

Darren J. Hartl, Ph.D.

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Education

Ph.D. Aerospace Engineering, Texas A&M University, December 2009
Dissertation: *Modeling of Shape Memory Alloys Considering Rate-Independent and Rate-Dependent Irrecoverable Strains*, Advisor: Dimitris C. Lagoudas
GPR: 4.00
B.S. Aerospace Engineering, Texas A&M University, May 2004
GPR: 3.94, *Summa Cum Laude*

Employment/Appointments

Texas A&M University, College Station, TX

Associate Professor, Materials Science and Engineering (courtesy), Sep. 2021–present
Associate Professor, Dept. of Aerospace Engineering, Sep. 2021–present
Assistant Professor, Materials Science and Engineering (courtesy), Mar. 2019–Aug. 2021
Assistant Professor, Dept. of Aerospace Engineering, Aug. 2016–Aug. 2021
TEES Research Assistant Professor, Dept. of Aerospace Engineering, Apr. 2011–Jul. 2016
Assistant Director, Aerospace Vehicles Systems Institute, Dec. 2012–Sep. 2014
Director of Operations, Texas Institute for Intelligent Materials and Structures (TiiMS), July 2012–Sep. 2014
Senior Research Associate, Dept. of Aerospace Engineering, Oct. 2009–Mar. 2011

Arts et Métiers ParisTech, Metz, France

Visiting Professor, Laboratoire d'étude des Microstructures et de Mécanique des Matériaux (LEM³), May 14 – June 14, 2019

Air Force Research Labs, Wright-Patterson AFB, Dayton, OH

Research Scientist, RXCC (Universal Technology Corporation), Oct. 2015–Aug. 2016
Visiting Researcher, RQVC, Dec. 2014–Aug. 2016
Research Scientist, RXCC (UES, Inc.), Oct. 2014–Oct. 2015

Technical University Dortmund, Dortmund, Germany

Visiting Scholar, Institute for Mechanics, June 1–30 2012

American Airlines, Fort Worth, TX

Power Plant Engineer - Co-op, May–Dec. 2002
Structures Engineer - Co-op, June–Dec. 2001

Awards and Honors

- National winner of the *NASA MUREP Innovation and Tech Transfer Idea Competition* (advisor) presented by NASA, 2024
- *Faculty Aspiring Leadership Program Fellow* presented by Texas A&M University Faculty Affairs, 2024
- *University Professorship for Undergraduate Teaching Excellence* presented by Texas A&M University Faculty Affairs, 2024
- *McElmurry Teaching Excellence Award* presented by Sigma Gamma Tau (Aerospace Engineering Honor Society) and selected by Aerospace Engineering senior class, 2023
- *McElmurry Teaching Excellence Award* presented by Sigma Gamma Tau (Aerospace Engineering Honor Society) and selected by Aerospace Engineering senior class, 2022
- *Distinguished Achievement Award in Teaching—College Level* presented by the Texas A&M Association of Former Students, 2020
- *2020 Best Paper Award in Bioinspired Smart Materials and Systems* presented by ASME Bioinspired Smart Materials and Systems Technical Committee, 2020
- *TEES Young Faculty Award* presented by Dean of the Texas A&M University College of Engineering, 2019
- *Ephraim Garcia Best Paper Award* presented by ASME Adaptive Structures and Material Systems Branch, 2018
- *Dean of Engineering Excellence Award* presented by Dean of the Texas A&M University College of Engineering, 2018
- *Outstanding Technical Paper Award (Third Place)*, presented at SAMPE 2017
- *Gary Anderson Early Achievement Award*, presented by ASME Aerospace Division, 2016
- Member, *Distinguished Aerospace Engineering Alumni Academy*, presented by Texas A&M University Department of Aerospace Engineering, 2015
- *Outstanding Young Aerospace Engineer Award*, presented by Texas A&M University Department of Aerospace Engineering, 2015
- *Best Student Paper/Presentation Award, 2nd Place (Advisor)*, presented by ASME at SPIE Smart Conference, 2015
- *Engineering Genesis Award for Multidisciplinary Research (Team Member)*, presented by Texas A&M Engineering Experimentation Station (TEES), 2014
- *The Computer and Graphics SMI 2013 Best Paper Award (Honorable Mention)*, presented by *Computer and Graphics*, 2013
- *Distinguished Graduate Student Award for Excellence in Doctoral Research* presented by Texas A&M University Association of Former Students, 2010
- *Best Student Paper/Presentation Award*, presented by ASME at SPIE Smart Structures Conference, 2009
- *2008 Best Paper Award*, presented at ASME-SMASIS Conference, 2008

- *William Sweet Smith Prize* presented for best aerospace paper, Journal of the Institute of Mechanical Engineers, 2007
- *Best Student Paper/Presentation Award (Honorable Mention)* presented by ASME at SPIE Smart Structures Conference, 2008
- *NSF Integrative Graduate Education and Research Traineeship (IGERT) Fellowship*, 2007–2009
- *National Defense Science and Engineering Grant (NDSEG) Fellowship*, 2004 – 2007
- *Outstanding Senior Award* presented by Sigma Gamma Tau to the regional senior of the year (1 of 6 nationwide), 2004
- *Stan H. Lowy Award for Excellence in Airplane Design*, 2004
- Tau Beta Pi – Engineering Honor Society
- Sigma Gamma Tau – Aerospace Engineering Honor Society
- Phi Kappa Phi

I. Teaching/Advising

I.1. Academic Courses

- *Engr. Learning Community & Student Success Seminar* (Hullabaloo U first-year experience)
- **Aerospace Structural Analysis II* (Undergraduate)
- *Design for Unconventional Applications of Aerospace Skills* (Undergraduate)
- **Aerospace Structural Design* (Undergraduate/Graduate stacked)
- *Mechanics of Active Materials* (Graduate)
- *Theory of Plasticity* (Graduate)

*Course includes novel virtual reality (VR) instructional module

I.2. Short Courses

1. *Introduction to Shape Memory Alloys*, The Boeing Company, Seattle, Washington, March 2009.
2. *Derivation and Implementation of Shape Memory Alloy Constitutive Models*, Department of Mechanical Engineering and Aeronautics, The University of Patras, September 2009.
3. *Materials Simulation at the Continuum Level*, IIMEC Winter School 2012, Texas A&M University, College Station, TX, January 2012 (20 students).
4. *Introduction to the Modeling and Analysis of Active Materials*, Doctoral Training Centre, Advanced Composites Centre for Innovation and Science, Bristol University, Bristol, UK, November 2012 (12 students).
5. *Continuum Response of Microstructures*, IIMEC Summer School 2014, Texas A&M University, College Station, TX, June 2014 (20 students).
6. *Introduction to the Modeling and Analysis of Active Materials*, Doctoral Training Centre, Advanced Composites Centre for Innovation and Science, Bristol University, Bristol, UK, July 2017 (15 students).

7. *Introduction to the Modeling of Active Materials*, Bernal Institute, University of Limerick, Limerick, Ireland, July 2017 (15 students).
8. *Introduction to the Modeling and Analysis of Active Materials*, AAC Technologies, Inc., University of Nanjing, Nanjing, China, June 2018 (20 students).
9. *Shape Memory Alloys: Behaviors, Modeling, Analysis, and Design*, ASME Smart Materials Adaptive Structures and Intelligent Systems (SMASIS) Conference, Louisville, KY, September 2019 (12 students).

I.3. Post-Doctoral Researchers Advised

- Edwin Peraza Hernandez (04/01/2017 – 08/01/2017)
- Sameer Jape (06/01/2017 – 03/31/2019)
- Mirmilad Mirsayar (06/01/2017 – 12/31/2019)
- Patrick Walgren (08/01/2022 – 10/31/2022)

I.4. Graduate Students Advised

Masters of Science (17 recruited from undergraduate research mentees)

1. Stephen Oehler, *Developing Methods for Designing Shape Memory Alloy Actuated Morphing Aerostructures* (December 2012; co-advised w/ Lagoudas*)
2. Stephen Cornell, *Experimental Characterization of Shape Memory Alloys Using Digital Image Correlation and Infra-Red Thermography* (May 2015; co-advised w/ Lagoudas*)
3. Aaron Powledge, *Experimental Characterization and Validated Multi-Fidelity Analysis of the Curvature of Shape Memory Alloy Composite Sheets* (May 2015; co-advised w/ Malak)
4. Tyler Halbert, *IGP: An Improved Algorithm for Sequential Information Gathering Decisions in Design Under Uncertainty* (May 2015; co-advised w/ Malak)
5. **Christopher Bertagne, *Experimental Evaluation of an Analysis Framework for Simulating the Coupled Behavior of Shape Memory Alloy-Based Morphing Radiators* (August 2016; co-advised w/ Whitcomb*)
6. †Brent Bielefeldt, *Computational Analysis of Shape Memory Alloy Sensory Particles for Structural Health Monitoring Applications* (August 2016); co-advised w/ Benzerga*)
7. ***William Scholten *Analysis and Wind Tunnel Testing of a SuperElastic Slat-Cove Filler For Airframe Noise Reduction* (December 2016)
8. Ryan Patterson *The Effects of a SMA-based Slat Cove Filler on the Aerodynamic and Structural Characteristics of a Wing Prototype* (December 2017)
9. Jacob Mingear *The Integration of Gallium-Based Liquid Metal Energy Circuits into Additively Manufactured Shape Memory Alloy Actuators for Increased Actuation Frequencies* (August 2018)
10. Patrick Walgren *Towards High Turndown Ratio Shape Memory Alloy Driven Morphing Space Radiators* (May 2019)
11. Allen Davis *Computational Framework for Magnetic Sensing in Structural Health Monitoring Applications via Magnetic Shape Memory Alloys* (May 2020)
12. Andrew Leaton *Experimental Testing of a Shape Memory Alloy Slat Cove Filler for Noise Reduction* (August 2020)

