Curriculum Vitae Anthony J. Vizzini, PhD, PE

Education:

Massachusetts Institute of Technology

- Ph.D. in Aeronautics and Astronautics, 1986.
- S.M. in Aeronautics and Astronautics, 1983, recipient of the DuPont Fellowship.
- S.B. in Mathematics, 1982, ranked 23rd on the National Putnam Exam, 1978.
- S.B. in Aeronautics and Astronautics, 1981, recipient of Henry Webb Salisbury award for academic achievement.

Professional Experience:

- Provost and Senior Vice President, Wichita State University, 2014 current.
- Vice President of Academic Affairs, Wichita State University, 2013 2014.
- Dean and Professor, College of Engineering and Applied Sciences, Western Michigan University, 2009 2013.
- Department Head, Professor, and inaugural holder of the Bill and Carolyn Cobb Chair, Aerospace Engineering, Mississippi State University, 2003 – 2009.
- Associate Professor, Aerospace Engineering, University of Maryland, 1992 2003.
- Visiting Scientist, NSWC Carderock, ASEE-ONR Summer Faculty Research Program, summer 1994.
- Founding Director, Composites Research Laboratory, University of Maryland, 1987 2003.
- Assistant Professor, Aerospace Engineering, University of Maryland, 1986 1992.
- Graduate Research Assistant, Massachusetts Institute of Technology, 1981 1986.

Administrative Experience:

Provost and Senior Vice President, Wichita State University (WSU), 2014 – current Vice President of Academic Affairs, Wichita State University (WSU), 2013 – 2014

- Lead Academic Affairs consisting of six academic colleges, the Dorothy and Bill Cohen Honors College, the Graduate School, the Libraries, and the Institute of Interdisciplinary Creativity. Current student enrollment is approximately 14,500. Oversee auxiliary enterprises including OneStop, admissions, financial aid, registrar, online education, adult learners, student success, and career development. Additional units reporting to Academic Affairs include the Ulrich Art Museum, KMUW (an NPR radio station), Information Technology Services, and the division of Student Affairs (performed the duties of the VP of Student Affairs for six months 7/16-1/17). Total annual budget is approximately \$120 MM excluding Student Affairs.
- Initiated and supported the development of the Master in Innovation Design (MID) degree, a university-wide MS degree focusing on the development of talent in innovation involving students with academic backgrounds from all of the academic

colleges. Established the Institute for Interdisciplinary Creativity to provide a home for the MID and additional interdisciplinary programs.

- Encouraged and supported the development of the Bachelor of Applied Arts in Media Arts (fall 17). This is a shared program between the College of Fine Arts and the Elliott School of Communication in the College of Liberal Arts & Sciences.
- Developed tuition models for non-degree-seeking students including concurrent education, undergraduate and graduate badges, and Market-Based Tuition.
- Promoted the concept of collision spaces to increase frequency of interdisciplinary interactions. Spaces include WIDGET (fall 15), GoCreate (spring 17), the Digital Garage (fall 17), and the Ideas Lab (TBD).
- Overseeing the alliance between WSU and the Wichita Area Technical College. WATC will become the WSU-Campus for Applied Sciences and Technology (spring 18 pending HLC approval). This will result in seamless education offerings from the GED to the PhD. Initiated articulation agreements with four local community colleges on true 2+2 programs in business and engineering (seven programs as of fall 17).
- Oversaw the establishment of the Dorothy and Bill Cohen Honors College and the initiation of the Honors Baccalaureate thus creating a degree-granting honors college. Coordinated the proposal that resulted in a \$5 MM gift to name the Honors College.
- Worked with the Barton School of Business to establish the Institute for the Study of Economic Growth funded through \$3.64 MM grant from the Charles Koch Foundation.
- Developed the goals and targets for the current capital campaign Shock the World (\$250 MM over seven years) with the WSU Foundation.
- Supported the development of a Strategic Enrollment Management plan including the establishment and growth of a virtual and physical OneStop, to provide students with a common portal for all questions and concerns and first-year advising. Allocated the resources necessary for its implementation.
- Supported the implementation of the first fully online program at WSU and the creation of a separate office for online education. The number of fully online programs has increased to more than 20 including a fully online MBA (spring 18). Total online offerings are approximately 25% of the total student credit hours.
- Incorporated and reorganized several additional units into Academic Affairs including admissions, financial aid, and career services. Assumed the responsibility of Information Technology Services. Assumed the responsibility of Student Affairs reporting to Academic Affairs.
- Developed and conducted more than 20 mini town halls in spring 2015 to bring on board the Innovation University, creating collaboration and empowering faculty and staff to initiate cross cutting discussion and action groups.
- Extensive hiring of key personnel including the VP of Student Affairs, nine deans, the CIO, and the general manager of KMUW resulting in a greater diversity of the leadership team.

- Established college, university, and presidential coins to unite alumni, faculty, staff and friends of the university.
- Served as the Global President of SAMPE.

Global President, Society for the Advancement of Material and Process Engineering (SAMPE), 2014 – 2015 (Elected Position)

- Chaired the Global Executive Cabinet and was responsible for the global operations of SAMPE (5000 members) including maintaining the brand and development of new membership regions working closely with the CEO.
- Represented SAMPE Global at three international venues.
- Provided leadership in the start-up phase of the global governing structure.
- Communicated with the general membership through bi-monthly letters in the *SAMPE Journal*.

Dean, College of Engineering and Applied Sciences (WMU), 2009 – 2013

- Led an academic college of seven departments offering 17 undergraduate programs, ten master's degrees, and six doctoral programs consisting of 90 faculty and 30 support staff. Total student enrollment was approximately 2,650. Total annual budget was approximately \$20 MM. The college is located in a 323,000 ft² building situated off campus in the Business Technology and Research Park (BTR).
- Established a college-level doctoral program to provide complete and comprehensive access to doctoral programs, to interdisciplinary graduate programs, and to a MD-PhD degree for WMU's School of Medicine (W-Med). Streamlined the doctoral programs across the college to reduce the number of required hours to decrease time to graduation and increase enrollment.
- Enabled the growth of a Medical Engineering program within CEAS including graduate curricula and research. Activity included 20 faculty members in the college who developed a MS in Medical Engineering in collaboration with the Homer Stryker, M.D. College of Medicine beginning fall 2017 to build a relationship with the med school and industry.
- Established and implemented separate admission standards for the college to provide paths to success for all students regardless of preparation. Ill-prepared students are placed in WMU Explore with appropriate advising to increase retention within the university. Worked to include faculty, students, senior leadership, and board of trustees in the process of this decision.
- Established and implemented a differential tuition plan to augment CEAS specific programs in student success and retention including scholarships, revision of engineering mechanics, first-year plus experience, infrastructure renewal, and faculty and staff development.
- In collaboration with faculty and staff committees, developed the strategic plan for the college consistent with the WMU and Academic Affairs strategic plan.
- Initiated a reorganization of the college to realign programs to educational and research priorities.

- Initiated a reformulation of co-op and internships into engineering practicum to provide transcript documentation and increased data capture attracting more student and business involvement.
- Oversaw capital improvements to the CEAS building including a multi-purpose function room, recognition wall, college computer laboratory, and college teaching assistant resource center.
- Supported continuing efforts to initiate and sustain programs with international institutions including a dual degree with Anadolu University in Eskişehir, Turkey for students in Industrial or Civil Engineering.
- Forwarded diversity in faculty ranks with new hires. Of the 11 new faculty hires in CEAS, six were from under-represented groups including two women, two Hispanic women, one African-American woman, and one African-American man.
- Established a college coin to unite alumni, faculty, staff, and friends of the college.
- Served as the president of two professional societies SAMPE and ASC.

