; Member; CArE Engineering Dept; 2017 to 2018.
- Campus Tenure Policy Committee; Member; 2017 to 2018.
- Campus Promotion and Tenure Committee; Department Representative; 2016 to 2018.
- College of Engineering, Discipline Specific Promotion and Tenure Committee; Member; 2016 to 2018.
- Faculty Senate Discipline Specific Curriculum Committee; Member; 2016 to 2018.
- Graduate Student Assignment and Workload Task Force; Member; CArE Engineering Department; 2016 to 2018.
- Title IX Curricular Developm'ent & Implementation Cmte; Co-Vice Chair; 2014 to 2016.
- Career Opportunities Center Advisory Board; Member, 1999 to 2015.
- Committee of Department Chairs; Member, 1999-2015; Chair, 2001 to 2002.
- Campus Strategic Planning Committee; Member, 2012 to 2013.
- President's Awards for University Citizenship Advisory Committee; Member, 2012.
- Campus eLearning Committee; Member, 2009 to 2011.
- HLC Institutional Assessment Committee; Member, 2008 to 2011.
- *ad hoc* Committee on (Re)defining the Role of the Department Chair at Missouri S&T; Member, 2009 to 2010.
- Graduate Student Stipend Task Force; Chair, 2008 to 2009.
- Jones Chaired Professorship Search Committee; CArE Engineering Dept; Chair, 2007 to 2010.
- *ad hoc* Committee on Biomedical Engineering; Member, 2006 to 2007.
- Administrative Reorganization of External Affairs Committee; Member, 2006 to 2007.
- Vice Provost for Research Search Committee; Member, 2006.
- Resource Allocation Model Committee; Member, 2004 to 2005.
- Missouri Transportation Institute Executive Director Search Committee; Member, 2004.
- Missouri Transportation Institute Steering Committee; Member, 2003 to 2004.
- Blue Ribbon Task Force on Faculty Workload; Member, 2002 to 2003.

University of Alabama-Huntsville
(1986-1999)

- Faculty Research Awards Committee (Chair)
- Faculty Integrity Committee
- Faculty Senate; Member (6 years), Secretary (4 years)

- Admissions & Scholastic Affairs Committee
- Curriculum Committee
- Library Appropriations Committee (Chair)
- School of Engineering Dean Search Committee
- Strategic Planning Committee
- SACS Student Outcomes Assessment Task Force
- Student Recruitment and Retention Committee (Chair)
- Faculty Panel, New Student Orientation

PEER REVIEW ACTIVITIES

Journals: AIAA Journal, Composites Engineering, International Journal of Impact Engineering, International Journal of Solids and Structures, Journal of Aerospace Engineering, Journal of Aircraft, Journal of Applied Mechanics, Journal of Engineering Mechanics, Journal of Sound and Vibration, Journal of Spacecraft and Rockets, Proceedings of the IMechE, Part G (Aerospace Engineering), Space Debris.

Funding Agencies: Fulbright Scholars Program, NSF Graduate Student Research Program, AFOSR Summer Faculty Fellowship Program, ISS National Laboratory (Advanced Manufacturing & Materials), European Research Council, Connecticut Innovations Incorporated, International Science Foundation (Canada), NDSEG Fellowship Program (ASEE); Center for the Advancement of Science in Space (CASIS); American Council of Engineering Companies of Missouri; Defense Intelligence Agency.

PROFESSIONAL REGISTRATION

- Professional Engineer, State of Missouri, Reg. No. 2000158254
- Professional Engineer, State of Alabama, Reg. No. 20720

PROFESSIONAL DEVELOPMENT

- Arecibo Observatory Options Workshop, NSF (*by invitation only*), June, 2021.
- 2020 Orbital Debris Workshop, Center for Orbital Debris Education and Research, University of Maryland, December, 2020.
- Academics for Black Survival and Wellness Training Workshop, August, 2020.
- 2018 Orbital Debris Workshop, Center for Orbital Debris Education and Research, University of Maryland, November, 2018.
- Short Course on Blast and Impact Resistant Design, Wessex Institute of Technology, November, 2015.
- 2014 Orbital Debris Workshop, Center for Orbital Debris Education and Research, University of Maryland, November, 2014.
- New AISC Construction Management Teaching Aids, AISC, Chicago, Illinois, April, 2006.
- ExCEED Two-Day Mini-Workshop, Missouri S&T, Rolla, Missouri, October, 2004 (host and sponsor).
- Teaching and Scholarship in the Grand Tradition of Modern Engineering II, Princeton University, August, 2004.

- ExCEED Teaching and Learning Seminar, ASCE, Nashville, Tennessee, November, 2003.
- ABET Evaluator Training Workshop, ASCE, Nashville, Tennessee, November, 2003.
- Teaching and Scholarship in the Grand Tradition of Modern Engineering I, Princeton University, May, 2003.
- Blackboard Workshop, UMR, Rolla, Missouri, August, 2002.
- Research Management Peer Exchange, Missouri DOT, Jefferson City, Missouri, April, 2002.
- New Developments in Teaching Structural Steel Design, AISC Workshop, AISC, New York City, October, 1999
- ABET EC2000 Faculty Workshop, ABET, Atlanta, Georgia, December, 1998
- Scale Modeling in Engineering Dynamics, Southwest Research Institute, San Antonio, Texas, June, 1991.
- ACI/PCA 318-89 Building Code Seminar: Recent Changes in the Concrete Building Code Requirements, ACI, Birmingham, Alabama, October, 1990
- The Growing Challenge: A Short Course on Dealing With Orbital Debris, Southwest Research Institute, San Antonio, Texas, March, 1990.

TEACHING ACTIVITIES

Undergraduate Courses: Engineering Law and Ethics (*at UCCI*), Statics, Dynamics, Structural Analysis I and II, Soil Mechanics, Structural Steel Design, Civil Engineering Senior Design Project, Engineering Communication and Computation, Senior Seminar – Contemporary Issues and the Global Impact of Engineering Solutions.

Graduate Courses: Structural Dynamics, Applied Mechanics in Structural Engineering, Finite Element Methods, Theory of Vibrations, Applied Mechanics of Solids, Theory of Structural Stability, Hypervelocity Impact Phenomena, Advanced Penetration Mechanics, Composite Materials, Finite Element Methods, Theory of Plates and Shells, Fracture Mechanics, Elasticity, Plasticity, Engineering Analysis I, Advanced Structural Analysis.

Short Courses: Penetration Phenomena in Low and High Speed Impact, University of Alabama in Huntsville Continuing Education Division, February, 1989.

CONSULTING ACTIVITIES

NASA/Johnson Space Center
DST Group, Australia
University of Illinois

NASA/Engineering Safety Center
University of Memphis

MEDIA CITATIONS

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