Gaurav Ameta, Ph.D.

Assistant Professor and
Founding Director of Sustainable Product Lifecycle Design Lab
School of Mechanical and Materials Engineering (MME)
100 Dairy Dr., Washington State University,
Pullman, Washington 99164-2920
Email: gameta@wsu.edu, Phone: (509) 335 8218
URL: http://www.mme.wsu.edu/people/faculty/faculty.html?ameta
Sustainable Product Lifecycle Design Lab http://www.mme.wsu.edu/~spd

EDUCATION

Doctor of Philosophy (Ph.D.), Mechanical Engineering,
Arizona State University, Tempe, AZ, USA — December 2006
Dissertation: "Statistical tolerance analysis and allocation for assemblies using tolerance-maps"
Advisor: Dr. Joseph K. Davidson

Master of Science (M.S.), Mechanical Engineering,
Arizona State University, Tempe, AZ, USA — May 2004
Thesis: "Tolerance-Maps applied to angled faces and two clusters of features"
Advisor: Dr. Joseph K. Davidson

Bachelor of Engineering (B.E.), Mechanical Engineering,
Bhilai Institute of Technology, India — July 2001

RESEARCH INTEREST

- Environmentally benign design and manufacturing
- Sustainable and energy efficient product life cycle
- Tolerance analysis and allocation
- Geometric problems in design, manufacturing and inspection
- Product models and informatics

PROFESSIONAL EXPERIENCE

Assistant Professor – Washington State University, Pullman, WA, USA — Aug 08 - Contd.

Visiting Professor – National Institute of Standards and Technology, Gaithersburg, MD, USA — May 12 - Aug 12; Oct 07 - Aug 08

Post Doctoral Research Associate – Arizona State University, Tempe, USA — May 07 - Sept 07

Assistant Research Technologist – Arizona State University, Tempe, USA — Feb 07 - May 07

Faculty Assistant (Lecturer) – Arizona State University, Tempe, USA — Dec 06 - Jan 07

Graduate Teaching Assistant – Arizona State University, Tempe, USA — Jan 05 - Dec 06; Aug 02 - May 03

Graduate Research Associate – Arizona State University, Tempe, USA — May 03 - Dec 04; Jan 02 - Aug 02

AWARDS AND RECOGNITION

1. **Young Engineer/ Investigator Award** from the 2011 ASME Computers and Information in Engineering Division's for 2011.
2. **Sigma XI member** – Invitation only scientific research society
3. **Best Paper Award** - Singh G., Ameta G., Davidson J.K. and Shah J.J., "Worst-Case Tolerance Analysis of a Self-Aligning Coupling Assembly using Tolerance-Maps", Proc., 11th CIRP Int'l Seminar on CAT, March 22-23, 2009, Annecy, France.
4. **CIE Poster Award** - Srinivasan R., Hu Y. and Ameta G., "Poster: Estimating Selective Disassembly Time using Disassembly Graph based on Connective Complexity Metrics",

International Design Engineering Technical Conference-2012/ Computers and Information in Engineering, Chicago, IL, USA, Aug 11 - 14, 2012.

5. **Member of International Scientific Committee** – CIRP Computer Aided Tolerancing – Since 2012.
6. **Invited to give lectures at IUT Lumière,** University of Lyon 2, France in Summer 2013**.**

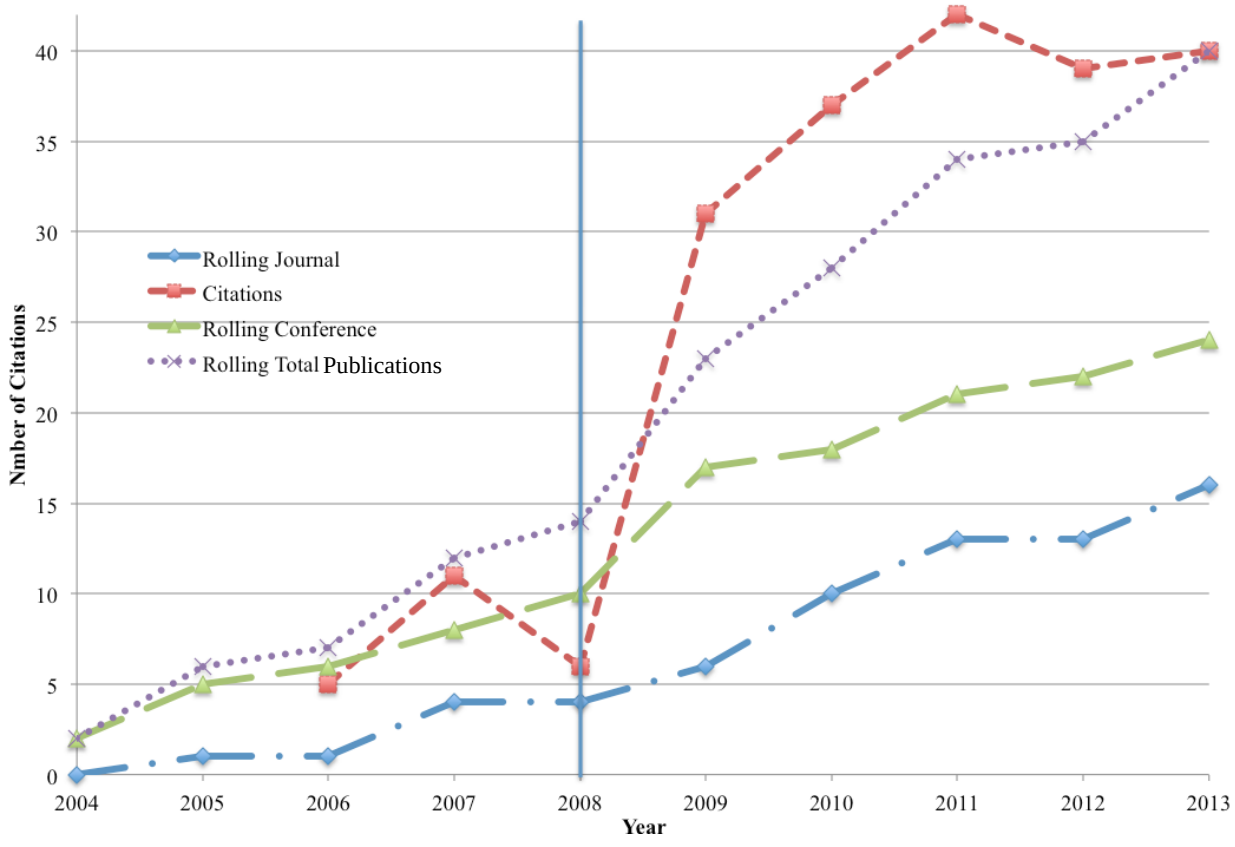
INVITED PRESENTATIONS (Excluding interview, thesis, dissertation and conference presentations)