International President, Society for the Advancement of Material and Process Engineering (SAMPE), 2011 – 2012 (Elected Position)

- Culmination of seven years on the Executive Cabinet (five years as an elected representative)
- Chaired the Executive Cabinet and was responsible for the operations of SAMPE (5000 world-wide members, ~\$3 MM in revenues) working closely with the Executive Director.
- Presided over two international conferences within the United States and represented SAMPE at four international venues.
- Provided leadership in the transition of the society from an international society to a global society involving the creation of a global governing structure.
- Communicated with the general membership through summaries of cabinet activities and bi-monthly letters in the *SAMPE Journal*.

Department Head, Aerospace Engineering (MSU), 2003 – 2009

- Led an academic unit consisting of 14 faculty, three research faculty, 20 support staff, 180 undergraduate students, and 37 graduate students including the Raspet Flight Research Laboratory (RFRL) involving a state budget of \$1.85 MM. The department was ABET accredited in 2006. The department was ranked for the first time by US News & World Report in 2011. Responsible for administrating the Engineering Mechanics program within the Bagley College of Engineering.
- Led the department in strengthening its research areas including new thrust areas in uninhabited air systems and small satellite engineering and increased research expenditures from \$0.7 MM in FY 03 to \$4.0 MM in FY 08. (Many faculty members expended additional funds in center activity.)
- Spearheaded the use of RFRL as an economic development tool to recruit aerospace industry to the region. Personally recruited Aurora Flight Sciences to Mississippi State University and supported economic development endeavors including American Eurocopter, GE Aviation, and Stark Aerospace receiving \$450k

from Mississippi Development Authority for capital improvements in RFRL. These strategic partners created an aerospace corridor in Northern Mississippi with more than 500 jobs by the end of 2008.

- Involved in development activities and stewardship for the department and the Bagley College of Engineering resulting in approximately \$3.5 MM including an endowment for the Raspet Flight Research Laboratory (\$950k), completion of an endowed chair (\$750k), capital improvements (\$100k), three endowed scholarships (\$85k), and an undergraduate travel allowance (\$45k). In addition, the first endowed chair in Aerospace Engineering (\$1.5 MM) was established.
- Transitioned the department to a broad-base aerospace curriculum providing concentrations in aeronautics and astronautics. Led the development of an interdisciplinary graduate program in small satellite engineering with direct links with Surrey Satellite Technology, Ltd (SSTL) and the University of Surrey in the United Kingdom. Led a team to redesign Engineering Mechanics I - Statics using an emporium model.
- Placed renewed emphasis in the graduate program, especially the doctoral program. Doubled the number of graduate students, and tripled the number of doctoral students through initiating a direct-admit program and streamlining requirements.
- Recruited and hired five faculty members including the first two women faculty in the department. One of the five faculty members was the first in the department to be awarded an NSF Career Grant. Transitioned an African-American researcher into adjunct faculty. Promoted faculty professional development and recognition of achievements. Through my involvement one faculty member was elected Fellow and six faculty members were elected Associate Fellows of AIAA. Approximately 60% of the faculty members were involved in professional technical committees. Mentored individual faculty members to enhance their research, teaching, and service portfolios. Successfully supported two tenure applications and one promotion to Associate Professor.
- Increased the number of student design competition teams from one to three providing opportunities to 50% of the students in the department as well as students throughout the college. Initiated programs to assist student mentoring, and increased recognition of student achievements.

Founding Director, Composites Research Laboratory (UMD), 1987 – 2003 (joint appointment with the Maryland Enterprise Technology Institute)

- Founded the Composites Research Laboratory in January 1987 to provide an interdisciplinary educational program at the undergraduate and graduate level within the A. James Clark School of Engineering; a \$1 MM state-of-the-art research/cost center for members, departmental units, and industry; and a knowledge base for the advancement of research in composite materials and structures.
- Responsible for acquisition and integration of equipment; development of testing, data analysis and modeling software; coordination of research programs; resource management; and generation of funds to maintain self sufficiency through direct sales with industry and government laboratories.
- Supervised a Research Engineer and 3-6 laboratory assistants at any given time.

Graduate Director, Aerospace Engineering (UMD), 1992 – 1994

• Coordinated the processing of graduate applications, developed a tracking system for graduates, formalized the graduate student guide, and secured university funds for fellowship support.

Professional Development:

- ASAE, Symposium for Chief Executive and Chief Elected Officers, 2010.
- American Council on Education, Managing Conflict, 2006.
- Harvard Management Development Program, 2004.

Registration:

- Professional Engineer #17105 Mechanical Engineering, MS (1/1/06)
- Professional Engineer #56613 Mechanical Engineering, MI (8/19/09)
- Professional Engineer #23030 Mechanical Engineering, KS (5/1/13)

Patent:

1. F. A. Taube, II and A. J. Vizzini, "Adjustable Low Flow High Pressure Regulator," #5,979,495, November 9, 1999.

Honors, Awards & Recognitions:

- Fellow, Society for the Advancement of Material and Process Engineering, 2017.
- WSU Ventures, Visionary Award, 2016.
- Fellow, National Academy of Inventors, 2014.
- Global President, Society for the Advancement of Material and Process Engineering (SAMPE), 2014 2015.
- State Board of Professional Engineers (Gubernatorial appointment, MI), 2012 2013.
- International President, Society for the Advancement of Material and Process Engineering (SAMPE), 2011 2012.
- President, American Society for Composites (ASC), 2010 2011.
- General Chair ASC 23rd Technical Conference, September 2008.
- Technical Co-Chair, SAMPE 2007, June 2007.
- Invited Keynote Speaker, Australia Composites, Gold Coast, Australia, April 2007.
- Bill and Carolyn Cobb Chair of Engineering, March 2005.
- Exceptional Achievement Award, NASA Goddard Space Flight Center, March 2005.
- Fellow, American Society for Composites, October 2004.
- Best Paper at the ASC 17th Technical Conference, October 2003.
- Outstanding Teamwork Award, NASA Goddard Space Flight Center, May 2003.

- Certificate of Teaching Excellence, University of Maryland, May 2003.
- Technical Chair, 34th International SAMPE Technical Conference, November 2002.
- Visiting Professor, Aalborg University, Institute for Mechanical Engineering, August-September 2002.
- Professor of the Year, 1999-2000, University of Maryland AIAA and ΣΓΤ Student Chapters, May 2000.
- General and Technical Conference Chair, ASC 13th Technical Conference, October 1998.
- A. James Clark School of Engineering Poole & Kent Company Teaching Award for Senior Faculty, May 1998.
- "Broken Propeller," University of Maryland AIAA Student Chapter, May 1996.
- Best Paper in the Interactive Plenary Session of the 36th AIAA Structures, Structural Dynamics, and Materials Conference, 1995.
- Associate Fellow, American Institute of Aeronautics and Astronautics, 1994.
- Member of Tau Beta Pi MA-Beta (engineering), Sigma Gamma Tau MA-MIT (aerospace), Phi Beta Kappa – MA-Xi (arts & sciences), and Phi Kappa Phi – MI-WMU (general) honor societies.

Editorships:

- Associate Editor, *Journal of Advanced Materials*, 2002 2010.
- Editorial Advisory Board, *Journal of Composite Materials*, 2001 2006.
- Editorial Advisory Board, AIAA Education Series, member, 1998 2000.
- Associate Editor, Journal of the American Helicopter Society, 1997 2005.

Professional Service:

Accreditation Board for Engineering and Technology (ABET)

- Commissioner for AIAA 2016 2017.
- ABET Program Evaluator 2004 current.

American Helicopter Society (AHS)

- Associate Editor, Journal of the American Helicopter Society, 1997 2005.
- Structures and Materials Technical Committee, Chair 1995-1997, member 1989 2006.
- AHS representative to AIAA 35th and 37th SDM, April 1994, 1996.
- Session Chair or Co-Chair AHS 47th, 48th, 50th, 55th, and 56th Annual Forum, Structures and Materials, 1991 – 2000.

