MICHAEL J. CHAJES, PH.D., P.E.

Work:
Department of Civil and Environmental Engineering
University of Delaware
Newark, DE 19716
E-mail: chajes@udel.edu

Home:
113 E Main St., Unit 410
Newark, DE 19711

Cell: (302) 690-1421

EDUCATION

Ph.D., Civil Engineering, University of California, Davis, March 1990.
Dissertation: *Nonlinear Dynamic Analysis of Building Frameworks Using a Continuum Model*, Advisor: Dr. Karl M. Romstad
M.S., Civil Engineering, University of California, Davis, June 1987.
Thesis: *A Steel Column Design Procedure Using a One–Step Nonlinear Analysis*, Advisor: Dr. Melvin R. Ramey
B.S., *Cum Laude*, Civil Engineering, University of Massachusetts, Amherst, May 1984.

PROFESSIONAL ENGINEER (P.E.) REGISTRATION

Delaware, Registration Number 9224.
Member of Delaware's Professional Engineering Registration Board (1995 – 2000).

CURRENT POSITION

Professor, Department of Civil and Environmental Engineering, University of Delaware, Newark, Delaware.

PROFESSIONAL HISTORY

Professor, Department of Civil and Environmental Engineering, University of Delaware, September 2002 – Present. Research, teaching, and advising activities in the area of structural engineering. Coordinator of the department co-op program.

Dean, College of Engineering, University of Delaware, July 2008 – June 2011. Responsible for administrative duties related to the operation of the college.

Interim Dean, College of Engineering, University of Delaware, October 2007 – June 2008. Responsible for administrative duties related to the operation of the college.

Chair, Department of Civil and Environmental Engineering, University of Delaware, July 2001 – September 2007. Responsible for administrative duties related to the operation of the department.

Affiliated Faculty Member, Center for Innovative Bridge Engineering, University of Delaware, September 2001 – Present. Founding member of the center and active in research, education, and technology transfer missions.

Associate Chair, Department of Civil and Environmental Engineering, University of Delaware, September 1998 – June 2001. Assist chairperson in administrative duties related to the operation of the department.

Acting Associate Chair, Department of Civil and Environmental Engineering, University of Delaware, September 1996 – August 1997. Assisted chairperson in administrative duties related to the operation of the department.

Associate Professor, Department of Civil and Environmental Engineering, University of Delaware, September 1996 – August 2002. Research, teaching, and advising activities in the area of structural engineering.

Affiliated Faculty Member, Center for Composite Materials, University of Delaware, September 1994 – Present. Conduct research in the applications of composite materials in civil engineering structures and the use of composites for infrastructure rehabilitation.

Assistant Professor, Department of Civil and Environmental Engineering, University of Delaware, September 1990 – August 1996. Research, teaching, and advising activities in the area of structural engineering.

Instructor, Department of Civil Engineering, University of California, Davis, October 1989 – June 1990. Taught undergraduate structural engineering classes.

Research Assistant, Department of Civil Engineering, University of California, Davis, October 1988 – September 1989. Conducted research on earthquake bridge response sponsored by the California Strong Motion Instrumentation Program.

Teaching Assistant, Department of Civil Engineering, University of California, Davis, October 1984 – September 1988. Taught and assisted in the teaching of graduate and undergraduate civil engineering classes.

HONORS AND AWARDS

- Academy of Distinguished CEE Alumni, University of Massachusetts (2016).
- E. A. Trabant Award for Women's Equity, Advance Team, University of Delaware (2012).
- Delaware Engineer of the Year, Delaware Engineering Society (2010).
- UC Davis College of Engineering Distinguished Engineering Alumni Medal (2010).
- Nominated for University Outstanding Teaching Award, University of Delaware (1993, 1997, 2004, and 2007).
- Nominated for Outstanding Academic Advising Award, University of Delaware (1994, 2009).
- Nominated for College of Engineering Outstanding Advising Award, University of Delaware (2003).
- Nominated for College of Engineering Outstanding Teaching Award, University of Delaware (2001).
- ASCE, Delaware Section, Project of the Year Award for Bridge 1–351 Over Muddy Run (Univ. of Delaware and DelDOT Team) (1999).
- Member of NSF's U.S. Delegation to the Structural Faults & Repair Conference in Edinburgh, Scotland (1997).
- Member of NSF's U.S. Delegation to the Second International Symposium on Non–Metallic (FRP) Reinforcement of Concrete Structures in Ghent, Belgium (1995).
- Feature Story on CNN's *Science & Technology Week*, February 4 (1995).
- Feature Story on Delaware's *First State News*, October 24 (1994).

- National Science Foundation Research Initiation Award (1993 – 1997).
- Outstanding Graduate Student Teaching Award, University of California, Davis (1986 and 1988).
- Graduate Student Fellowship, University of California, Davis (1984 – 1986).
- Distinguished Scholar Research Award, University of California, Davis (1984 – 1985).
- President, American Society of Civil Engineers Student Chapter, University of Massachusetts, Amherst (1983 – 1984).
- NSF REU Summer Student Fellowship, Woods Hole Oceanographic Institute, Woods Hole, Massachusetts (1983).
- Outstanding Student Award, University of Massachusetts, Amherst (1983).
- Member, Chi Epsilon, Civil Engineering Honor Society.
- Member, Tau Beta Pi, Engineering Honor Society.

PROFESSIONAL MEMBERSHIP AND SERVICE

American Society of Civil Engineers (ASCE).

- Member of Department Heads Council Executive Committee (2002 – 2008, Secretary 2003 – 2005, Chair 2006 - 2008).
- Chair of 2008 National Department Heads Meeting in Charlotte, North Carolina.
- Chair of 2007 National Department Heads Meeting in Fort Collins, Colorado.
- Co–Chair of 2006 National Department Heads Meeting in Galveston, Texas.
- Member of Educational Activities Committee (2006 – 2008).
- Member of Government Affairs Committee (2007 – 2008).
- Member of Task Committee to Plan a Summit on the Future of the Civil Engineering Profession in 2025 (2005 – 2007).
- Member of Mid–Atlantic Chairs Council (meeting coordinator, 2002 – 2004).
- Member of ASCE's Body of Knowledge Committee (2003 – 2004).

American Society of Engineering Education (ASEE).

- Member of the Dean's Council (2007 – 2011).
- Member of Public Policy Committee (2009 – 2011).

Member of TRB's Committees: AHD30 – Structures Maintenance (2007 – 2012), AFF40 – and Field Testing of Bridges (2002 – 2011), AFF40(1) – NDE of Highway Structures (2002 – 2011), and AFF20(1) – Methods of Analyzing Steel Bridges (2002 – 2011).

NSF Review Panels: Large Structural and Building Systems (1994, 1995, 1996, 2000, 2001, 2002, 2003, and 2006), Large Structural and Building Systems – CAREER (1996, and 1997), Structural Systems and Construction Processes (1995), and Investigation Into the Cause and Effects of the Northridge Earthquake of January 17, 1994 (1994).

NSF/AISI/AISC Review Panel for "Innovative Steel Research for Construction," 1992.

Conference Organizing Committee, 3rd Annual CIBrE Bridge Workshop: Fatigue and Fracture, Newark, DE, 2004.

Conference Organizing Committee, 2nd Annual CIBrE Bridge Workshop: Applications of Advanced Materials to Bridge Infrastructure, Newark, DE, 2003.

Conference Organizing Committee, 1st Annual CIBrE Bridge Workshop: Field Load Testing and Long–Term Monitoring, Newark, DE, 2002.

Reviewer for ACI's *Structural Journal*, AISC's *Engineering Journal*, ASCE's *Journals of Bridge Engineering Composites for Construction, Structural Engineering*, and *Engineering Mechanics*, TRB's *Journal of the Transportation Research Record, and the*

Journals of Constructional Steel Research, Building and Construction Materials, Bridge Structures, and Composites Science and Technology.

ADMINISTRATIVE EXPERIENCE

Dean, College of Engineering, University of Delaware (July 1, 2008 – June 30, 2011).
Interim Dean, College of Engineering, University of Delaware (October 1, 2007 – June 30, 2008).

During Michael Chajes' tenure as dean, the College of Engineering developed and executed an ambitious strategic plan aimed at moving the college into the top tier of engineering programs in the US. During his four years of service, the college experienced an unprecedented level of growth, and made significant strides towards achieving the goals of the strategic plan. The following are some of the accomplishments that were realized during this time.

- A hallmark of the college has long been its successful research program, and under Chajes' leadership, research expenditures in the college grew from $35 million in FY 2008 to $49 million in FY 2011, a 40 percent increase
- The number of faculty in the college increased 39 percent, from 99 in 2007 to 138 in 2011, partially through the incorporation of the Department of Computer and Information Sciences and the Center for Energy and Environmental Policy into the college in 2010, but also due to aggressive faculty hiring in newly developed cluster areas such as energy, nanotechnology, information technology, and bioengineering. The number of named professors in the college was also increased from 22 to 31.
- Diversity of engineering faculty increased, particularly among women. The number of women faculty in the college from 2007 to 2011 increased by 55%, from 14.5 to 22.5 (representing 17% of the college in 2011). Chajes also appointed the first woman chair of an engineering department at UD, Annette Karlsson, who became chair of the Department of Mechanical Engineering in 2009 (and is now Dean at Cleveland State University).
- Chajes has helped lead an effort to develop effective resources for the recruitment and retention of women faculty in STEM fields through an NSF Advance grant for which he is the PI. In recognition of the success of this effort, the team was awarded the universities E. A. Trabant Award for Women's Equity.
- The number of students in the College of Engineering grew substantially from 2007 to 2011. The number of undergraduates increased by 60 percent from 1,286 to 2,060, and the number of graduate students increased by 62 percent from 508 to 823. At the same time, the quality of undergraduate students admitted to the college has also increased, with average SAT scores rising from 1871 to 1910 and average GPAs up from 3.66 to 3.77.
- Chajes championed or supported a number of global initiatives including being a member of UD's planning team that traveled to Seoul, South Korea several times to explore establishing a UD campus there, visiting China to establish educational and research partnerships with several institutions, being a member of several UD delegations that built and strengthened relationships with universities in Asia and South America,

strengthening relationships in India, hosting UD's first-ever engineering alumni reunion in Taiwan, and participating in other international alumni reunions.

