David A. Lattanzi, Ph.D., P.E.

Associate Professor & John Toups Faculty Fellow, Sid and Reva Dewberry Department of Civil, Environmental, and Infrastructure Engineering, George Mason University

E: dlattanz@gmu.edu P: (703) 993-3695 W: http://lrg.gmu.edu

I. PERSONAL INFORMATION

A. Education

Ph.D.	Civil Engineering, University of Washington	2013
M.S.	Mechanical Engineering, University of Washington	2013
M.S.	Civil Engineering, Tufts University	2005
B.S.	Civil Engineering, Tufts University	2003

B. Experience

i. Academic

Associate Professor, George Mason University — 2019-present
John Toups Faculty Fellow — 2018-present
Assistant Professor — 2013-2019
Sid and Reva Dept. of Civil, Environmental, and Infrastructure Engineering

Research Assistant, University of Washington — 2009-2013
Dept. of Civil & Environmental Engineering

Instructor, University of Washington — 2011
Dept. of Civil & Environmental Engineering

ii. Professional

Bridge Engineer, Gannett Fleming — 2005-2009
Pittsburgh, PA

Assistant Structural Engineer, Dewberry, Inc. — 2004-2005
Boston, MA

C. Licensure

Professional Engineer (P.E.), Commonwealth of Pennsylvania
License Number: PE076478

D. Awards & Recognition

2019 George Mason University research mentoring excellence award
2018 Selected participant, NAE German-American Frontiers of Engineering Symposium
2017 ASCE *Journal of Computing in Civil Engineering* Best Paper Award
2017 Office of Naval Research Faculty Fellow
2016 NVIDIA Global Impact of Computing Award– Finalist
2013 The William Allison Fellowship (*as graduate student)*
2005 The Earle F. Littleton Award (*as graduate student*)

II. RESEARCH ACTIVITIES

A. Publications and Presentations

i. Dissertation

"A computational framework for next-generation inspection imaging," Ph.D., University of Washington, June 2013; Advisor: Gregory Miller.

ii. Refereed journal publications *(underlined student co-authors)*

[16] K. Ghahremani, A. Khaloo , S. Mohammadi, and D. Lattanzi, "Automated 3D damage detection in structural components for finite element model updating," *Journal of Aerospace Engineering* [Special issue] 31.5 (2018): 04018068, American Society of Civil Engineers.

[15] A. Khaloo, D. Lattanzi, A. Jachimowicz, and C. Devaney, "Utilizing UAV and 3D Computer Vision for Visual Inspection of a Large Gravity Dam," *Frontiers in Built Environment: Structural Sensing* 4 (2018): 31, Frontiers.

[14] A. Khaloo, D. Lattanzi**,** K. Cunningham, M. Riley, and R. Dell'Andrea. "Unmanned aerial vehicle inspection of the Placer River Trail Bridge through image-based 3D modelling," *Structure & Infrastructure Engineering* 14.1 (2018, first online in 2017): 124-136*,* Taylor & Francis.

[13] A. Jootoo and D. Lattanzi, "Extraction of structural system designs from topologies via morphological analysis," *Designs* [Featured paper in Special issue] 2.1 (2018): 8*,* Multidisciplinary Digital Publishing Institute.

[12] B. Jafari, A. Khaloo, and D. Lattanzi, "Deformation tracking in 3D point clouds via statistical sampling of cloud-to-cloud distances," *Journal of Nondestructive Evaluation* 36.4 (2017): 65, Springer.

[11] A. Khaloo and D. Lattanzi, "Robust normal estimation and region growing segmentation of infrastructure 3D point clouds," *Advanced Engineering Informatics* 34 (2017): 1-16, Elsevier.

[10] A. Bapu and D. Lattanzi, "Bridge type classification: supervised learning on a modified NBI dataset," *Journal of Computing in Civil Engineering* 31.6 (2017): 04017063*,* American Society of Civil Engineers.

[9] A. Khaloo and D. Lattanzi, "Pixel-wise structural motion tracking from rectified repurposed videos," *Structural Control & Health Monitoring* 24.11 (2017): e2009*,* Wiley.