American Institute of Aeronautics and Astronautics (AIAA), Associate Fellow

- Member of Academic Affairs Committee, 2004 current.
- Member of Aerospace Department Chairs Association, 2003 2009.
- Member of Structures Technical Committee, 1991 1994.

- Session Chair and organizer, Education, AIAA 45th Aerospace Science Meeting, 2007.
- Session Chair: AIAA 33^{rd} , 34^{th} , 35^{th} , 38^{th} , 39^{th} , 40^{th} , 41^{st} , 42^{nd} , 48^{th} , 49^{th} , 50^{th} , and 51^{st} SDM 1992 2010.
- Session Chair: Adaptive Structures Forum, April 1994.
- Co-faculty advisor for University of Maryland student chapter 1988 1993.

American Society for Composites (ASC), Fellow

- Young Composites Research Award Committee, 2017 2021.
- Past President, 2012 2013.
- President (elected), 2010 2011.
- Vice-President (elected), 2008 2009.
- General Chair, ASC 23rd Technical Conference, September 2008.
- Membership Activity Development, Chair 2003 2007.
- Membership Secretary (elected), 2000 2001.
- General and Technical Chair, ASC 13th Technical Conference, September 1998.
- Session Chair: ASC 9th, 10th, 12th, 13th, 16th, 17th, 19th, 21st, 22nd, 23rd, 24th, and 26th Technical Conferences, 1994 – 2011.

American Society for Testing and Materials (ASTM)

• Voting member of D-30 committee, 1987 – current.

Board of Professional Engineers (Michigan)

• Member (Gubernatorial appointment), April 2012 – March 2016 (resigned June 2013).

The Composites Consortium

• Executive Steering Committee, 2006.

International Community on Composite Materials

• Local Scientific Board, ICCM-14, 2003.

International Conference on Computational and Experimental Structures

• Session co-chair, 2004.

Massachusetts Institute of Technology

• MIT Educational Counselor, 2008 – current.

Michigan Medical Devices Accelerator

• Member, Board of Directors, 2010 – 2013.

Phi Beta Kappa (ΦBK)

• Southwest Michigan Association, Secretary, 2011 – 2013.

Society for the Advancement of Material and Process Engineering (SAMPE), Fellow

- Global Immediate Past President, SAMPE, 2015 2016.
- Global President (elected), SAMPE, 2014 2015.

- Global Vice President (elected), SAMPE, 2013 2014.
- International Immediate Past President, SAMPE Executive Cabinet, 2012 2013.
- International President (elected), SAMPE Executive Cabinet, 2011 2012.
- International Executive Vice President (elected), SAMPE Executive Cabinet, 2010 2011.
- International Vice President (elected), SAMPE Executive Cabinet, 2009 2010.
- International Secretary (elected), SAMPE Executive Cabinet, 2007 2009.
- Technical Co-Chair, SAMPE 2007, June 2007.
- Parliamentarian, SAMPE Executive Cabinet, 2006 2007.
- Founding faculty advisor for Mississippi State University chapter, 2003 2009.
- Technical Chair, 34th International SAMPE Technical Conference, November 2002.
- Chair, Baltimore-Washington D.C. chapter, 2000 2003.
- Secretary, Baltimore-Washington D.C. chapter, 1995 2000.
- Founding faculty advisor for University of Maryland chapter, 1990 2003.
- Student Affairs Officer for Baltimore-Washington D.C. chapter, 1989 1992.

Program Reviewer

- Emirates Aviation College (UAE), Aeronautical Engineering, 2011.
- Khalifa University (UAE), Aerospace and Mechanical Engineering, 2009.
- University of Texas Arlington, Graduate Program in Aerospace Engineering, 2008.
- Wichita State University, National Institute for Aviation Research, 2008.

Other Professional Service

• McGraw-Hill Focus Group on Engineering Mechanics, 2008.

Additional Professional Societies

• AAAS, ASEE, ASME, NAI, NSPE, and Sigma Xi

University Service:

Campus (WSU):

- Budget Advisory Committee, Co-chair, 2017.
- Search Committee for Vice President of Finance & Administration, Chair, 2016.
- Council of Chief Academic Officers, Kansas Board of Regents, Chair, 2014 2015, member 2013 – current.

Campus (WMU):

- Search Committee for Dean of the Lee Honors College, Chair, 2013.
- Member of the Collective Bargaining Team, 2011.
- Administrative Retreat Planning Committee, 2010, 2011, 2012.
- Strategic Enrollment Management Committee, 2010 2012.
- Search Committee, Vice President for Development & Alumni Relations, 2010.

- Provost Council, 2009 2013.
- Academic Affairs Strategic Plan Committee, 2009 2010.
- Critical Incident Response Planning, 2009 2013.

Campus (MSU):

- Investigation Committee, Office of Research and Economic Development, Chair, 2008 2009.
- Research Development A-Team, 2007 2008.
- Search Committee for Director of Procurement and Contracts, 2006.
- International Task Force, 2006.
- Department Head Executive Committee, 2005 2007.
- MSU Planning Committee, 2005.
- Search Committee for Dean of Bagley College of Engineering, 2004.

Campus (UMD):

- College Park Senate, Senator, 1996 1997.
- College Park Senate, Elections, Rules, and Governance Committee, Chair, 1996 1997, Member, 1994 – 1996.

College of Engineering (MSU):

- Search Committee for Department Head, Mechanical Engineering, Chair, 2008.
- Endowed Professors Committee, Chair, 2005 2007.
- Bagley College of Engineering Diversity Committee, 2005 2007.
- Search Committee for Department Head, Industrial Engineering, Chair, 2004 2005.
- Training Panel for Promotion and Tenure Procedures in BCOE, 2004.
- Mechanics working group, 2004 2009.
- Engineering Administrative Committee, 2003 2009.
- Materials working group, 2003 2009.

College of Engineering (UMD):

- Search Committee for A. James Clark School of Engineering Director of Information Technologies, Chair, 2001.
- Search Committee for the Campus Computing Associate for the A. James Clark School of Engineering, 2000.
- Review of Fire Protection Engineering Chair, 1999.
- Airworthiness Assurance Center of Excellence, Board of Directors, member for University of Maryland, 1998 2003.
- College Teaching Award Selection Committee, 1998 2003.
- Internal Review of Fire Protection Engineering, 1997 1998.
- ERC TIP Award Selection Committee, 1996.
- College Service Awards Selection Committee, 1995 1996.
- Chemistry Curriculum Review, 1995.

- Search Committee for Director of Women's Programs in Engineering, 1994.
- Curriculum Review Committee, 1994.
- Appointments, Promotion, and Tenure Committee, 1993 1996.
- Search Committee for Department of Fire Protection Engineering Chair, 1993 1994.
- Undergraduate Recruitment Committee, 1992 1994.
- Minta Martin Seminar Organizer, 1991 1994.
- Polymer Group, 1989 2003.
- Engineering Council 1986 1988, 1989 1991.

Department of Aerospace Engineering (MSU):

- Faculty Advisor, SAE Heavy Lift Student Design Team, 2004 2006, 2008 2009.
- Faculty Advisor, AIAA Design/Build/Fly, 2003 2008.

Department of Aerospace Engineering (UMD):

- Search Committee for Structures Faculty, Chair, 1997 2003.
- Committee on ENAE100, Chair, 1996 2003.
- Merit Review Committee, 1996 1998.
- Search Committee for Director of Administration, 1996.
- Internal Review Committee, 1995.
- Faculty Advisor, SAE Heavy Lift Student Design Team, 1994 2003.
- Executive Committee, 1994 1996.
- Executive Curriculum Committee, 1993 1994.
- Academic Laboratory Committee, 1993 1994.
- Search Committee for Space Systems Faculty, 1993.
- Appointments, Promotion, and Tenure Committee, 1992 2003.
- Facilities Committee, Chair, 1991 1992, 1993 1998.
- Search Committee for Smart Structures Faculty, 1989 1993.
- Committee on Structures Curriculum, Chair, 1988 1991.
- Search Committee for Department Chair, 1988 1990.
- Graduate Committee, Member, 1987 1992, 1998 2003, Chair, 1992 1994.
- Computer Committee, Chair, 1987 1991.