- Chajes committed much of his time to broadening the base of donors and friends and renewing alumni interest and involvement with the college. During his tenure, the college raised roughly $23 million in pledges and outright gifts. This included an anonymous $10 million donation to fund graduate fellowships in the Department of Chemical Engineering. The $10 million donation is the largest gift to the University from an individual since 1995 and the largest outright gift ever to the College of Engineering.
- Chajes focused on developing industrial partnerships to benefit the college's students and research programs. Working together with Dean Bobby Gempesaw of the Lerner College of Business and Economics, a partnership was forged with JPMorgan Chase that supports both college's educational and research missions.
- Chajes supported the development and approval of a new undergraduate major in biomedical engineering during his tenure, which admitted its first class of 53 students for the 2010–2011 academic year, and had 55 students in the 2011-12 freshmen class.
- Chajes branded the college educational goals around the concept of inspiring leaders. This included placing increased educational emphasis on communication skills, teamwork, management and business concepts, and the importance of public policy and global awareness. He has also worked to expand student engagement and provide invaluable educational activities outside of the classroom through activities including internships, undergraduate research, study aboard, and service-based learning.
- Chajes developed and coordinated an introductory engineering course that is taken by all incoming engineering freshmen. The course provides an introduction to the engineering profession. It prepares students for success through the integration of technical problem solving and engineering design, ethical decision-making, working in teams, and communicating solutions to diverse audiences.
- Chajes recognized the need to provide business and management skills to engineering students and actively explored new joint programs with the Lerner College of Business and Economics to accomplish this.
- Under Chajes' leadership, the college became a major player in the design and development of the university's new $132M Interdisciplinary Science and Engineering Building. The college has been leading the fundraising effort.
- At the university level, Chajes served as co-chair of the committee overseeing the University's 2011 accreditation by the Middles States Commission on Higher Education.

Chair, Department of Civil and Environmental Engineering, University of Delaware (July 1, 2001 – September 30, 2007).

During Michael Chajes' tenure as chair of the Department of Civil and Environmental Engineering, the department developed and implemented a comprehensive strategic plan and made significant strides towards achieving the many goals set forth. The department significantly grew the size of the undergraduate program, implemented a major undergraduate curriculum revision, and achieved rapid growth in its research programs.

- Chajes participated on the college's strategic planning committee, and then led the department in developing a department plan with defined action steps and metrics for evaluation.
- Under Chajes' leadership, research expenditures in the department grew from $5.7 million in FY 2002 to a $7.6 million in FY 2007, a 33 percent increase.
- During his tenure as chair, the number of undergraduate students increased 57 percent from 237 to 402, and the number of bachelor degrees awarded per year increases by 106% from 47 to 97. While the number of graduate students during that same time increased by only 3% from 90 to 93 (4.3 graduate students per faculty member), there was a shift towards more doctoral students and fewer master degree students.
- Chajes promoted active recruitment of faculty members from diverse groups. During his tenure the department hired eight faculty members including three women. The number of women on the faculty increased from zero to three (becoming 14% of the faculty).
- Under Chajes' leadership, the department executed its first major curriculum revision in over 15 years.
- Chajes' dedication to undergraduate teaching led him to bring the American Society of Civil Engineering's Excellence in Civil Engineering Education (ExCEEd) teaching workshop to campus. All of the department faculty participated, and since that time, several participants have gone on to win college, university, and national teaching awards.
- Chajes oversaw the departments ABET accreditation visit in 2005.
- As chair, Chajes played a very active role in the recruitment of both undergraduate and graduate students.
- While chair, Chajes planned a construction project that led to the renovation of faculty and student office space.
- Chajes served on the university's Chairs Caucus Steering Committee for several years, and chaired the caucus during his last year as chair. This enabled him to gain an appreciation for issues that departments across campus where facing.
- Chajes worked with colleagues across campus to develop and implement best practices in written and oral communications education though his work on the university's Commutations Task Force.
- Nationally, Chajes was very active in the American Society of Civil Engineering Department Heads Council, serving on the executive committee for six years, and chairing the committee for two years. During his tenure on the executive committee, an annual meeting for national department heads was initiated, and Chajes co-chaired the inaugural meeting, and then chaired the next two meetings.

Dean (July 2008 – June 2011).
Interim Dean (October 2007 – June 2008).
Chair (July 2001 – September 2007).
Associate Chair (September 1998 – June 2001).
Acting Associate Chair (September 1996 – August 1997).
Faculty Senate, Senator (2015 – present).
Faculty Senate's Task Force on Sexual Harassment and Assault, Chair (2014 – present).
Faculty Senate's Student and Faculty Honors Committee (2014 – present).
University Sustainability Task Force, Member (2014 – 2015), Co-Chair (2015 – present).
University Search Committee for Arts & Sciences Dean, Chair (2009 – 2010).
University Middle States Accreditation, Co-Chair (2008 – 2010).
University Carbon Footprint Advisory Group (2008 – 2011).
University Branding IMPACT Group (2008 – 2011).
University Search Committee for Sustainability Manager (2015).
University Search Committee for DBI Director, Chair (2008).
University Warner and Taylor Awards for Outstanding Seniors, Selection Committee (2007-2009).
University Chairs' Caucus Steering Committee (2002 – 2007, Chair 2006 – 2007).
University Task Force on Oral and Written Communication (2002 – 2005).
University Distinguished Scholarship Selection Committee (2000 – 2009, 2012 – 2013).
University Honors Program's, Charter Member of the Senior Thesis Board of Third Readers (1993 – 1997).
Provost Executive Council (2007 – 2011).
College Strategic Planning Committee (1999 – 2000).
College Educational Activities Committee (1996 – 1997, 1998 – 2001, Chair 1999 – 2001).
College Outreach Advisory Committee (2002 – 2007).
College Common First Year Committee, Chair (2005 – 2006).
Deans Chairs Advisory Committee (2001 – 2011).
Deans Chairs and Engineering Centers Advisory Committee (2001 – 2011).
Deans Council (2007 – 2011).
Department Co-op Coordinator (2013 – present).
Department Advisor for Civil Engineering Honors Students (1991 – 2007).
Department Faculty Search Committee (1992, 1994, 1997, 1999, 2000, 2012, 2016).
Department Faculty Advisor to ASCE Student Chapter (1992 – 1997, 1999 – 2000).
Department Undergraduate Coordinator (1996 – 1997, 1998 – 2001).
Department Advisory Committee (1999 – 2001).
Department Coordinator for Science and Engineering Scholars Program (1994 – 1997).
Department Safety Committee (1994 – 1996).
Department Coordinator for MATHCOUNTS Program (1991 – 1997, 2001, 2005 – 2006).
Department Coordinator for Annual Open House (1991 – 1995).
Department Undergraduate Committee, Member (1991 – 1997, 2013 – 2014), Chair (2015 – present).
Department ABET Implementation Committee (1991 – 1992).
Department Undergraduate Recruiting and Scholarship Committee (1990–1992, 1995 – 1997).

McConnell, J., Chajes, M., and Michaud, K. (2015). "Destructive Testing of a Decommissioned Skewed Steel I-Girder Bridge: Analysis of System Effects," *ASCE Journal of Bridge Engineering*, 141(1).

Bechtel, A., McConnell, J., and Chajes, M. (2011). "Ultimate Capacity Destructive Testing and Finite Element Analysis of Steel I-Girder Bridges," *ASCE Journal of Bridge Engineering*, 16(2), 197-208.

Shenton III, H.W., Carson, P.D., Chajes, M.J., O'Shea, D., Kursinsky, C., (2010). "Delaware's Indian River Inlet Bridge: a comprehensive plan for long-term structural monitoring," Transportation Research Record: Journal of the Transportation Research Board, No. 2201, 148-153.

Bechtel, A., McConnell, J., and Chajes, M. (2009). "Destructive Testing and Finite Element Analysis to Determine the Ultimate Capacity of Skewed Steel I-Girder Bridges," *Transportation Research Record*, Vol. 2131, 49-56.

Bhattacharya, B., Li. D., and Chajes, M. J. (2008). "Bridge Rating Using In-Service Data in the Presence of Strength Deterioration and Correlation in Load Process," *Structure & Infrastructure Engineering,* 4(3), 237-249.

Liu, J., and Chajes, M.J. (2008). "Lateral-Torsional Buckling Study of a Continuous, Skewed, Steel Bridge During Deck Placement," *Journal of Bridge Structures*, 4(1), 15-22.

Huang, H., Chajes, M. J., Mertz, D.R., Shenton III, H. W., and Kaliakin, V. (2007). "Strength Behavior of Filled Grid Decks for Bridges," *Journal of Bridge Structures*, 3(2), 105-118.

Huang, H., Kaliakin, V., Chajes, M. J., Mertz, D.R., and Shenton III, H. W. (2007), "Application of Orthotropic Thin Plate Theory to Filled Grid Decks for Bridges," *Journal of Bridge Engineering*, ASCE, 12(6), pp. 807-810.

Chajes, M.J., and Shenton, H.W. (2006), "Using Diagnostic Load Tests for Accurate Load Rating of Typical Bridges," *Journal of Bridge Structures*, 2(1), 13-23.

Hirachan, J., and Chajes, M.J. (2005), "Experimental Influence Lines for Bridge Evaluation," *Journal of Bridge Structures*, 1(4), 405-412.

Bhattacharya, B., Li, D., Chajes, M. and Hastings, J. (2005). "Reliability–Based Load and Resistance Factor Rating Using In–Service Data," *Journal of Bridge Engineering*, ASCE, 10(5), 530–543.

Bhattacharya, B., Li., D. and Chajes, M. J. (2005). "Load and resistance factor rating using site specific data. *Transportation Research Record: Journal of the Transportation Research Board*, CD 11–S, Transportation Research Board of the National Academies, Washington, D. C., pp. 143–151.

Huang, H., Shenton III, H.W., and Chajes, M.J. (2004). "Load Distribution for a Highly Skewed Bridge: Testing and Analysis," *Journal of Bridge Engineering*, ASCE, 9(6), 558–562.

Chajes, M.J., Hunsperger, R.G., Liu, W., Li, J., and Kunz, E. (2003). "Time Domain Reflectometry for Void Detection in Grouted Post–Tensioned Bridges," *Journal of the Transportation Research Board*, TRB, 1845, 148–152.

Shenton III, H.W., Chajes, M.J., Sivakumar, B., and Finch, W.W. (2003). “Field Tests and In–Service Monitoring of the Newburgh–Beacon Bridge,” *Journal of the Transportation Research Board*, TRB, 1845, 153–162.

