

## Curriculum Vitae

### Dr. Jeffrey S. Vipperman

Vice Chair, Department of Mechanical Engineering and Materials Science  
Professor of Mechanical Engineering  
Professor of BioEngineering  
Professor of Communication Science and Disorders  
Director and founder of the *Sound, Systems, and Structures Laboratory*  
University of Pittsburgh  
Department of Mechanical Engineering & Materials Science  
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#### Education:

|         |                               |                 |
|---------|-------------------------------|-----------------|
| 04/1997 | Ph.D., Mechanical Engineering | Duke University |
| 06/1992 | M.S., Mechanical Engineering  | Virginia Tech   |
| 08/1990 | B.S., Mechanical Engineering  | Virginia Tech   |

#### Professional Experience:

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|--------------|--|
| 2021-present | Professor of Communication Sciences and Disorders, University of Pittsburgh, Pittsburgh, PA          |
| 2021-present | President of Atlas Medtech, LLC  |
| 2018-present | Vice President of Atlas Medtech, LLC   |
| 2017-present | Sole proprietor, Blue Ridge Consulting, LLC  |
| 1/16-present | Vice Chair of Mechanical Engineering and Materials Science, University of Pittsburgh, Pittsburgh, PA |
| 6/14-present | Professor of Mechanical Engineering, University of Pittsburgh, Pittsburgh, PA                        |
| 6/14-Present | Professor of BioEngineering, University of Pittsburgh, Pittsburgh, PA                                |
| 1/08-8/11    | Graduate Director (Mechanical Engineering), University of Pittsburgh, Pittsburgh, PA                 |
| 4/05-6/14    | Associate Professor of Mechanical Engineering, University of Pittsburgh, Pittsburgh, PA              |
| 4/05-6/14    | Associate Professor of BioEngineering, University of Pittsburgh, Pittsburgh, PA                      |
| 1/99-4/05    | Assistant Professor of Mechanical Engineering, University of Pittsburgh, Pittsburgh, PA              |
| 6/00-6/02    | Mechanical Engineer, NIOSH, Pittsburgh Research Laboratory   |
| 9/97-12/98   | Assistant Professor, University of Maine, Orono, ME  |
| 2/97-8/97    | Assistant Research Professor, Duke University, Durham, NC  |
| 8/93-2/97    | Research Assistant, Duke University, Durham, NC  |
| 8/93-2/97    | Systems Administrator, Duke University, Durham, NC   |
| 1993-1997    | Vice President and Senior Research Scientist, Adaptive Technologies, Inc. Blacksburg, VA             |
| 7/92-7/93    | Research Associate, Virginia Polytechnic Institute and State University, Blacksburg, VA              |

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| 8/90-6/92 | Graduate Project Assistant, Virginia Polytechnic Institute and State University, Blacksburg, VA                       |
| 1/90-8/90 | Undergraduate Researcher, Virginia Polytechnic Institute and State University and Bristol Compressors, Blacksburg, VA |
| 5/89-8/90 | Development Engineering Assistant, Ingersoll-Rand Corporation, Roanoke, VA  |

### **Leadership Highlights, Present and Past:**

- Vice Chair of Mechanical Engineering and Materials Science Department (current). *Advise Chair on issues regarding Mechanical Engineering curriculum, research, and hiring; oversee purchase and installation of major instrumentation and infrastructure for research and teaching; oversee departmental safety and academic integrity. Attend meetings with University leadership on behalf of the Chair when absent.*
- President of Atlas Medtech LLC (current). *Atlas Medtech is a University of Pittsburgh startup company commercializing a rapidly deployable surgical retractor developed in Dr. Vipperman's lab.*
- Founding Chair of the University of Pittsburgh Swanson School of Engineering Academic Integrity Committee (current). *Developed school-wide academic integrity policy in accordance with university guidelines. Chair bimonthly meetings of the Academic Integrity Committee, which has representation from every Swanson School of Engineering department and student leaders. Developed outreach materials and give presentations to large groups of faculty, graduate, and undergraduate students. Oversee the development of educational and outreach materials related to academic integrity intended to build and enhance a culture of integrity within the school.*
- Inaugural (faculty) Cochair of Department of Mechanical Engineering and Materials Science Students Advisory Board. *Oversaw the establishment of the Student Advisory Board in response to intense national political and social unrest in order to best support our student population (the committee of faculty, undergraduate and graduate students represents a broad cross section of background, race, gender identities, sexual orientations); In addition to chairing monthly meetings, oversaw the development of a mission statement, student climate survey, outreach materials and activities, and development of diversity, equity, and inclusion modules for courses.*
- Graduate Director, Department of Mechanical Engineering and Materials Science. *Responsible for 120 MS and 45 PhD students; Oversaw 45% growth in PhD students and 40% growth in part-time MS program, including offering courses at a satellite campus; Oversaw the evaluation and selection of new graduate students, including departmental offers for aid; Evaluated the curriculum developed for the new MS in Nuclear Engineering program; Certified graduations and approved new courses; Oversaw the external 10-year review of the graduate program.*
- Chair of the Noise Control and Acoustics Division for the American Society of Mechanical Engineers. *Conducted the business of the Division and chaired the annual technical planning and executive committee meetings; Interfaced the division with the national office of ASME; Sought nominations for the prestigious Rayleigh Lecturer for next year's conference; attended ASME Leadership Development Training.*
- Technical Program Chair, American Society of Mechanical Engineers International Mechanical Engineering Conference and Exposition (ASME IMECE). *Oversaw the review and publication of all (several dozen) acoustics and vibration related conference papers that were submitted through the Noise Control and Acoustics Division of ASME.*
- Associate Editor for ASME Journal of Vibration and Acoustics.
- Chair of the Active Noise Control Technical Committee for the American Society of Mechanical Engineers. *Oversaw the planning for multiple (3-5/yr) sessions in active noise control for the next year's annual conference.*