Community Service:

- Planning Committee, Wichita Hispanic Chamber of Commerce, 2016.
- Mentor, Starkville Academy First Robotics Team, 2007 2009.
- Rotary International, Paul Harris Fellow, 2013, Starkville Chapter, 2006 2009, Kalamazoo Chapter 2009 2013, Downtown Wichita Chapter 2013 current.

- Municipal Airport Board, City of Starkville, MS, 2005 2009, Treasurer, 2007, Vice-Chair, 2008 2009.
- Resurrection Church, Religious education teacher, 1987 2003. Parish Council, 1996 1999.
- Reach-out programs with Eleanor Roosevelt High School, Duvall High School, Nicholas Oren School, Cloverly Elementary School, MD.

Research Areas of Interest:

Response and failure of composite structures, in particular, energy absorption and crashworthiness, tailoring techniques to improve structural integrity, and damage tolerance of sandwich structures. Manufacturing methods for polymer based structural components including affordable manufacturing and manufacturing for automotive and space applications. System design and mission planning of unmanned aircraft.

Significant Contributions:

- Developed detailed analytical tools to describe the state of stress and the method of failure of tapered laminated beams based on extensive static and fatigue testing of various tapered configurations. Identified key failure mechanism of in-plane fracture of resin pocket prior to delamination initiation and growth. Incorporated analytical tools into software used by Sikorsky Aircraft in the design of the RAH-66 rotor. (Cocontributors: J. Fish, A. Llanos, A. Botting, S. Kuczma).
- Developed a thorough understanding of the effects of side loads on the energy absorption of composite tubes, cones, and plates. Developed a test method for energy absorption of flat plates under combined axial and side loads. Developed an analytical formulation to determine the energy absorption mode of flat plates. (Cocontributors: D. Fleming, D. Dubey, J. Knack).
- Developed methodology to assess and predict the damage tolerance of sandwich panels after low velocity impact. Determined the effect of width and curvature on damage growth and ultimate strength. Identified self-arrest mechanism evident in wide panels. Explored integrated stiffeners as a method of damage arrest in sandwich panels. Investigated the failure mechanisms in repaired sandwich structures, identifying key damage sequences. (Co-contributors: J. Harris, R. Moody, J. Ruddy, K. Turner, Z. Xie).
- Conceptualized and applied structural tailoring techniques to arrest or delay the occurrence of damage in laminated structures. Techniques were applied to the stress-free edge problem, tapered composites, and smart structures with embedded devices. (Co-contributors: W. Pogue, J. Hansen, D. Shukla)

Funded research as principal investigator:

- "Course Redesign of Engineering Mechanics I Statics," Institute for Higher Learning, 7/08 6/09, \$49,996.
- "Fabrication and Modeling of a Windtronix Vertical Wind Turbine," Windtronix, Inc, 10/07 11/08, \$108,193.
- "Analysis and Testing of Tapered Beams," GE Aviation, 8/06 12/06, \$20,590.

- "Guardian Angel Unmanned Aerial Vehicle (UAV) Development," Mississippi Science and Engineering Technology, 6/05 4/06, \$90,048.
- "A Tungsten/Copper Composite Munitions," AFRL Munitions Directorate, 8/03 8/04, \$71,000.
- "Modeling of Fire-Exposed Composite Structures," Office of Naval Research, 11/02 – 10/05, \$300,000.
- "Strain Rate Dependent Constitutive and Strength Models for Glass-Fiber Composites," Army Research Laboratory, Aberdeen Proving Grounds, 10/02 – 9/03, \$90,000.
- "Airframe Health Monitoring Using Acoustic Emission Crack Detection," Systems Planning and Analysis, Inc. and MIPS, 1/02 12/02, \$66,000.
- "Response and Failure of Thermoelectric Materials," Teledyne-Brown, 3/01 8/01, \$41,889.
- "Air Worthiness Transportation Study," Federal Aviation Administration, 12/00 11/03.
- "Damage Tolerance of Composite Sandwich Airframe Structures," Wichita State University, 6/00 3/02, \$80,000.
- "Processing of Structures with RQEM Sensors," Johns Hopkins University-Applied Physics Laboratory, 5/98 1/00, \$38,628.
- "Response of Composite Sandwich Structures," Boeing Defense & Space Group, Helicopters Division, 10/97 12/97, \$44,976.
- "FAA Center of Excellence in Airworthiness Assurance," Federal Aviation Administration, 9/97 9/00, \$15,000.
- "Damage Tolerance of Composite Sandwich Airframe Structures," Federal Aviation Administration, 9/97 9/99, \$88,500.
- "Composite Thick Panel Analysis and Validation Test on Effect of Delamination Size and Location," NSWC Carderock, 8/95 9/96, \$24,999.
- "Validation of a Stress Field around a Pre-Existing Delamination," NSWC Carderock, 2/95 7/95, \$24,999.
- "Analysis of Composite Structures with Internal Ply Drops," Sikorsky Aircraft, 11/94 10/95, \$30,000.
- "An Analytical Study of Delamination-Type Damage in Thick-Section FRP Composites," NSWC Carderock, 9/94 3/95, \$24,999.
- "Analysis of Composite Tapered Beams," Sikorsky Aircraft, 10/93 12/93, \$30,000.
- "Interlaminar Stress in a Tapered Section," Sikorsky Aircraft, 9/91 12/92, \$30,000.
- "Load, Heat Flux, Time-to-Failure of Thermoplastic Composites," James A. Milke, Co-PI, Hughes Associates, Inc., 12/90 12/91, \$30,878.
- "Handling Characteristics of Woven Thermoplastic Material," Freewing Aircraft Company/Maryland Industrial Partnerships, 2/90 1/91, \$26,000.
- "Development of a General Stress Model for Thermally Degraded Composites," James A. Milke, Co-PI, Hughes Associates, Inc., 2/90 9/90, \$71,540.

- "Stacking Sequence Effects on the Flexural Strength of Composite Beams," McDonnell Douglas Helicopter Company, 6/89 11/89, \$38,989.
- "Dynamic Crushing of Graphite/Epoxy," Kimberly-Clark Corporation, 1/89 6/90, \$35,040.

Funded research as co-principal investigator:

- "Magnolia-1 Small Satellite Program," David Shaw, PI, NASA, 10/07 9/09, \$10,940,713.
- "Southern Regional Center for Lightweight Innovative Design," Mark Horstemeyer, PI, Department of Energy, 5/06 11/07, \$3,960,000.
- "Fatigue Response of Viscoelastic Materials," Rani Sullivan, PI, Virginia Tech, 5/06 8/08, \$100,000.
- "Medium-Altitude Long Endurance (MS/LE) Unmanned Aerial Vehicle (UAV) Composite Part Fabrication," David Lawrence, PI, Aurora Flight Sciences, Inc., 2/05 – 1/06, \$157,081.
- "Advanced Modular Composite Bridge (AMCB) Engineering Design and Analysis Support," Tom Edwards, PI, Seemann's Composites, Inc, 11/04 8/07, \$78,959.
- "Development of Damage Assessment Methodology for Composite Sandwich Structures," Sung W. Lee, PI, Army Research Laboratory, 10/00 10/01, \$199,749.
- "Nonlinear Response and Integrity of Composite Sandwich Structures," Sung W. Lee, PI, ONR, 6/96 7/03, \$359,900.
- "Instrumentation for Rotorcraft Model Testing," Inderjit Chopra, PI, Army Research Office, 9/88, \$129,915.