[8] D. Lattanzi and G. Miller, "Review of robotic infrastructure inspection systems," *Journal of Infrastructure Systems* 23.3 (2017): 04017004*,* American Society of Civil Engineers.

[7] A. Khaloo and D. Lattanzi, "Hierarchical dense structure-from-motion reconstructions for infrastructure condition assessment," *Journal of Computing in Civil Engineering* 31.1(2017, first published online in 2016): 04016047, American Society of Civil Engineers.

[6] G. Urgessa, D. Lattanzi, and M. Casey, "Stability of large reinforcing column cages during temporary construction conditions," *Practice Periodical on Structural Design and Construction* 21.1 (2016, first published online in 2015): 04015003*,* American Society of Civil Engineers.

[5] D. Lattanzi, G. Miller, M. Eberhard, and O. Haraldsson, "Bridge column maximum drift estimation via computer vision," *Journal of Computing in Civil Engineering* 30.4 (2016, first published online in 2015): 04015051, American Society of Civil Engineers.

[4] D. Lattanzi and G. Miller, "3D scene reconstruction for robotic bridge inspection," *Journal of Infrastructure Systems* 21.2 (2015, first published online in 2014): 04014041, American Society of Civil Engineers.

[3] D. Lattanzi and G. Miller, "Robust automated concrete damage detection algorithms for field applications," *Journal of Computing in Civil Engineering* 28.2 (2014, first published online in 2012): 253-262, American Society of Civil Engineers.

[2] P. Obrien, M. Eberhard, O. Haraldsson, A. Irfanoglu, D. Lattanzi, S. Lauer, and S. Pujol, "Measures of the seismic vulnerability of reinforced concrete buildings in Haiti," *Earthquake Spectra* 27.S1 (2011): S373-S386, EERI.

[1] B. Brenner, M. Sanayei, D. Lattanzi, and E. Bell, "Evaluation of highway bridge strength considering parapets," *Bridge Structures* 1.3 (2005): 273-280, Taylor & Francis.

iii. Curated databases

[1] N. Sedra, M. Eberhard, A. Irfanoglu, A. Matamoros, S. Pujol, O. Haraldsson, D. Lattanzi, S. Lauer, B. Lyon, J. Messmer, & K. Nasi, "The Haiti earthquake database," *Network for Earthquake Engineering Simulation (NEES),* Purdue University, 2012. https://datacenterhub.org/resources/263 [9 citations]

iv. Patents

[1] D. Lattanzi and A. Khaloo. A multi-scale method of generating 3D civil site surveys. Utility patent awarded August 21, 2019.

v. Fully refereed conference proceedings

[9] J. Bynum, G. Earle and D. Lattanzi, "A convolutional neural network approach to the semi-supervised acoustic monitoring of industrial facilities," *International Conference on Smart Infrastructure and Construction*, 2019.

[8] S. Mohamadi and D. Lattanzi, "A computational geometry approach to the life-cycle modeling of remotely-sensed defects," International Conference on Computing in Civil Engineering, American Society of Civil Engineers, 2019.

[7] B. Jafari, A. Khaloo and D. Lattanzi, "Tracking structural deflections via sample-based point cloud analysis," *International Workshop on Computing in Civil Engineering*, American Society of Civil Engineers, 2017.

[6] A. Khaloo and D. Lattanzi, "Robust outlier detection and normal estimation in noisy infrastructure 3D point clouds," *International Workshop on Computing in Civil Engineering*, American Society of Civil Engineers, 2017.

[5] A. Jootoo and D. Lattanzi, "Hybridizing topology optimization and evolutionary computation to support computer-aided engineering design," *International Workshop on Computing in Civil Engineering*, American Society of Civil Engineers, 2017.

[4] K. Ghahremani, A. Khaloo, and D. Lattanzi, "Automated 3D Image-Based Section Loss Detection for Finite Element Model Updating," *International Symposium on Automation and Robotics in Construction*, 2016.

[3] A. Jootoo and D. Lattanzi, "A hybrid machine learning and optimization based approach to bridge design," *International Conference on Computing in Civil and Building Engineering*, 2016.