13. Madalyn Mikkelsen *Applications of Parameterized L-Systems for Preliminary Structural Design and Optimization* (August 2020)
14. Gregory Wilson *Shaping Radiation Contours with a Parabolic Active Reconfigurable Origami Reflector Antenna* (August 2020)
15. Michayal Mathew *Realtime Design and Analysis of 3D Structures Using Finite Element Analysis within Virtual Reality Environments* (August 2020)
16. Hannah Stroud *Knitted Smart Structures: Robust Modeling via Finite Element Analysis and Experimental Validation* (August 2020)
17. Sean Nevin *Combined Thermal and Structural Modeling and Design of a SMA-Driven Morphing Radiator* (December 2021)
18. Jake Schrass *Design and Optimization of a Morphing Slat Gap Filler for Aircraft Noise Reduction Including Aerodynamic Visualization Approaches* (August 2022)
19. ‡Jessica Zamarripa *Discovering Optimal Flexible Circuits Using Graph-Based L-System Network Optimization* (December 2022)
20. Alejandro Martinez *Design and Optimization of a Conformal Surface for a Morphing Supersonic Aircraft* (Defended June 2023)
21. Joseph El Askar *Conceptual Design, Validation, and Optimization of an Active Material Actuated Bi-Stable Gripping Mechanism for Drone Perching and Recharging* (August 2023)
22. Collette Gillaspie *Shape Memory Alloy-Actuated Adaptive Thermal Control Systems for Representative Spaceflight Missions: Computational Analysis and Concept Demonstration* (December 2023)
23. Adelynn Butler (December 2025 expected)
24. Liam McCue (May 2025 expected)
25. James Dean (May 2025 expected)

Doctor of Philosophy (8 recruited from undergraduate research mentees)

1. Edwin Peraza Hernandez *Kinematics, Structural Mechanics, and Design of Origami Structures with Smooth Folds* (December 2016; co-advised w/ Lagoudas)
2. ***William Scholten *A Novel Uncoupled Method for Static Aeroelastic Analysis Towards Morphing Structures Design* (May 2020)
3. †, ‡‡Brent Bielefeldt *Multiobjective Topology Optimization for Preliminary Design Using Graph Theory and L-System Languages* (May 2020)
4. Pedro Camara Leal *Reduced-order Modeling and Parameterized Optimization of Bio-inspired Adaptive Structures* (August 2021)
5. Jacob Mingear *Surface Engineering of Additively Manufactured Shape Memory Alloys Actuators Enabling Higher Actuation Frequencies* (August 2022)
6. ‡‡Patrick Walgren *A Nonlinear Substructure Method for Efficient Reduced-Order Structural Modeling Based on a Classical Plasticity Framework* (August 2022)
7. Allen Davis *A Generalized Approach to Multiphysical and Mission-Adaptive Aerostructural Design With Rotorcraft Applications* (December 2022)
8. ††, †Trent White *A Massively Parallelizable Surrogate-Based Modeling Framework for Non-linear Static Aeroelasticity and Structural Design* (December 2023)

9. ***Hannah Stroud *Computational Analysis of Solid Bodies Experiencing Homotopic Surface Evolution Associated with Fluid-Driven Material Loss* (December 2023)
10. **Maddie Haas (August 2025 expected)
11. ‡Jessica Zamarripa (December 2025 expected)
12. ★Priscilla Nizio (December 2025 expected)
13. ‡Kevin Lieb (December 2025 expected)
14. Sefa Oksuz (December 2025 expected)
15. Jared Lilly (May 2026 expected)
16. ★★, ‡Mason Ward (May 2027 expected)

*“Research Faculty” appointment allowed co-advisor status only; these students recruited, fully supported, and primarily technically advised by Hartl; **NASA Space Technology Research Fellow (NSTRF/NSTGRO); ***NSF Graduate Research Fellow; †DoD SMART Fellow or selection; ‡National Defense Science and Engineering Graduate Fellow; ‡‡American Academy of Arts and Sciences National Research Council Postdoctoral Research Fellowship recipient; ††Army Research Laboratory Journeyman Fellow; ★Texas A&M Stanger Endowed Graduate Fellow; ★★Texas A&M Aerospace Engineering NEXAS Fellow

I.5. Graduate Student Committees

Masters of Science

Isaac Reese (MEEN); Shane Bearrow (ARCH); Benita Mordi (ISEN); Rajiv Jay (ELEN); John Rohmer (AERO); Alim Kim (AERO); Neil Jog (MEEN); Daniel Martin (AERO); Collin Blake (AERO); Yasushi Mizuno (MEEN); Inderdeep Singh (ELEN); Joshua Ruff (ELEN); Matthew Fisseler (MEEN); Ramsay Ramsey (AERO); Chase Wiley (AERO); Chia-Ching Tsai (MEEN); Carson Lawrence (MEEN); Anurag (MEEN); Casey Gudall (AERO)

Doctor of Philosophy

Edgar Galvan (MEEN); Robert Wheeler (AERO); Francis Phillips (AERO); Kenneth Cundiff (AERO); Joshua Herrington (AERO); Pawan Chaugule (AERO); Lei Xu (AERO); Vignesh Radhakrishnan (AERO); Amrita Bal (ECEN); Dillon Hall (AERO); Ralston Fernandes (AERO); Roshan Suresh Kumar (AERO); Francisco Medrano (AERO); Ying-Kuan (Rick) Tsai (MEEN); Haoyi Tian (AERO); Adrien Cassagne (AERO); Vardhil, Mehta (MEEN); Lucas Spies (MEEN); Alton Hutchinson (AERO); William Rogers (MEEN)

I.6. Undergraduate Research for Credit Mentees

Judy Santa Cruz (Summer & Fall 2012); Klaus Lima (Fall 2012); William Scholten (Honors, Spring 2013); Flavia Ohara (Spring & Summer 2013); Christopher Bertgane (Honors, Fall 2013); Daniel Whitten (Honors, Fall 2013); Joshua Herrington (Honors, Spring 2014); Logan Hodge (Honors, Spring 2014); Nicholas Page (Honors, Spring 2016); Matthew Wescott (Fall 2016); Jorge Chong (Honors, Spring 2017); Lane Kirstein (Honors, Spring 2017); Luis Gonzalez (Spring 2017); Elise Kooock (Spring 2017); Madalyn Mikkelsen (Spring 2017); Brady Allen (Honors, Spring and Fall 2018, Spring and Fall 2019, Spring 2020); Keval Shah (Honors, Spring 2018); Sebastian Cook (Spring 2018); Mitchell Mu (Honors, Fall 2018 and Spring 2020); Ryan Lotz (Honors, Spring 2019); Jacob Schrass (Honors, Spring 2019); Mason Ward (Honors, Fall 2019); Bethany Hansen (Honors, Fall 2019); Colin Invie (Honors, Spring 2020); Isabella Bradberry (Honors, Spring 2020); Brendon Petersen (Spring 2020);

Alejandro Martinez (Spring 2021); Benjamin McAdams (Fall 2022); Nyima Sanneh (Honors, Fall 2022); Colby Jacquin (Spring 2023); Sarah Kinney (Honors, Fall 2023); Walker Buckle (Honors, Spring 2024)

I.7. Visiting Student Scholar Mentees

Bachelors Thesis / Masters of Science

Florent Righi (École Supérieure des Sciences et Techniques de l'Ingénieur de Nancy, Mar–Aug 2012); Robin Schulte (Technical University Dortmund, Aug–Oct 2013); Thibaut Brosse (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Feb–Aug 2014); Fan Fei (Harbin Institute of Technology, Feb–Jun 2014); Clément Nony-Davadie (Arts et Métiers Paris-Tech), May–Sept 2014); Jeff Volpi (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Sep 2015–Jan 2016); Quentin Chapelon (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Feb 2016–Jun 2016); Gregory Methon (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Feb 2017–Jul 2017); Antoine Baldo (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Sept 2017–Jan 2018); Thomas Thollot (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Sept 2017–Jan 2018); Sebastien Andre (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Feb 2019–July 2019); Hugues Robin (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Feb 2019–July 2019); Bastien Dupenloup (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Mar 2020); Laurice Dupois (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Mar 2020); Mizuki Abe (Tohoku University, Sept 2021–Feb 2022); Mamadou Diallo (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Sep 2022–Dec 2022); Arindha Joshua Silva (Texas A&M-Qatar, May 2023–Jul 2023); Michalis Koutsoftas (University of Cyprus, May 2023–Jul 2023); Benoit Andre (Ecole nationale d'Ingénieurs de Saint-Etienne (ENISE), Sep 2023–Dec 2023)

Doctor of Philosophy

Alex Solomou (University of Patra, Jun-Aug 2011, Jun-Aug 2014); Theodoros Machairas (University of Patra, Jun-Aug 2012); Giulia Scalet (University of Pavia, Jun-Aug 2013); Larissa M. da Fonseca (Federal University of Rio de Janeiro, Aug 2018–Aug 2019)

II. Research (*h-index: 32, i-10 index: 103, Google Scholar 04/22/2024*)

II.1. Books

1. E. Peraza Hernandez, D. Hartl, D. Lagoudas, *Active Origami: Modeling, Design, and Applications*, Springer, 2018.
2. B. Bielefeldt, D. Hartl, M. Kobayashi, *Topology Optimization via L-Systems and Genetic Algorithms: Bioinspired Encoding for Generative Design*, Cambridge University Press, 2024. (*in press*)
3. E. Peraza Hernandez, D. Hartl, D. Lagoudas (eds.), *Shape Memory Alloys: Materials, Modeling, and Design*, Springer, 2024. (final editing)

II.2. Book Chapters

1. D. Hartl, D. Lagoudas, *Thermomechanical Characterization of Shape Memory Alloys*, In D. Lagoudas (Ed.), *Shape Memory Alloys: Modeling and Engineering Applications*, Springer, 2008, pp. 55–124.
2. M. Qidwai, D. Lagoudas, D. Hartl, *Numerical Implementation of an SMA Thermomechanical Constitutive Model Using Return Mapping Algorithms*, In D. Lagoudas (Ed.), *Shape Memory Alloys: Modeling and Engineering Applications*, Springer, 2008, pp. 193–236.