Funded research as principal contractor:

- "Mechanical and Thermal Design and Development for the AImS Platform," NASA Goddard, 4/00 – 10/00, \$24,025.
- "Composite Extendible Booms," NASA Goddard, 4/00 10/01, \$39,500.
- "Mars Micromissions Propulsion System Low-Mass Composite Skirt," Carleton Technologies, Inc., Pressure Technology Division, 3/00 7/01, \$84,140.
- "Low-Cost Manufacture of Space Habitats," Genesis Engineering, 2/98 12/99, \$42,464.
- "Composite Applications for Space High Sensitivity Thermal Expansion Sensors," Allied Signal, 2/98 3/00, \$44,963.
- "Processing of Multi-Layered Liquid-Crystal Polymer Laminates," DRM Consulting, 7/95 9/95, \$21,000.
- "E-Beam Curable Composites," DAMILIC Corp., 2/95 2/96, \$25,287.
- "Development of Composite Materials for FUSE," NASA Goddard, 1/95 2/95, \$20,011.

Funded research as task leader:

- "Ultra Light Unmanned Aerial Vehicle Sensor Platform," David Lawrence, PI, US Army Space and Missile Defense Command, January 16, 2005 – March 31, 2008, \$7,415k. Role – Investigator.
- "Development of a Low Cost UAV for Long Endurance-Phase II," Darryll Pines, PI, NAVMAR Corporation, 9/00 – 8/01, \$120k. Task: Airframe development and flight testing.
- "Development of a Low Cost UAV for Long Endurance," Darryll Pines, PI, NAVMAR Corporation, 6/00 9/00, \$20k. Task: Airframe development and flight testing.
- "Continuation of the Rotorcraft Centers of Excellence Program," Inderjit Chopra, PI, National Rotorcraft Technology Center, 1/96 – 12/00, \$2,900k. Task: Repair of composite structures.
- "Preparing Engineers for Manufacturing in the 21st Century," Edward Magrab, Michael Pecht, Jim Dally, and Dave Barbe, PIs, ARPA/NSF, 6/94 – 5/97, \$1,414k. Task: Design and manufacture of composite prototypes.
- "Augmentation to the Center for Rotorcraft Education and Research," Inderjit Chopra, PI, Army Research Office, 7/94 – 6/96, \$637k. Tasks: Structural integrity enhancement; Repair of composite structures.
- "Continuation of the Rotorcraft Centers of Excellence Program," Inderjit Chopra, PI, Army Research Office, 1/93 – 12/95, \$1,800k. Tasks: Structural integrity of composite flexbeams; Multiaxial energy absorption.
- "Smart-Structures Technology: Innovations and Applications to Rotorcraft Systems," Inderjit Chopra, PI, Army Research Office, 6/92 – 12/96, \$1,870k. Tasks: Damage detection, mitigation, and repair; Structural integrity of smart structures.
- "Continuation of the Rotorcraft Centers of Excellence Program," Alfred Gessow, PI, Army Research Office, 12/87 – 11/92, \$1,900k. Tasks: Prevention of edge delamination; Multiaxial energy absorption.
- "Research on Structural Mechanics of Composite Materials and New Matrix Material Development," Sung W. Lee, PI, University of Illinois at Urbana-Champaign (ONR-URI), 9/86 – 9/91, \$831,434. Tasks: Notched strength of thick composites; Mechanical properties of composites with expanding monomers.

External funds acquired for testing and support services:

- "Development and Manufacture of Graphite/Epoxy Cages for CREAM," Institute for Physical and Science Technology, 2/01 7/01, \$6,584.
- "Quality Assurance of Filament Wound Pressure Vessels," Carleton Technologies, Inc., Pressure Technology Division, 8/99 8/03, \$19,635.
- "Lamination of Polyimide Film," HiDEC/University of Arkansas, 5/99 12/99, \$4,900.
- "Strength of Adhesive Bonds," Technical Finishers, 6/98 8/03, \$6,100.
- "Develop and Manufacture Graphite/Epoxy Test Specimens and Hybrid Enclosure," Naval Research Laboratory: 9/93 – 5/96, \$14,996; 9/94 – 9/95, \$10,040; 1/96 – 9/97, \$30,036; 1/01 – 4/01, \$4,000. Total: \$59,072.

- "Manufacturing and Testing Support for Code 752.2," NASA Goddard: 1/94 1/95, \$4,998; 10/94 10/95, \$1,374; 11/95 11/96, \$5,000; 12/96 12/97, \$38,063; 1/98 12/98, \$17,347; 1/99 12/99, \$32,241; 2/00 1/01, \$20,000; 1/01 11/01, \$18,520. Total: \$137,543.
- Additional small-scale projects involving development of manufacturing processes or determination of structural response, 1994 2003, \$18,171.

Consulting related to research areas: Kimberly-Clark Corporation, Olin Materials Laboratory, Damilic Corporation, W. A. Kates, AAI Corporation, Carleton Technologies, Inc., Fracture and Fatigue Associates, and Delta Group International

Teaching:

Western Michigan University

• ENGR 1001 Introduction to Engineering Design (1)

Mississippi State University

- ASE 1501 Student Design Competition (6)
- EM 3413 Vibrations (1)
- EM 4133/6133 Mechanics of Composites (5)
- EM 4624/6624 Experimental Methods for Material Research (co-lecturer) (1)

University of Maryland

- ENAE 100 Aerospace Engineering Profession (7)
- ENAE 423H Vibration & Aeroelasticity Honors Section (1)
- ENAE 424 (originally 488V) Design and Manufacture of Composite Prototypes (9)
- ENAE 425 (originally 488F) & 654 Mechanics of Composite Structures (17)
- ENAE 482 Principles of Aircraft Design Heavy Lift Project (5)
- ENAE 754 (originally 788T) Structural Integrity of Composites (7)
- ENAE 451 Flight Structures I (1)
- ENAE 452 Flight Structures II (2)
- ENNU 684/ENRE 674 Reliability Failure Analysis Lab (2 weeks) (4)
- **ENAE 100** Developed and coordinated the first offering of the freshman introductory seminar to Aerospace Engineering. The objectives of the course were to provide adequate introduction to the department its faculty and facilities; to reinforce communicative skills and work ethics; and to provide the students with views of the aerospace profession from fellow students, faculty, alumni, and employers. This experimental course was developed to proactively increase the retention of qualified engineering students within the department.
- **ENAE 424** Developed to provide a hands-on experience for undergraduate and graduate students who have little or no prior knowledge of or experience with composite materials and manufacturing. This course was reorganized in 1994 to include design of manufacturing in response to an ARPA/NSF

grant. Students design a manufacturing process and construct a prototype article. Prototype and production costs and schedule are determined. Past assignments have included a bicycle wheel, a roller blade, a connecting rod, a helmet, a low-cost airfoil for UAVs, an avionics box, and a paddle.

- **ENAE 482** Developed to provide a hands-on experience in the design capstone sequence. Students were formed into a design group while in ENAE 481 (Principles of Aircraft Design I). Students design, test, and build an RC aircraft to compete in the SAE AeroDesign East Heavy Lift Contest. Typical team size was eight. (Heavy Lift Section)
- **ENAE 754** Developed as the second course of a two-course sequence to provide continuation into research programs. This course explores many of the structural integrity concepts being developed within the research programs at the University of Maryland.

Developed customized short courses in mechanics of composite structures and manufacturing with composites including hands on activities.

- "Damage Tolerance of Composites" in Introduction to Fracture Mechanics, Damage Tolerance, and Fracture Control, MSFC Engineering Directorate, November 2007 (90 attendees), January 2008 (55 attendees), and June 2008 (60 attendees).
- 2. "Design for Manufacturing," University of Aalborg, Denmark, September 2002, 18 attendees.
- 3. "Manufacture and Testing of Composite Tubes," NASA Goddard, June 2001, 8 days, 4 attendees.
- 4. "Manufacturing of Composites Technician Apprenticeship Program," NASA Goddard, September 2000 December 2000, 6 attendees.
- 5. "Manufacture and Testing of Composite Sandwich Structures," NASA Goddard, June 1999, 6 days, 4 attendees.
- 6. "Manufacture and Response of Composite Sandwich Structures," NASA Goddard, August 1998, 2 days, 16 attendees.
- 7. "Manufacturing with Composites," Naval Research Laboratory, March 1993, 3 days, 10 attendees.