[2] A. Khaloo and D. Lattanzi, "A hierarchical computer vision approach to infrastructure inspection," *International Workshop on Computing in Civil Engineering*, American Society of Civil Engineers, 2015.

[1] D. Lattanzi and G. Miller, "A computational framework for next generation bridge inspection," *Joint Conference on Computer Vision, Imaging, and Computer Graphics Theory and Applications*, 2012.

vi. Abstract reviewed conference proceedings

[14] J. Bynum, P. Kamranfar and D. Lattanzi, "Autoencoder networks for unsupervised feature extraction of acoustic monitoring signals," *International Workshop on Structural Health Monitoring*, 2019.

[13] M. Momtaz Dargahi, S. Mohamadi and D. Lattanzi, "Temporal modeling of point-cloud evolution for predictive structural assessments," *International Workshop on Structural Health Monitoring*, 2019.

[12] J. Bynum and D. Lattanzi, "Robotic manufacturing system damage detection and process identification via acoustic analysis," *Workshop on Advances and Applications of Data Science & Engineering*, Data Science & Engineering Consortium, 2018.

[11] A. Khaloo and D. Lattanzi, "Automatic detection of structural deficiencies using 4D hue-assisted analysis of color point clouds," *IMAC*, 2018.

[10] A. Khaloo and D. Lattanzi, "Integrating 3D computer vision and robotic infrastructure inspection," *International Workshop on Structural Health Monitoring*, 2017.

[9] T. Moran and D. Lattanzi, "Quantifying the effects of localized corrosion through the use of digital imaging" *International Bridge Conference,* 2017.

[8] A. Khaloo and D. Lattanzi, "Exploring computer vision inspection techniques through data mining of the visual NEESHub," *International Conference on Sustainable Design, Engineering, and Construction*, 2016.

[7] A. Jootoo and D. Lattanzi, "A machine learning approach to bridge prototyping," *International Conference on Sustainable Design, Engineering, and Construction*, 2016.

[6] B. Jafari, A. Khaloo and D. Lattanzi, "Long-term monitoring of structures through 3D point cloud analysis," *Proceedings of SPIE: Smart Structures and Nondestructive Evaluation*, SPIE, 2016.

[5] A. Khaloo and D. Lattanzi, "Repurposing video recordings for structure motion estimations," *Proceedings of SPIE: Smart Structures and Nondestructive Evaluation*, SPIE, 2016.

[4] A. Khaloo and D. Lattanzi, "Extracting structural models through computer vision," *Proceedings of the Structures Congress*, American Society of Civil Engineers, 2015.

[3] K. Cunningham, D. Lattanzi, R. Dell'Andrea, M. Riley, T. Huette, R. Goetz, and R. Wilson, "UAS-based inspection of the Placer River Trail Bridge: a data-driven approach," *Proceedings of the Structures Congress,* American Society of Civil Engineers, 2015.

[2] D. Lattanzi and G. Miller, "A prototype imaging and visualization system for robotic infrastructure inspection," *Proceedings of the Structures Congress*, American Society of Civil Engineers, 2013.

[1] B. Brenner, M. Sanayei, D. Lattanzi, and E. Bell, "Defining a baseline model for bridge analysis and design," *Proceedings of the Transportation Research Board*, 2006.

vii. Extended abstracts

[8] D. Lattanzi, S. Mohamadi, A. Khaloo, and M. Darhagi, "Life-cycle infrastructure monitoring via temporal point cloud analytics," Engineering Mechanics Institute International Conference, 2019.

[7] D. Lattanzi, "The digital twin: a platform for life-cycle infrastructure management," SEI Structures Congress, 2019.

[6] S. Mohamadi, M. Dargahi, and D. Lattanzi, "Temporal modeling of 3D remote sensing for predictive condition assessment," SEI Structures Congress, 2019.

[5] M. Dizaji, S. Mohamadi, S.Yang, D. Lattanzi, and D. Harris, "Vision-based characterization and identification of structural systems," Engineering Mechanics Institute Conference, 2018.

[4] S. Mohamadi, and D. Lattanzi, "Dynamic digital twinning of structural systems," Engineering Mechanics Institute Conference, 2018.