3. J. Schick, D. Hartl, D. Lagoudas, *Incorporation of Shape Memory Alloy Actuators into Morphing Aerostructures*, In J. Valasek (Ed.), *Morphing Aerospace Vehicles and Structures*, Wiley, 2012
4. J. Mingear and D. Hartl *Introduction to Shape Memory Alloys*, In E. Peraza Hernandez, D. Hartl, D. Lagoudas (eds.) *Shape Memory Alloys: Materials, Modeling, and Design*, Springer, 2024. (final editing)
5. J. Mingear and D. Hartl *Introduction to Shape Memory Alloys*, In E. Peraza Hernandez, D. Hartl, D. Lagoudas (eds.) *Shape Memory Alloys: Materials, Modeling, and Design*, Springer, 2024. (final editing)
6. P. Leal, J. Weaver-Rosen, R. Malak, and D. Hartl *Design Exploration and Optimization of Shape Memory Alloy Morphing Structures*, In E. Peraza Hernandez, D. Hartl, D. Lagoudas (eds.) *Shape Memory Alloys: Materials, Modeling, and Design*, Springer, 2024. (final editing)

II.3. Papers in Refereed Journals

1. D. Hartl, D. Lagoudas, *Aerospace Applications of Shape Memory Alloys*, Proceedings of the Institution of Mechanical Engineers, Part G, Journal of Aerospace Engineering, Vol. 221 (Winner of the William Sweet Smith Prize), pp. 535–552, 2007. (*IF: 1.10*)
2. D. Hartl, D. Lagoudas, *Constitutive Modeling and Structural Analysis Considering Simultaneous Phase Transformation and Plastic Yield in Shape Memory Alloys*, Smart Materials and Structures, Vol. 18, No. 10, 2009. (*IF: 3.54*)
3. D. Hartl, D. Lagoudas, J. Mabe, F. Calkins, *Use of Ni60Ti Shape Memory Alloy for Active Jet Engine Chevron Application, Part I: Thermomechanical Characterization*, Smart Materials and Structures, Vol. 19, No. 1, 2010. (*IF: 3.54*)
4. D. Hartl, J. Mooney, D. Lagoudas, J. Mabe, F. Calkins, *Use of Ni60Ti Shape Memory Alloy for Active Jet Engine Chevron Application, Part II: Experimentally Validated Numerical Analysis*, Smart Materials and Structures, Vol. 19, No. 1, 2010. (*IF: 3.54*)
5. D. Hartl, G. Chatzigeorgiou, D. Lagoudas, *Three-Dimensional Modeling and Numerical Analysis of Rate-Dependent Irrecoverable Deformation in Shape Memory Alloys*, International Journal of Plasticity, Vol. 26, No. 10, pp. 1485–1507, 2010. (*IF: 5.80*)
6. D. Hartl, D. Lagoudas, F. Calkins, *Advanced Methods for the Analysis, Design, and Optimization of SMA-Based Aerostructures*, Smart Materials and Structures, Vol. 20, 094006, 2011. (*IF: 3.54*)
7. D. Lagoudas, D. Hartl, Y. Chemisky, L. Machado, P. Popov, *Constitutive Model for the Numerical Analysis of Phase Transformation in Polycrystalline Shape Memory Alloys*, International Journal of Plasticity, Vol. 32–33, pp. 155–183, 2012. (*IF: 5.80*)
8. S. Oehler, D. Hartl, R. Lopez, R. Malak, D. Lagoudas, *Design Optimization and Uncertainty Analysis of SMA Morphing Structures*, Smart Materials and Structures. Vol. 21, No. 9, 2012. (*IF: 3.54*)
9. E. Peraza-Hernandez, S. Hu, H-W. Kung, E. Akleman, D. Hartl, *Towards Building Smart Self-Folding Structures*, Computers and Graphics, Vol. 37, No. 6, (Winner of the Computers and Graphics SMI 2013 Best Paper Award, Honorable Mention), 2013.
10. E. Peraza-Hernandez, D. Hartl, R. Malak, *Design and Optimization of an SMA-Based Self-Folding Sheet*, ASME Journal of Mechanical Design, Vol. 135, No. 11, p. 111007, 2013. (*IF: 2.78*)

11. E. Peraza-Hernandez, D. Hartl, R. Malak, *Design and Numerical Analysis of an SMA Mesh-based Self-Folding Sheet*, Smart Materials and Structures, Vol. 22, 094008, 2013. (IF: 3.54)
12. G. Esquivel, D. Hartl, D. Whitten, *POP-OP: A Shape Memory-Based Morphing Wall*, International Journal of Architectural Computing, Vol. 11, No. 3, 2013.
13. E. Peraza-Hernandez, D. Hartl, R. Malak, D. Lagoudas, *Origami-Inspired Active Structures: A Synthesis and Review*, Smart Materials and Structures (special issue), Vol. 23, No. 9, 2014. (IF: 3.54)
14. D. Hartl, J. Mabe, O. Benafan, A. Coda, B. Conduit, R. Padan, B. Van Doren, *Standardization of Shape Memory Alloy Test Methods Toward Certification of Aerospace Applications*, Smart Materials and Structures, Vol. 24, No. 8, 2015. (IF: 3.54)
15. E. Peraza-Hernandez, B. Kiefer, D. Hartl, A. Menzel, D. Lagoudas, *Analytical Investigation of Structurally Stable Configurations in Shape Memory Alloy-Actuated Plates*, International Journal of Solids and Structures, Vol. 69–70, pp. 442–458, 2015. (IF: 2.79)
16. W. Scholten, D. Hartl, T. Turner, R. Kidd, *Development and Analysis-Driven Design Optimization of an SMA-Based Slat-Cove Filler for Airframe Noise Reduction*, AIAA Journal, Vol. 54, No. 3, 2016. (IF: 1.95)
17. D. Hartl, E. Galvan, R. Malak, J. Baur *Parameterized Design Optimization of a Magneto-hydrodynamic Liquid Metal Active Cooling Concept*, ASME Journal of Mechanical Design, Vol. 138, No. 3, pp. 031402-1–031402-11, 2016. (IF: 2.78)
18. G. Scalet, F. Auricchio, D. Hartl *Efficiency and Effectiveness of Implicit and Explicit Approaches for the Analysis of Shape Memory Alloy Bodies*, Journal of Intelligent Materials Systems and Structures, Vol. 27, No. 3, pp. 384–402, 2016. (IF: 2.21)
19. E. Peraza Hernandez, D. Hartl, R. Malak, Jr., E. Akleman, O. Gonen, H-W. Kung, *Design Tools for Patterned Self-Folding Reconfigurable Structures Based on Programmable Active Laminates*, Journal of Mechanisms and Robotics, Vol. 8, No. 3, pp. 031015-1–031015-12, 2016. (IF: 2.23)
20. R. Saunders, J. Boyd, D. Hartl, J. Brown, F. Calkins, D. Lagoudas, *A Validated Model for Induction Heating of Shape Memory Alloy Actuators*, Smart Materials and Structures, Vol. 25, No. 4, 2016. (IF: 3.54)
21. D. Hartl, G. Frank, J. Baur, *Effects of Microchannels on the Mechanical Performance of Multifunctional Composite Laminates with Unidirectional Laminae*, Composite Structures, Vol. 143, No. 5, 2016. (IF: 6.36)
22. E. Peraza Hernandez, D. Hartl, E. Akleman, D. Lagoudas, *Modeling and Analysis of Origami Structures with Smooth Folds*, Computer-Aided Design, Vol. 78. pp. 93-106, 2016.
23. E. Peraza Hernandez, D. Hartl, D. Lagoudas, *Kinematics of Origami Structures with Smooth Folds*, Journal of Mechanisms and Robotics, Vol. 8, No. 6, 2016. (IF: 2.23)
24. T. Halbert, E. Peraza-Hernandez, R. Malak, D. Hartl, *Numerically Validated Reduced-Order Model for Laminates Containing Shape Memory Alloy Wire Meshes*, Journal of Intelligent Materials Systems and Structures, Vol. 27, No. 11, pp. 1492–1509, 2016. (IF: 2.21)
25. A. Solomou, T. Machairas, D. Saravanos, D. Hartl, and D. Lagoudas, *A Coupled Layered Thermomechanical Shape Memory Alloy Beam Element with Enhanced Higher Order Temperature Field Approximations*, Journal of Intelligent Materials Systems and Structures, Vol. 27, No. 17, pp. 359–2384, 2016. (IF: 2.21)