1. Summer Research Experience for Undergraduates: "Scaling issues in Life-Cycle Assessment", Washington State University, Pullman, WA, USA (July 2013).
2. Engineering Lab Seminar: "Tolerance Analysis", National Institute of Standards and Technology, Gaithersburg, MD, USA (July 2012)
3. "Composite Modeling and Standards Landscape", National Institute of Standards and Technology, Gaithersburg, MD, USA (Aug 2012)
4. Engineering Lab Seminar: "Tolerance Modeling with T-Maps", National Institute of Standards and Technology, Gaithersburg, MD, USA (Feb 2008)
5. Graduate Seminar: "Recent Advances in Sustainable Design", University of Nebraska, Lincoln, NE (March 2012)
6. Graduate Seminar: "Carbon Weight Tolerancing Methodology", Washington State University, Pullman, WA (Nov, 2008)

PUBLICATIONS

Total Refereed Publications: 41:
Summary Journal/Book Chapters: Journal = 15, In Press Journal = 1, Book Chapters = 5, Total = 21
Summary Conference: Full Papers = 20

Citation Information (Google Scholar, August 2013): Total Citations = 203 (186 *since 2008*); External Citations = 160; external cites/paper = ~4; h-index = 9; i10-index = 7. Graph below indicates number of publications and citations over the years. Vertical line indicates the year of joining WSU.



Journal Publications (15 published, 1 in press, 4 under review and 2 currently being prepared)

Published

Impact factor: http://www.scimagojr.com

1. Singh G., *Ameta G.*, Davidson J.K., and Shah J.J., "Tolerance Analysis of a Self-Aligning Coupling Assembly using Tolerance-Maps in Design", Vol. 135(3), Journal of Mechanical Design, 14pp, March 2013.
    - Impact factor(2013): 1.4
2. Mani M., Johansson B., Lyons K., Sriram R.D. and *Ameta G.*, "Modeling, Simulation and Analysis for Sustainable Product Realization", International Journal of Life Cycle Assessment, Vol. 18(5), pp1129-1136, June 2013.
    - Impact factor(2013): 2.65
3. *Ameta G.*, Serge S. and Giordano M., "Comparison of Spatial Math Models for Tolerance Analysis: Tolerance-Maps, Deviation Domain, and TTRS", Journal of Computing and Information Science in Engineering, Vol. 11(2), 021004, 8pp, 2011.
    - Citation count: 5
    - Impact factor(2013): 0.81
4. *Ameta G.*, Davidson J.K., and Shah J.J., "Effects of Size, Orientation, and Form Tolerances on the Frequency Distributions of clearance between two planar faces", Journal of Computing and Information Science in Engineering, Vol. 11(1), 011002, 10pp, 2011.
    - Citation count: 1
    - Impact factor (2013): 0.81
5. *Ameta G.*, Rachuri S., Fiorentini X., Mani M., Fenves S. J., Lyons K., and Sriram R., "Extending the notion of quality from physical metrology to information and sustainability", Journal of Intelligent Manufacturing, Vol. 22(5), pp737-750, 2011.
    - Citation count: 5
    - Impact factor (2013): 1.5
6. *Ameta G.*, Panchal J. and Pezeshki C., "A Collective-Learning Approach to Sustainable Design Education", International Journal of Engineering Education, Vol. 26(2), pp 265-270, 2010.
    - Citation count: 2
    - Impact factor (2013): 0.73
7. *Ameta G.*, Davidson J.K., and Shah J.J., "Influence of form on Tolerance-Map-generated frequency distributions for 1-D clearance in design", Journal of Precision Engineering. Vol. 34, pp 22-27, 2010.
    - Citation count: 7
    - Impact factor (2013): 1.7
8. *Ameta G.*, Davidson J.K., and Shah J.J., "Statistical Tolerance Allocation for Tab-Slot Assemblies using Tolerance-Maps", Journal of Computing and Information Science in Engineering, Vol 10(1), 2010.
    - Citation count: 5
    - Impact factor (2013): 0.81
9. *Ameta G.*, and Sarkar P., "Comparison of Electronics Products Standards for Sustainability", International Journal of Product Design, Vol. 1(1), 2010.
10. *Ameta G.*, Mani M., Rachuri S., Lyons K.W., Feng S.C., and Sriram R.D., "Carbon Weight Analysis for Machining Operation and Allocation for Redesign", International Journal of Sustainable Engineering, Vol 2(4), December 2009.
    - Citation count: 12
    - Impact factor (2013): 1.06
11. *Ameta G.*, "Recent Patents on Mechanical Tolerancing", Recent Patents on Mechanical