Liu, W., Hunsperger, R.G., Chajes, M.J., Folliard, K., and Kunz, E. (2002). “Corrosion Detection of Steel Cables Using Time Domain Reflectometry,” *Journal of Materials in Civil Engineering*, ASCE, 14(3), 217–223.

Huang, H., Chajes, M.J., Mertz, D.R., Shenton III, H.W., and Kaliakin, V.N. (2002). “Behavior of Open Steel Grid Decks,” *Journal of Constructional Steel Research*, 58(5–8), 819–842.

Chajes, M.J., Shenton III, H.W., and Finch, W.W. (2001). "Performance of a GFRP Deck on Steel Girder Bridge," *Journal of the Transportation Research Board*, TRB, 1770, 105–112.

Chajes, M.J., Shenton III, H.W., and Finch, W.W. (2001). "Diagnostic and In–Service Testing of a Transit Railway Bridge," *Journal of the Transportation Research Board*, TRB, 1770, 51–57.

Miller, T.C., Chajes, M.J., Mertz, D.R., and Hastings, J. (2001). "Strengthening of a Steel Bridge Girder Using CFRP Plates," *Journal of Bridge Engineering*, ASCE, 6(6), 514–522.

Gillespie, J. W., Eckel, D.A., Edberg, W.M., Sabol, S.A., Mertz, D.R., Chajes, M.J., Shenton III, H.W., Hu, C., Chaudhri, M., Faqiri, A., Soneji, J. (2000). "Bridge 1–351 Over Muddy Run: Design, Testing and Erection of an All–Composite Bridge," *Journal of the Transportation Research Record*, TRB, 1696(2), 118–123.

Chajes, M.J., Shenton III, H.W., and O'Shea, D. (2000). "Bridge Condition Assessment and Load Rating Using Nondestructive Evaluation Methods," *Journal of the Transportation Research Record*, TRB, 1696(2), 83–91.

Geng, Z.–J., Chajes, M.J., Chou, T.–W., and Pan, D. Y.–C. (1998). "The Retrofitting of Reinforced Concrete Column–to–Beam Connections," *Composites Science and Technology*, 58(8), 1297–1305.

Zureick A.–H., and Chajes, M.J. (1998). "Guest Editorial," *Composites Science and Technology*, 58(8), 1257–1258.

Chajes, M.J., Mertz, D.R., and Commander, B. (1997). "Experimental Load Rating of a Posted Girder–and–Slab Bridge," *Journal of Bridge Engineering*, ASCE, 2(1), 1–10.

Chajes, M.J., Zhang, L., and Kirby, J.T. (1996). "Dynamic Analysis of Tall Building Using Reduced–Order Continuum Model," *Journal of Structural Engineering*, ASCE, 122(11), 1284–1291.

Kaliakin, V.N., Chajes, M.J., and Januszka, T.F. (1996). "Analysis of Concrete Beams Reinforced with Externally Bonded Woven Composite Fabrics," *Composites: Part B*, 27B, 235–244.

Chajes, M.J., Kirby, J.T., and Finch, W.W. (1996). "Dynamic Analysis of a 10–Story Concrete Building Using A Continuum Model," *Journal of Computers and Structures*, 58(3), 487–498.

Chajes, M.J., Finch, W.W., Januszka, T.F., and Thomson, T.A. (1996) "Bond and Force Transfer of Composite–Material Plates Adhered to Concrete," *Structural Journal*, ACI, 93(2), 208–217.

Chajes, M.J., Thomson, T.A., and Farschman, C.A. (1995). "Durability of Externally Bonded Composite Material Reinforcement," *Construction and Building Materials*, 9(3), 141–148.

Chajes, M.J., Januszka, T.F., Mertz, D.R., Thomson, T.A., and Finch, W.W. (1995). "Shear Strengthening of Reinforced Concrete Beams Using Externally Applied Composite Fabrics," *Structural Journal*, ACI, 92(3), 295–303.

Chajes, M.J., Kaliakin, V.N., Holsinger, S.D., and Meyer, A.J. (1995). "Experimental Testing of Composite Wood Beams for Use in Timber Bridges." *Fourth International Bridge Engineering Conference*, TRB, National Research Council, Washington, D.C, Vol. 2, 371–380.

Chajes, M.J., Thomson, T.A, Finch, W.W, and Januszka, T.F. (1994). "Flexural Strengthening of Concrete Beams Using Externally Bonded Composite Materials," *Construction and Building Materials,* 8(3), 191–201.

Zhang, L., Yang, C.Y., Chajes, M.J., and Cheng, A.H.–D. (1993). "Stability of Active Tendon Structural Control," *Journal of Engineering Mechanics*, ASCE, 119(5), 1017–1024.

Cheng, A.H.–D., Yang, C.Y., Hackl, K., and Chajes, M.J. (1993). "Stability, Bifurcation and Chaos of Nonlinear Structures with Control Part II: Non–Autonomous Case." *International Journal of Non–Linear Mechanics*, 28(5), 549–565.

Dolan, C.W., Rider, W., Chajes, M.J., and DeAscanis, M. (1993). "Prestressed Concrete Beams Using Non–Metallic Tendons And External Shear Reinforcement," *Fiber–Reinforced–Plastic Reinforcement for Concrete Structures*, Special Publication SP–138, ACI, 475–495.

Chajes, M.J., Romstad, K.M., and McCallen, D.B. (1993). "Analysis of Multi–Bay Frames Using a Continuum Model," *Journal of Structural Engineering*, ASCE, 119(2), 522–546.

Chajes, M.J., and DeGeorge, J. (1992). "Supplementing Engineering Education Using Interactive Computer Demonstrations," *Computers in Education Journal*, ASEE, 2(4), 54–59.

Rizzoli, P., Spiesberger, J., and Chajes, M.J. (1985). "Gulf Stream Variability for Acoustic Tomography," *Deep–Sea Research*, 32(2), 237–250.

CONFERENCE PROCEEDINGS AND OTHER PUBLICATIONS

Chajes, M.J., Shenton, H.W., Al-khateeb, H.T., Wenczel, G.R., and Ramanna, N. (2015). "Structural Health Monitoring of the Indian River Inlet Bridge: Results from Controlled Load Tests Conducted over the First Two Years of Service." *Proceedings of the 7th International Conference on Structural Health Monitoring of Intelligent Infrastructure*, Torino, Italy.

Shenton, H.W., Fernandez, M, Ramanna, N, Chajes, M.J., and Al-khateeb, H.T. (2015). "Structural Health Monitoring of a Cable-Stayed Bridge: Using Tiltmeter Data to

Determine Edge Girder Deflections." *Proceedings of the 7th International Conference on Structural Health Monitoring of Intelligent Infrastructure*, Torino, Italy.

Shenton III, H.W., Chajes, M.J., Wenczel, G., Ramanna, N., Al-khateeb, H., Davidson, K., and Marquez, P. (2014). "Structural Health Monitoring of Delaware's Indian River Inlet Bridge: Year One Update." *Proceedings of the 2014 Structures Congress*, Boston, Massachusetts.

Marquez, P., Chajes, M.J., Shenton III, H.W., Al-khateeb, H., Wenczel, and Cardinal, J. (2013). "Structural Health Monitoring: Establishing the Baseline Performance of Delaware's Indian River Inlet Bridge." *Proceedings of the 6th International Conference on Structural Health Monitoring of Intelligent Infrastructure*, Hong Kong.

Shenton III, H.W., Chajes, M.J., Wenczel, and Davidson, K. (2013). "Lessons Learned in the Construction and Early Experiences with the Indian River Inlet Bridge SHM System." *Proceedings of the 6th International Conference on Structural Health Monitoring of Intelligent Infrastructure*, Hong Kong.

McConnell, J., Chajes, M., Shenton III, H., Michaud, K., Russo, C., and Ross, J. (2010). "Destructive test of a steel slab-on-girder bridge," Bridge Maintenance, Safety, Management and Life-cycle Optimization, Ed. Frangopol, D., Sause, R., and Kusko, C., CRC Press, 2010.

Rakowski, M., Shenton III, H.W. and Chajes, M.J. (2009). "In-Service and Weigh-In-Motion Monitoring of Typical Highway Bridges," Proceedings of the CSHM2 Workshop "Civil Structural Health Monitoring 2", Taormina, Sicily, Italy.

Bechtel, A., McConnell, J., and Chajes, M. (2009). "Ultimate Capacity of Skewed Steel I-Girder Bridges," Proceedings of the 2009 Transportation Research Board Annual Meeting, Washington, D.C.

Shenton III, H.W. and Chajes, M.J. (2009). "Experiences in Testing and Modeling for Bridge Maintenance and Rehabilitation," *Proceedings of the 2009 ASCE Structures Congress*, Austin, Texas

Bhattacharya, B., Li, D., and Chajes, M.J. (2009). "Reliability-Based Optimized Rating Equation of Deteriorating Bridges Using Loading and Corrosion Data," *Proceedings of 10th International Conference on Structural Safety and Reliability*, Osaka, Japan.

Walesh, S.G., Mongan, D.G., and Chajes, M.J. (2007). "Civil Engineering in 2025: The Vision and How It Was Developed," *Proceedings of the 2007 ASEE Annual Meeting*, Honolulu, Hawaii.

Weston, D.F., Stuffle, T.J., West, J., Shenton III, H.W., and Chajes, M.J., (2006). "Plan for Structural Health Monitoring of the Indian River Inlet Bridge," *Proceedings of the 2006 ASCE Structures Congress*, ASCE, St Louis, Missouri, Ed. Cross, B., and Finke.

Shenton III, H.W., Chajes, M.J., Finch, W.W., Chasten, C.P., and Chu, C-M (2006). "Field Test/Fatigue Investigation of the Summit Bridge," *Proceedings of the 2006 ASCE Structures Congress*, ASCE, St Louis, Missouri, Ed. Cross, B., and Finke.

Ross, J., Righman, J., M. Chajes, M.J., Mertz, D., Zoli, T., and Volk, J. (2006). "Evaluating Ultimate Bridge Capacity through Destructive Testing of Decommissioned Bridges," *Proceedings of the 3rd International Conference on Bridge Maintenance, Safety and Management,* IABMAS, Porto, Portugal.

Chajes, M.J., Shenton, H.W., Weston, D.F., Stuffle, T.J., and West, J. (2006). "Structural Health Monitoring of Delaware's Indian River Inlet Bridge," *Proceedings of the 3rd International Conference on Bridge Maintenance, Safety and Management,* IABMAS, Porto, Portugal.