- Chair, Per Bruel Gold Medal in Acoustics award committee for American Society of Mechanical Engineers. *Oversaw the nomination and selection process for ASME's most prestigious annual award in acoustics while conducting the meetings of the committee.*
- Chair, ANSI S1.1 Acoustical Terminology standard working group for the Acoustical Society of America. *Conducted several in-person meetings of the working group; collected input from the working group and Society members at large that was discussed at length and used to edit and revise the content of the S1.1 standard.*
- Chair of the Pittsburgh Section of American Society of Mechanical Engineers (1,500 members). *Chaired the monthly Executive Committee meetings; interfaced with the ASME national office; the business of the Section, including a monthly newsletter and technical and outreach programming; routinely connected with members about items of potential interest; attended ASME Leadership Development Training.*
- Program and Education Chairs for Pittsburgh Section of American Society of Mechanical Engineers. *Developed monthly programs on a variety of topics for our members, which included at least one course for continuing education credits per year, and an annual student/professional mixer.*

### **Consulting:**

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|-----------------|--|
| 2020-21         | Expert Witness for Google: Google v. Sonos, Finnegan Law Firm (IPR Proceedings)  |
| 2020-21         | Expert Witness for Shure: Shure v. ClearOne, Finnegan Law Firm (PGR Proceedings)   |
| 2019-2020       | Expert Witness for Shure: Shure v. ClearOne, Finnegan Law Firm (IPR Proceeding)  |
| 2018            | Expert Witness for Covidien: Ethicon Endo-Surgery v. Covidien, DLA Piper Global Law Firm   |
| 2016            | Expert Witness for Samsung: Suntegra v. Samsung, Convington and Burlington   |
| 2016            | Mine Safety and Appliance  |
| 2014-15         | Expert Witness for Invensys / DLA Piper Global Law Firm (Invensys v Emerson) (seven different IPR proceedings)                       |
| 2013-15         | Expert Witness for Apple Computer / Wilmer Cutler Pickering Hale and Dorr (WilmerHale) (THX v. Apple) (Two separate IPR proceedings) |
| 2013-14         | Expert Witness for Covidien / DLA Piper, Global Law Firm (Ethicon v. Covidien)   |
| 2011-2012       | Technical Analysis and Services, International   |
| 2011-2012       | Mosebach Manufacturing, Inc.   |
| 2011-2012       | MIRATECH Corporation   |
| 2008            | Siemens Government Services  |
| 2007-2008       | Expert Witness: Thompson, Coburn and FagelHaber LLC  |
| 2007-2008,11,12 | Westinghouse Electric Company  |
| 2004            | National Institute of Occupational Safety and Health   |
| 2003-2008       | BrashearLP   |

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| 2001-2005  | H. H. Reich Engineers        |
| 2000       | SigmaTech                    |
| 2000, 2001 | Psychology Software Tools    |
| 1999       | NASA Langley Research Center |
| 1998       | Nikola Engineering           |
| 1998       | Duke University              |
| 1997       | Sandia National Laboratory   |
| 1995       | BSG Laboratories             |
| 1994       | Centrair Corporation         |

**Honors and Awards:**

|            |   |
|------------|---|
| 2018       | Pitt Innovator Award  |
| 2018       | Chancellors Innovation Commercialization Award  |
| 2016, 2017 | Chancellor's Early Stage Commercialization Fund award   |
| 2014       | Association for Iron and Steel Rolls Technology Best Paper Award  |
| 2014       | University of Pittsburgh Innovator Award  |
| 2011       | Visiting Committee Educator Award, MEMS Department  |
| 2011       | University of Pittsburgh Innovator Award  |
| 2007       | Elected Fellow of ASME  |
| 2006       | School of Engineering Beitle-Veltri Memorial Teaching Award   |
| 2005       | Engineering Faculty Honor Roll  |
| 2003       | Letter of commendation from the Chancellor of the University, for chairing ASME-Pittsburgh                                      |
| 2001       | Who's Who in Engineering, Pittsburgh Business Times   |
| 2000       | Letter of commendation from the Vice Chancellor of Student Affairs for Positively Impacting Student                             |
| 1999-2001  | Leighton E. and Mary N. Orr Faculty Fellowship, Univ. of Pittsburgh,  |
| 1992       | Paul Torgersen Research Excellence Award, Virginia Tech: Voted best Master of Science project for the year.                     |
| 1991       | Student Paper Award, Acoustical Society of America: Voted second best student paper in structural acoustics for the conference. |
| 1989       | Frank O'Bell Academic Scholarship   |