Engineering, Vol 2(1), pp 55-60, January 2009.

12. *Ameta G.*, Davidson J.K., and Shah J.J., "Using Tolerance-Maps to Generate Frequency Distributions of Clearance and Allocate Tolerances for Pin-Hole Assemblies", ASME Transaction, Journal of Computing and Information Science and Engineering, Vol 7(4), pp 347-359, December 2007.
    - Citation count: 12
    - Impact factor (2013): 0.81
13. *Ameta G.*, Davidson J. K., Shah J. J., "Tolerance-Maps Applied to A Point-Line Cluster of Features", ASME Transaction, Journal of Mechanical Design, Vol. 129(8), August, 2007, pp781-792.
    - Citation count: 16 (13 external citations)
    - Impact factor (2013): 1.4
14. Shah J.J., *Ameta G.*, Shen Z., and Davidson J.K., "Navigating the Tolerance Analysis Maze", Computer Aided Design and Applications, Vol. 4(5), pp 705-718, 2007.
    - Citation count: 27 (23 external citations)
    - Impact factor (2013): 0.4
15. Shen Z., *Ameta G.*, Shah J. J. and Davidson J. K., "A Comparative Study of Tolerance Analysis Methods", Journal of Computing and Information Science in Engineering, Vol. 5(3), September 2005, pp247-256.
    - Citation count: 48 (41 external citations)
    - Impact factor (2013): 0.81

In Press

16. Ameta G., "Establishing the Energy Profile for Geometric Variations of a Planar Surface", Procedia CIRP, Elsevier, article in press.

In Review

17. Hu Y., Srinivasan R., Spoll J., and Ameta G., "Product Assembly graph metrics based selective disassembly time estimation method and tool", in review.
18. Huang H., and Ameta G., "A CAD Energy Estimation Tool for Estimating Machining Manufacturing Energy Based on Process Plans", in 2nd review cycle.
19. Huang H., and Ameta G., "Computational Energy Estimation Tools for Machining Operations", in 2nd review cycle.
20. Huang H., and Ameta G., "A CAD-based Software Framework for Estimating Energy during a Product Life Cycle", in review.
21. Huang H., and Ameta G., "A Novel Pattern for Energy Estimation Framework and Energy Estimation Tools to Compute Energy Consumption", in review.

Book Chapters (5 published)

1. Pezeshki C, Panchal J. and *Ameta G.*, "Blueprints for Teaching Ecodesign and Sustainability to University Students", In Handbook of Sustainable Engineering, Editors Wolfgang Wimmer and Joanne Kauffman, 2013, Springer, Dordrecht, Netherlands.
2. *Ameta G.*, and Hoffmann P., "Ontological Model of Tolerances for Interoperability in Product Life Cycle", Chapter 26 In Geometric Variations within Product Life-Cycle management (Selected Papers from the 11th CIRP International Conference on Computer-Aided Tolerancing, held at Université de Savoie, Annecy, France, 26-27 March 2009), Editors Max Giordano, Luc Mathieu and François Villeneuve, 2010, ISTE, HERMES publishers, London, UK.
3. Hoffman P., Feng S.C., *Ameta G.*, Ghodous P., and Qiao L., "Towards a Multi-View Semantic Model for Product Feature Description", In Collaborative Product and Service Life Cycle Management for a Sustainable World, Advanced Concurrent Engineering, (Proc., 15th ISPE Int'l Conference on Concurrent Engineering, Belfast, Ireland, August 18-22, 2008), pp. 205-213, 2008,

Springer, Dordrecht, Netherlands.
- Citation count: 4

4. Bhide, S., *Ameta, G.*, Davidson, J.K., and Shah, J.J. "Tolerance-Maps Applied to the Straightness and Orientation of an Axis", In Models for Computer-Aided Tolerancing in Design and Manufacturing, (Proc., 9th CIRP Int'l Seminar on CAT, April 10-12, 2005, Tempe, AZ, USA), pp. 45-54, 2007, Springer, Dordrecht, Netherlands.
   - Citation count: 16 (12 external citations)
5. Jian A. D., *Ameta G.*, Davidson J. K., Shah J. J., "Tolerance Analysis and Allocation using Tolerance-Maps for a Power Saw Assembly", In Models for Computer-Aided Tolerancing in Design and Manufacturing, (Proc., 9th CIRP Int'l Seminar on CAT, April 10-12, 2005, Tempe, AZ, USA), pp. 45-54, 2007, Springer, Dordrecht, Netherlands.
   - Citation count: 8