26. D. Hartl, G. Frank, G. Huff, J. Baur, *A Liquid Metal-Based Structurally Embedded Vascular Antenna: I. Concept and Multiphysical Modeling*, Smart Materials and Structures, Vol. 26, No. 2, 2017. (IF: 3.54)
27. D. Hartl, G. Frank, R. Malak, J. Baur, *A Liquid Metal-Based Structurally Embedded Vascular Antenna: II. Multiobjective and Parameterized Design Exploration*, Smart Materials and Structures, Vol. 26, No. 2, 2017. (IF: 3.54)
28. T. Bertagne, D. Hartl, T. Cognata, R. Sheth, C. Dinsmore, *Testing and Analysis of a Morphing Radiator Concept for Thermal Control of Crewed Space Vehicles*, Applied Thermal Engineering, Vol. 124, pp. 986–1002, 2017 (IF: 4.01)
29. G. Huff, H. Pan, D. Hartl, G. Frank, R. Bradford, J. Baur, *A Physically Reconfigurable Structurally Embedded Vascular Antenna (SEVA)*, IEEE Transactions on Antennas and Propagation, Vol. 65, No. 5, pp. 2282–2288, 2017. (IF: 4.13)
30. D. Hartl, G. Frank, J. Baur, *Embedded Magnetohydrodynamic Liquid Metal Thermal Transport: Validated Analysis and Design Optimization*, Journal of Intelligent Materials Systems and Structures, Vol. 28, No. 7, pp. 862–877, 2017. (IF: 2.21)
31. E. Peraza Hernandez, D. Hartl, D. Lagoudas, *Design and simulation of origami structures with smooth folds*, Proceedings of the Royal Society A, Vol. 473, No. 2200, 2017. (IF: 2.82)
32. D. Hartl, J. Mingear, B. Bielefeldt, J. Rohmer, J. Zamarripa, A. Elwany, *High Frequency Shape Memory Alloy Actuators Incorporating Liquid Metal Energy Circuits*, Shape Memory and Superelasticity, Vol. 3, No. 4, pp. 457–466, 2017.
33. B. Bielefeldt, J. Hochhalter, D. Hartl, *Shape Memory Alloy Sensory Particles for Damage Detection: Experiments, Analysis, and Design Studies*, Structural Health Monitoring, Vol. 17, No. 4, pp. 777–814, 2017. (IF: 4.94)
34. E. Galvan, D. Hartl, J. Baur, R. Malak, *Performance Assessment of a Multi-objective Parametric Optimization Algorithm with Application to a Multi-physical Engineering System*, Structural and Multidisciplinary Optimization, Vol. 58, pp. 489–509, 2018. (IF: 2.88)
35. P. Walgren, C. Bertagne, M. Wescott, O. Benafan, L. Erickson, J. Whitcomb, and D. Hartl, *Development and Testing of a Shape Memory Alloy-Driven Composite Morphing Radiator*, Shape Memory and Superelasticity, Vol. 4, No. 1, pp. 232–241, 2018.
36. R. Saunders, J. Boyd, D. Hartl, F. Calkins, D. Lagoudas, *A Simplified Model for High Rate Actuation of Shape Memory Alloy Torque Tubes Using Induction Heating*, Journal of Intelligent Materials Systems and Structures, Vol. 29, No. 6, pp. 1088–1101, 2018. (IF: 2.21)
37. D. Hartl, B. Kiefer, R. Schulte, A. Menzel, *Computationally-Efficient Modeling of Inelastic Single Crystal Responses via Anisotropic Yield Surfaces: Applications to Shape Memory Alloys*, International Journal of Solids and Structures, Vol. 136–137, pp. 38–59, 2018. (IF: 2.79)
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74. **L. Smith, H. Pan, R. Bradford, G. Frank, D. Hartl, J. Baur, G. Huff, *A Study of Liquid Metal Alloy Reconfigurable Antennas Embedded in a Structural Composite* In Proceedings of 2016 IEEE International Symposium on Antennas and Propagation/USNC-URSI National Radio Science, Fajardo, Puerto Rico, June/July 2016.
75. D. Hartl, G. Frank, G. Huff, J. Baur, *Analysis-Driven Design of Vascular Antennas Embedded in Multifunctional Composites* In Proceedings of the 31st ASC Technical Conference and ASTM D30 Meeting, Williamsburg, VA, September 2016.

76. G. Huff, H. Pan, D. Hartl, G. Frank, R. Bradford, J. Baur, *A Physically Reconfigurable Structurally Embedded Vascular Antenna (SEVA)* In Proceedings of the 54th Annual Allerton Conference on Communication, Control, and Computing, Monticello, IL, September 2016.
77. E. Peraza Hernandez, D. Hartl, and D. Lagoudas, *Design of Origami Structures with Smooth Folds*, In Proceedings of ASME SMASIS 2016, Stowe, VT, October 2016.
78. W. Scholten, R. Patterson, J. Volpi, Q. Chapelon, D. Hartl, T. Strganac, and T. Turner *Noise Reduction in a High Lift Wing Using SMAs: Computational Fluid-Structural Analysis*, In Proceedings of ASME SMASIS 2016, Stowe, VT, September 2016.
79. D. Hartl, B. Bielefeldt, G. Reich, and P. Beran, *Multi-fidelity Analysis and Experimental Characterization of Muscular-Skeletal Structures Optimized via Genetic Programming*, In Proceedings of AIAA SciTech 2017, Grapevine, TX, January 2017.
80. J. Mingear, N. Page, A. Greer, B. Bielefeldt, and D. Hartl, *Liquid Metal Integration for Expedited Heating and Cooling of Monolithic and Composite SMA Actuators*, In Proceedings of AIAA SciTech 2017, Grapevine, TX, January 2017.
81. P. Leal, R. Patterson, and D. Hartl, *Thermal-Structural Analysis of a Shape Memory Alloy Based Bio-Inspired Morphing Wing*, In Proceedings of AIAA SciTech 2017, Grapevine, TX, January 2017.
82. W. Scholten, R. Patterson, Q. Chapelon, D. Hartl, T. Strganac, and T. Turner *Computational and Experimental Fluid-Structure Interaction Assessment of a High-Lift Wing with a Slat-Cove Filler for Noise Reduction*, In Proceedings of AIAA SciTech 2017, Grapevine, TX, January 2017.
83. E. Peraza Hernandez, D. Hartl, and D. Lagoudas, *Modeling and Design of Shape Memory Alloy-based Origami Structures with Smooth Folds*, In Proceedings of AIAA SciTech 2017, Grapevine, TX, January 2017.
84. M. Wescott, S. McQuien, C. Bertagne, J. Whitcomb, D. Hartl, and L. Erickson *Design and Fabrication of a Composite Morphing Radiator Panel Using High Conductivity Fibers*, In Proceedings of AIAA SciTech 2017, Grapevine, TX, January 2017.
85. C. Bertagne, J. Chong, J. Whitcomb, D. Hartl, and L. Erickson *Experimental Characterization of a Composite Morphing Radiator Prototype in a Relevant Thermal Environment*, In Proceedings of AIAA SciTech 2017, Grapevine, TX, January 2017.
86. J. Mingear and D. Hartl, *Corrosion of Nickel-Titanium, C110, and Al6061 in Gallium-based Liquid Metal Alloys*, In Proceedings of 2017 TMS Annual Meeting & Exhibition, San Diego, CA, Feb-Mar 2017.
87. J. Baur, T. Gibson, D. Rapping, S. Murphy, G. Frank, R. Bradford, G. Huff, D. Hartl, D. Phillips, *Integration of Structurally Embedded Vascular Antenna (SEVA) in a Complex Curved Composites*, In Proceedings of the Society for the Advancement of Material and Process Engineering Annual Conference, Seattle, WA, May 2017, (winner of the *Outstanding Technical Paper Award, Third Place*)
88. B. Bielefeldt, J. Mingear, and D. Hartl, *Induction Heating of Shape Memory Alloy Components Using Liquid Metal Energy Circuits for High Bandwidth Distributed Actuation*, Proceedings of the 8th ECCOMAS Thematic Conference on Smart Structures and Materials, Madrid, June 2017.

89. P. Leal, H. Stroud, and D. Hartl, *Design and Fabrication of a Shape Memory-Based Bio-Inspired Morphing Wing*, Proceedings of the 8th ECCOMAS Thematic Conference on Smart Structures and Materials, Madrid, June 2017.
90. J. Baur, D. Hartl, G. Frank, G. Huff, Keith. Slinker, C. Kondash, W. Kennedy, G. Ehlert, *Experimental Mechanics for Multifunctional Composites and Next Generation UAVs* Proceedings of the Conference and Exposition on Experimental and Applied Mechanics, Indianapolis, IN, June 2017.
91. **J. Baur, D. Hartl, G. Frank, R. Bradford, D. Phillips, T. Gibson, D. Rapking, G. Huff, *Beamforming and Reconfiguration of a Structurally Embedded Vascular Antenna Array (SEVA2) in a Complex Curved Composite* In Proceedings of 2017 IEEE International Symposium on Antennas and Propagation/USNC-URSI National Radio Science, San Diego, CA, July 2017.
92. **C. Bertagne, M. Wescott, J. Whitcomb, D. Hartl, and L. Erickson , *Overview of Technology Development of Shape Memory Alloy Morphing Radiators* In Proceedings of 2017 International Conference on Environmental Systems (ICES), Charleston, SC, July 2017.
93. J. Baur, D. Hartl, G. Frank, R. Bradford, G. Huff, *Graphical Material Selection Methods for Multi-Constraint, Multi-Functional Composites Pressure Vessels*, In Proceedings of the 2017 AMSE PVP (Pressure Vessels & Piping) Conference, Hawaii, July 2017.
94. **E. Peraza Hernandez, D. Hartl, D. Lagoudas, *Analysis and Design of an Active Self-Folding Antenna* In Proceedings of the ASME 2017 International Design Engineering Technical Conference & Computers and Information in Engineering Conference, Cleveland, OH, August 2017.
95. **D-Y. Hur, E. Peraza Hernandez, E. Galvan, D. Hartl, R. Malak, *Design Optimization of Folding Solar Powered Autonomous Underwater Vehicle Using Origami Architecture* In Proceedings of the ASME 2017 International Design Engineering Technical Conference & Computers and Information in Engineering Conference, Cleveland, OH, August 2017.
96. **G. Scalet, E. Boatti, M. Ferraro, V. Mercuri, D. Hartl, F. Auricchio, *Explicit Finite Element Implementation of a Shape Memory Alloy Constitutive Model and Associated Analyses*, Proceedings of XIV International Conference on Computational Plasticity - COMPLAS 2017, Barcelona, Sept. 2017.
97. P. Leal, T. White, V. Goecks, J. Valasek, D. Hartl, *Experimental and Computational Assessment of a Shape Memory Alloy Based Morphing Wing Incorporating Linear and Non-Linear Control*, In Proceedings of AIAA SciTech 2018, Kissimmee, FL, January 2018.
98. V. Goecks, P. Leal, T. White, J. Valasek, D. Hartl, *Control of Morphing Wing Shapes with Deep Reinforcement Learning*, In Proceedings of AIAA SciTech 2018, Kissimmee, FL, January 2018.
99. P. Leal, H. Stroud, E. Sheahan, M. Cabral, D. Hartl, *Skin-Based Camber Morphing Utilizing Shape Memory Alloy Composite Actuators in a Wind Tunnel Environment*, In Proceedings of AIAA SciTech 2018, Kissimmee, FL, January 2018.
100. Vishala, W. Scholten, R. Fernandes, B. Dunbar, D. Hartl, *Finite Element Analysis of an Index Finger Flexion in an Extravehicular Activity Glove*, In Proceedings of AIAA SciTech 2018, Kissimmee, FL, January 2018.
101. H. Stroud, P. Leal, D. Hartl *Experimental multiphysical characterization of an SMA driven, camber morphing owl wing section* In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Denver, CO, 2018.

