

# CURRICULUM VITAE ET STUDIORUM

**Dr. Eleonora Tubaldi**

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## Employment

2018/1 - today

Assistant Professor Tenure-Track Position in the Department of Aerospace and Mechanical Engineering (AME) at **University of Arizona**.

Research interests: Fluid-structure interaction and nonlinear vibrations.

2017/9 – 2017/12

Post-Doctoral Researcher in Mechanical Engineering at **McGill University**.  
Supervisors: Prof. Marco Amabili, Prof. Michael P. Païdoussis.

## Education

2013/9 - 2017/7

Ph.D. in Mechanical Engineering at **McGill University**  
**GPA 4/4**

Supervisors: Prof. Marco Amabili, Prof. Michael P. Païdoussis

Ph.D. Thesis Title: “Nonlinear dynamics of shells and plates subjected to pulsatile flow”.

2010/9 - 2013/7

Master Degree in Aeronautical Engineering at **Politecnico di Milano**  
Specialization: Structural Mechanics. **Final mark: 110/110**.

Master’s Thesis Title: “Linear and Nonlinear Vibrations and Stability of a Periodically Simply Supported Plate in Axial Flow”.

Master's Thesis Supervisors: Prof. Marco Amabili (McGill University), Prof. Chiara Bisagni (Politecnico di Milano), Prof. Dominique Pelletier (École Polytechnique de Montréal).

2011/9 - 2013/5

Master Degree in Aerospace Engineering at **École Polytechnique de Montréal**.  
Specialization: Fluid Mechanics. **GPA 3.93/4**.

Double Degree Program between École Polytechnique de Montréal and Politecnico di Milano

2007/9 - 2010/9

Bachelor Degree in Aerospace Engineering at **Politecnico di Milano**.  
**Final mark: 106/110**.

## Professional Societies

ASME (American Society of Mechanical Engineers) member of the Dynamics & Control System & Structures (DCSS) Technical Committee.

## Previous Research Positions

2015/4 - 2015/6 Temporary Research Associate at Texas A&M at Qatar in the Department of Mechanical Engineering. Supervisor: Prof. Annie Ruimi.

## Awards and Scholarships

2014/5 - 2016/8 Doctoral Merit Scholarship for Foreign Students FRQNT (Fonds de recherche du Québec -Nature et technologies)

2013/9 - 2016/8 MEDA Awards (McGill Engineering Doctoral Awards)

2014/4 Graduate Research Enhancement and Travel Awards (GREAT Awards) McGill University. Presenter at Conference ASME IMECE 2013, San Diego.

2011/9 - 2013/7 Double Degree Award Politecnico di Milano

2011/9 - 2013/7 Italian Government Scholarship for Italian students in Canadian Universities  
Research Disciplines: Aeronautical Engineering

2010/9 "XXIV Merit Award BCC" Bachelor's Degree Merit Award  
*Banca di Credito Cooperativo Recanati e Colmurano.*

2007/9 - 2013/7 Merit scholarship "Scholarship high grade point average"  
Politecnico di Milano

2007/6 "XXI Merit Award BCC" High-School Merit Award  
*Banca di Credito Cooperativo Recanati e Colmurano.*

## Publications

### Journal Papers

1. M. Amabili, P. Balasubramanian, I. Breslavky, G. Ferrari, E. Tubaldi, Viscoelastic characterization of woven Dacron by using direction-dependent quasi-linear viscoelasticity, *Journal of the Mechanical Behavior of Biomedical Materials*, 82 (2018), 282-290.
2. E. Tubaldi, M. Amabili, M.P. Païdoussis, Nonlinear dynamics of Dacron aortic prosthesis conveying pulsatile flow, *ASME Journal of Biomechanical Engineering*, 140 (2018), 061004.
3. E. Tubaldi, M. Amabili, M.P. Païdoussis, Nonlinear dynamics of shells conveying pulsatile flow with pulse-wave propagation. Theory and numerical results for a single harmonic pulsation, *Journal of Sound and Vibration*, 396 (2017) 217-245.