Refereed Conference Papers (20 published and 2 under preparation)

Published

1. Hu Y. and *Ameta G.*, "Life-Cycle Assessment and Eco-Design of a Wireless TV/VCR Remote", Proceedings of American Society of Mechanical Engineering- International Design Engineering Technical Conference-2013/ Computers and Information in Engineering-12484, Portland, OR, USA, Aug 4 - 7.
2. *Ameta G.*, Brown C., Lubell J. and Lipman R., "A Survey of Standards for the Lifecycle Management of Composite Structural Products", Proceedings of American Society of Mechanical Engineering- International Design Engineering Technical Conference-2013/ Computers and Information in Engineering-12655, Portland, OR, USA, Aug 4 - 7.
3. *Ameta G.*, "Towards Establishing the Energy Profile for Geometric Variations of a Planar Surface", 12th CIRP Conference on Computer Aided Tolerancing, University of Huddersfield, UK, 18th - 19th April 2012.
4. Hawthorne B. and *Ameta G.*, "LCA Study And Comparison Of Two Multispeed Blenders", Proceedings of American Society of Mechanical Engineering- International Design Engineering Technical Conference-2011/ Computers and Information in Engineering-48612, Washington DC, USA, Aug 28 – 31.
5. Srinivasan R. and *Ameta G.*, "Comparison of Life-Cycle Assessment of Two Toasters", Proceedings of American Society of Mechanical Engineering- International Design Engineering Technical Conference-2011/ Computers and Information in Engineering-48772, Washington DC, USA, Aug 28 – 31.
6. Zhenghui S. and *Ameta G.*, "Life-Cycle Asssessment of an Electric Rice Cooker", Proceedings of American Society of Mechanical Engineering- International Mechanical Engineering Congress – 2011 (paper no. 64356), Denver, CO, Nov 13-16.
7. Huang H. and *Ameta G.*, "Towards a Computational Framework for Energy Estimation -- Needs, Requirements, and Its Generic Shell", Proceedings of American Society of Mechanical Engineering-Manufacturing Science and Engineering Conference-2010, Montreal, CA, Aug 15 – 18.
8. Huang H. and *Ameta G.*, "Towards a Design Framework for Bi-level Estimation of Turning Energy for parts and assemblies", Proceedings of American Society of Mechanical Engineering-Manufacturing Science and Engineering Conference-2009, West Lafayette, IN, USA, Oct 4 – 7.
9. *Ameta G.*, Huang H. and Mahesh M., "A Bi-level Framework for Estimating Manufacturing Energy and Carbon Weights of Milled Parts and Assemblies", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-2009/ Computers and Information in Engineering-86805, San Deigo, CA, USA, Aug 30 - Sept 29.
10. *Ameta G.*, "Design for Sustainability – Overview and Trends", The 17th International Conference

on Engineering Design, 24th -27th August 2009, Stanford University, Stanford, CA.

11. *Ameta G.*, and Hoffmann P., "Ontological Model of Tolerances for Interoperability in Product Life Cycle", Proc., 11th CIRP Int'l Seminar on CAT, March 22-23, 2009, Annecy, France.
12. Singh G., *Ameta G.*, Davidson J.K. and Shah J.J., "Worst-Case Tolerance Analysis of a Self-Aligning Coupling Assembly using Tolerance-Maps", (***Best Paper Award***) Proc., 11th CIRP Int'l Seminar on CAT, March 22-23, 2009, Annecy, France.
    - Citation count: 3
13. Mani M., Lyons K.W., Rachuri S., *Ameta G.*, Subrahmanian E., Sriram R.D. and Feng S.C., "Introducing Sustainability early into Manufacturing Process Planning", Proceedings of the 14th International Conference on Manufacturing Science and Engineering, Evanston, IL, USA, October 7-10, 2008.
    - Citation count: 9
14. *Ameta G.*, Davidson J. K., Shah J. J., "Using Tolerance-Maps to Generate Frequency Distributions of Clearance for Tab-Slot Assemblies", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-2007/ Computers and Information in Engineering-35162, Las Vegas, NV, USA, September 4-7.
    - Citation count: 1
15. *Ameta G.*, Davidson J. K., Shah J. J., "Influence of Form on Frequency Distributions for 1-D Clearance Which is generated from Tolerance-Maps". 10th CIRP conference on Computer Aided Tolerancing, March 21-23, Erlangen, Germany, 2007.
    - Citation count: 10
16. *Ameta G.*, Davidson J. K., Shah J. J., "Using Tolerance-Maps to generate Frequency Distributions of Clearance for Pin-Hole Assemblies", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-2006/Computers and Information in Engineering-99585, Philadelphia, PA, USA, September 10-13.
17. *Ameta G.*, Davidson J. K., Shah J. J., "Allocating Tolerance Statistically with Tolerance-Maps and Beta Distributions: The Target A Planar Face", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-2005/Design Automation Conference-85122, Long Beach, California, USA, September 24-28
    - Citation count: 3
18. *Ameta G.*, Davidson J. K., Shah J. J., "Tolerance-Maps Applied to A Point-Line Cluster of Features", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-2005/Design Automation Conference-85115, Long Beach, California, USA, September 24-28.
19. *Ameta G.*, Davidson J. K., Shah J. J., "The Effects of Different Specifications on the Tolerance-Maps For An Angled Face", Proceedings of ASME 2004, Design Automation Conference, Salt Lake City, Utah, USA, September 28-October 2, Paper No. 57199.
    - Citation count: 4
20. Shen Z., *Ameta G.*, Davidson J. K., Shah J. J., "A Comparative Study of Tolerance Analysis Methods" Proceedings of ASME 2004, 24th Computers and Information in Engineering Conference, Salt Lake City, Utah, USA, September 28-October 2.