102. A. Davis, M. Mirsayar, E. Sheahan, D. Hartl *Structural health monitoring for DOT using magnetic shape memory alloy cables in concrete* In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Denver, CO, 2018.
103. J. Chong, P. Walgren, D. Hartl *Demonstration of a shape memory alloy torque tube-based morphing radiator* In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Denver, CO, 2018.
104. **B. Bielefeldt, D. Hartl, E. Akleman, *L-System-Generated Topology Optimization of Compliant Mechanisms Using Graph-Based Interpretation* In Proceedings of the ASME 2018 International Design Engineering Technical Conference & Computers and Information in Engineering Conference, Quebec City, Quebec, Canada, August 2018.
105. **P. Walgren, O. Benafan, L. Erickson, D. Hartl, *Towards High Turndown Ratio Shape Memory Alloy-Driven Morphing Radiators*, In Proceedings of ASME SMASIS 2018, San Antonio, TX, September 2018.
106. **W. Scholten, R. Patterson, M. Eustice, S. Cook, D. Hartl, T. Strganac, T. Turner, *Aerodynamic and Structural Evaluation of an SMA Slat-Cove Filler Using Computational and Experimental Tools at Model Scale*, In Proceedings of ASME SMASIS 2018, San Antonio, TX, September 2018.
107. **G. Arena, R. Groh, A. Pirrera, W. Scholten, D. Hartl, T. Turner, *A Tailored Nonlinear Slat-Cove Filler for Airframe Noise Reduction*, In Proceedings of ASME SMASIS 2018, San Antonio, TX, September 2018.
108. **D. Sessions, J. Ruff, F. Espinal, G. Huff, S. Jape, E. Peraza Hernandez, D. Lagoudas, D. Hartl, B. Borges, *Folding, Tessellation, and Deployment of an Origami-Inspired Active-Material-Enabled Self-Folding Reflector Antenna*, In Proceedings of the 2018 IEEE International Symposium on Antennas and Propagation & USNC/URSI National Radio Science Meeting, Boston, MA, July 2018.
109. P Walgren, R Seifert, W Chapkin, G Frank, J Baur, DJ Hartl, *Efficient Design of a Smooth Bending Cylinder via Parametric Studies and Optimization*, In Proceedings of AIAA SciTech 2019, San Diego, CA, January 2019.
110. JH Mabe, DJ Hartl, N Tichenor, M Zackery, E Blades, M Nucci, *Fluid-Structure Interaction Modeling of a Shape-Memory Alloy Actuated Supersonic Wind Tunnel Model Alloy*, In Proceedings of AIAA SciTech 2019, San Diego, CA, January 2019.
111. PB Leal, T Giblette, DF Hunsaker, DJ Hartl *Extended 3D Class/Shape Transformation equations for multicomponent aircraft assemblies*, In Proceedings of AIAA SciTech 2019, San Diego, CA, January 2019.
112. A. Davis, M. Mirsayar, D. Hartl *Structural health monitoring using embedded magnetic shape memory alloys for magnetic sensing* In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Denver, CO, 2019.
113. B. Edmiston, A. Davis, M. Mirsayar, D. Hartl *Control of thermal deflection in concrete structures using iron-based shape memory alloys* In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Denver, CO, 2019.
114. M. Garza, E. Peraza Hernandez, D. Hartl *Self-folding origami surfaces of non-zero Gaussian curvature* In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Denver, CO, 2019.

115. T. White, D. Hartl *Exploration of static equilibrium in elastically biased shape memory alloy components* In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Denver, CO, 2019.
116. A. Davis, M. Mirsayar, D. Hartl, *Structural Health Monitoring by Magnetic Sensing in Concrete Structures via Embedded Shape Memory Alloy Components*, In Proceedings of Tran-SET 2019 Conference, San Antonio, TX, April 2019.
117. **M. Mikkelsen, P. Walgren, M. Mathew, B. Bielefeldt, P. Leal, A. Arrieta, D. Hartl, *Aerostructural optimization of a morphing airfoil using graph based L-System topologies*, In Proceedings of ASME SMASIS 2019, Louisville, KY, September 2019.
118. AG Leaton, WD Scholten, KF Lieb, TW Strganac, DJ Hartl, *Aerostructural and Aeroacoustic Experimental Testing of Shape Memory Alloy Slat Cove Filler*, In Proceedings of AIAA SciTech 2020, Orlando, FL, January 2020.
119. WD Scholten, DJ Hartl, *An Uncoupled Method for Fluid-Structure Interaction Analysis with Application to Aerostructural Design*, In Proceedings of AIAA SciTech 2020, Orlando, FL, January 2020.
120. JA Schrass, PB Leal, DJ Hartl, *Structurally Feasible Morphing of a Low-Boom Supersonic Transport*, In Proceedings of AIAA SciTech 2020, Orlando, FL, January 2020.
121. J. Mabe, S. Frederes, D. Hartl, F. Carpenter, *A direct comparison of shape memory alloy and electromechanical actuation for wing twist applications*, In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Online/Virtual, 2020.
122. R. Ward, B. Bielefeldt, D. Hartl, *Design of tailorable stiffness structures using L-system topology optimization*, In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Online/Virtual, 2020.
123. T. White, F. Phillips, W. Scholten, T. Henry, J. Hrynuik, D. Hartl, *Uncoupled Method for Massively Parallelizable 3D Fluid-Structure Interaction Analysis and Design*, In Proceedings of AIAA AVIATION 2020, Virtual/Online Conference, June 2020.
124. **J. Lilly, B. Hansen, R. Lotz, D. Hartl, T. Cognata, P. Nizio, C. Joyce *Development and Experimental Demonstration of a Shape Memory Alloy-Based Adaptive Two-Phase Radiator for Space Applications*, In Proceedings of ASME SMASIS 2020, Virtual/Online Conference, September 2020.
125. **G. Wilson, D. Lagoudas, D. Hartl *Designing a Morphable Parabolic Reflector Antenna Using Origami-Inspired Discretization and Efficient Global Optimization*, In Proceedings of ASME SMASIS 2020, Virtual/Online Conference, September 2020.
126. D. Lazzara, T. Magee, H. Shen, J. Mabe, P. Leal, and D. Hartl, *A Decoupled Method for Estimating Non-Ideal Sonic Boom Performance of Low-Boom Aircraft Due to Off-Design Flight Conditions and Non-Standard Atmospheres*, In Proceedings of AIAA SciTech 2021, Virtual Event, January 2021.
127. T. White, F. Phillips, T. Henry, and D. Hartl, *Massively Parallelizable Structural Design Optimization Using the Uncoupled Static Aeroelastic Analysis Method*, In Proceedings of AIAA SciTech 2021, Virtual Event, January 2021.
128. M. Mu, J. Schrass, K. Lieb, and D. Hartl, *Aerodynamic and Aeroacoustic Experimentation of a Slat-Gap Filler for Airframe Noise Reduction*, In Proceedings of AIAA SciTech 2021, Virtual Event, January 2021.

129. K. Lieb, R. Lotz, and D. Hartl, *Design, Fabrication, and Experimental Demonstration of an SMA-based Adaptive Flow Modification System*, In Proceedings of AIAA SciTech 2021, Virtual Event, January 2021.
130. F. Phillips, T. White, A. Davis, and D. Hartl, *Analysis of Rotor Blade Aeroelastic Deformation Utilizing the Uncoupled Static Aeroelastic Analysis Method*, In Proceedings of AIAA SciTech 2022, San Diego, CA, January 2022.
131. J. Schrass, J. Cate, J. Dean, and D. Hartl, *Mixed Reality Wind Tunnel Visualizations*, In Proceedings of the 2022 AIAA AVIATION Forum, Chicago, IL, 2022.
132. H. Stroud, J. McMurray, and D. Hartl, *Experimental framework toward 2D multiphysical model validation of components manufactured from multifunctional, degrading material*, In Proceedings of SPIE Smart Structures and Materials/NDE Conference, Long Beach, CA, 2022.
133. D. Miller, D. Hartl, D. Nicholson, O. Benafan, C. Joyce, S. Nevin, P. Nizio, G. Bigelow, and D. Gaydosh, *Shape Memory Alloys for Regulating TCS in Space (SMARTS): System Design and Thermal Vacuum Demonstration*, In Proceedings of the 51st International Conference on Environmental Systems Conference, St. Paul, MN, 2022.
134. S. Nevin, J. El-Ashkar, C. Gillaspie, and D. Hartl, *Shape Memory Alloys for Regulating TCS in Space (SMARTS): Validated Multiphysical Modeling and Design Optimization of Morphing Composite Radiators*, In Proceedings of the 51st International Conference on Environmental Systems Conference, St. Paul, MN, 2022.
135. K. Lieb, S. Kinney, P. Shah, D. Hensley, L. Schweizer, and D. Hartl, *Development of an Economical 2-DOF Continuous-Scan Acoustic Beamforming Array*, In Proceedings of the 2023 AIAA AVIATION Forum, San Diego, CA, 2023.
136. R. Ward, D. Kirby, J. Hardy, and D. Hartl, *Effectiveness of Shape Memory Alloy Golf Clubs in Enhancing Golfer Performance*, In Proceedings of the ASME Smart Materials, Adaptive Structures and Intelligent Systems, Austin, TX, September 2023.
137. G. Cervantes, W. Buckle, D. Hartl, J. Kudva, D. Inman, and J. Perry, *Development of a Software Framework for Rapid Optimized Design of Morphing Small UAVs*, In Proceedings of the In Proceedings of AIAA SciTech 2022, Orlando, FL, January 2024.
138. K. Lieb, S. Kinney, P. Shah, D. Hensley, and D. Hartl, *Improved Computational Efficiency of Continuous-Scan Beamforming with Partial Field Decomposition*, In Proceedings of the In Proceedings of AIAA SciTech 2022, Orlando, FL, January 2024.
139. F. Phillips, T. White, and D. Hartl, *Aeroelastic Analysis of Adaptive Small Unmanned Aerial System Wings*, In Proceedings of the In Proceedings of AIAA SciTech 2022, Orlando, FL, January 2024.
140. J. Lilly, W. Buckle, A. Davis, J. Dean, T. White, D. Hartl, G. Cervantes, *High-Throughput Analysis and Morphing Design Space Decomposition for Mission-Adaptive Air Vehicles*, In Proceedings of the In Proceedings of AIAA SciTech 2022, Orlando, FL, January 2024.

