

Maria Chierichetti

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Employment

- **Assistant Professor San Jose' State University** August 2019 – present
Department of Aerospace Engineering San Jose', CA
- **Part-time Lecturer; San Jose' State University** January – May 2019
Department of Aerospace Engineering San Jose', CA
- **Assistant Professor – Educator; University of Cincinnati** August 2017 – July 2018
Department of Mechanical and Materials Engineering Cincinnati, OH
- **Visiting Assistant Professor; University of Cincinnati** August 2015 – July 2017
Department of Mechanical and Materials Engineering Cincinnati, OH
- **Assistant Professor; Worcester Polytechnic Institute** Aug. 2012 – Dec. 2014
Department of Mechanical and Aerospace Engineering Worcester, MA

Education

- **Ph.D. in Aerospace Engineering** Jan. 2009 – August 2012
Georgia Institute of Technology Atlanta, GA
 - Thesis title: *Combined analytical and experimental approaches to dynamic component stress prediction*
 - Minor: Mathematics
 - Relevant graduate classes: CFD, Structural dynamics, Computational mechanics, Flexible multibody dynamics, Aeroelasticity, Helicopter Aerodynamics, Helicopter flight dynamics, Structural Acoustics, Statistics.
- **M.S. in Aerospace Engineering** Jan. 2009 – May 2011
Georgia Institute of Technology Atlanta, GA
- **Laurea Specialistica (M.S.) in Aeronautical Engineering** Sept. 2004 – July 2007
Politecnico di Milano Milan, Italy
 - Relevant graduate classes: Structural Stability, Helicopter Structural Dynamics, Advanced Aerodynamics, Non-linear analysis of Aerospace Structures, Structural Passive Safety, Aerospace Technologies and Materials, Experimental Techniques in Aerospace Structures, Design of Aerospace Structures
- **Laurea (B.S.) in Aerospace Engineering** Sept. 2001 – Sept. 2004
Politecnico di Milano Milan, Italy

Teaching

- **Classes as principal instructor**
San Jose' State University San Jose', CA
 - AE 112: Aerospace Structural Analysis I; Fall 2019
 - AE 250: Advanced Aerospace Structures and Materials; Spring 2019. Graduate class in advanced aerospace structures focusing on composite design. Introduced new topic on "Introduction to Aeroelasticity"

- Experimental methods in Mech. Eng. - Structural motion - MECH 5072C (multiple sections); Fall 2015 & Fall 2016 & Fall 2017 Required laboratory class for seniors in mechanical engineering. Designed new experiment and improved three lab sessions based on available equipment.
- Acoustics - MECH 6066/5166; Fall 2015 & Fall 2016 & Fall 2017 Elective first year graduate class. Re-designed class to include lab session in anechoic chamber (with support of National Institute of Noise Control) and reviews of numerical methods
- Statics and Particle Dynamics - MECH 2020 (two sections); Spring 2016 & Spring 2017
- Statics - MET 1071; Spring 2016 & Spring 2017

Worcester Polytechnic Institute

Worcester, MA

- Structural Dynamics - ME-4712; Spring 2014 Designed new required class for senior aerospace engineers to satisfy ABET recommendations
- Aeroelasticity - ME-593; Spring 2013 & Fall 2014 Designed new elective graduate class for introduction of new MS and PhD program in Aerospace Engineering
- Aircraft Dynamics and Control - ME-4723; Fall 2012 Re-designed based on ABET requirements

- **Senior project advising**

Worcester Polytechnic Institute

Worcester, MA

- 2014-2015: Design of a Drop Tower for Impact Tests
- 2014-2015: Design of a Helicopter Hover Test Stand
- 2013-2014: Design and test of a flapping wing micro-aerial vehicle
- 2012-2013: Design and Testing of a Miniaturized Fly. Co-advisor with Prof. M. Demetriou

- **Undergraduate student advising**

2013-2014

Worcester Polytechnic Institute

Worcester, MA

- Advised about 30 undergraduate students (sophomore-junior-senior) majoring in Aerospace Engineering

Professional Development

- *Engineering Community of Practice*, organized by COE at SJSU, Fall 2019
- *Teaching and Learning Engineering: a Tango*, organized by Prof. Nikos Mourtos at SJSU, February, 2019
- *Lighting Lessons in the Active Learning Classroom Course Design Institute*, organized by CETL at the University of Cincinnati, May, 2017
- *Echo360 ALP training session*, organized by CETL at the University of Cincinnati, April, 2017
- *Basic Kaltura Video Creation*, organized by CETL at the University of Cincinnati, February, 2017

Consulting Activities

- **Independent Contractor for ATA-Engineering, Inc.** July 2017–December 2017
Support activities for Phase I STTR project under Navy topic N17A-T009 Cincinnati, OH

Honors and Awards

- Awarded Amelia Earhart Fellowship by Zonta International (2010 – 2011 & 2011 – 2012)

- American Helicopter Society national Lichten Competition, 1st place Southern Region, 2011

Student research advising

- **Graduate students**
 - Currently advising 1 MS student in Aerospace Engineering at SJSU.
 - Two Ph.D. and three MS students advised on research projects at Worcester Polytechnic Institute.
- **Undergraduate students**
 - Three undergraduate students advised on research projects at Worcester Polytechnic Institute.