Other Conference Papers (5 published)

1. *Ameta G.*, "Towards a New Geometric Metric for Sustainability Assessment", PerMis Conference, NIST, Gaithersburg, MD, USA, September 21st-23rd 2009.
2. *Ameta G.*, Panchal J. and Pezeshki C., "A Collective-Learning Approach to Sustainable Design Education", Mudd Design Workshop VII, 28th May 2009.
3. Hoffman P., Feng S.C., *Ameta G.*, Ghodous P., and Qiao L., "Towards a Multi-View Semantic Model for Product Feature Description", Proc., 15th ISPE Int'l Conference on Concurrent

Engineering, Belfast, Ireland, August 18-22, 2008.
4. Bhide S., *Ameta G.*, Davidson J. K., Shah J. J., "Tolerance-Maps Applied to the Straightness and Orientation of an Axis", Proceedings of CIRP 2005 Seminar on Computer Aided Tolerancing, Tempe, AZ, USA.
5. Jian A. D., *Ameta G.*, Davidson J. K., Shah J. J., "Tolerance Analysis and Allocation using Tolerance-Maps for a Power Saw Assembly ", Proceedings of CIRP 2005 Seminar on Computer Aided Tolerancing, Tempe, AZ, USA.

Reports (3 published)
1. Mani M., Johansson B., Lyons K., Sriram R.D., *Ameta G.*, "Modeling, Simulation and Analysis for Sustainable Product Realization", National Institute of Standards and Technology Internal Report (NISTIR), 2010.
2. *Ameta G.*, Mani M., Rachuri S., Lyons K.W., Feng S.C., and Sriram R.D., "Carbon Weight Analysis for Machining Operation and Allocation for Redesign", National Institute of Standards and Technology Internal Report (NISTIR), 2008.
3. *Ameta G.*, Rachuri S., Fiorentini X., Mani M., Fenves S. J., Lyons K., and Sriram R., "Extending the notion of quality from physical metrology to information and sustainability", National Institute of Standards and Technology Internal Report (NISTIR), 2008.

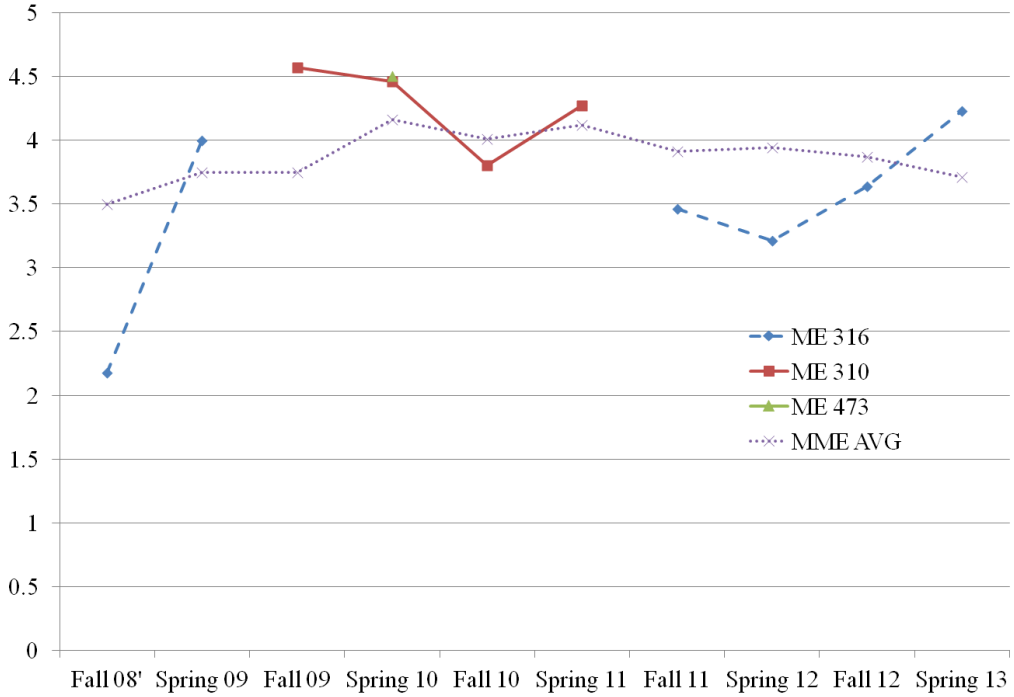
Posters (6 published; 3 more poster were published as part of the NSF funded graduate study)
1. Yang Hu and *Ameta G.*, "Poster: Graph based automatic computation of product disassembly time from assembly models", Wiley Research Exposition, 2013, WSU, Pullman, WA.
2. Raman A., and *Ameta G.*, "Poster: Novel Multi-Dimensional Geometric Metric for Uncertainty in Life-Cycle Assessment", Wiley Research Exposition, 2013, WSU, Pullman, WA.
3. Srinivasan R., Hu Yang and *Ameta G.*, "Poster: Estimating Selective Disassembly Time using Disassembly Graph based on Connective Complexity Metrics", ***CIE Poster Award***, International Design Engineering Technical Conference-2012/ Computers and Information in Engineering, Chicago, IL, USA, Aug 11 - 14, 2012.
4. Godinez, A. and *Ameta G.*, "Poster: Flatness evaluation for a v-flash rapid prototype (rp) machine", Summer REU posters, Washington State University, 2012.
5. Noah G. and *Ameta G.*, "Poster: Towards a Multidimensional Geometric Metric for Sustainability", Summer REU, 2010.
6. Srinivasan R. and *Ameta G.*, "Poster: Use – phase energy impact of two toasters: towards sustainable selective disassembly planning", Proceedings of American Society of Mechanical Engineering-Manufacturing Science and Engineering Conference -2010, Erie, PA, Oct 12-15.