** peer-reviewed conference paper

II.5. Media/Professional Coverage of Research

- *Folding Frontier: Origami Engineering Could Be the Next Big Thing in Manufacturing*, PRISM (ASEE Magazine; cover story), Jan. 2013.

- *Academic Case Study: Using Abaqus to Simulate Self-folding Structures*, Simulia Community News, May 2015, pp. 13–14.
- *Better flight through shape-shifting materials*, Aerospace America, December 2015, pp. 6–7.
- *Testing a variety of adaptive structures*, Aerospace America, December 2017, p. 8.
- *Shape memory materials begin to take shape*, Aerospace America, December 2018, p. 9.
- *Materials that remember show promise for aircraft and space applications*, Aerospace America, December 2019, p. 9.

II.6. Funded Research Projects

Principle Investigator / Co-PI

1. “Modeling of SMA Actuated Trailing Edge Devices,” Boeing Company, PI: Lagoudas, Co-PI: Hartl, 10/1/09 – 9/30/2010, \$134,721, Hartl:\$134,721.
2. “Analysis of Shape Memory Alloy (SMA) Test Data and Characterization of SMA Test Specimens, Boeing Company, ” PI: Lagoudas, Co-PI: Hartl, Students: 1, 3/11/10 – 6/30/2010, \$35,000, Hartl:\$5,000.
3. “Large Tube and High Torque Test Bed (HTTB) Modeling Using ABAQUS and UMATs,” Boeing Company, PI: Lagoudas, Co-PI: Hartl, 3/26/10 – 9/30/10, \$38,650, Hartl:\$38,650.
4. “Texas A&M University eMAR Active Spar FEA Analysis,” Boeing Company, PI: Lagoudas, Co-PI: Hartl, 10/1/10 – 12/31/10, , \$19,477, Hartl: \$19,477.
5. “Improved SMA Actuators,” Boeing Company, PI: Lagoudas, Co-PI: Hartl, Students: 1, 2/7/11 – 10/30/11, , \$70,500, Hartl: \$70,500.
6. “Conformal Moldline Link (CML) Modeling Using ABAQUS,” Boeing Company, PI: Hartl, Co-PI: Lagoudas, Students: 1, 3/15/11 – 12/31/11, \$95,655, Hartl: \$95,655.
7. “Active Spar Finite Element Analysis Support,” Boeing Company, PI: Lagoudas, Co-PI: Hartl, 5/1/11 – 10/16/11, \$46,500, Hartl: \$46,500.
8. “Educational Institution Contract with Texas A&M University,” Sandia National Laboratories, PI: Lagoudas, Co-PIs: Boyd, Hartl, Karaman, Students: 2, 9/2/11 – 8/31/12, \$25,000, Hartl: \$5,000.
9. “Conformal Moldline Link (CML) Modeling Using ABAQUS (Follow-On),” Boeing Company, PI: Hartl, Students: 1, 2/15/12 – 8/14/12, \$51,693, Hartl: \$51,693.
10. “Improved SMA Modeling and Control Methods and Tools,” Boeing Company, PI: Hartl, Students: 1, 2/15/12 – 6/15/12, \$29,404, Hartl: \$29,404.
11. “Implementation of SMAs into Aircraft Seating - Phase 1: Headrest,” Weber Aircraft LLC, PI: Hartl, Co-PI: Lagoudas, Students: 1, 5/1/12 – 6/30/12, \$27,047, Hartl: \$27,047.
12. “Shape Memory Alloy Fatigue,” Boeing Company, PI: Lagoudas, Co-PI: Hartl, Students: 1, 6/22/12 – 12/14/12, \$50,000, Hartl: \$5,000.
13. “Automated Morphing Wall Installation,” TAMU Academy for the Visual and Performing Arts, PI: Esquivel, Co-PI: Hartl, 1/15/13 – 1/15/14, \$7,271, Hartl: \$3,500.
14. “Engineering Services for the Smart High-turndown Area Articulator with Passive Environment Response,” Jacobs Technology Inc. / NASA-JSC, PI: Hartl, 06/01/13 – 06/30/13, \$11,500, Hartl:\$11,500.
15. “Improved SMA Modeling Methods and Tools,” Boeing Company, PI: Hartl, 12/10/13 – 12/10/14, \$30,900, Hartl: \$30,900.

16. “Development of Analysis Tools for Induction Heating of SMAs,” Boeing Company, PI: Hartl, Co-PI: Boyd, Students: 1, 02/01/14 – 05/31/14, \$31,400, Hartl: \$16,000.
17. “Coupling Damage-Sensing Particles and Computational Micromechanics to Enable the Digital Twin: Phase II,” NASA, PI: Hochhalter, Co-PIs: Newman, Leser, Glassgen, Ratcliffe, Gupta, Heber, Hartl, Karaman, Students: 2, 4/1/2104–9/30/15, \$300,000, Hartl: \$50,000.
18. “Tensile and Torque Tube Fatigue Characterization of NiTiHf High Temperature Shape Memory Alloys,” PI: Karaman, Co-PI: Hartl, Lagoudas, Students: 2, 6/1/14 – 12/31/14, \$65,000, Hartl: \$21,000.
19. “AFE 77 - Shape Memory Alloy Test Methods”, Various Sponsors (via Aerospace Vehicle Systems Institute) PI: Hartl, Students: 1, 06/01/2014–10/31/2015, \$26,918, Hartl: \$26,918.
20. “Improved SMA Modeling Methods and Tools (Add-On),” Boeing Company, PI: Hartl, 6/1/13 – 8/31/14, \$20,000, Hartl: \$20,000.
21. “Variable Geometry Radiators Using Shape Memory Alloys”, NASA PI: Hartl, Students: 1, 08/01/2014–07/31/2016, \$130,000, Hartl: \$130,000.
22. “Computational Analysis and Design of an SMA-Based Broadhead Blade,” Slick Hunting Products, PI: Hartl, Students: 1, 10/15/2014–12/15/2014, \$5,500, Hartl: \$5,500.
23. “Analysis and Optimal Design of SMA-Enabled Reconfigurable Structures for Airframe Noise Control,” NASA (via National Institute of Aerospace), PI: Hartl, Students: 1, 11/15/2014–12/31/2016, \$114,000, Hartl: \$114,000.
24. “Multi-Functional, Multi-Scale Design for Reconfigurable Flight Structures”, AFRL/RQVC (via UTC, Inc.) PI: Hartl, Students: 0, 12/15/2014–04/30/2015, \$35,000, Hartl: \$35,000.
25. “Avian-Inspired Multifunctional Morphing Vehicles”, AFOSR (via UMichigan) PI: Hartl, Students: 2, 06/01/2015–06/30/2018, \$600,000, Hartl: \$600,000.
26. “Exploration of Design Methods for Bio-Inspired Compliant Load-Bearing Mechanisms Based on Evolutionary Algorithms”, AFRL/RQVC (via UTC, Inc.) PI: Hartl, Students: 0, 06/15/2015–10/30/2015, \$18,991, Hartl: \$18,991.
27. “Exploration of Design Methods for Bio-Inspired Compliant Load-Bearing Mechanisms Based on Evolutionary Algorithms”, AFRL/RQVC (via UDRI) PI: Hartl, Students: 0, 12/01/2015–03/30/2017, \$72,000, Hartl: \$72,000.
28. “Shape-Morphing Adaptive Radiator Technology”, NASA-JSC PI: Hartl, Co-PI: Whitcomb, Students: 2, 01/01/2016–12/31/2016, \$76,700, Hartl: \$76,700.
29. “Superelastic SMAs,” NASA (via National Institute of Aerospace), PI: Hartl, Co-PI: Strganac, Students: 1, 09/01/2016–09/25/2017, \$98,607, Hartl: \$98,607.
30. “Materials and Processing of Composite and Hybrids for Additive Research and Multifunctional Structures,” AFRL/RXCC (via Universal Technology Cooperation), PI: Huff, Co-PI: Hartl, Students: 1, 09/01/2015–02/28/2017, \$117,646, Hartl: \$2,447.
31. “Exploration of Design Methods for Bio-Inspired Compliant Load-Bearing Mechanisms Based on Evolutionary Algorithms”, AFRL/RQVC (via UDRI) PI: Hartl, Students: 1, 04/01/2017-08/31/2017, \$50,000, Hartl: \$50,000.
32. “Synergistic Modeling, Characterization, and Design of Embedded Phase Transforming Sensory Particles,” NSF, PI: Hartl, Co-PI: Karaman, Students: 1, 04/01/17–03/31/20, \$390,536, Hartl: \$208,338.