Chajes, M.J., Finch, W.W, and Shenton III, H.W. (2005). "Enhanced End Anchorage of Bonded FRP Repairs," *Proceedings of the 7th International Symposium on Fiber–Reinforced Polymer (FRP) Reinforcement for Concrete Structures*, Special Publication SP–230, ACI Fall Convention, Kansas City, Missouri.

Bensi, M., Bhattacharya, B. and Chajes, M. (2005). "Evaluating Risk of Terrorist Attack on a Cable Stayed Bridge: A Probabilistic Structural Analysis Based Approach," *Proceedings of the 1st International Conference on Safety and Security Engineering*, Rome, Italy.

Chajes, M.J., Mertz, D.R, Quiel, S., Roecker, H., and Milius, J. (2005). "Steel Girder Fracture on Delaware's I–95 Bridge over the Brandywine River," *Proceedings of the 2005 ASCE Structures Congress*, ASCE, New York, New York.

Chajes, M.J., Mertz, D.M., Quinn, P., Zoli, T., and Volk, J. (2004). "Inelastic Response of a Steel Girder Bridge," *Proceedings of the 2nd International Conference on Bridge Maintenance, Safety and Management*, IABMAS, Kyoto, Japan.

Chajes, M.J., Chacon, A., and Swinehart, M. (2004). "Steel Bridge Rehabilitation Using Advanced Composites," *Proceedings of the 2nd International Conference on Bridge Maintenance, Safety and Management*, IABMAS, Kyoto, Japan.

Chacon, A., Chajes, M.J., Swinehart, M., Richardson, D., and Wenczel, G. (2004). "Application of Advanced Composites to Steel Bridges – A Case Study on the Ashland Bridge," *Proceeding of the 4th International Conference on Advanced Composite Materials in Bridges and Structures*, Calgary, Canada.

Li, D., Bhattacharya, B. and Chajes, M. J. (2004). "Bridge In–Service Load and Resistance Factor Rating Method," *Proceedings of the 17th ASCE Engineering Mechanics Conference*, Newark, Delaware.

Soneji, J., Chajes, M.J., Mertz, D.M., Roecker, H., and Milius, J. (2004). "Brandywine Bridge Fracture Analysis and Retrofit," *Proceeding of the 21st Annual International Bridge Conference*, IBC, Pittsburgh, Pennsylvania.

Shenton III, H.W., Gallagher, K. and Chajes, M.J. (2004). "Applicability of the ASTM hole–drilling method for measuring dead load stresses" *Structural Materials Technology VI: An NDT Conference*, Buffalo, NY, Sept. 2004, pp. 212–218, The American Society for Nondestructive Testing, Columbus, Ohio, *Ed.* S. Alampalli and G. Washer.

Chajes, M.J., Mertz, D.M., Roecker, H., and Milius, J. (2003). "Fracture Analysis and Retrofit Design for the I–95 Bridge over the Brandywine River," *Proceedings of the 2nd New York City Bridge Conference*, New York, New York.

Chajes, M.J., Shenton, H.W., O'Shea, D., and Chaudhri, M. (2003). "Using Bridge Testing to Enhance Bridge Management in Delaware," *Proceedings of the 9th International Bridge Management Conference*, TRB, Orlando, Florida.

Chajes, M.J., Swinehart, M., Richardson, D., and Wenczel, G (2003). "Bridge Rehabilitation Using Advanced Composites: Ashland Bridge SR–82 over Red Clay Creek," *Proceedings of Structural Faults & Repair '03*, London, United Kingdom.

Shenton III, H.W., Chajes, M.J., Finch, W.W., Rzucidlo, M.C., Carrigan–Laning, J., Chasten, C.P. (2003). "Field Test of a Fatigue Prone Steel Tied Arch," *Proceedings of the 2003 ASCE Structures Congress*, ASCE, Seattle, Washington.

Mertz, D.R., Chajes, M.J., Gillespie, J.W., Kukich, D., Sabol, S.A., Hawkins, N. and Dean, T. (2003). "Application of Fiber Reinforced Polymer Composites to the Highway Infrastructure: Strategic Plan," NCHRP Report 503, National Cooperative Highway Research Program.

Chajes, M.J., Hunsperger, R., Liu, W., Li, J., and Kunz, E. (2002). "Nondestructive Evaluation of Pre– and Post–tensioning Strands Using Time Domain Reflectometry," Structural Materials Technology V: An NDT Conference, Cincinnati, Ohio.

Shenton III, H.W., Chajes, M.J., Finch, W.W., and Sivakumar, B (2002) "Long–Term Monitoring of the Newburgh–Beacon Bridge," Structural Materials Technology V: An NDT Conference, Cincinnati, Ohio.

Chajes, M. J., Bhattacharya, B., Attoh–Okine, N., and Hastings, J. (2002). "Application of Load and Resistance Factor Rating Using Site Specific Data," *First International Conference on Bridge Maintenance, Safety and Management*, IABMAS, Barcelona, Spain.

Shenton III, H.W., Huff, S.E., and Chajes, M.J. (2002), "Field Test and Load Rating of a Concrete Encased Steel Girder Bridge," *Proceedings of the 2002 ASCE Structures Congress*, Denver, Colorado.

Kukich, D., Bernhardt, S., Imhoff, P., Chajes, M., Pearlman, M., and O'Neill, D. (2002). "Integrating Professional Communication Into Civil and Environmental Engineering Curricula," *Proceedings of the 2002 ASEE Annual Conference*, Montreal, Canada.

Chajes, M.J., Hunsperger, R., Liu, W., Li, J., and Kunz, E. (2002). "Nondestructive Evaluation of Pre– and Post–tensioned Tendons: Void Detection and Corrosion Monitoring," *Proceeding of the 19th Annual International Bridge Conference*, IBC, Pittsburgh, Pennsylvania.

Chajes, M. J., Mertz, D.R., Kukich, D., and Sabol, S. (2001). "Developing a Strategic Plan for the Implementation of Fiber Reinforced (FRP) Composites to the Bridge Infrastructure," *5th NSF Workshop on Bridge Research in Progress*, NSF, Minneapolis, Minnesota.

Wei, L., Hunsperger R., Chajes, M. J., and Kunz, E., (2001). "An Overview of Corrosion Damage Detection in steel Bridge Strands Using TDR," *Proceedings of the 2nd International Symposium on TDR for Innovative Application*, Evanston, Illinois.

Shenton III, H.W., Chajes, M.J., and Johnson, W.L. (2001). "Continuous In–Service Monitoring of an FRP Bridge for Long–Term Performance Evaluation," *CD Proceeding of the ASCE Structures Congress*, ASCE, Washington, D.C.

Li, D., Chajes, M.J., and Shenton III, H.W. (2001). "Prestress Losses in HPC Girders: Before and After Transfer," *CD Proceeding of the TRB Annual Meeting*, TRB, Washington, D.C.

Wei, L., Hunsperger R., Chajes, M. J., Li, D., and Kunz, E., (2001). "Nondestructive Corrosion Monitoring of Prestressed HPC Bridge Beams Using Time Domain Reflectometry," *CD Proceeding of the TRB Annual Meeting*, TRB, Washington, D.C.

Li, D., Chajes, M.J., and Shenton III, H.W., Richardson, D., Wenczel, G., Soneji, J., and Folliard, K., (2000). "Delaware's High Performance Concrete Bridge Showcase: A Case Study," *Proceeding of the PCI/FHWA/FIB International Symposium on High Performance Concrete*, PCI, Orlando, Florida.

Chajes, M.J., Gillespie, J.W., Mertz, D.R., Shenton III, H.W. and Eckel II, D.A. (2000). "Delaware's First All–Composite Bridge," *CD Proceeding of the ASCE Structures Congress*, ASCE, Philadelphia, Pennsylvania.

Shenton III, H.W., Chajes, M.J., Mertz, D.R., and Gillespie, J.W. (2000). "Continuous, Long–Term Monitoring of Two Advanced Polymer Composite Bridges," *CD Proceeding of the ASCE Structures Congress*, ASCE, Philadelphia, Pennsylvania.

Shenton III, H.W., Chajes, M.J., Finch, W.W., Hemphill, S., and Craig, R. (2000), "Performance of a Historic 19th Century Wrought Iron Through–Truss Bridge Rehabilitated Using Advanced Composites," *CD Proceeding of the ASCE Structures Congress*, ASCE, Philadelphia, Pennsylvania.

Chajes, M.J., Shenton III, H.W., and O'Shea, D., (2000) "Assessing Bridge Capacity Using NDE Methods," *CD Proceeding of the Structural Materials Technology IV: An NDT Conference*, Atlantic City, New Jersey, February 28 – March 3, 2000, Ed. Alampalli, Technomic Publishing Co., Lancaster Pennsylvania.

Shenton III, H.W., Chajes, M.J., and Holloway, E.S., (2000) "A System for Monitoring Live Load Strain in Bridges," *CD Proceeding of the Structural Materials Technology IV: An NDT Conference*, Atlantic City, NJ, Feb.28 – Mar. 3, 2000, Ed. Alampalli, Technomic Publishing Co., Lancaster Pennsylvania.

Soneji, J., Hu, C., Chaudhri, M., Faqiri, A., Gillespie J.W., Eckel, D.A., Mertz, D.R., and Chajes, M.J. (1999). "Use of Glass–Fiber–Reinforced Composite Panels to Replace the Superstructure for Bridge 351 on N387A Over Muddy Run," *Proceeding of the 16th Annual International Bridge Conference*, IBC, Pittsburgh, Pennsylvania.

Chajes, M.J., Shenton III, H.W., O'Shea, D. (1999). "Use of Field Testing in Delaware's Bridge Management Program," *Proceeding of the 8th International Bridge Management Conference*, TRB, National Research Council, Denver, Colorado.

Shenton III, H.W., and Chajes, M.J. (1999). "Long–Term Health Monitoring of an Advanced Polymer Composite Bridge," *Proceeding of the 6th Annual International Symposium on Smart Structures and Materials*, SPIE, Newport Beach, California.

Liu, W., Hunsperger, R., Folliard, K., Chajes, M., Barot, J., Jhaveri, D., and Kunz, E. (1999). "Detection and Characterization of Corrosion of Bridge Cables by Time Domain Reflectometry," *Proceeding of the 6th Annual International Symposium on Smart Structures and Materials*, SPIE, Newport Beach, California.

Bhatia, S., Hunsperger, R., and Chajes, M. (1998). "Modeling Electromagnetic Properties of Bridge Cables for Non–destructive Evaluation," *Proceedings of the International Conference on Corrosion and Rehabilitation of Reinforced Concrete Structures*, Orlando, Florida.