Ph.D. students with placement

- Kevin R. Uleck, "A Hybrid Model for Fatigue Life Estimation of Polymer Matrix Composites," May 2006, Aurora Flight Sciences, Manassas, VA.
- Hun Park, "A Nonlinear Solid Shell Element Formulation for Analysis of Composite Panels under Blast Wave Pressure Loading," August 2003, Hyundai Motors R&D Center, Korea.
- Zonghong Xie, "Damage Tolerance of Low Velocity Impacted Composite Sandwich Structures," May 2003, Associate Professor, Northwestern Polytechnical University Xi'an, China.
- David C. Fleming, "The Energy Absorption of Composite Materials under Off-Axis Loads," August 1995, Assistant Professor, Florida Institute of Technology.

• James A. Milke, "Structural Integrity of Composites under Load and Thermal Insult," December 1991, Assistant Professor, University of Maryland.

M.S. Thesis students with placement

- Calvin R. Walker, "Design and Flight Test of a Backpackable Unmanned Air Vehicle," August 2006, Raspet Flight Research Laboratory, Mississippi State University.
- R. Clifton Moody, "Damage Tolerance of Impacted Composite Sandwich Panels," May 2001, Lockheed-Martin, Palm Beach.
- Divyang Shukla, "Interlacing for Improved Structural Integrity of Laminates with Embedded Devices," May 2000, NAVAIR.
- Kevin R. Uleck, "Effect of Temperature on the Fatigue Life of Polymer Matrix Composite Laminates," December 1999, PhD candidate at University of Maryland.
- Matthew T. Fenske, "The Inclusion of In-plane Stresses in Delamination Criteria," August 1998, MBA candidate at Dartmouth University.
- John P. Hansen, "Fatigue Response of a Composite Host Structure with Interlaced Embedded Devices," August 1997, Industrial Light & Magic.
- Dean D. Dubey, "Energy Absorption of Composite Plates and Tubes," August 1997, Swales Aerospace.
- Donald Barnes, "The Failure of Thick-Section Laminated Composites Containing Pre-Existing Edge Delamination," December 1996, Swales Aerospace.
- Jennifer L. Knack, "Energy Absorption of Truncated Kevlar/Epoxy Cones," May 1996, Computer Science Corporation.
- Scott K. Kuczma, "Failure of Sandwich-to-Laminate Composite Structures," December 1995, John Hopkins University Applied Physics Laboratory.
- Jan M. Niemiec, "Prediction of Multiaxial Deformation Response from Simple Stress Relaxation Tests," August 1995, U.S. Air Force.
- Ajay A. Divekar, "Detection of Delamination in Laminated Composite Structures Using Integrated Ultrasonics," May 1995, Price Waterhouse Coopers.
- Joseph H. Ruddy, "Bonded Repair of Minimum-Gage Composite Sandwich Structures," May 1995, Marconi Flight Systems.
- Joseph Orso, "Micromechanics/Macromechanics of Composites with Shrinkage Controlled Matrices," August 1994, Boeing-Seattle.
- David C. Fleming, "The Energy Absorption of Composite Truncated Cones under Non-Axial Loads," December 1991, PhD candidate at University of Maryland.
- Hristo Atanasoff, "An Open-Mold Foam Tooling Process for Manufacturing Stiffness-Coupled Composite Box Beams," September 1991, Swales Aerospace.
- Mark M. Matsumura, "The Effects of a Non-Shrinking Resin on the Tensile Properties of Graphite/Epoxy," May 1990 (in conjunction with Mechanical Engineering), Swales Aerospace.
- Nancy L. Mueller, "The Effects of Thickness on the Compressive Notch-Sensitivity of Graphite/Epoxy," August 1989, NSWC Carderock.

- William R. Pogue, III, "Prevention of Free-Edge Delamination of Composite Laminates via Edge Alteration," December 1988, Naval Research Laboratory.
- Hung-Kang Jan, "Nonlinear Postbuckling of One-Dimensional Composite Delaminated Sublaminate," May 1988.

M.S. Non-Thesis students

- Kevin Turner, "Response of Impacted Sandwich Panels with Integral Stiffeners," December 2002.
- Zonghong Xie, "Damage Tolerance of Sandwich Panels with Barely Visible Impact Damage," May 2001.
- Janet Hicks-Beaton, "Stress Concentrations in Composite Laminates," December 1997.
- Gerard Marks, "Free Vibration of a Cantilevered Beam with a Single Delamination," May 1995.
- Eric McCartney, "Future Naval Aircraft Materials," December 1990.
- Chul Won Park, "Delamination Buckling and Growth," May 1990.

Served as PhD committee member: MSU Aerospace Engineering – 1; UMD Aerospace Engineering – 23; UMD Mechanical Engineering – 13; UMD Materials and Nuclear Engineering – 1; UMD Industrial, Technological and Occupational Education – 1; University of Aalborg Institute of Mechanical Engineering – 1. Total: 40.

Served as MS thesis committee member: MSU Aerospace Engineering – 1; MSU Mechanical Engineering – 4; UMD Aerospace Engineering – 12; UMD Mechanical Engineering – 11; Total: 28.

Served as MS non-thesis member (reader): UMD Aerospace Engineering – 16; UMD Mechanical Engineering – 2. Total: 18.

Chapters in Books:

- 1. A. J. Vizzini, "Light-weight Sandwich Structures," <u>Encyclopedia of Aerospace</u> <u>Engineering</u>, John Wiley and Sons, Ltd., Chichester, UK, 2010, pp. 2205-2214 (Invited).
- 2. A. J. Vizzini, "Design, Tooling, and Manufacturing Interaction," <u>ASM Handbook,</u> <u>Volume 21: Composites</u>, ASM International, Materials Park, OH, 2001, pp. 373-383 (Invited).
- 3. A. J. Vizzini, "Design for Composite Manufacturing," <u>ASM Handbook, Volume 20:</u> <u>Materials Selection and Design</u>, ASM International, Materials Park, OH, 1997, pp. 804-810 (Invited).
- A. J. Vizzini, "Influence of Realistic Ply-Drop Geometries on Interlaminar Stresses in Tapered Laminates" <u>Composite Materials: Fatigue and Fracture-Fifth Volume, ASTM</u> <u>STP 1230</u>, R. H. Martin, ed., American Society for Testing and Materials, Philadelphia, PA, 1995, pp. 467-485.
- 5. J. C. Fish and A. J. Vizzini, "Delamination of Ply-Drop Configurations," <u>Composite</u> <u>Materials: Testing and Design-Eleventh Volume, ASTM STP 1206, E. T.</u>

Camponeschi, Jr., ed., American Society for Testing and Materials, Philadelphia, PA, 1993, pp. 323-332.

- J. A. Milke and A. J. Vizzini, "Determination of a Load, Heat, Time-to-Failure Surface of Polymeric Composites," <u>High Temperature and Environmental Effects on</u> <u>Polymeric Composites, ASTM STP 1174</u>, C. E. Harris and T. S. Gates, eds., American Society for Testing and Materials, Philadelphia, PA, 1993, pp. 135-146.
- 7. P. A. Lagace and A. J. Vizzini, "The Sandwich Column as a Compressive Characterization Specimen for Thin Laminates," <u>Composites Materials Testing and</u> <u>Design: Eighth Symposium, ASTM STP 972</u>, J. D. Whitcomb, ed., American Society for Testing and Materials, Philadelphia, PA, 1988, pp. 143-160.