4. E. Tubaldi, M. Amabili, M.P. Païdoussis, Fluid–structure interaction for nonlinear response of shells conveying pulsatile flow, *Journal of Sound and Vibration*, 371 (2016) 252-276.
5. E. Tubaldi, M. Amabili, F. Alijani, Nonlinear vibrations of plates in axial pulsating flow, *Journal of Fluids and Structures*, 56 (2015) 33-55.
6. E. Tubaldi, F. Alijani, M. Amabili, Nonlinear vibrations and stability of a periodically supported rectangular plate in axial flow, *International Journal of Non-Linear Mechanics*, 66 (2014) 54-65.
7. E. Tubaldi, M. Amabili, Vibrations and stability of a periodically supported rectangular plate immersed in axial flow, *Journal of Fluids and Structures*, 39 (2013) 391-407.

## Proceedings

1. M. Amabili , I. Breslavsky, G. Ferrari, E. Tubaldi, P. Balasubramanian, A. Kassab, R. Mongrain, G. Arena, Comparison of Experimental and Numerical Results for Dynamics of Human Thoracic Descending Aortas, 8<sup>th</sup> World Congress of Biomechanics, 8-12 July, 2018, Dublin, Ireland. *Accepted abstract*.
2. M. Amabili, P. Balasubramanian, I. Breslavky, G. Ferrari, E. Tubaldi, Viscoelastic characterization of woven Dacron with direction-dependent quasy-linear viscoelasticity, 8<sup>th</sup> World Congress of Biomechanics, 8-12 July, 2018, Dublin, Ireland. *Accepted abstract*.
3. E. Tubaldi, G. Ferrari, P. Balasubramanian, M.P. Paidoussis, M. Amabili, The nonlinear dynamics of Woven Dacron Aortic Prostheses conveying pulsatile blood flow, 8<sup>th</sup> World Congress of Biomechanics, 8-12 July, 2018, Dublin, Ireland. *Accepted abstract*.
4. E. Tubaldi, M. Amabili, M.P. Païdoussis, Fluid-structure interaction of woven Dacron prostheses with simple interrupted suture, 10<sup>th</sup> European Solid Mechanics Conference, 2-6 July, 2018, Bologna, Italy. *Accepted abstract*.
5. M. Amabili , I. Breslavsky, G. Ferrari, E. Tubaldi, P. Balasubramanian, A. Kassab, R. Mongrain, G. Arena, Comparison of experimental and numerical results for dynamics of human aorta, 10<sup>th</sup> European Solid Mechanics Conference, 2-6 July, 2018, Bologna, Italy. *Accepted abstract*.
6. M. Amabili, P. Balaubramanian, G. Ferrari, E. Tubaldi, Experimental investigation on the dynamic behavior of a Dacron graft used for the treatment of descending thoracic aortic aneurysm, ASME International Mechanical Engineering Congress and Expositions, 3-9 November, 2017, Tampa, Florida, USA.
7. I. Breslavkyi, M. Amabili, E. Tubaldi, A. Ruimi, Statics and dynamics of an aortic segment considering residual stresses, ASME International Mechanical Engineering Congress and Expositions, 3-9 November, 2017, Tampa, Florida, USA.
8. E. Tubaldi, M. Amabili, M.P. Païdoussis, Nonlinear vibrations of woven Dacron aortic prostheses conveying pulsatile flow, ASME International Mechanical Engineering Congress and Expositions, 3-9 November, 2017, Tampa, Florida, USA.
9. M. Amabili, E. Tubaldi, M.P. Païdoussis, Nonlinear dynamics of woven Dacron prostheses, 14<sup>th</sup> U.S. National Congress on Computational Mechanics, Montreal, Jul7 17-20, 2017.
10. E. Tubaldi, M. Amabili, M.P. Païdoussis, Nonlinear dynamics of Dacron aortic prostheses conveying pulsatile flow, ASME SB3C, 21-24 June, 2017, Tucson, Arizona, USA.