[3] A. Khaloo and D. Lattanzi, "Automated color-based structural damage detection using photometric invariant computer vision and UAVs," Engineering Mechanics Institute Conference, 2018.

[2] A. Khaloo and D. Lattanzi, "Leveraging 3D imaging for structural assessments," Engineering Mechanics Institute Conference, 2017.

[1] A. Khaloo, D. Lattanzi, K. Cunningham, M. Riley, and R. Dell'Andrea, "UAV Inspection of the Placer River Trail Bridge: A Case Study," NDE/NDT for Highways and Bridges: SMT, 2016.

viii. Other media

[5] Featured in "A Dam Good Mix: Combining UAVS and 3D Computer Vision", *XYHT Magazine*, November, 2019.

[4] Featured in "The New Reality", *Civil Engineering Magazine*, American Society of Civil Engineers, September 9, 2018.

[3] With Good Reason Radio, "Reaching the End of a Bridge's Lifespan", April 30, 2016.

[2] NVIDIA Global Impact Program, "How Haiti's Earthquake Inspired New Ways to Map Structural Safety Using GPUs," March 11, 2016.

[1] Featured in "Steel Shots: 3D-Printed Sculpture", *Modern Steel Construction*, American Institute of Steel Construction, September, 2014.

ix. Invited presentations

[17] Structural Engineering Institute-South Jersey Chapter, "Human-Machine Partnership and the Future of Civil Engineering," September 26, 2019.

[16] Princeton University Seminar Series, "Dynamic Digital Twinning of Infrastructure Systems," April 2, 2019.

[15] Carleton University Seminar Series, "A Digital Twin Approach to Improving Infrastructure Lifecyle Resiliency," November 29, 2018.

[14] University of Delaware Seminar Series, "The Real and the Unreal: Creating Digital Twins of Smart Infrastructure Systems," March 15, 2018.

[13] University of Utah Seminar Series, "The Real and the Unreal: Creating Digital Twins of Smart Infrastructure Systems," February 27, 2018.

[12] CDM Smith, "Unmanned aerial vehicles: a civil engineering perspective," February 22, 2017

[11] The American Society of Civil Engineers, "Human-machine interaction and the future of civil engineering," February 16, 2017.

[10] Structural Engineering Institute-Pittsburgh Chapter, "Human-machine interaction and the future of structural engineering," January 17, 2017.

[9] The Transportation Research Board, "Integrating UAVs and photogrammetry to support bridge inspections," January 11, 2017.

[8] The American Society of Highway Engineers National Conference, "Unmanned aerial vehicles with applications in bridge inspection and surveying," May 20, 2016.

[7] University of Virginia Civil & Environmental Engineering Department Seminar Series, "Human-machine interaction and the future of robotics in civil engineering," March 18, 2016.

[6] Krasnow Institute, "Connecting imaging and computational mechanics through computer vision," February 8, 2016.

[5] The American Society of Photogrammetry and Remote Sensing, "Placer River Trail Bridge inspection using small unmanned aircraft systems," September 24, 2015.

[4] Turner-Fairbank Highway Research Center: "Automating the analysis of NDE data," May 18, 2015.

[3] Academy of Science and Engineering: "Robotic bridge inspection: A needle in a haystack problem," May 27, 2014.

[2] National Institute of Standards and Technology: "Virtualized bridge inspection," April 30, 2014.

[1] Transportation Research Board Annual Meeting: "Inspection robotics: challenges and opportunities," January 14, 2014.

B. Contracts and grants (Total: ~$3,100,000 Lattanzi Share: ~$1,800,000)

i. External Funding

[15] ***Jeffress Trust Award in Interdisciplinary Research***

Project title: "A computational approach to autonomous monitoring of subsea infrastructure"

Start date: July 1, 2019, one year duration

Role: co-PI (PI: Feitian Zhang, co-PI: Jill Nelson)

Total: $120,000 (Lattanzi share: ~$26,000)

[14] ***University Transportation Center, Region 3***

Project Title: "Finite element model updating for bridge deformation measurements extracted from remote sensing data"

Start date: June 1, 2019, two year duration

Role: PI

Total: $85,000

[13] ***University Transportation Center, Region 3***

Project Title: "Bridge load rating and evaluation using digital image measurements"