33. “Transportation Consortium of South-Central States (Tran-SET)”, Dept. of Transportation, PI: Karaman, Co-PIs: Hartl, Radovic, Karsilayan, Grasley, Students: 1, 11/30/2016–11/30/2018, \$279,000, Hartl: \$31,025.
34. “Shape-Morphing Adaptive Radiator Technology”, NASA-JSC, PI: Hartl, Co-PI: Whitcomb, Students: 2, 01/01/2017–10/30/2017, \$61,500, Hartl: \$61,500.
35. “University Leadership Initiative”, NASA, PI: Lagoudas, co-PIs: Hartl, Bowersox, Cizmas, Students: 2, 06/15/2017–06/14/2022 \$9,972,212 Hartl: \$428,220.
36. “Siemens Electric Propulsion Aircraft,” Siemens, PI: Hartl, Students: 0, 09/01/2017–08/31/2018, \$110,000, Hartl: \$110,000.
37. “EFRI-OSISSEI: Synthesizing Complex Structures from Programmable Self-Folding Active Materials (Supplement),” NSF, PI: McAdams, Co-PIs: Lagoudas, Amato, Akleman, Hartl \$399,683, 8/1/17 – 7/31/19, Hartl: \$199,841.
38. “Add-on For: Adaptive and Reconfigurable System Design Explorations (ARSDE)”, AFRL/RQVC (via UDRI) PI: Hartl, Students: 1, 12/31/2017-12/12/2018, \$61,290, Hartl: \$61,290.
39. “Substructure Modeling of Missile Enhancement via Reconfigurable Interceptor Nose (SM MERLIN)”, AFRL/RX (via UTC) PI: Hartl, Students: 1, 01/01/2018-09/21/2018, \$69,101, Hartl: \$69,101.
40. “Development of Computational Tools Based on the Substructure Modeling and Class/Shape Transformation (CST) Approaches”, AFRL/RX (via ARCTOS Inc.) PI: Hartl, Students: 1, 12/18/2018-02/22/2021, \$197,221, Hartl: \$197,221.
41. “Modeling and Simulation of Variable Thickness Devices and Structures Using Shape Memory Alloys”, The Boeing Company, PI: Hartl, Students: 1, 07/09/2018-11/16/2018, \$18,400, Hartl: \$18,400.
42. “Experimental and Computational Research on the Fluid-Structure-Interaction Behavior of Structural Noise Treatments for Aircraft High-Lift Systems,” NASA (via National Institute of Aerospace), PI: Hartl, Co-PI: Strganac, Students: 5, 09/26/2017–9/25/2022, \$344,309.00, Hartl: \$344,309.00.
43. “Biomimetic Adaptive Aircraft Structures (BAAT),” Army Research Labs (via The Boeing Company), PI: Hartl, Students: 1, 12/03/2018–03/31/2021, \$206,638, Hartl: \$206,638.
44. “Cyber Training : CIC: The Texas A&M University Computational Materials Science Summer School (CMS3),” NSF, PI: Benzerga, co-PIs: Liu, Perez, Arroyave, Srivastava, Qian,, Hartl, Students: 0, 09/01/18–08/31/21, \$499,822, Hartl: \$71,403.
45. “Educatar: Supplementing The Stem Classroom Experience,” Texas A&M University, PI: Hartl, co-PIs: Arroyave, Nowotarski, Students: 1, 1/1/2019–12/31/2019, \$36,000, Hartl: \$36,000.
46. “Adaptive and Reconfigurable System Design Explorations (ARSDE)”, AFRL/RQVC (via UDRI) PI: Hartl, Students: 1, 4/16/2019–12/06/2019, \$40,000, Hartl: \$40,000.
47. “Ford - SMA Technology Project”, Ford Motor Company, PI: Hartl, Students: 1, 1/01/2019–12/31/2019, \$50,000, Hartl: \$50,000.
48. “AFRL/TAMU Data-Enabled Discovery and Design of Materials (D3M)”, Air Force Research Lab (via UTC, Inc.), PI: Arroyave, Students: 1 (Hartl), 6/24/2019–6/28/2021, \$715,486, Hartl: \$35,000.
49. “Smart Passively Articulating High-Turndown Radiator”, NASA (via Paragon Space Development Corp.), PI: Hartl, Students: 1, 11/18/2019–2/18/2020, \$30,000, Hartl: \$30,000.

50. “Shape Memory Alloys for Regulating TCS in Space (SMARTS)”, NASA (via Paragon Space Development Corp.), PI: Hartl, Students: 2, 3/1/2020–2/28/2022, \$416,500.00, Hartl: \$416,500.00.
51. “Exploration of Flight Simulation Options Employing Augmented Reality”, US Air Force (via Passenger Inc.), PI: Hartl, Students: 1, 4/1/2020–6/30/2020, \$15,000, Hartl: \$15,000.
52. “Deep Immersion Extended Reality Flight Simulator”, US Air Force (via Passenger Inc.), PI: Hartl, co-PI: McNamara Students: 2, 3/29/2021–9/30/2021, \$150,000, Hartl: \$87,427.
53. “Missile Utility Transformation via Articulated Nose Technology (MUTANT)”, US Air Force (via Univ. of Dayton Research Institute), PI: Hartl, Students: 2, 12/01/2020–3/31/2022, \$90,067, Hartl: \$90,067.

Senior Personnel

- “EFRI-OSISSEI: Synthesizing Complex Structures from Programmable Self-Folding Active Materials,” NSF, PI: Malak, Co-PIs: Lagoudas, Amato, Akleman, McAdams \$1,998,423, 8/1/12 – 7/31/16 (Member of core proposal team; manage AERO component), Hartl: \$196,325.

II.7. New Design Methods, Patents

1. “Variable heat rejection device,” T. Cognata (Paragon SDC), C. Dinsmore (NASA), R. Sheth (NASA), and D. Hartl, Patent US10228197B2, granted Mar. 12, 2019.
2. “Origami Based Re-configurable Antenna with Steering Mechanism,” S. Sharma, V. Singh, V. Garg, D. Pandey, S. Kalra, B. Bhattacharya D. Hartl, Disclosure of Invention (India) filed November. 2019.
3. “Physically reconfigurable structurally embedded vascular antenna,” J. Baur, G. Huff, D. Hartl, G. Frank, and H. Pan, Patent US10944178B1 granted Mar. 9, 2021.
4. “Physically reconfigurable structurally embedded vascular antenna and method of making,” J. Baur, G. Huff, D. Hartl, G. Frank, H. Pan, and R. Bradford, Patent US10985446B1 granted Apr. 20, 2021.
5. “Flexible Multi-Material Structures ,” J. Baur, W. Chapkin, D. Seifert, G. Frank, P. Walgren, D. Hartl, Patent Application US20230279916A1 filed Sep. 2022.

III. Service

III.1. Membership in Professional Societies

American Institute of Aeronautics and Astronautics (AIAA) (1999; Lifetime Member, Senior Member 2024)
 International Society for Optics and Photonics (SPIE) (2007)
 American Society of Mechanical Engineers (ASME) (2011)
 The Minerals, Metals, and Materials Society (TMS) (2011)

III.2. Professional Societies Service and Leadership

Service

- Active Member, ASME Aerospace Division, Adaptive Structures & Material Systems Branch, Sept. 2011 – present

- Active Member, ASME Branch on Adaptive Structures & Material Systems, Active and Multifunctional Materials Technical Committee, Sept. 2012 – present
- Active Member, AIAA Adaptive Structures Technical Committee, Jan. 2015 – present

Leadership

- Secretary, ASME Branch on Adaptive Structures & Material Systems, Active and Multifunctional Materials Technical Committee, Sept. 2012 – 2016
- Symposium 2 Co-Chair, ASME Branch on Adaptive Structures & Material Systems, Active and Multifunctional Materials Technical Committee, Mar. 2014 – present
- Secretary, ASME Aerospace Division, Adaptive Structures & Material Systems Branch, Sept. 2015 – Sept. 2016
- Treasurer, ASME Aerospace Division, Adaptive Structures & Material Systems Branch, Sept. 2016 – Sept. 2017
- Chair, Publication Sub-Committee, AIAA Adaptive Structures Technical Committee, Jan. 2017 – present
- co-Chair, ASME Aerospace Division, Adaptive Structures & Material Systems Branch, Sept. 2017 – Sept. 2018
- Chair, ASME Aerospace Division, Adaptive Structures & Material Systems Branch, Sept. 2018 – Sept. 2019
- co-Chair, AIAA Adaptive Structures Technical Committee, Jan. 2018 – May 2020
- Chair, AIAA Adaptive Structures Technical Committee, May 2020 – May 2022

III.3. Conference/Symposium/Workshop Organization

Conference Organizing Leadership

- Co-Chair: Student Paper Competition, SPIE Smart Structures/NDE Conference, Sept. 2013–Mar. 2019.
- Co-Chair: ASME, Smart Materials Adaptive Structures and Intelligent Systems Conference, Mechanics and Behavior of Active Materials Symposium, Mar. 2014–Feb. 2017.
- Chair: ASME, Smart Materials Adaptive Structures and Intelligent Systems Conference, Mechanics and Behavior of Active Materials Symposium, Mar. 2017–Sept. 2019.

Conference Organizing Committee

- The 21st International Conference on Composite Materials (ICCM-21), Track Leader, Track 5.3: Stimuli Responsiveness and Shape Reconfiguration, Aug. 20-25 2017, Xi'an, China.
- SMI-FASE 2016 (Shape Modeling International'2016 - Fabrication and Sculpting Event), Jun. 20-24, 2013, Berlin.
- Gordon Research Conference on “Multifunctional Materials and Structures”, Social Committee, Jan 31–Feb 5, 2016, Ventura, CA.
- International Conferences on Modern Materials and Technologies, International Advisory Board, “Biomimetic Morphing of Unmanned Aerial Vehicles,” June 5-10, 2016, Perugia, Italy.
- Shape Modeling International (SMI/ISAMA: Shape Fabrication & Sculpting), Jul. 24-26, 2015, Telecom-Lille, France.

- SPIE Smart Structures/NDE Conference, Behavior and Mechanics of Multifunctional Materials and Composites IX (Conference 9432), Mar. 8–12, 2015, San Diego, CA.
- ASME, Smart Materials Adaptive Structures and Intelligent Systems Conference, Mechanics and Behavior of Active Materials Symposium, Sept. 16-18, 2013, Salt Lake City, UT.
- Shape Modeling International (SMI/ISAMA: Shape Fabrication & Sculpting), Jul. 10-12, 2013, Poole, UK.

Workshop Organizer

- Texas A&M SMA Research Summer Workshop, Aug. 4, 2011, College Station, TX.