Journal publications

1. M. Chierichetti, M. Demetriou, Moving sensors for improved estimation of dynamic structures, in progress. To be submitted to the Journal of Vibration and Control.
2. V. Rahmehin, M. Chierichetti. An integrated approach for non-periodic dynamic response prediction of complex structures: Numerical and experimental analysis. Journal of Sound and Vibration, 378, 38:55, 2016.
3. M. Chierichetti, C. McColl, M. Ruzzene. Prediction of UH-60A blade loads: an insight on Load Confluence Algorithm. AIAA Journal, 52(9), 2007:2018, 2014.
4. M. Chierichetti, C. Grappasonni, G. Coppotelli and C. McColl. A modal approach for dynamic response monitoring from experimental data. Mechanical Systems and Signal Processing, 48, 199:217, 2014.
5. M. Chierichetti. Load and Response Identification for a rotating flexible structure subject to periodic loads. Journal of Computational and Nonlinear Dynamics. Special issue on Flexible Multibody Dynamics, 9(1), 011009, 2014.
6. M. Chierichetti, M. Ruzzene. Dynamic displacement field reconstruction through a limited set of point measurements: application to plates. Journal of Sound and Vibration, 331(21), 4713:4728, 2012.
7. M. Chierichetti, C. McColl, D. Palmer, M. Ruzzene, O. Bauchau. Combined analytical and experimental approaches to rotor components stress predictions. Proceedings of the Institution of Mechanical Engineers - Part K, Journal of Multibody Dynamics, 225, 322:330, 2011, *invited paper*
8. M. Chierichetti, M. Ruzzene. Model updating in structural dynamics through a confluence algorithm. Journal of Theoretical and Applied Mechanics, 49(3), 2011
9. M. Morandini, M. Chierichetti, P. Mantegazza. Characteristic behavior of prismatic anisotropic beam via generalized eigenvectors. Journal of Solids and Structures, 47, 1327:1337, 2010

Professional presentations

1. M. Chierichetti, M. Demetriou. Use of mobile sensors to monitor flexible structures. Submitted to SPIE smart structures, April 2019.

2. M. Chierichetti, V. Rahneshin. Efficient response monitoring of flexible structures. SMASIS 2014, Newport, RI, September 8-10, 2014.
3. M. Chierichetti, V. Rahneshin. An FFT-based approach for dynamic response prediction of non-periodic systems. SPIE Smart Structures/NDE 2014, San Diego, CA, USA, March 9-13, 2014.
4. M. Chierichetti, C. Grappasonni. Experimental full-field response identification with limited set of operational data, 50th Annual Technical Meeting of the Society of Engineering Science, Providence, RI, USA, July 28-31, 2013.
5. M. Chierichetti, C. Grappasonni, G. Coppotelli, M. Ruzzene, A modal approach for dynamic response monitoring from experimental data, AIAA SDM 2013, Boston MA, April 8-11, 2013.
6. C. Grappasonni, M. Chierichetti, G. Coppotelli, M. Ruzzene. Using OMA for Full-Field Dynamic Response Identification. IOMAC'13, 5th International Operational Modal Analysis Conference, Guimares - Portugal, May 13-15 2013.
7. M. Chierichetti, Self-updating numerical models for Structural Health Monitoring, NEW.MECH 2012, Brown University, Providence, Nov. 3, 2012.
8. M. Chierichetti, M. Ruzzene. Calibration of dynamic models based on experimental measurements in a rotating environment. 49th Annual Technical Meeting of the Society of Engineering Science, Atlanta, GA, USA, October 10-12, 2012.
9. M. Chierichetti, A novel approach for dynamic response monitoring, Mechanical Engineering graduate seminar, WPI, Worcester, MA, Sept. 26, 2012.
10. M. Chierichetti, M. Ruzzene. Model updating in structural dynamics through a confluence algorithm. 53rd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, Honolulu, USA, 23-26 April 2012.
11. M. Chierichetti, D. Palmer, M. Ruzzene, C. McColl, O. Bauchau. Prediction of UH-60 blade loads: an insight on confluence algorithm to correct internally generated airloads. In Proceedings of the American Helicopter Society 67th Annual Forum, Virginia Beach, USA, 3-5 May 2011
12. M. Chierichetti. Model updating in structural dynamics through a confluence approach. AHS Lichten Competition, Georgia Institute of Technology, Atlanta, USA, 3 February 2011
13. C. McColl, D. Palmer, M. Chierichetti, O. Bauchau, M. Ruzzene. Comprehensive UH-60 loads model validation. In Proceedings of the American Helicopter Society 66th Annual Forum, Phoenix, USA, 11-13 May 2010
14. M. Chierichetti, C. McColl, D. Palmer, M. Ruzzene, O. Bauchau. Combined analytical and experimental approaches to rotor components stress predictions. In Proceedings of the First Joint International Conference on Multibody System Dynamics, Lappeenranta, Finland, 25-27 May 2010
15. M. Chierichetti, M. Ruzzene. Response prediction in dynamic systems from experimental measurements. AIAA Region II Student Conference, Destin, USA, 8-9 April 2010
16. M. Chierichetti, N. Margiotta, G. Sala and E. Wilczek. Structural design of a seaplane float made of composite material. 4th Pegasus AIAA Student conference, Prague, 23-25 April 2008.