Editor:

- 1. Proceedings of the American Society for Composites Twenty-Third Technical Conference on Composite Materials, T. E. Lacy, R. W. Sullivan, and A. J. Vizzini, eds., American Society for Composites, Dayton, OH, 2008, CD-ROM.
- 2. SAMPE '07 Conference Proceedings, Vol. 52, P. Joyce, A. Vizzini, and S. W. Beckwith, eds., Society for the Advancement of Material and Process Engineering, Covina, CA, 2007, CD-ROM.
- 3. 34th International SAMPE Technical Conference Proceedings, J. Harris, A. Vizzini, and S. W. Beckwith, eds., Society for the Advancement of Material and Process Engineering, Covina, CA, 2002, CD-ROM.
- 4. Proceedings of the American Society for Composites Thirteenth Technical Conference on Composite Materials, A. J. Vizzini, ed., American Society for Composites, Los Angeles, CA, 1998, CD-ROM.

Archival Journal Articles:

- 1. Z. H. Xie, A. J. Vizzini, and T. Qingru, "On Residual Compressive Strength Prediction of Composite Sandwich Panels after Low-Velocity Impact Damage," *Acta Mechanica Solida Sinica*, Vol. 19, No. 1, 2006, pp. 9-17.
- 2. Z. H. Xie and A. J. Vizzini, "Damage Propagation in a Sandwich Panel Subjected to Increasing Uniaxial Compression after a Low-Velocity Impact," *Journal of Sandwich Structures and Materials*, Vol. 7, No. 4, July 2005, pp. 269-288.
- 3. F. Laurin and A. J. Vizzini, "Energy Absorption of Sandwich Panels with Composite Reinforced Foam Core," *Journal of Sandwich Structures and Materials*, Vol. 7, No. 2, March 2005, pp. 113-132.
- 4. K. M. Turner and A. J. Vizzini, "Response of Impacted Sandwich Panels with Integral Stiffeners," *Journal of Sandwich Structures and Materials*, Vol. 6, No. 4, July 2004, pp. 313-326.
- 5. Z. H. Xie and A. J. Vizzini, "A Feasible Methodology for Engineering Applications in Damage Tolerance of Composite Sandwich Structures," *Journal of Composite Materials*, Vol. 38, No. 11, 2004, pp. 891-914.
- 6. A. J. Vizzini, "Design and Manufacture of Composite Prototypes," *International Journal of Engineering Education*, Vol. 19, No. 6, 2003, pp. 902-909.

- K. R. Uleck and A. J. Vizzini, "Influence of Temperature on the Fatigue Life of a Quasi-Isotropic Laminate," *Journal of Composites Technology & Research*, Vol. 25, No. 3, July 2003, pp. 179-184.
- S. J. Ng, R. Boswell, S. J. Claus, F. Arnold, and A. Vizzini, "Degree of Cure, Heat of Reaction, and Viscosity of 8552 and 977-3 HM Epoxy Resins," *Journal of Advanced Materials*, Vol. 34, No. 2, April 2002, pp. 33-37.
- 9. R. C. Moody, J. S. Harris, and A. J. Vizzini, "Scaling and Curvature Effects on the Damage Tolerance of Impacted Composite Sandwich Panels," *Journal of Sandwich Structures and Materials*, Vol. 4, No. 1, January 2002, pp. 71-82.
- 10.C. D. MacDonald and A. J. Vizzini, "Response of Indented Sandwich Panels," *Journal of Thermoplastic Composite Materials*, Vol. 15, No. 1, January 2002, pp. 33-42.
- 11.J. L. Knack and A. J. Vizzini, "Energy Absorption of Truncated Kevlar Epoxy Cones Under Off-Axis Loads," *Journal of Composites Technology and Research*, Vol. 23, No. 4, October 2001, pp. 247-253.
- 12. M. T. Fenske and A. J. Vizzini, "The Inclusion of In-Plane Stresses in Delamination Criteria," *Journal of Composite Materials*, Vol. 35, No. 15, 2001, pp. 1325-1342.
- 13. J. P. Hansen and A. J. Vizzini, "Fatigue Response of a Host Structure with Interlaced Embedded Devices," *Journal of Intelligent Materials, Systems, and Structures*, Vol. 11, No. 11, 2000, pp. 902-909.
- D. D. Dubey and A. J. Vizzini, "Testing Methods for Energy Absorption of Composite Materials," *Journal of the American Helicopter Society*, Vol. 44, No. 3, 1999, pp. 179-187.
- 15.S. K. Kuczma and A. J. Vizzini, "Failure of Sandwich to Laminate Tapered Composite Structures," *AIAA Journal*, Vol. 37, No. 2, 1999, pp. 227-231.
- 16. D. D. Dubey and A. J. Vizzini, "Energy Absorption of Composite Tubes and Plates," *Journal of Composite Materials*, Vol. 32, No. 2, 1998, pp. 158-176.
- 17.K. R. Uleck and A. J. Vizzini, "Evaluation of Electron-Beam Cured Resins for Repair of Composite Structures," *Journal of Advanced Materials*, Vol. 29, No. 1, October 1997, pp. 38-42.
- 18. D. A. Barnes, A. J. Vizzini, and A. B. Macander, "The Nature of Failure of Thick-Section Laminated Composites Containing Pre-Existing Edge Delamination," *Journal of Reinforced Plastics and Composites*, Vol. 16, No. 17, 1997, pp. 1536-1549.
- 19. A. J. Vizzini, "Shear-Lag Analysis about an Internally-Dropped Ply," *Journal of Reinforced Plastics and Composites*, Vol. 16, No. 1, 1997, pp. 73-85.
- 20. D. C. Fleming and A. J. Vizzini, "The Energy Absorption of Composite Plates under Off-Axis Loads," *Journal of Composite Materials*, Vol. 30, No. 18, 1996, pp. 1977-1995.
- A. D. Botting, A. J. Vizzini, and S. W. Lee, "The Effect of Ply-Drop Configuration on the Delamination Strength of Tapered Composite Structures," *AIAA Journal*, Vol. 34, No. 8, August 1996, pp. 1650-1656.

- 22. D. C. Fleming and A. J. Vizzini, "Off-Axis Energy Absorption Characterization of Composites for Crashworthy Rotorcraft Design," *Journal of the American Helicopter Society*, Vol. 41, No. 3, July 1996, pp. 239-246.
- 23.J. H. Ruddy and A. J. Vizzini "Bonded Repair of Minimum-Gage Composite Sandwich Structures," *Journal of the American Helicopter Society*, Vol. 41, No. 3, July 1996, pp. 232-238.
- 24. D. Shukla and A. J. Vizzini, "Interlacing for Improved Performance of Laminates with Embedded Devices," *Smart Materials and Structures*, Vol. 5, 1996, pp. 225-229.
- 25.J. Orso and A. J. Vizzini, "Stress Effects of Inhomogeneous Expansion-Controlled Matrices in Continuous Fiber Composites," *Journal of Composite Materials*, Vol. 29, No. 15, 1995, pp. 2003-2024.
- 26.A. J. Vizzini and S. W. Lee, "Damage Analysis of Composite Tapered Beams," *Journal of the American Helicopter Society*, Vol. 40, No. 2, April 1995, pp. 43-49.
- 27.J. Orso and A. J. Vizzini, "The Effects of an Expanding Monomer on the Tensile Properties of Graphite/Epoxy," *Journal of Composite Technology and Research*, Vol. 16, No. 3, July 1994, pp. 270-274.
- 28.D. A. Singh and A. J. Vizzini, "Structural Integrity of Composite Laminates with Interlaced Actuators," *Smart Materials and Structures*, Vol. 3, 1994, pp. 71-79.
- 29. J. A. Milke and A. J. Vizzini, "The Effects of Simulated Fire Exposure on Glass-Reinforced Thermoplastic Materials," *Journal of Fire Protection Engineering*, Vol. 5, No. 3, 1993, pp. 113-124.
- 30. D. C. Fleming and A. J. Vizzini, "Tapered Geometries for Improved Crashworthiness under Side Loads," *Journal of the American Helicopter Society*, Vol. 38, No. 1, January 1993, pp. 38-44.
- 31.A. S. Llanos, and A. J. Vizzini, "The Effect of Film Adhesive on the Delamination Strength of Tapered Composites," *Journal of Composite Materials*, Vol. 26, No. 13, 1992, pp. 1968-1983.
- 32. J. C. Fish and A. J. Vizzini, "Tailoring Concepts for Improved Structural Performance of Rotorcraft Flexbeams," *Composites Engineering*, Vol. 2, No. 5-7, 1992, pp. 303-312.
- 33. A. J. Vizzini, "Strength of Laminated Composites with Internal Discontinuities Parallel to the Applied Load," *AIAA Journal*, Vol. 30, No. 6, June 1992, pp. 1515-1520.
- 34.H. Atanasoff and A. J. Vizzini, "Foam Tool Manufacture of Stiffness-Coupled Composite Box Beams," *SAMPE Quarterly*, Vol. 23, No. 3, April 1992, pp. 37-42.
- 35. D. C. Fleming and A. J. Vizzini, "The Effect of Side Loads on the Energy Absorption of Composite Structures," *Journal of Composite Materials*, Vol. 26, No. 4, 1992, pp. 486-499.
- 36. A. J. Vizzini, "An Efficient Algorithm to Characterize Stress-Strain Data Using Piece-Wise Linear Curves," *Journal of Testing and Evaluation*, Vol. 20, No. 2, March 1992, pp. 126-131.
- 37.J. A. Milke and A. J. Vizzini, "Thermal Response of Fire Exposed Composites," *Journal of Composites Technology and Research*, Vol. 13, No. 3, Fall 1991, pp. 145-151.