Presentations at Conferences (12 presentations)
1. *Ameta G.*, Brown C., Lubell J. and Lipman R., "A Survey of Standards for the Lifecycle Management of Composite Structural Products", Proceedings of American Society of Mechanical Engineering- International Design Engineering Technical Conference-2013/ Computers and Information in Engineering-12655, Portland, OR, USA, Aug 4 - 7.
2. Davidson J. K. and Shah J. J., "Modeling of Geometric Variations for Line-Profiles", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-20011/ Design Automation Conference - 47507, Washington DC, USA, Aug 28-31.
3. *Ameta G.*, "Design for Sustainability – Overview and Trends", The 17th International Conference on Engineering Design, 24th -27th August 2009, Stanford University, Stanford, CA.
4. *Ameta G.*, Davidson J. K., Shah J. J., "Statistical Clearance Analysis for Tab-Slot Assemblies using Tolerance-Maps", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-2007/ Computers and Information in Engineering-35162, Las Vegas, NV, USA, September 4-7.
5. *Ameta G.*, Davidson J. K., Shah J. J., "Using Tolerance-Maps to generate Frequency Distributions

of Clearance for Pin-Hole Assemblies", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-2006/Computers and Information in Engineering-99585, Philadelphia, PA, USA, September 10-13.

6. *Ameta G.*, Davidson J. K., Shah J. J., "Allocating Tolerance Statistically with Tolerance-Maps and Beta Distributions: The Target A Planar Face", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-2005/Design Automation Conference-85122, Long Beach, California, USA, September 24-28
7. *Ameta G.*, Davidson J. K., Shah J. J., "Tolerance-Maps Applied to A Point-Line Cluster of Features", Proceedings of American Society of Mechanical Engineering-International Design Engineering Technical Conference-2005/Design Automation Conference-85115, Long Beach, California, USA, September 24-28.
8. *Ameta G.*, Davidson J. K., Shah J. J., "The Effects of Different Specifications on the Tolerance-Maps For An Angled Face", Proceedings of ASME 2004, Design Automation Conference, Salt Lake City, Utah, USA, September 28-October 2, Paper No. 57199.
9. *Ameta G.*, "Towards a Novel Geometric Metric for Sustainability Assessment", PerMis Conference, NIST, Gaithersburg, MD, USA, September 21st-23rd 2009.
10. *Ameta G.*, Panchal J. and Pezeshki C., "A Collective-Learning Approach to Sustainable Design Education", Mudd Design Workshop VII, 28th May 2009.
11. Bhide S., *Ameta G.*, Davidson J. K., Shah J. J., "Tolerance-Maps Applied to the Straightness and Orientation of an Axis", Proceedings of CIRP 2005 Seminar on Computer Aided Tolerancing, Tempe, AZ, USA.
12. Jian A. D., *Ameta G.*, Davidson J. K., Shah J. J., "Tolerance Analysis and Allocation using Tolerance-Maps for a Power Saw Assembly ", Proceedings of CIRP 2005 Seminar on Computer Aided Tolerancing, Tempe, AZ, USA.

COURSES TAUGHT (Total of 16 undergraduate semesters and 3 graduate semesters):
The graph below indicates the student evaluations of the courses that I taught. The dip in evaluations in Fall 10 and Spring 12 indicates new methods incorporated which were not well accepted by students. The rise in evaluations in Spring 09, Spring 11, Fall 12 and Spring 13 indicates new methods incorporated which were well accepted by students.