Chajes, M.J., Gillespie, J.W., Mertz, D.R., and Shenton III, H.W. (1998). "Advanced Composite Bridges in Delaware," *Proceedings of the Second International Conference on Composites in Infrastructure*, Tucson, Arizona.

Chajes, M.J., Shenton III, H.W., Mertz, D.R., and Gillespie, J.W. (1997). "Structural Monitoring of an Advanced Composite Bridge," *Proceedings of the US–Canada–Europe Workshop on Bridge Engineering*, Zurich, Switzerland.

Chajes, M.J., Shenton III, H.W., Gillespie, J.W., and Mertz, D.R. (1997). "Load Testing and Long–Term Monitoring of Advanced Composite Bridges," *Proceedings of Structural Faults & Repair '97*, Edinburgh, Scotland.

Reid, J.S., Chajes, M.J., Mertz, D.R., and Reichelt, G.H. (1996). "Bridge Strength Evaluation Based on Field Test Results," *Proceedings of the 1996 American Society of Civil Engineers Specialty Conference on Probabilistic Mechanics and Structural Reliability*, Worcester, Massachusetts.

Chajes, M.J., Kaliakin, V.N., and Meyer, A.J. (1996). "Behavior of Engineered Wood–CFRP Beams," *Proceedings of the First International Conference on Composites in Infrastructure*, Tucson, Arizona.

Chajes, M.J., and Finch, W.W. (1996). "Performance of a Prestressed Concrete Bridge Rehabilitated Using CFRP Sheets," *Proceedings of the First International Conference on Composites in Infrastructure*, Tucson, Arizona.

Chajes, M.J., Mertz, D.R., and Commander, B. (1996). "Can Economical Bridge Testing Reduce Postings?" *Better Roads*, August, 29–32.

Chajes, M.J., Mertz, D.R., Commander, B. (1995). "Experimental Load Testing of a Posted Bridge: A Case Study," *Proceeding of the 1995 International Bridge Conference*, IBC, Pittsburgh, Pennsylvania.

Chajes, M.J., Finch, W.W., and Mertz, D.R. (1995). "Rehabilitation of an Adjacent Box–Beam Bridge Using CFRP Sheets," *Proceeding of the 1995 International Bridge Conference*, IBC, Pittsburgh, Pennsylvania.

Chajes, M.J., Mertz, D.R., Edberg, W., and Schulz, J.L. (1995). "Bridge Evaluation Through Experimental Field Testing," *Proceedings of the Structural Stability Research Council's 1995 Annual Technical Session*, Kansas City, Missouri.

Chajes, M.J., Thomson, T. A., and Tarantino, B. (1995). "Reinforcement of Concrete Structures Using Externally Bonded Composite Materials," *Non–Metallic (FRP) Reinforcement for Concrete Structures*, (ed. L. Taerwe), E & FN Spon, London.

Chajes, M.J., Finch, W.W., and Mertz, D.R. (1995). "Development of Probability–Based Fatigue Resistance of Advanced Composite Material–to–Concrete Adhesive Bonds," *Proceedings of the 1995 American Society of Civil Engineers Structures Congress*, Boston, Massachusetts.

Chajes, M.J., Mertz, D.R., Kaliakin, V.N., Holsinger, S.D., and Meyer, A.J. (1995). "Development of a Concrete–Wood–CFRP Composite Beam," *Proceedings of the 1995 American Society of Civil Engineers Structures Congress*, Boston, Massachusetts.

Chajes, M.J., Mertz, D.R., and Thomson, T.A. (1994). "Durability of Composite Material Reinforcement," *Proceedings of the American Society of Civil Engineers Third Materials Engineering Conference*, San Diego, California.

Finch, W.W., Chajes, M.J., Mertz, D.R., Kaliakin, V.N., and Faqiri, A. (1994). "Bridge Rehabilitation Using Composite Materials," *Proceedings of the American Society of Civil Engineers Third Materials Engineering Conference*, San Diego, California.

Chajes, M.J., Karbhari, V.M., Mertz, D.R., Kaliakin, V.N., Faqiri, A., and Chaudhri, M. (1993). "Rehabilitation of Cracked Adjacent Box Beam Bridges." *Proceedings of the NSF Symposium on Practical Solutions for Bridge Strengthening and Rehabilitation*, Des Moines, Iowa.

Chajes, M.J., Kirby, J.T., Yang, C.Y., and Finch, W.W. (1993). "Validating Continuum Analyses of Buildings Subjected to Dynamic Loads." *Proceedings of the 2nd U.S. National Congress on Computational Mechanics*, Washington, D.C.

Chajes, M.J., Yang, C.Y., and Zhang, L. (1992). "Stability Of A 47–Story Office Building With Active Controls," *Proceedings of the Structural Stability Research Council's 1992 Annual Technical Session*, Pittsburgh, Pennsylvania.

Chajes, M.J., Yang, C.Y., and Zhang, L. (1992). "Simplified Seismic Analysis of a 47–Story Building," *Proceedings of the American Society of Civil Engineers Tenth Structures Congress*, San Antonio, Texas.

Chajes, M.J., Argiris, L., and Hermann, D.M. (1992). "A Design Case Study Using Advanced Analyses," *Proceedings of the American Society of Civil Engineers Tenth Structures Congress*, San Antonio, Texas.

Hackl, K., Cheng, A.H.–D., Yang, C.Y., and Chajes, M.J. (1992). "Bifurcations and Chaos in Structural Control," *Proceedings of the American Society of Civil Engineers Ninth Engineering Mechanics Conference*, College Station, Texas.

Kirby, J.T., Chajes, M.J., and Melby, J.A. (1992). "Wavelet Transform Analysis of Several Transient or Nonstationary Phenomena in Engineering Mechanics," *Proceedings of the American Society of Civil Engineers Ninth Engineering Mechanics Conference*, College Station, Texas.

Chajes, A., Delis, E., and Chajes, M.J. (1991). "Nonlinear Analysis of Frames," *Proceedings of the Structural Stability Research Council's 1991 Annual Technical Session*, Chicago, Illinois.

Yang, C.Y., Chajes, M.J., Cheng, A.H.–D., and Zhang, L. (1991). "Transient Response of Nonlinear Structures With Feedback Control," *Proceedings of the 62nd Shock and Vibration Symposium*, Springfield, Virginia.

Chajes, M.J., Romstad, K.M., and McCallen, D.B. (1990). "Nonlinear Frame Analysis Using A Continuum Model," *Proceedings of the American Society of Civil Engineers Eighth Structures Congress*, Baltimore, Maryland.

Chajes, M.J., Romstad, K.M., and McCallen, D.B. (1990). "Inelastic Frame Analysis Using A Continuum Model," *Proceedings of the Structural Stability Research Council's 1990 Annual Technical Session*, St. Louis, Missouri.

Maroney, B., Romstad, K.M., and Chajes, M.J. (1990). "Interpretation of Rio Dell Freeway Response During Six Recorded Earthquake Events," *Proceedings of the Fourth U.S. National Conference on Earthquake Engineering*, Palm Springs, California.

Chajes, M.J., Ramey, M.R., and Romstad, K.M. (1989). "A Proposed Method Which Eliminates the Effective Length Factor in the Design of Beam–Columns," *Proceedings of the Structural Stability Research Council's 4th International Colloquium*, New York, NY.

Romstad, K.M., Maroney, B., and Chajes, M.J. (1989). "Interpretation of Rio Dell Freeway Response During Six Recorded Earthquake Events," *Proceedings of the Strong–Motion Instrumentation Program's Seminar on Seismological and Engineering Implications of Recent Strong–Motion Data*, Sacramento, California.

PRESENTATIONS AND INVITED LECTURES

"Structural Health Monitoring of the Indian River Inlet Bridge: Results from Controlled Load Tests Conducted over the First Two Years of Service." 7th International Conference on Structural Health Monitoring of Intelligent Infrastructure, Torino, Italy (2015).

"Structural Health Monitoring of Delaware's Indian River Inlet Bridge: Year One Update." 2014 ASCE Structures Congress, Boston, Massachusetts (2014).

"Advance Workshop: Train the Trainers – Search Committee Best Practices," Delaware County Community College, Media, Pennsylvania (2011).

"Structural Health Monitoring of the Indian River Inlet Bridge," Podwal Seminar, City College of New York, New York (2011).

"Structural Health Monitoring of Delaware's Indian River Inlet Bridge," 3rd International Conference on Bridge Maintenance, Safety and Management, IABMAS, Porto, Portugal (2006).

"Evaluating Ultimate Bridge Capacity through Destructive Testing of Decommissioned Bridges," 3rd International Conference on Bridge Maintenance, Safety and Management, IABMAS, Porto, Portugal (2006).

"Enhanced End Anchorage of Bonded FRP Repairs," 7th International Symposium on Fiber–Reinforced Polymer (FRP) Reinforcement for Concrete Structures, ACI Fall Convention, Kansas City, Missouri (2005).

"Experimental Influence Lines for Bridge Evaluation," 3rd New York City Bridge Conference, New York, New York (2005).

"Steel Girder Fracture on Delaware's I–95 Bridge over the Brandywine River," 2005 ASCE Structures Congress, New York, New York (2005).

"Use of Field Testing to Evaluate and Monitor an I–95 Bridge with a Fractured Girder," Transportation Research Board Annual Meeting – AFF40 Committee Meeting, Washington, D.C. (2005).

"Application of Advanced Composites to Steel Bridges," Fourth International Conference on Advanced Composite Materials in Bridges and Structures, Calgary, Canada (2004).

"Learning from Failure: Case Studies in Forensic Engineering," Wilmington Rotary Club, Wilmington, DE (2004).

"Fracture: Case Study of the I–95 Bridge," 3rd Annual CIBrE Bridge Workshop: Fatigue and Fracture, Newark, DE (2004).

"Learning from Failure: Case Studies in Forensic Engineering," Christiana Rotary Club, Christiana, DE (2004).

"Use of Field Testing to Evaluate and Monitor an I–95 Bridge with a Fractured Girded," Transportation Research Board Annual Meeting – AFF40 Committee Meeting, Washington, D.C. (2004).

"Fracture Analysis and Retrofit Design for the I–95 Bridge over the Brandywine River," 2nd New York City Bridge Conference, New York, New York (2003).

"Bridge Rehabilitation Using Advanced Composites: Ashland Bridge SR–82 over Red Clay Creek," Structural Faults & Repair '03, London, United Kingdom (2003).