- 38. W. R. Pogue, III and A. J. Vizzini, "Structural Tailoring Techniques to Prevent Delamination in Composite Laminates," *Journal of the American Helicopter Society*, Vol. 35, No. 4, October 1990, pp. 38-45.
- 39. A. J. Vizzini and P. A. Lagace, "An Elastic Foundation Model to Predict the Growth of Delaminations," *Journal of Composites Technology and Research*, Vol. 11, No. 3, Fall 1989, pp. 81-86.
- 40. A. J. Vizzini and P. A. Lagace, "The Buckling of a Delaminated Sublaminate on an Elastic Foundation," *Journal of Composite Materials*, Vol. 21, No. 12, December 1987, pp. 1106-1117.
- 41.A. J. Vizzini and P. A. Lagace, "The Role of Ply Buckling in the Compressive Behavior of Graphite/Epoxy Tubes," *AIAA Journal*, Vol. 23, No. 11, November 1985, pp. 1791-1797.

Conference Proceedings:

- 1. M. Rais-Rohani, A. Walters, and A. Vizzini, "Emporium Based Redesign of Statics: An Innovative Approach to Enhance Learning and Reduce Costs," *Proceedings of the 2010 ASEE Annual Conference*, Louisville, KY, June 2010.
- 2. P. Cinnella, D. Bridges, and A. J. Vizzini, "Designing a Self-Assessment Process for ABET Accreditation," *Proceedings of the 45th AIAA Aerospace Sciences Meeting and Exhibit*, Reno, NV, January 2007.
- 3. Z. H. Xie, A. J. Vizzini, and M. Yang, "On Residual Compressive Strength Prediction of Composite Sandwich Panels after Low-velocity Impact Damage," *Sandwich Structures 7: Advancing with Sandwich Structures and Materials*, Aalborg, Denmark, August 2005, pp. 363-372.
- 4. A. M. Myer and A. J. Vizzini, "The Effect of Strain Rate on Interlaminar Shear Properties," *Proceedings of the AIAA/ASME/ASCE/AHS/ASC 45th Structures, Structural Dynamics and Materials Conference,* Palm Springs, CA, April 2004.
- 5. S. W. Kwon, S. W. Lee, and A. J. Vizzini, "Modeling of Fire-Exposed Composites," *Proceedings of the American Society for Composites Eighteenth Technical Conference on Composite Materials*, Gainesville, FL, October 2003.
- 6. C. S. Baldwin and A. J. Vizzini, "Acoustic Emission Crack Detection with FBG," SPIE Conference, July 2003.
- 7. S. Ng and A. J. Vizzini, "Mechanism of Marcel Formation in Thick Tapered Composites," *Proceedings of the 34th International SAMPE Technical Conference*," Baltimore, MD, November 2002, pp. 1168-1179.
- 8. Z.-H. Xie and A. J. Vizzini, "A Modified Analytical Model for Damage Propagation of a Low-velocity Impacted Sandwich Panel," *Proceedings of the American Society for Composites Seventeenth Technical Conference on Composite Materials*, West Lafayette, IN, October 2002.
- 9. P. Valsgaard, A. J. Vizzini, and O. T. Thomsen, "Failure of Tapered Composite Beams Loaded in Torsion: Experimental Results," *Proceedings of the American Society for Composites Seventeenth Technical Conference on Composite Materials*, West Lafayette, IN, October 2002.

- 10.K. R. Uleck and A. J. Vizzini, "Low-Cost UAV Airframe Manufacturing," *Proceedings* of AUVSI's 29th Annual Symposium & Exhibition, July 2002.
- 11.K. R. Uleck and A. J. Vizzini, "A Low-Cost UAV System Using Commercial Technology," *Proceedings of AUVSI's 29th Annual Symposium & Exhibition*, July 2002.
- 12. A. J. Vizzini, "Design and Manufacture of Composite Prototypes," *Proceedings of the AIAA/ASME/ASCE/AHS/ASC 43rd Structures, Structural Dynamics and Materials Conference,* Denver, CO, April 2002.
- 13. F. Laurin and A. J. Vizzini, "Energy Absorption of Sandwich Panels with Composite Reinforced Foam Core," *Proceedings of the AIAA/ASME/ASCE/AHS/ASC 43rd Structures, Structural Dynamics and Materials Conference*, Denver, CO, April 2002.
- 14.Z.-H. Xie and A. J. Vizzini, "The Presence of a Delamination in Damage Growth of an Impacted Sandwich Panel," *Proceedings of the American Society for Composites Sixteenth Technical Conference on Composite Materials*, Blacksburg, VA, September 2001.
- 15. R. C. Moody and A. J. Vizzini, "Incorporation of a Compliance Change Due to Impact in the Prediction of Damage Growth in Sandwich Panels," *Proceedings of the 13th International Conference on Composite Materials*, Beijing, China, June 2001.
- 16. K. M. Turner and A. J. Vizzini, "Response of Impacted Sandwich Panels with Integral Stiffeners," *Proceedings of the AIAA/ASME/ASCE/AHS/ASC 42nd Structures, Structural Dynamics and Materials Conference*, Seattle, WA, April 2001, CD-ROM.
- 17.C. D. MacDonald and A. J. Vizzini, "Response of Indented Sandwich Panels," *Proceedings of the American Society for Composites Fifteenth Technical Conference on Composite Materials*, College Station, TX, September 2000, pp. 275-281.
- 18.S. J. Ng, R. Boswell, S. J. Claus, F. Arnold, and A. Vizzini, "Degree of Cure, Heat of Reaction and Viscosity of HEXCEL 8552, 977-3 and E773 Resin," *Proceedings of the 45th SAMPE Symposium*, Long Beach, CA, May 2000, pp. 1019-1028.
- 19.K. R. Uleck and A. J. Vizzini, "Incorporation of Temperature in Fatigue Models of PMC Laminates," *Proceedings of the AIAA/ASME/ASCE/AHS/ASC 41st Structures, Structural Dynamics and Materials Conference*, Atlanta, GA, April 2000, CD-ROM, Paper #AIAA-2000-1369.
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