Invited talks

1. A novel approach for dynamic response monitoring, Maria Chierichetti, March 8, 2013, Mechanical Engineering, Clarkson University, Postdam, NY.
2. Definition and validation of response monitoring approaches in the frequency domain, Maria Chierichetti, Feb. 1, 2013, North Eastern University, Boston, MA.
3. A combined numerical and experimental approach for stress prediction in rotating components, Maria Chierichetti, March 20, 2012, WPI, Worcester, MA. Invited Talk.

Outreach Activities

- **Learning aerospace structures** Service Learning in AE 112, SJSU
Third street community center & Campbell Union School District Fall 2019
- **Sound & Vibrations!** Tech Girls program, WPI
Worcester Polytechnic Institute Worcester, MA
- **Teaching Fellow** May 2011 – May 2012
Georgia Institute of Technology Atlanta, GA

Service

- **Profession**
 - Symposium organizer for 50th SES/ASME AMD technical meeting “Characterization and Imaging of Structural and Material Imperfections”, July 28-31, 2013, Brown University, Providence, RI.
 - Session chairman for SES 2012, AIAA SDM 2013.
 - Associate Member of AIAA Structures Technical Committee.
 - Associate Member of ASME NDE Technical Committee.
- **Department and University**
 - Member of aerospace department and program committee, SJSU. Fall 2019-present.
 - Member COE research committee, SJSU. Fall 2019-present.
 - Member of tenure-track search committee, aerospace engineering, SJSU. Fall 2019-Spring 2020.
 - Participated in defining class demonstrations using Siemens software, Spring 2017, University of Cincinnati.
 - Participated in ABET program review, 2017, University of Cincinnati.
 - Participated in graduate program review, 2017, University of Cincinnati.
 - Participated in ABET program review, 2014, WPI.
 - Aerospace Engineering undergraduate committee, Fall 2014, WPI.
 - Contributed to planning and establishing of Aerospace Engineering graduate program, 2012-2014, WPI.
 - MS thesis committees, 2013, WPI.
 - Responsible for Aerospace Engineering Degree Audits, 2013-2014, WPI.
 - Member of Faculty Search Committee for opening in Aerospace Engineering 2014, WPI.
- **Students**
 - Volunteer as judge in the “Silicon Valley Innovation Challenge,” 2019, SJSU.
 - Volunteer as judge in “GRAD 2013: The Innovation Exchange,” WPI.
 - Volunteer to participate in “Witson” Online Mentoring program.

- Volunteer as judge at MassAcademy, WPI, May 2013.
- Volunteer to be an instructor of the WPI Tech Girl program, Spring 2014.

- **Peer-reviewer**

Jan. 2009 – Present

- External reviewer for proposals submitted to: NSF CMMI, ARISTEIA II.
- Journals: IOP Conference Series: Earth and Environmental Science, Smart Materials and Structures, Journal of Sound and Vibration, Journal of Vibration and Control, Journal of Applied Mechanics, Journal of Vibrations and Acoustics, Recent patents in Mechanical Engineering, Mechanics Research Communications, The Aeronautical Journal, Journal of Aerospace Engineering, Journal of Mechanical Engineering, Optics and Lasers in Engineering, Journal of Sandwich Structures and Materials.
- Conferences: ASME IMECE 2014, ASME IDETC/CIE 2013, ASME IMECE 2013, AIAA SDM 2013, ASME IMECE 2011.

- **Professional societies**

2012 – 2015

- ASME “Nondestructive Structural Monitoring and Diagnosis (NMD) Technical Committee”
- AIAA “Structures” Technical Committee”