"Using Bridge testing to Enhance Bridge Management in Delaware," 9th International Bridge Management Conference, TRB, Orlando, Florida (2003).

"Applications of Fiber–Reinforced Polymer Composites," 2nd Annual CIBrE Bridge Workshop: Applications of Advanced Materials to Bridge Infrastructure, Newark, DE (2003).

"Time Domain Reflectometry for Void Detection in Grouted Post–Tensioned Bridges," Transportation Research Board Annual Meeting, Washington, D.C. (2003).

"Field Tests and In–Service Monitoring of the Newburgh–Beacon Bridge," Transportation Research Board Annual Meeting, Washington, D.C. (2003).

"Nondestructive Evaluation of Pre– and Post–tensioning Strands Using Time Domain Reflectometry," Structural Materials Technology V: An NDT Conference, Cincinnati, Ohio (2002).

"Application of Load and Resistance Factor Rating Using Site Specific Data," First International Conference on Bridge Maintenance, Safety and Management, IABMAS, Barcelona, Spain (2002).

"Integrating Professional Communication Into Civil and Environmental Engineering Curricula," 2002 ASEE Annual Conference, Montreal, Canada (2002).

"Evaluation of Pre– and Post–tensioned Tendons: Void Detection and Corrosion Monitoring," 19th Annual International Bridge Conference, IBC, Pittsburgh, Pennsylvania (2002).

"Diagnostic and Proof Testing," 1st Annual CIBrE Bridge Workshop: Field Load Testing and Long–Term Monitoring, Newark, DE (2002).

"In–Service Monitoring," 1st Annual CIBrE Bridge Workshop: Field Load Testing and Long–Term Monitoring, Newark, DE (2002).

"Developing a Strategic Plan for the Implementation of Fiber Reinforced (FRP) Composites to the Bridge Infrastructure," 5th NSF Workshop on Bridge Research in Progress, NSF, Minneapolis, Minnesota (2001)

"FRP for Bridge Repair and Rehabilitation – Panel Discussion Member," ASCE Structures Congress, Washington, D.C. (2001).

"Strengthening of a Steel Bridge Girder Using CFRP Plates," N.Y City Bridge Conference, N.Y., New York (2001).

"Performance of a GFRP Deck on Steel Girder Bridge," Transportation Research Board Annual Meeting, Washington, D.C. (2001).

"Diagnostic and In–Service Testing of a Transit Railway Bridge," Transportation Research Board Annual Meeting, Washington, D.C. (2001).

"Prestress Losses in HPC Girders: Before and After Transfer," Transportation Research Board Annual Meeting, Washington, D.C. (2001).

"Bridge Load Testing," One–Day Seminar Sponsored by Lichtenstein Consulting Engineers, Rochelle Park, New Jersey (2000).

"Delaware's High Performance Concrete Bridge Showcase: A Case Study," PCI/FHWA/FIB International Symposium on High Performance Concrete, Orlando, Florida (2000).

"Bridge Load Testing," One–Day Seminar Sponsored by Lichtenstein Consulting Engineers, Langhorne, Pennsylvania (2000).

"Delaware's First All–Composite Bridge," ASCE Structures Congress, Philadelphia, Pennsylvania (2000).

"Performance of a Historic 19th Century Wrought Iron Through–Truss Bridge Rehabilitated Using Advanced Composites," ASCE Structures Congress, Philadelphia, Pennsylvania (2000).

"Bridge Field Testing Activities at the University of Delaware," TRB Committee A2C05, Washington, D.C., (2000).

"Bridge Infrastructure Renewal: Applications of Advanced Composite Materials," Department of Civil and Environmental Engineering Seminar Series, Rutgers University, New Jersey, (1999).

"Use of Field Testing in Delaware's Bridge Management Program," 8th International Bridge Management Conference, Denver, Colorado, (1999).

"Design of Structural Rehabilitations Using Composites," Structural Engineers Association of Kentucky, Frankfort, Kentucky, (1999).

"New Composite Technology for Rebuilding Our Infrastructure." Delaware Academy of Science Annual Spring Meeting, Newark, Delaware (1999).

"Advanced Polymer Composite Bridges," Department of Civil Engineering Seminar Series, The Johns Hopkins University, Baltimore, Maryland, (1998).

"Advanced Composite Bridges in Delaware," Second International Conference on Composites in Infrastructure, Tucson, Arizona, (1998).

"Saving Bridges from the Past, Building Bridges for the Future: Application of Composite Materials." University of California, Davis, California (1997).

"Structural Monitoring of an Advanced Composite Bridge," US–Canada–Europe Workshop on Bridge Engineering, Zurich, Switzerland, (1997).

"Load Testing and Long–Term Monitoring of Advanced Composite Bridges," *Structural Faults & Repair '97*, Edinburgh, Scotland, (1997).

"Bridge Infrastructure Renewal: Application of Advanced Composite Materials," ASCE Central Pennsylvania Section, Camp Hill, Pennsylvania, (1997).

"Behavior of Engineered Wood–CFRP Beams," First International Conference on Composites in Infrastructure, Tucson, Arizona, (1996).

"Performance of a Prestressed Concrete Bridge Rehabilitated Using CFRP Sheets," First International Conference on Composites in Infrastructure, Tucson, Arizona, (1996).

"Experimental Testing of Composite Wood Beams for Use in Timber Bridges," Fourth International Bridge Engineering Conference, San Francisco, California, (1995).

"Reinforcement of Concrete Structures Using Externally Bonded Composite Materials," Second International Symposium on Non–Metallic (FRP) Reinforcement for Concrete Structures, Ghent, Belgium, (1995).

"Experimental Load Testing of a Posted Bridge: A Case Study," International Bridge Conference, Pittsburgh, Pennsylvania, (1995).

"Development of Probability–Based Fatigue Resistance of Advanced Composite Material–to–Concrete Adhesive Bonds," American Society of Civil Engineers Structures Congress, Boston, Massachusetts, (1995).

"Development of a Concrete–Wood–CFRP Composite Beam," American Society of Civil Engineers Structures Congress, Boston, Massachusetts, (1995).

"Bridge Evaluation Through Experimental Field Testing," Structural Stability Research Council's Annual Meeting, Kansas City, Missouri, (1995).

"Innovative Methods of Bridge Evaluation and Rehabilitation." University of Massachusetts, Amherst, MA (1994).

"Bridge Rehabilitation Using Composite Materials." American Society of Civil Engineers Third Materials Engineering Conference, San Diego, California (1994).

"Uses of Composite Materials in Infrastructure Rehabilitation." University of Edinburgh, Edinburgh, Scotland (1994).

"Rehabilitation of Bridges: Applications of Composite Materials." Stone & Webster Engineering Corporation, Cherry Hill, NJ (1994).

"Applications of New Materials and Intelligent Structures in Infrastructure Rehabilitation." University of California, Davis, CA (1994).

"Reinforcement of Concrete Structures Using Externally Bonded Composite Fabrics." ACI Spring Convention, San Francisco, CA (1994).

"Validating Continuum Analyses of Buildings Subjected to Dynamic Loads." 2nd U.S. National Congress on Computational Mechanics, Washington, D.C (1993).

"Lessons Learned from Two Major Earthquakes: A Structural Engineer's Perspective." Delaware Academy of Science Annual Spring Meeting, Lewes, Delaware (1993).

"Rehabilitation of Cracked Adjacent Box Beam Bridges." NSF Symposium on Practical Solutions for Bridge Strengthening and Rehabilitation, Des Moines, Iowa (1993).

"Measured and Predicted Dynamic Response of the 47–Story Embarcadero Center in San Francisco During the Loma Prieta Earthquake." University of California, Davis, California (1992).

"Stability of a 47–Story Office Building with Active Controls." Structural Stability Research Council's 1992 Annual Technical Session, Pittsburgh, Pennsylvania (1992).

"Simplified Seismic Analysis of a 47–Story Building." American Society of Civil Engineers Tenth Structures Congress, San Antonio, Texas (1992).

"A Design Case Study Using Advanced Analyses." American Society of Civil Engineers Tenth Structures Congress, San Antonio, Texas (1992).

"Loma Prieta Earthquake, October 1989 in San Francisco Bay Area." University of Massachusetts' ASCE Student Chapter Meeting, Amherst, Massachusetts (1991).

"The 1989 Loma Prieta Earthquake." University of Delaware's ASCE Student Chapter Meeting, Newark, Delaware (1991).

"The 1989 Loma Prieta Earthquake: What Have We Learned and What Are We Doing About It?" Structures, Mechanics & Geotechnical Engineering Seminar, University of Delaware, Newark, Delaware (1991).

"Nonlinear Dynamic Frame Analysis." California Universities for Research in Earthquake Engineering First Annual Meeting, San Francisco, California (1990).

"Inelastic Frame Analysis Using a Continuum Model." Structural Stability Research Council's 1990 Annual Technical Session, St. Louis, Missouri (1990).

"Nonlinear Frame Analysis Using a Continuum Model." American Society of Civil Engineers Eighth Structures Congress, Baltimore, Maryland (1990).

"A Proposed Method Which Eliminates the Effective Length Factor in the Design of Beam–Columns." Structural Stability Research Council's 4th International Colloquium, New York, New York (1989).

SPONSORED RESEARCH CONTRACTS AND GRANTS

Ongoing Evaluation and Maintenance of the Indian River Inlet Bridge Structure Health Monitoring System, Delaware Department of Transportation, with Harry Shenton III (co-PI), $62,500, September 14, 2015 – August 31, 2016.

Advancing Steel and Concrete Bridge Technology to Improve Infrastructure Performance, Federal Highway Administration, with Dennis Mertz (PI), Nii-Attoh Okine (Co-PI), Jennifer Righman McConnell (Co-PI), Thomas Schumacher (Co-PI), and Harry Shenton III (Co-PI), $549,442, September 30, 2011 – September 29, 2016.

Instrumentation and Monitoring of the Indian River Inlet Bridge – Phase II, Delaware Department of Transportation, with Harry Shenton III (PI), $446,458, May 25, 2012 – June 30, 2014.

Instrumentation and Monitoring of the Indian River Inlet Bridge, Delaware Department of Transportation, with Harry Shenton III (PI), $1,138,411, August 12, 2009 – June 30, 2012.

Field Testing and FEM Analysis of the Rt. 141 Newport Viaduct, Delaware Department of Transportation, with Dennis Mertz (Co-PI), Jennifer Righman McConnell (Co-PI), and Harry Shenton III (Co-PI), $175,412, March 1, 2009 – May 31, 2010.