Start date: June 1, 2019, eighteen-month duration

Role: PI (co-PIs at U. Delaware: Monique Head, Tripp Shenton, and Michael Chajes)

Total: $174,261 (Lattanzi share: $63,514)

[12] ***University Transportation Center, Region 3***

Project Title: "Strategic prioritization and planning of transportation infrastructure maintenance, rehabilitation, and improvements incorporating continuously-sensed data"

Start date: June 1, 2019, two year duration

Role: co-PI (PI: Elise Miller-Hooks, co-PIs: Sue McNeil, Shelley Stoeffels, Kostas Papakonstantinou)

Total: $290,579 (Lattanzi share: ~$55,000)

[11] ***Virginia Transportation Research Center***

Project Title: "Accounting for downtime effects in maintenance and restoration scheduling for routing, periodic, and post-disasater events"

Start date: June 1, 2019, three year duration

Role: co-PI (PI: Elise Miller-Hooks, co-PI: Jonathan Gifford)

Total: $300,000 (Lattanzi share: ~$100,000)

[10] ***Federal Highway Administration***

(Sub-award via Engineering & Software Consultants, Inc.)

Project Title: "Data fusion and visualization of NDE data"

Start date: September 1, 2018, fifteen-month duration

Role: PI

Total: $124,469

[9] ***Micron Technology***

Project title: "Facility structural health monitoring"

Start date: March 9, 2018, six-month duration

Role: PI

Total: $80,421

[8] ***Office of Naval Research***

Project title: "High-dimensional life-cycle modeling for naval survey assessments"

Start date: January 1, 2018, four-year duration

Role: PI

Total: $390,953

[7] ***Center for Innovative Technology***

Commonwealth Research Commercialization Fund

Start date: July 1, 2017, six-month duration

Role: PI (Co-PI: David Perkins)

Total awarded: $49,909

[6] ***Office of Naval Research***

ONR Summer Faculty Research Program

Start date: June 1, 2017, three-month duration

Role: PI

Total awarded: $14,000

[5] ***National Science Foundation***

Project title: "I-Corps: Bringing digital twin technology to the asset management community"

Start date: December 1, 2016, six-month duration

Role: PI

Total awarded: $50,000

[4] ***Jeffress Trust Award in Interdisciplinary Research***

Project title: "Connecting 3D imaging and computational mechanics for next-generation civil infrastructure assessment"

Start date: June 30, 2016, one year duration

Role: PI

Total: $100,000

[3] ***U.S. Department of Agriculture, U.S. Forest Service***

Project title: "UAV inspection of the Placer River Trail Bridge"

Start date: June 6, 2015, one year duration

Role: PI (Co-PI: Keith Cunningham (U. Alaska-Fairbanks))

Total awarded: ~$100,000 (Lattanzi share: $36,867)

[2] ***National Science Foundation***

Project title: "Comprehensive structural assessments through hierarchical computer vision"

Start date: August 1, 2014, three-year duration

Role: PI

Total awarded: $264,942

[1] ***4-VA Foundation***

Project title: "Bringing 3D printing into the engineering classroom"

Start date: June 1, 2014, two-year duration

Role: PI (Co-PI: Laura Kosoglu (George Mason University))

Total awarded: $30,530 (Lattanzi share: $23,530)

ii. Internal Funding

[4] ***Office of the Provost, George Mason University***

Provost's Transdisciplinary Center Competition: The Center for Advancing Human-Machine Partnership"

Start date: July 1, 2019, five year duration

Role: PI

Co-PIs: Amarda Shehu and Brenda Bannan

Total awarded: $925,000 (Lattanzi share: $308333)

[3] ***OSCAR Summer Team Impact Grant, George Mason University***

Project title: "Health monitoring of offshore field infrastructure"

Start date: May 25, 2019, three month duration

Role: Co-PI

Co-PIs: Katherine Scafide and Janusz

Total awarded: $34,560 (Lattanzi share: $11,000)

[2] ***Office of the Provost, George Mason University***

Project title: "Health monitoring of offshore field infrastructure"