11. E.Tubaldi, M.Amabili, M.P. Païdoussis, Nonlinear response of shells conveying pulsatile flow with pulse-wave propagation, ASME International Mechanical Engineering Congress and Expositions, 11-17 November, 2016, Phoenix, Arizona, USA.
12. E.Tubaldi, M.Amabili, M.P. Païdoussis, Nonlinear response of shells conveying pulsatile flow, XXIV ICTAM, 21-26 August, 2016, Montreal, Quebec, Canada.
13. E.Tubaldi, M.Amabili, M. Païdoussis, Fluid-Structure Interaction for nonlinear response of aorta replacement. ASME International Mechanical Engineering Congress and Expositions, November 13–19, 2015, Houston, Texas, USA.
14. E.Tubaldi, M.Amabili, F.Alijani, Nonlinear vibrations of plates in axial pulsating flow. ASME 2014 International Mechanical Engineering Congress and Expositions, November 14-20, 2014, Montreal, Quebec, Canada.
15. E.Tubaldi, F.Alijani, M.Amabili, Nonlinear vibrations of a periodically simply supported rectangular plate immersed in axial flow, 4th Canadian Conference on Nonlinear Solid Mechanics (CanCNSM 2013), July 23-26, 2013, Montreal, Quebec, Canada.

### Teaching Experience

1. Lecturer at University of Arizona, Aerospace and Mechanical Engineering Department.  
Course Title: Engineering Analysis (AME 301).  
Term: Spring 2018.
2. Teaching Assistant at McGill University, Mechanical Engineering Department.  
Course Title: Mechanics 3 (MECH 315).  
Terms: Fall 2017 - Fall 2016 - Winter 2016 - Fall 2014.  
Professors: Prof.Luc Mongeau, Prof.Marco Amabili, Prof.Srikar Vengallatore.
3. Teaching Assistant at McGill University, Mechanical Engineering Department.  
Course Title: Vibrations of continuous systems (MECH 550).  
Terms: Fall 2016 - Fall 2015.  
Professor: Prof.Marco Amabili.
4. Teaching Assistant at McGill University, Mechanical Engineering Department.  
Course Title: Fluid-Structure Interaction (MECH 566).  
Term: Winter 2016  
Professor: Prof.Michael Païdoussis.

### Supervision of Graduate Students

1. Samuel Thomas Dunn, *Since January 2018*  
Master student in Mechanical Engineering  
Department of Aerospace and Mechanical Engineering  
University of Arizona

## Invited Seminars

1. E. Tubaldi, Fluid-Structure Interaction of Cardiovascular Woven Dacron Aortic Prostheses conveying pulsatile flow, University College Dublin (UCD), Biomedical Engineering Seminar, December 18<sup>th</sup> 2017.

## Presentations

1. Fluid-Structure Interaction of Dacron Vascular Aortic Prostheses, Poster Presentation, 1<sup>st</sup> Forum Franco-Québécois de l'innovation en santé, 11<sup>th</sup> October 2016, École Polytechnique de Montreal, MEDTEQ (Medical Technology), Montreal, Quebec, Canada. Main Audience: Researchers.
2. Buckling of Human Aortic Segment, Mini-Research Day at the Montreal Heart Institute (MHI) organized by Dr Raymond Cartier, October 2014, Montreal, Quebec, Canada. Main Audience: Clinicians and Researchers.
3. Showcase, May 2013, Montreal, Quebec, Canada. Main Audience: Researchers.

## Reports

E.Tubaldi, Redesign of the bleed valve system for the industrial Trent 60MW Rolls-Royce Gas Turbine 20. Ecole Polytechnique de Montreal - Rolls Royce Canada, 2012.

## Journal Review Activities

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|-----------------|---|
| 2016/07 - Today | Invited reviewer, <u>Computers in Biology and Medicine</u> , Elsevier.<br>Number of Works Reviewed / Refereed: 3.             |
| 2013/10 - Today | Invited reviewer, <u>International Journal of Nonlinear Mechanics</u> , Elsevier.<br>Number of Works Reviewed / Refereed: 12. |
| 2012/12 - Today | Invited reviewer, <u>Journal of Fluids and Structures</u> , Elsevier.<br>Number of Works Reviewed / Refereed: 10.             |

## Event Administration

1. ASME IMECE 2017 Session Co-Organizer.  
Track: Dynamics, Vibration and Control. Symposium: Fluid-Structure Interaction II.
2. Volunteer (logistic support) at the Conference XXIV ICTAM, 21-26 August, 2016, Montreal, Quebec, Canada.
3. Member of the organizing committee, Fourth Canadian Conference of Nonlinear Solid Mechanics (CanCNSM 2013), July 23-27, 2013. Responsible for the organization of the Opening Ceremony and for the "Banquet and Awards" event.