Graduate

ME 502 – Sustainability Assessment for Engineering Design, Fall 2012
ME 574 – Foundations of CAD, Spring 2012
ME 579 – Special topics, Life Cycle Assessment, Fall 2010

Undergraduate

ME 316 – Systems Design, [Fall 2008, 2011, 2012 and Spring 2009, 2012, 2013].
ME 310 – Manufacturing Processes, [Fall 2009, 2010, Spring 2010, 2011 and Summer 2010, 2011]
ME 473 – Advanced CAD and Geometric Modeling, [Spring 2010 and 2013]
ME 212 – Dynamics, [Summer 2013]
MAE 216 – Computer Aided Design, [Winter -2006-2007] at Arizona State University

NEW COURSES DEVELOPED/MAJOR CHANGES COMPLETED

ME 502 – Sustainability Assessment for Engineering Design. A multi-project (LCA case study and service learning project) based course that covers engineering design, life-cycle assessment, sustainability related product standards, product optimization techniques including sustainability considerations.

ME 316 – Systems Design. Introduced "impromptu design exercise", group exercise, multiple design projects in the course with service learning components including collaborative design among multiple teams in the class and with other student clubs, ME 416 or ME 401 Mechatronics class.

ME 310 – Manufacturing Process. Introduced video based manufacturing process and simulation demonstrations besides updating the laboratory manual.

PH.D. RESEARCH SUPERVISED

1. He Huang, Graduated May 2012, Dissertation Title "A CAD-Based Framework for Energy Efficient Product Life-Cycle".
    - Currently working in UniGraphics division of Siemens in Ohio.
    - Was an intern with UniGraphics division of Siemens in Los Angeles, May 2011-April 2012.
2. Yang Hu, Expected Graduation May 2015, Dissertation Working Title "Theory of Graph Based Disassembly Time Estimation".

MS RESEARCH SUPERVISED

1. Raghunathan Srinivasan, Graduated December 2011, Thesis Title "Sustainability Analysis And Connective Complexity Method For Selective Disassembly Time Prediction"
    - Currently working with Goken America in Design and Analysis team.
2. Yang Hu, Graduated July 2013, Thesis Title "Investigation of Sustainable Selective Disassembly Planning and Product Architecture Redesign Methodology"
    - Currently pursuing Ph.D. in the School of Mechanical and Materials Engineering, WSU.
3. Arvind Raman Shankar, Expected Graduation September 2013, Thesis Title "Statistical uncertainty accumulation in Product Life-Cycle Assessment"
4. Amaninder Gill, Expected Graduation Dec 2013, Thesis Title "Hybrid uncertainty quantification methodology in Product Life-Cycle Assessment"

MS PROJECTS SUPERVISED

1. Mohammed Anazi, Graduated May 2012, Project Title "Effects of Arm Position in a Stereolithography Machine on Geometric Quality of Manufactured Surface"
    - Currently pursuing Ph.D. in the School of Mechanical and Materials Engineering, WSU.
2. Martin Baker, Graduated May 2013, Project Title, "Towards Non-Rocket Space Launch Systems: Emergent Structure and Properties of A Lighter-than-Air Distributed System"

UNDERGRADUATE RESEARCH SUPERVISED

1. Noah Granieri, Aug 2010, "Towards a Multidimensional Geometric Metric for Sustainability".
2. Abdon Godinez, Aug 2012, "Characterizing flatness of surfaces in a V-Flash machine based on the location and orientation of the surfaces".
3. Jessica Spoll, Aug 2013, "Validating Complete Disassembly and Selective Disassembly Time Estimation".

RESEARCH PROPOSALS

Accepted Proposals

Indo-US Science and Technology forum, India (2013-2015): award for Indo-US Joint Center on Design of Sustainable Products, Services and Manufacturing Systems; Co-PI with Chakrabarti A, Indian Institute of Science, Banglore, India; Davidson C., Syracuse University, USA; Dornfeld D., University of California, Berkley, CA, USA; Krishnan S.S., Center for Study of Science, Technology and Policy, Banglore, India; and Gupta A., Indian Institute of Management, Ahmedabad, India

National Institute of Standards and Technology (NIST), USA (2012): award for studying the State of the art and current industry practices for modeling and exchange of composites information in PLM in the amount of $31,000.

National Institute of Standards and Technology (NIST), USA (2007-2008): award for creating a tolerancing methodology for carbon weight of a mechanical product system in the amount of $72,000; Co-PI with Dr. Jami J. Shah, Arizona State University, Tempe, AZ, USA

PROFESSIONAL SERVICE

Washington State University

Committees Served

- Graduate studies committee, School of Mechanical and Materials Engineering – 2009 to present.
- Safety Committee, School of Mechanical and Materials Engineering – 2009 to 2011.
- PhD and MS committees served for (Mayur Tailor, Ryan Faulkner, Trung Chi Nguyen, Bryant Hawthorne, Yiwen Liu, Sindhuja Jujhavarapu).

Mentoring/Advising

- Undergraduate Student Advising (30 students per semester) – 2009 to present
- Mentor to summer (NSF site) REU students – 2010, 2012, 2013.

Judge

- Spirit of Innovation Awards, Conrad Foundation, 2011.
- Imagine Tomorrow Competition 2009 and 2010.
- Wiley Research Symposium – Washington State University, 2008 and 2009.