Start date: September 7, 2017, one year duration

Role: Co-PI

Co-PIs: Damoon Soudbakhsh; David Lattanzi; Elham Sahraei Esfahani; Feitian Zhang

Total awarded: $40,000 (Lattanzi share: $10,000)

[1] ***Office of the Provost, George Mason University***

Project title: "Assessing emergent risks in interdependent transportation and communication systems"

Start date: August 1, 2016, one year duration

Role: PI

Co-PI: Shanjiang Zhu

Total awarded: $25,000 (Lattanzi share: $4,500)

III. TEACHING AND ADVISING

A. Courses taught over last 5 years (4 courses, 360 total students)

[4] **CEIE 310: Mechanics of Materials**

Student evaluation				
Term	**Instructor rating**	**Dept. mean**	**Course rating**	**Dept. mean**
Fall 2013 *(46 students)*	3.78/5.0	4.32/5.0	3.84/5.0	4.24/5.0
Fall 2014 *(44 students)*	4.78/5.0	4.51/5.0	4.49/5.0	4.35/5.0
Spring 2015 *(42 students)*	4.79/5.0	4.50/5.0	4.52/5.0	4.35/5.0
Fall 2015 *(50 students)*	4.84/5.0	4.50/5.0	4.51/5.0	4.39/5.0
Spring 2018 *(24 students)*	5.0/5.0	4.45/5.0	4.80/5.0	4.37/5.0

[3] **CEIE 612: Structural Mechanics**

Student evaluation				
Term	**Instructor rating**	**Dept. mean**	**Course rating**	**Dept. mean**
Spring 2014 *(8 students)*	4.88/5.0	4.35/5.0	4.75/5.0	4.24/5.0
Fall 2015 *(13 students)*	4.85/5.0	4.50/5.0	4.62/5.0	4.39/5.0
Spring 2017 *(13 students)*	4.83/5.0	4.52/5.0	4.82/5.0	4.40/5.0
Fall 2018 (*10 students*)	5.0/5.0	4.53/5.0	4.8/5.0	4.4/5.0

[2] **CEIE 620: Intelligent Structural Systems**

Student evaluation				
Term	**Instructor rating**	**Dept. mean**	**Course rating**	**Dept. mean**
Fall 2014 *(14 students)*	4.77/5.0	4.51/5.0	4.67/5.0	4.35/5.0
Spring 2016 *(7 students)*	4.67/5.0	4.52/5.0	4.83/5.0	4.40/5.0
Spring 2019 (*8 students*)	4.71/5.0	4.39/5.0	4.86/5.0	4.27/5.0

[1] **CEIE 414: Computer Modeling for Structural Engineers**

Student evaluation				
Term	**Instructor rating**	**Dept. mean**	**Course rating**	**Dept. mean**
Spring 2017 (*24 students*)	4.71/5.0	4.52/5.0	4.43/5.0	4.40/5.0
Spring 2018 (*23 students*)	4.96/5.0	4.45/5.0	4.59/5.0	4.37/5.0
Spring 2019 (*24 students*)	4.53/5.0	4.39/5.0	4.32/5.0	4.27/5.0

B. Advising

Post-doctoral

Kasra Ghahremani
Topic: Section loss estimation through differential 3D imaging
Summer 2015 – Spring 2016

Ph.D.

Ali Khaloo
Thesis: Finite element model updating through computer vision
Graduated: Spring 2018

Achyuthan Bapu
Thesis: A multi-stage machine learning approach to structural design
Graduated: Summer 2018

Sara Mohammadi
Thesis: Nonlinear finite element model updating through 3D point cloud analytics
(Expected graduation in 2020)

Mozghan Momtaz Dargahi
(Expected graduation in 2022)

Parastoo Kamranfar (Computer Science, co-advised with Amarda Shehu)
(Expected graduation in 2021)

William Graves
(Expected graduation in 2022)

Gholamreza Jahangiri
(Expected graduation in 2023)

M.S.