NSF ADVANCE Partnerships for Adaptation, Implementation, and Dissemination (PAID) Award: Resources for Recruitment & Retention (RRR) of Women Faculty in STEM Fields at U. Delaware, National Science Foundation, with Tom Apple (Co–PI), Pam Cook (Co–PI), and Kate Scantlebury (Co–PI), $307,936, August 1, 2008 – July 31, 2013.

Near Real-Time Monitoring of Indian River Inlet Scour Hole Edge Evolution Seaward of the Bridge Piers: Phase 1, Delaware Department of Transportation, with Jack Puleo (PI) and Jennifer Righman (Co-PI), $842,397, October 1, 2007 – September 30, 2010.

Bridge Management using In–Service Data (Phase II), Delaware Department of Transportation, with Harry Shenton III (PI), $53,908, July 1, 2007 – June 30, 2008.

Instrumentation and Monitoring of the Indian River Inlet Bridge: Phase I, Delaware Department of Transportation, with Dov Leshchinsky (Co-PI), and Harry Shenton III (Co–Investigator), $399,991, September 1, 2005 – August 31, 2007.

Development of a Comprehensive Workplan for FHWA's Long–Term Bridge Performance (LTBP) Program, with Dennis Mertz (Co–PI), Nii Attoh-Okine (Co–Investigator), Sue McNeil (Co–Investigator), Jennifer Righman (Co–Investigator), and Harry Shenton III (Co–Investigator), $330,000, July 1, 2005 – June 30, 2009.

Bridge Management using In–Service Data, Delaware Department of Transportation, with Harry Shenton III (Co–PI), $58,229, July 1, 2005 – June 30, 2007.

Research Experiences for Undergraduates in Bridge Engineering, with Diane Kukich (Co–PI), National Science Foundation, $322,625, March 1, 2002 – February 28, 2007.

Monitoring of the Churchman's Road Bridge over I–95, with Dennis Mertz (Co–PI), Delaware Department of Transportation, $89,953, January 1, 2005 – December 31, 2006.

Testing of Bridge 1–651, Delaware Department of Transportation, $12,865, July 1, 2004 – June 30, 2005.

Testing of Bridge 1–155, Delaware Department of Transportation, $12,865, July 1, 2004 – June 30, 2005.

Testing of Bridge 1–307, Delaware Department of Transportation, $12,865, July 1, 2004 – June 30, 2005.

Testing of Bridge 1–688, Delaware Department of Transportation, $18,665, July 1, 2004 – June 30, 2005.

Planning and Testing of Decommissioned Bridges, Delaware River and Bay Authority, $5,000, January 1, 2004 – December 31, 2004.

Void Detection in Post Tensioning Ducts Using Time Domain Reflectometry, with Robert Hunsperger (Co–PI), National Research Council, $75,518, September 1, 2003 – February 28, 2005.

Field Testing and Evaluation of the I–95 Bridge over the Brandywine River, with Dennis Mertz (Co–PI), Delaware Department of Transportation, $27,372, August 15, 2003 – December 31, 2004.

Planning and Testing of Decommissioned Bridges, Delaware River and Bay Authority, $5,000, January 1, 2003 – December 31, 2003.

Stainless Clad Rebar and CFRP Rehab Evaluation for Bridge 1–119, with Harry Shenton III (Co–PI), Baidurya Bhattacharya (Co–PI), and Robert Hunsperger (Co–PI), Delaware Department of Transportation, $59,140, September 1, 2002 – August 31, 2004.

MMFX Rebar Evaluation for I–95 Service Road Bridge 1–712–B, with Harry Shenton III (Co–PI), and Robert Hunsperger (Co–PI), Delaware Department of Transportation, $99,286, September 1, 2002 – August 31, 2004.

Load Rating of Bridges Without Plans: Phase II, with Harry W. Shenton III (Co–PI), Delaware Department of Transportation, $39,572, September 1, 2002 – August 31, 2004.

Review of Available Design Criteria for Using Composites as Superstructure, Reinforcement, or Strengthening, with Dennis Mertz (Co–PI), Delaware Department of Transportation, $9,487, September 1, 2002 – August 31, 2003.

Development of Delaware's First "Smart" Bridge, with Harry Shenton III (Co–PI), Baidurya Bhattacharya (Co–PI), and Jian Sun (Co–PI), Delaware Department of Transportation, $78,306, July 1, 2001 – June 30, 2003.

Load Testing and Post–Repair Evaluation of CFRP Repaired Bridge 1–026, with Harry Shenton III (Co–PI), Delaware Department of Transportation, $28,658, November 1, 2001 – October 31, 2003.

High–Density Polyethylene (HDPE) Pipe Evaluation, with Dov Leshchinsky (PI), Delaware Department of Transportation, $35,476, May 1, 2001 – December 31, 2002.

Evaluation of Concrete Encased Steel Girder Bridges, Delaware Department of Transportation, $36,846, July 1, 2001 – June 30, 2003.

NCHRP 4–27 – Application of Fiber Reinforced Polymer (FRP) Composites to the Highway Infrastructure: Strategic Plan, with Dennis Mertz (PI), John Gillespie (Co–PI), and Diane Kukich (Co–PI), National Cooperative Highway Research Program, $224,704, September 12, 2000 – March 11, 2002.

Application of Load Resistance Factor Rating Using Site Specific Data, with Dennis R. Mertz (Co–PI), and Nii Attoh–Okine (Co–PI), Delaware Department of Transportation, $47,828, July 1, 2000 – June 30, 2002.

Detecting Corrosion in Existing Structures Using Time Domain Reflectometry, with Robert Hunsperger (Co–PI), Delaware Department of Transportation, $49,824, July 1, 2000 – June 30, 2002.

Newark Airport Monorail, with Dennis Mertz (Co–PI), and Harry Shenton III (Co–PI), HDR Engineering, Inc., $224,499, May 23, 2000 – December 31, 2000.

Load Rating of Arches, with Harry Shenton III (Co–PI), Delaware Department of Transportation, $37,721, July 1, 1999 – June 30, 2001.

Evaluating Corrosion of Steel Strands Using Time Domain Reflectometry, with Robert Hunsperger (Co–PI), and Kevin J. Folliard (Co–PI), Delaware Department of Transportation, $42,030, July 1, 1999 – June 30, 2001.

High–Performance Concrete for Bridge 8F in Frederica, Delaware, with John Gillespie (Co–PI), Dennis Mertz (Co–PI), Scott Sabol (Co–PI), and Harry Shenton III (Co–PI), Delaware Department of Transportation, $99,969, August 1, 1999 – June 30, 2002.

A System for Long–Term Health Monitoring of an Advanced Polymer Composite Bridge, with Harry Shenton III (PI), John Gillespie (Co–PI), and Dennis Mertz (Co–PI), National Science Foundation, $60,640, October 1, 1998 – September 30, 1999.

Bridge Load Testing, with Harry Shenton III (Co–PI), Delaware Department of Transportation, $41,544, November 1, 1998 – June 30, 1999.

Application of Advanced Composites to Steel–Bridge Retrofitting, with Dennis R. Mertz (PI), and John W. Gillespie (Co–PI), National Academy of Sciences, $97,049, December 1, 1998 – September 30, 1999

Design of Composite Grid–Reinforced Highway Bridge Decks–Phase II, with Dennis Mertz (Co–PI), John Gillespie (Co–Investigator), Victor Kaliakin (Co–Investigator), Scott Sabol (Co–Investigator), and Harry Shenton III (Co–Investigator), IKG Industries and the Delaware Research Partnership, $200,000, August 1, 1998 – July 31, 1999.

Field Implementation of a System for Long–term Monitoring of Bridges, with Harry Shenton III (PI), Delaware Department of Transportation, $34,472, July 1, 1998 – June 30, 2000.

Proposed Research Program to Evaluate Fiber–Reinforced Concrete Properties, with Kevin Folliard (PI), and John Gillespie (Co–PI), KAPEJO and the Delaware Research Partnership, $20,000, December 1, 1997 – November 30, 1998.

Rehabilitation of Steel Bridge Girders Through the Application of Composite Materials, with John Gillespie (PI), and Dennis Mertz (Co–PI), Delaware Department of Transportation, $30,000, July 1, 1997 – June 30, 1999.

Nondestructive Evaluation of Bridges Through Long–Term Monitoring, with Harry Shenton III (PI), Delaware Department of Transportation, $36,955, July 1, 1997 – June 30, 1999

Corrosion Detection of Embedded or Encased High Strength Steel Rods and Cables Using Time Domain Reflectometry, with Robert Hunsperger (PI), National Science Foundation, $218,270, June 1, 1997 – May 31, 2000.

UNIDEL96L: Infrastructure Renewal Match, with John Gillespie (Co–PI), and Dennis Mertz (Co–PI), University of Delaware, $350,000, January 3, 1997 – December 31, 2050.

Design of Composite Grid–Reinforced Highway Bridge Decks–Phase I, with Dennis Mertz (Co–PI), Victor Kaliakin (Co–Investigator), and Harry Shenton III (Co–Investigator), IKG Industries and the Delaware Research Partnership, $175,000, December 30, 1996 – December 29, 1997.

Advanced Composites for Bridge Infrastructure Renewal – Phase II, with John Gillespie (PI), Giuseppe Palmese (Co–PI), Roy McCullough (Co–Investigator), and Dennis Mertz (Co–Investigator), University of California, San Diego, $600,000, September 1, 1996 – August 31, 1997.

Proposal to Monitor the Magazine Ditch and New Castle Avenue Bridges, with John Gillespie (Co–PI), Dennis Mertz (Co–PI), and Harry Shenton III (Co–PI), Federal Highway Administration and the Delaware Department of Transportation, $100,000, September 1, 1996 – January, 31, 1999.

A Multi–Disciplinary Design Approach to an All–Composite Slab Bridge, with Dennis R. Mertz (Co–PI), John Gillespie (Co–Investigator), Federal Highway Administration and the Delaware Department of Transportation, $600,000, September 1, 1996 – May 31, 1999.

Infrastructure Rehabilitation Using Advanced Composites, with John Gillespie, (PI), and Dennis R. Mertz (Co–Investigator), Hardcore DuPont and the Delaware Research Partnership, $375,000, September 1, 1996 – August 31, 1997.