**Students Honors and Awards:**

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| 2017 | Chris Dumm, 1 <sup>st</sup> place PDMA Competition     |
| 2017 | Chris Dumm, 2 <sup>nd</sup> Place in Wells Competition |

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| 2016 | Tim Ryan, Carl Zeiss Student Scholarship, American Society of Precision Engineering  |
| 2016 | Sr. Design team took 2 <sup>nd</sup> Place in the SSOE Design Expo   |
| 2014 | Konstantin Redkin, Association for Iron and Steel Rolls Technology Best Paper Award  |
| 2009 | Brian Bucci, Best Research Assistant, MEMS Department  |
| 2007 | Mentored the first team from Pitt to be selected for the NASA micro-gravity experiment (it flew on the “vomit comet” with our students). |

### **Published Journal Articles:**

1. Li, Qi, and J.S. Vipperman, “Three-Dimensional Pentamode Acoustic Metamaterials with Hexagonal Unit Cells,” *J. Acoust. Soc. of Am.* **145**, 1372 (2019); <https://doi.org/10.1121/1.5093622>
2. Li, Qi, and J.S. Vipperman, “Two-dimensional arbitrarily shaped acoustic cloaks with triangular patterns of homogeneous properties ASME. *J. Vib. Acoust.* 141(2):021014-021014-7. doi:10.1115/1.4041897, 2018.
3. Li, Qi, and J.S. Vipperman, “Non-singular three-dimensional arbitrarily shaped acoustic cloaks composed of homogeneous parts,” *AIP J. of Applied Physics*, 124, 035103 (2018); <https://doi.org/10.1063/1.5028136> , June 26, 2018
4. Schimoler, P.J., J.S. Vipperman, M.C. Miller, “Pole/Zero Design of Agonist/Antagonist Actuation,” *IEEE Transactions on Control Systems Technology*, **26**(6), pp. 2141-8, DOI: 10.1109/TCST.2017.2740852, Nov. 2018.
5. Li, Qi, and J.S. Vipperman, “Two-dimensional arbitrary shape acoustic cloaks composed of homogeneous parts,” *AIP J. of Applied Physics*, 122, 144902 (2017); <https://doi.org/10.1063/1.4990758>, Oct. 2017.
6. M. Hua, Q. Wang, C. Li, JS Vipperman, AJ DeArdo, “Plastic Deformation Behavior of Weld Lines in ERW Steel Pipe,” *Iron and Steel Technology*, 13(10), pp. 144-151, 10/2016.
7. Wang, Chenzhi, Jae Bum Pahk, Carey D. Balaban, Mark C. Miller, Adam R. Wood, Jeffrey S. Vipperman, “Computational Study of Human Head Response to Primary Blast Waves of Five Levels from Three Directions,” *PLOS One*, 10.1371/journal.pone.0113264, <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0113264>, 2014.
8. Li, Qi, and J.S. Vipperman, “Two-dimensional acoustic cloaks of arbitrary shape with layered structure based on transformation acoustics,” *AIP Applied Physics Letters*, 105, 101906; doi: 10.1063/1.4895765, 2014.
9. K.V. Redkin, J.S.Vipperman, C.Hrizo (WHEMCO), R.Schleiden (United Rolls), C.I.Garcia, "Multi-scale Finite-Element Modeling and Microstructural Evaluation of Centrifugally Cast High-Speed Steel Finishing Rolls" (FEATURE article), *Iron and Steel Technology* (AISTech) Journal, Vol.10, No.10, pp.69-84, 2013
10. Ryan, Timothy S. and Jeffrey S. Vipperman, “Incorporation of Scheduling and Adaptive Historical Data in the Sensor Utility Network Method for Occupancy Estimation,” *Energy and Buildings*, <http://dx.doi.org/10.1016/j.enbuild.2013.01.037>, Volume 61, June 2013, Pages 88–92.
11. B. Bucci, J.S. Vipperman, D. Cole, S. Ludwick, “Evaluating a servo settling algorithm,” *Precision Engineering*, DOI: 10.1016/j.precisioneng.2012.04.006, 37(1), pp. 10-22, Jan 2013.
12. Bucci, B., Cole, D., Ludwick, S., Vipperman, J.S., “A Nonlinear Control Algorithm for Reducing Settling Time in High-Precision Point to Point Motion,” *IEEE Transactions on Control System Technology*, Issue 99, 10.1109/TCST.2012.2206812, Sep. 11, 2012.
13. Cvengros, B., D. Valente, E. Nykaza, J. Vipperman, “Blast Noise Classification With Common Sound Level Meter Metrics,” *Journal of the Acoustical Society of America*, **132**(2), pp. 822-31, Aug 2012.

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