Jeffrey Bynum (Electrical and Computer Engineering, co-advised with Jill Nelson)
Thesis: A deep learning approach to acoustic monitoring of robotic manufacturing facilities
Graduated: Summer 2019

Nicole Nmair
Thesis: Finite element model calibration using 3D DIC
Graduation: Fall 2018

Bahman Jafari
Thesis: Measuring mechanical deformations through 3D point cloud analysis
Graduated: Fall 2016

Affan Khan
Thesis: Finite element modeling through point cloud analytics
Graduated: Fall 2016

Undergraduate research

Roger Noggin "Structural dynamics from video"
Funding from GMU OSCAR Program
Fall 2019

Gabriel Earle & Robin Smith "3D shape characterization for robotic inspection systems"
Funding from the Jeffress Trust
Fall 2019

Gabriel Earle "Acoustic structural health monitoring
Funding from GMU OSCAR Program
Fall 2018

Terrence Moran "Noncontact evaluation of corrosion through image analysis"
Funding from GMU OSCAR Program
Spring 2017

Richard Mayo "Section loss estimation of bridges"
Funding from GMU OSCAR Program
Spring 2016

Jeffrey Bynum "Mechanical properties of fused deposition manufactured thermoplastics"
Funding from 4-VA Program
Summer 2014, Fall 2014, and Spring 2015

Jeffrey Bynum "Fusing digital imaging and embedded sensor network information"
Funding from National Science Foundation
Summer 2015

Jared Keller "Unmanned aerial vehicles for bridge inspections"
Funding from GMU OSCAR Program
Fall 2014 and Spring 2015

C. Thesis committee membership

Javad Esfandiari, Ph.D., Civil Engineering (GMU)
Mohamad Alipour, Ph.D., Civil Engineering (University of Virginia)
Robert Sobeski, Ph.D., Civil Engineering (GMU)
Wondwosen Ali, Ph.D., Civil Engineering (GMU)
David Marr, Ph.D., Geography and Geoinformation Science (GMU)
Raven Russell, Ph.D., Computer Science (GMU)
Andrei Denes, M.S., Civil Engineering (GMU)

IV. SERVICE

A. Professional

i. Membership in professional organizations

American Society of Civil Engineers (ASCE)

Structural Engineering Institute (SEI)

American Society of Nondestructive Testing (ASNT)

International Society for Optics and Photonics (SPIE)

Construction History Society of America (CHSA)

ii. Committee memberships & activities

Chair – SEI Bridge Management, Inspection, and Rehabilitation Committee (10/2018 – 10/2021)

Member – SEI Methods of Monitoring Structural Performance Committee

Member – SEI Structural Control and Sensing

Member – ASCE Data Sensing and Analysis Committee

Scientific committee – 2018 CIB W78 Conference

Scientific committee – 2018 International Congress of Polymers in Concrete

Technical committee – 2017 International Workshop on Computing in Civil Engineering

Session chair – 2019 ASCE Structures Congress

Session chair – 2018 Engineering Mechanics Institute Conference

Session chair – 2017 International Workshop on Structural Health Monitoring

Session chair – 2017 ASCE Structures Congress

Session chair – 2015 ASCE Structures Congress

iii. Reviewing activities:

Review Editor, *Frontiers in Structural Sensing*

Reviewer for *Computer-Aided Civil and Infrastructure Engineering*

Reviewer for *ASCE Journal of Computing in Civil Engineering*

Reviewer for *ASCE Journal of Infrastructure Systems*

Reviewer for *ASCE Journal of Bridge Engineering*

Reviewer for *IEEE Transactions on Automation Science and Engineering*

Reviewer for *IEEE Transactions on Geoscience and Remote Sensing*

Reviewer for *Structure & Infrastructure Engineering*

Reviewer for *Sensors*

Reviewer for *Machines*

Reviewer for *Automation in Construction*

Reviewer for *Plos One*

National Science Foundation Review Panelist, Engineering Directorate (2013-present)

Reviewer for National Institute of Standards & Technology (2018-present)

B. University

Director for Tech Innovation search committee member, 2019

Elected faculty senate representative, University IP committee, 2017-present

Seminar series coordinator, 2014-2015

Engineering library committee, 2013-present

Engineering Entrepreneurship committee, 2018-present

Hazel Chair search committee member, 2014-2016

Department Chair search committee member, 2016-2017