Load Rating of Bridges That Have No Plans and Bridges That Are Highly Skewed, with Harry Shenton III (Co–PI), Delaware Department of Transportation, $36,672, July 1, 1996 – June 30, 1998.

Rehabilitation of Steel Bridge Girders Through the Application of Composite Materials, with John Gillespie (PI), and Dennis Mertz (Co–PI), Delaware Department of Transportation, $45,000, July 1, 1996 – June 30, 1998.

Load Rating Equipment, with Dennis Mertz (Co–PI), Delaware Department of Transportation, $86,610, June 1, 1996 – December 31, 1999.

Infrastructure Rehabilitation Using Advanced Composites, with John Gillespie, (PI), and Dennis R. Mertz (Co–Investigator), Hardcore DuPont and the Delaware Research Partnership, $250,000, August 1, 1995 – June 30, 1997.

Experimental Load Rating of Posted Bridges, with Victor Kaliakin (Co–PI), Dennis Mertz (Co–PI), and Harry Shenton III (Co–PI), Delaware Department of Transportation, $37,474, July 1, 1995 – June 30, 1997.

Performance of Concrete Bridge Rehabilitation Using Composite Materials, with Dennis Mertz (Co–PI), Tonen Corporation and the Delaware Research Partnership, $25,500, June 1, 1995 – May 31, 1996.

RIA: Development and Evaluation of Composite Beams, National Science Foundation, $89,059, August 1, 1994 – July 31, 1997.

Rehabilitating Longitudinally Cracked Concrete Bridges Using Composite Materials, Dennis Mertz (Co–PI), Delaware Department of Transportation, $31,286, July 1, 1994 – June 30, 1996.

Seismic Retrofit Strategies for Delaware's Bridges, with Victor N. Kaliakin (Co–PI), Delaware Department of Transportation, $24,785, July 1, 1993 – June 30, 1995.

Evaluation of Experimental Load Rating of Posted Bridges, with Dennis R. Mertz (Co–PI), Delaware Department of Transportation, $24,539, July 1, 1993 – June 30, 1995.

Analysis of Flat Slab Bridges, with Victor Kaliakin (Co–PI), Vistasp Karbhari (Co–PI), and Dennis Mertz (Co–PI), Delaware Department of Transportation, $22,353, July 1, 1992 – June 30, 1994.

Uses of Fiber–Reinforced Plastics in Structures and for the Rehabilitation of Concrete Box Girders, with Victor Kaliakin (Co–PI), Vistasp Karbhari (Co–PI), and Dennis Mertz (Co–PI), Delaware Department of Transportation, $22,687, July 1, 1992 – June 30, 1994.

Nonlinear Dynamic Analysis of Large Lattice Structures Using Continuum Models, Engineering Foundation, $23,000, September 1, 1991 – May 31, 1993.

Dynamic Analysis and Design of Tall Buildings Using Continuum Models, University of Delaware Research Foundation, $18,000, January 15, 1991 – December 31, 1992.

STUDENT MENTORING

Doctoral Students – (5)

Hadi Al-khateeb, William Finch, Jr., Haoxiong Huang, Degang Li, and Jian Liu.

Masters Students – (43)

Andrew Bechtel, Ashley Bechtold (current), Briana Brookes, Patrick Carson, William Edberg, Ahmad Faqiri, Michael Haddad (current), Jason Hastings, Jasmeen Hirachan, Eric Holloway, Scott Holsinger, Haoxiong Huang, Steve Huff, Ted Januszka, William

Johnson, Dan Kucz, Degang Li, Pablo Marquez, Kervin Michaud, Matthew McNally, Albert Meyer, Jr., Trent Miller, Jim Quigley, Peter Quinn, Michael Rakowski, Nicole Reader, Geoffrey Reichelt, John Reid, Wade Rider, Tiera Rollins, Justin Ross, Kim Skroback, Jiten Soneji, Tim Stuffle, Eric Thompson, Theodore Thomson, Jr., Heather Upshur, Amy Ward, Julia West, Dan Weston, Melissa Williams, Jason Winterling, and Liyang Zhang.

Undergraduate Research Assistants (UD) – (41)

Dan Bartlett, Erik Bergey, David Blanchard, Caryn Bohn, Tim Burroughs, Jack Cardinal, Christopher Chang, Alison Conway, Natalie Czaplicki, Peter Dean, Cortney Dula, Charlene Elliason, Peter Fagan, Josh Fanelli, Cory Farschman, Emily Fletcher, Stephanie Glien, Jason Hastings, Dana Heffernan, Monique Hite, Steve Huff, Joe Jakubowski, Ted Januszka, Julia Krohn, Adriel Lazaro, Ivan Lim, David Lubitz, Kate Manning, Wendy Neal, Mark Parker, William Payne, Bethany Simmons, Keith Sunshine, Brian Tarantino, Theodore Thomson, Jr., Debra Varnell, Melissa Williams, Mark D. Wisniewski, John Wodjak, Mete Zadil, and Michael Zettlemoyer.

Undergraduate Research Assistants (NSF REU Program) – (17)

Laura Akl, Michelle Banister, Kevin Bott, Geoffrey Burrell, Angela Chacon, Doug Charles, Judd Galloway, Kelsey Miner, David Pirnia, Spencer Quiel, Nicole Reader, Justin Ross, Matthew Savage, Matthew Swinehart, Katie Wehrum, Kris Weidner, and Laura Weyl.

TEACHING

University of Delaware

2016 Spring:	CIEG 302	Structural Design
2015 Fall:	EGGG 101	Introduction to Engineering (co-instructor)
	CIEG 402	Introduction to Sustainability Principles in CEE
	CIEG 467	Co-op Experience (co-instructor)
2015 Spring:	Sabbatical	
2014 Fall:	EGGG 101	Introduction to Engineering (CEE Organizer)
	CIEG 211	Statics
2014 Spring:	CIEG 302	Structural Design
2013 Fall:	EGGG 101	Introduction to Engineering (CEE Organizer)
	CIEG 211	Statics
2013 Spring:	CIEG 167	Sustainable Energy Technology (Co–Taught with Dr. Heck)
	CIEG 302	Structural Design (Co–Taught with Dr. Righman)
2012 Fall:	EGGG 101	Introduction to Engineering (CEE Organizer)

	CIEG 301	Structural Analysis (Taught Computer Laboratory)
2011 Fall:	EGGG 101	Introduction to Engineering (Contributor)
2010 Fall:	EGGG 101	Introduction to Engineering (Course Coordinator)
2009 Fall:	EGGG 101	Introduction to Engineering (Course Coordinator)
2008 Fall:	EGGG 101	Introduction to Engineering (Course Coordinator)
2008 Spring:	CIEG 302	Structural Design (Co–Taught with Dr. Righman)
	CIEG 167	Introduction to Civil Engineering (Co-Taught with Dr. Davidson, Dr. Lee, Dr. Puleo, and Dr. Shenton)
2007 Fall:	EGGG 101	Introduction to Engineering (Course Coordinator)
2007 Spring:	CIEG 302	Structural Design (Co–Taught with Dr. Righman)
2006 Fall:	EGGG 167	Introduction to Engineering (Course Coordinator)
2005 Fall:	CIEG 301	Structural Analysis (Co–Taught with Dr. Righman)
2005 Spring:	CIEG 667	Matrix Structural Analysis
2004 Fall:	CIEG 301	Structural Analysis
2004 Spring:	CIEG 302	Structural Design (Co–Taught with Dr. Mertz)
	CIEG 865	Structural Engineering Seminar
2003 Fall:	CIEG 301	Structural Analysis
2003 Spring:	CIEG 302	Structural Design (Co–Taught with Dr. Mertz)
	CIEG 461	Senior Design
	CIEG 865	Structural Engineering Seminar
2002 Fall:	CIEG 461	Senior Design
2002 Spring:	CIEG 302	Structural Design (Co–Taught with Dr. Mertz)
	CIEG 865	Structural Engineering Seminar
2001 Fall:	CIEG 301	Structural Analysis
2001 Spring:	CIEG 467	Structural Design (Co–Taught with Dr. Mertz)
	CIEG 865	Structural Engineering Seminar (Co–Taught with Dr. Mertz)
	CIEG 867	Intermediate Topics in Finite Element Analysis (Co–Taught with Dr. Kaliakin)
2000 Fall:	CIEG 865	Structural Engineering Seminar
2000 Spring:	CIEG 467	Structural Design (Co–Taught with Dr. Mertz)
	CIEG 867	Intermediate Topics in Finite Element Analysis (Co–Taught with Dr. Kaliakin)
1999 Fall:	CIEG 301	Analysis of Structures

1999 Spring:	CIEG 403	Concrete Design
	CIEG 865	Structural Engineering Seminar
1998 Fall:	CIEG 405/605	Matrix Structural Analysis
1998 Spring:	Sabbatical	
1997 Fall:	Sabbatical	
1997 Spring:	CIEG 403	Concrete Design
	CIEG 405/605	Matrix Structural Analysis
1996 Fall:	CIEG 211	Statics
1996 Spring:	CIEG 212	Strength of Materials (Co–Taught with Dr. Mertz)
	CIEG 213	Strength of Materials Lab
	CIEG 403	Concrete Design
1995 Fall:	CIEG 803	Advanced Concrete Design
1995 Spring:	CIEG 403	Concrete Design
	CIEG 605	Matrix Structural Analysis
1994 Fall:	CIEG 402	Steel Design
	CIEG 865	Structural Engineering Seminar
1994 Spring:	CIEG 467	Computer Methods of Structural Analysis (Course Co–Taught and Co–Developed with Dr. Kaliakin)
	CIEG 611	Structural Dynamics Design
1993 Fall:	CIEG 402	Steel Design
1993 Spring:	CIEG 403	Concrete Design
	CIEG 405/605	Matrix Structural Analysis
1992 Fall:	CIEG 402	Steel Design
1992 Spring:	CIEG 411/611	Structural Dynamics Design
1991 Fall:	CIEG 402	Steel Design
	CIEG 667	Matrix Structural Analysis
	CIEG 865	Structural Engineering Seminar
1991 Spring:	CIEG 467/667	Matrix Structural Analysis (Course Developed by Dr. Chajes)
1990 Fall:	CIEG 403	Concrete Design

CONSULTING

Field evaluation and testing of major bridges and structures including the Newburgh–Beacon Bridge, the Brooklyn–Queens Expressway, the Goethals Bridge, the Ben Franklin Bridge, the Chesapeake City Bridge, the Summit Bridge, the Lock Gates on the Erie Canal, and several historic trusses and polymer composite bridges.