Service Engineering Projects/Collaboration

- Organized Engineering 101 a Cougar Quest Summer 2012 Workshop to expose participating high school students to Microsoft's Kinect based CAD system developed at WSU.
- Assisted in the development of "What-if" Sustainability app for Facebook in collaboration with Pacific Northwest National Laboratory, USA and Capstone Design Team from the School of Electrical Engineering and Computer Science.
- Design of a Portable Drip Irrigation and Harvesting mechanism/system for potatoes – Skagit County Extension, Washington State University.
- Design of a Wind Resistant High Tunnel Hoop Crop Production system – Mount Vernon,

North West Research and Extension Center, Washington State University.
- Sustainability analysis and design of Wood High Rise – Institute of Sustainable Design, Washington State University.
- Designing a sustainable mobile kitchen for food packaging/processing – Pierce County Research and Extension Center, Washington State University.
- Designing a Sustainable Green Roof system - Puyallup Research and Extension Center, Washington State University
- Environmental Cleanup with Sustainable ROV – 4H Youth Club, Skagit County Extension, Washington State University.
- Design of a Baja RC CAR Test Stand – ASME RC Baja Club, School of Mechanical and Materials Engineering, Pullman.
- Design of UAV thrust testing stand – HYPER Lab, School of Mechanical and Materials Engineering, Pullman.
- Design of UAV autopilot test stand – HYPER Lab, School of Mechanical and Materials Engineering, Pullman.
- Design of a Tumor Morcellator for horses – Equestrian Surgery Team, School of Veterinary Medicine, Pullman.

Arizona State University

Mentoring/Advising
- Engineering and Applied Sciences Graduate Student Association, New Student Mentor Program, Fall 2004- Spring 2005.
- Student Mentor, Fulton Undergraduate Research and Initiative, Spring 2005 and 2006.

Judge
- Senior Design Projects, Mechanical and Aerospace Engineering Department, Arizona State University Fall 2005.

Volunteer
- Student volunteer at the 3rd Symposium on Research in Engineering and Applied Sciences 2005, Arizona State University.
- Student volunteer at the 9th CIRP International seminar on Computer Aided Tolerancing (CAT), April 11-12, 2005, Tempe, AZ.
- Student volunteer at the 2005 National Science Foundation (NSF) – Design, Manufacturing and Industrial Innovation (DMII) Grantees Workshop, January 3-6, 2005, Scottsdale, AZ.
- Student volunteer at the National Science Foundation (NSF) – Engineering Design Retreat/Strategic Planning Workshop (ED-2030), March 26-29, 2004, Phoenix, AZ.
- Student volunteer at the Army Research Office Workshop on Legacy Systems Engineering and Virtual Parts Engineering Research Center Review, June 5-6, 2003, Tempe, AZ.

Professional Societies

Committees served
- Chair of CAPPD (Computer Aided Product and Process Development) committee – Computers and Information in Engineering subdivision of ASME, 2013-2014.
- Co-Chair of CAPPD (Computer Aided Product and Process Development) committee – Computers and Information in Engineering subdivision of ASME, 2012-2013.
- Secretary of CAPPD (Computer Aided Product and Process Development) committee – Computers and Information in Engineering subdivision of ASME, 2011-2012.

Symposium Organizer/Co-Organizer

- Tools and Metrics for Sustainable Manufacturing, in Computers and Information in Engineering Conference at ASME IDETC-2013 in Portland, OR, USA.
- Poster Session Organizer for Computers and Information in Engineering Conference, ASME IDETC-2012 in Chicago, IL, USA.
- Tools and Metrics for Sustainable Manufacturing, in Computers and Information in Engineering Conference at ASME IDETC-2012 in Chicago, IL, USA; ASME IDETC-2011 in Washington DC, USA; ASME IDETC-2010 in Montreal, Quebec, CA; ASME IDETC-2009 in San Diego, USA.

Review Coordinator

- Computer Aided Product Development section in Computers and Information in Engineering Conference at ASME IDETC-2011 in Washington DC, USA; ASME IDETC-2010 in Montreal, CA; ASME IDETC-2009 in San Diego, USA; ASME IDETC-2008 in New York, USA.

Session Chair

- Computers in Information and Engineering sub-section of Computer Aided Product Development section in Computers and Information in Engineering Conference at ASME IDETC/CIE conferences in 2010, 2011, 2012 and 2013.
- Design Automation and Applications sub-section of Computer Aided Product Development section in Computers and Information in Engineering Conference at ASME IDETC/CIE-2008 in New York, USA.

Reviewer

Journals

- Journal of Engineering Manufacture
- Journal of Computing and Information Sciences in Engineering
- Journal of Mechanical Design
- Journal of Research in Engineering Design
- Precision Engineering
- Computer Aided Design
- International Journal of Product Lifecycle Management
- International Journal of Engineering Education

Conferences

- Design Automation Conferences in IEEE
- CIRP Seminar for Computer Aided Tolerancing
- ASME International Design Engineering and Technical Conference
- ASME Manufacturing Science and Engineering Conference
- ASME Mechanical Engineering Congress

Proposals/Grants

- National Science Foundation – Graduate Research Fellowship Program, USA.
- Natural Sciences and Engineering Research Council of CANADA.

PROFESSIONAL MEMBERSHIPS (current and past)

American Society of Mechanical Engineers (ASME)
American Society of Engineering Education (ASEE)
Mathematical Association of America (MAA)
Institute of Electrical and Electronics Engineers – Robotics and Automation Division (IEEE)