III.4. Journal Service and Organization

Journal Associate Editor

- Journal of Intelligent Material Systems and Structures

Journal Reviewer

AIAA Journal, ASME Journal of Mechanical Design, European Journal of Mechanics, International Journal of Plasticity, International Journal of Precision Engineering and Manufacturing, International Journal of Solids and Structures, Journal of Applied Mechanics, Journal of Intelligent Material Systems and Structures, Journal of Mechanical Science and Technology, Smart Materials and Structures, and many others.

Special Issue Organization

- Co-Editor, Smart Materials Structures special issue on *Active Materials and Structures for Origami Engineering*, September 2014.
- Co-Editor, Smart Materials Structures special issue on *Adaptive and active materials: selected papers from the ASME 2014 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (Newport, RI, USA, 8–10 September 2014)*, September 2015.
- Co-Editor, Smart Materials Structures special issue on *Adaptive and active materials: selected papers from the ASME 2018 Conference on Smart Materials, Adaptive Structures and Intelligent Systems (San Antonio, TX, USA, September 2018)*.

IV. Professional Outreach

IV.1. Seminars and Presentations

Invited Talks and Seminars

1. ***Constitutive Modeling and FEA Analysis of Shape Memory Alloy Materials and Applications*, Department of Mechanical Engineering and Aeronautics Seminar, The University of Patras, Patras, Greece, September 2009.
2. *Recent Advances in the Analysis, Design and Optimization of SMA-Based Aerostructures*, Aerospace Engineering Seminar Series, Texas A&M University, College Station, Texas, January 2011.
3. *Optimized Design of SMA-Based Active Structures*, Winter Meeting of the OSU/TAMU Smart Vehicle Concepts Center, College Station, Texas, February 2011.

4. ***Recent Advances in the Analysis, Design and Optimization of SMA-Based Aerostructures*, COBEM 2011: 21st International Congress of Mechanical Engineering, Natal, Brazil, October 2011.
5. *Advanced Multi-physical Analysis and Optimization of SMA-Based Morphing Structures*, Workshop on “New Concepts for Active Materials, Actuators, and Bioinspired Sensing-Actuation Control” University of Washington, Seattle, Washington, April 2012.
6. ***Advanced Multi-physical Analysis and Optimization of SMA-Based Morphing Structures*, Institute of Mechanics Seminar, Technical University Dortmund, Dortmund, Germany, June 2012.
7. ***Advanced Multi-physical Analysis and Optimization of SMA-Based Morphing Structures*, Department of Mechatronics Seminar, University of Saarland, Saarland, Germany, June 2012.
8. ***Advanced Multi-physical Analysis and Optimization of SMA-Based Morphing Structures*, Seminar of Laboratoire d’étude des Microstructures et de Mécanique des Matériaux (LEM³), Arts et Métiers ParisTech, Metz, France, July 2012.
9. ***Advanced Multi-physical Analysis and Optimization of SMA-Based Morphing Structures*, Advanced Composites Centre for Innovation and Science, Bristol University, Bristol, UK, July 2012.
10. ***Numerical Analysis and Design of Novel SMA-Based Systems*, Seminar of Laboratoire d’étude des Microstructures et de Mécanique des Matériaux (LEM³), Arts et Métiers ParisTech, Metz, France, May 2013.
11. *SYMP 2: Modeling, Design Optimization, and Experimental Assessment of SMA-Based Reconfigurable Structures*, ASME Smart Materials Adaptive Structures and Intelligent Systems (SMASIS) Conference, Snowbird, UT, Sept. 2013.
12. *Modeling, Design Optimization, and Experimental Assessment of SMA-Based Reconfigurable Structures* Aerospace Engineering Seminar Series, Texas A&M University, College Station, Texas, August 2013.
13. *Materials Development and Analysis-Driven Design for Multifunctional Material Applications* NASA Langley Research Center, Hampton, VA, September 2013.
14. *Modeling, Design Optimization, and Experimental Assessment of SMA-Based Reconfigurable Structures* Boeing Research and Technology “SMA Research Summit”, The Boeing Company, Seattle, Washington, January 2014.
15. *Modeling and Analysis of Recoverable and Irrecoverable Inelastic Phenomena in Phase Transforming Structural Materials Across Scales* Aerospace Engineering Seminar Series, Texas A&M University, College Station, Texas, February 2014.
16. *Modeling and Analysis of Recoverable and Irrecoverable Inelastic Phenomena in Shape Memory Alloys Across Scales* Mechanical Engineering Seminar, Virginia Tech, Blacksburg, Virginia, March 2014.
17. *Modeling, Optimization, and Characterization of SMA-Based Reconfigurable Structures* Army Research Lab, Adelphi Laboratory Center, Adelphi, Maryland, April 2014.
18. *Modeling, Optimization, and Characterization of SMA-Based Reconfigurable Structures* US Naval Research Lab, Multifunctional Materials Branch, Washington, D.C., April 2014.

19. *Analysis and Design of Functionally Optimized SMA-Based Reconfigurable Structures* Air Force Research Lab, Structural Materials Division, Materials and Manufacturing Directorate, Dayton, OH, May 2014.
20. ***Methods for Analysis and Optimization of SMA-Based Structures Across Scales*, 3rd Annual Symposium on Smart and Multi-functional Materials, Center for Smart Materials and Structures, Harbin Institute of Technology, Harbin, China, June 2014.
21. *Analysis and Design of Functionally Optimized SMA-Based Reconfigurable Structures*, Dept. of Mechanical Engineering William Maxwell Reed Seminar Series, University of Kentucky, Lexington, KY, October 2015.
22. *Multiphysical Modeling and Design of Multifunctional Aerostructures Across Scales*, Dept. of Aerospace Engineering Seminar Series, University of Michigan, Ann Arbor, MI, January 2016.
23. *Additive Topological Optimization of Muscular-Skeletal (Micro?) Structures via Genetic Programming*, Air Force Research Lab, Structural Materials Division, Materials and Manufacturing Directorate, Dayton, OH, March 2016.
24. *Multifunctional Composites and Genetic Programming for Adaptive Structures Design: An Air Force Research Laboratory Experience* Aerospace Engineering Seminar Series, Texas A&M University, College Station, Texas, April 2016.
25. *Metals that Move and Aircraft that Morph* Science Cafe Bryan/College Station (sponsored by WGBH Educational Foundation), Bryan, TX, April 2017.
26. *Liquid Metals, Genetic Programming and Morphing Wings: From Academia to AFRL and Back Again* Mechanical Engineering Seminar, Purdue University, West Lafayette, Indiana, May 2017.
27. *Energetic Transduction in Novel Solid-Liquid Metal Composite Actuators*, Air Force Research Lab, Structural Materials Division, Materials and Manufacturing Directorate, Dayton, OH, August 2017.
28. ***Computational Fluid-Structure Interaction Assessment of a High-Lift Wing with a Slat-Cove Filler for Noise Reduction*, Software Cradle User's Conference 2017, Tokyo, Japan, October 2017.
29. *Analysis of Fluid-Structure Interactions in a High-Lift Wing with a Slat-Cove Filler for Noise Reduction*, NASA-Langley Research Center Aeroacoustics Branch Seminar, Hampton, VA, November 2017.
30. *Investigation, Analysis, and Design of Multifunctional Materials and Aerospace Structures*, Air Force Research Lab, Structural Materials Division, Materials and Manufacturing Directorate, Dayton, OH, August 2018.
31. *Aerodynamic Advantages of utilizing Camber Morphing Wings for Lightweight Aircraft*, ASME Smart Materials Adaptive Structures and Intelligent Systems (SMASIS) Conference, San Antonio, TX, September 2018.
32. ***Biomimetic Exploration and Design of Shape Memory Materials and Adaptive Structures [Keynote]*, XVIII International Symposium on Dynamic Problems of Mechanics (DINAME 2019), Buzios, Brazil, March 2019.
33. *Shape Memory Materials and Adaptive Structures: Explorations, Analyses, and Designs*, Ford Motor Company, Dearborn, MI, April 2019.

34. ***Multifunctional Materials and Aerospace Structures: Design, Exploration, and Education*, Seminar of Laboratoire d'étude des Microstructures et de Mécanique des Matériaux (LEM³), Arts et Métiers ParisTech, Metz, France, June 2019.
35. ***Investigation, Analysis, and Design of Multifunctional Materials and Aerospace Structures*, Seminar of Institut de Mécanique et d'Ingénierie de Bordeaux (I2M), Esplanade des Arts et Métiers, Bordeaux, France, June 2019.
36. *Investigation, Analysis, and Design of Multifunctional Materials and Aerospace Structures*, Air Force Research Lab, Structural Materials Division, Materials and Manufacturing Directorate, Dayton, OH, October 2019.
37. *Investigation, Analysis, and Design of Multifunctional Materials and Aerospace Structures*, Mechanical and Aeronautical Engineering Seminar, Clarkson University, Potsdam, NY, April 2021.
38. *New Analysis and Design Schemes Enabling the Next Generation of Multifunctional Aerospace Structures*, Multifunctional Materials and Structures Gordon Research Conference, Ventura, CA, September 2022.
39. *New Analysis and Design Schemes Enabling the Next Generation of Multifunctional Aerospace Structures*, Aerospace Engineering Seminar Series, Texas A&M University, College Station, Texas, April 2023.
40. ***New Analysis and Design Schemes Enabling the Next Generation of Multifunctional Structures*, Guest Seminar, Faculty of Mechanical, Maritime and Materials Engineering, Delft University of Technology, Delft, Netherlands, June 2023.
41. *Eliminating Maslows Hammer from the Development of Adaptive Structures*, The Adaptive Structures Lecture, AIAA SciTech 2024, Orlando, FL, Jan. 2024.

** International

Panels

1. *SYMP I: Origami IV – Panel*, ASME Smart Materials Adaptive Structures and Intelligent Systems (SMASIS) Conference, Snowbird, UT, Sept. 2013.

This CV submitted is most current and correct as of the date of this signature.

Signature:

Date: