FACULTY VITA: Abhijit Chandra
COLLEGE OF ENGINEERING

NOTES:
a) In each section, list items in reverse chronological order.
b) Font: Times New Roman, minimum font size 11.
c) Include page numbers. Notes in shaded boxes (like this one) should be deleted before submission.

Date:

FACULTY INFORMATION
ORCID ID: https://orcid.org/0000-0002-4844-4466

I.

A. Name: Abhijit Chandra

B. Department and Current Rank: Professor Emeritus, Mechanical Engineering

C. Degrees Held

For each degree provide the name of institution, degree, field of study, and date of degree.

Ph. D Theoretical and Applied Mechanics, Cornell University, 1983
M.S. Mechanical Engineering, University of New Brunswick, 1980
B. Tech (Hons.). Mechanical Engineering, I.I.T - Kharagpur, 1978

D. Academic Positions Held

For each position (including those at ISU) provide position held, institution, and dates.

05/23-Date	Professor Emeritus, Department of Mechanical Engineering, Iowa State University
12/99-05/23	Professor (Engel Professor & Director Engel Lab.12/99-6/04, Assoc. Chair & Dir. Graduate Education 11/15-6/18), Department of Mechanical Engineering, Iowa State University
8/95 - 11/99	Professor, Department of Mechanical Engineering – Engineering Mechanics, Michigan Technological University
8/85 - 7/95	Associate Professor (8/89-7/95), Assistant Professor 8/85-7/89) University of Arizona, Aerospace and Mechanical Engineering
1/92 - 7/92	Visiting Professor, Institut fur Maschinenelemente und Maschinenakustik, Technische Universitaat, Darmstadt, Germany
8/91 - 12/91	Visiting Professor, Dept. of Solid Mechanics, Technical University of Denmark, Lyngby, Denmark
1/14 – Date	Visiting Professor, Dept. of Mechanical Engineering, Nanjing University of Science and Technology, China.

E. Other Professional Employment

For each position provide position held, organization, and dates.

F. Honors and Awards

For each honor/award provide name of honor/award, granting group, and date.

Presidential Young Investigator Award, U. S. National Science Foundation,1987
Award of Achievement , J. F. Lincoln Arc Welding Foundation, 1989
Humboldt Research Fellowship, Alexander von Humboldt-Stiftung, Germany, 1991
Fellow, American Society of Mechanical Engineers, 1996
Outstanding Paper Award, Society of Manufacturing Engineers, 1999
D. R. Boylan Eminent Faculty Award for Excellence in Research, Iowa State University, 2011
Excellence in Mechanics Award, Electronic Packaging & Photonics (EPPD) Division, American Society of Mechanical Engineers (ASME), 2019
Best Associate Editor Award, The IEEE Electronics Packaging Society, 2021

Biographical Sketch appears in:
Who's Who in the World, 12th Edition, 1994-date
Who's Who in America, 52nd Edition, 1996-date
Who's Who in Science and Engineering, 3rd Edition, 1996-date
Who's Who in American Education, 4th Edition, 1994-date

II. RESEARCH / CREATIVE ACTIVITIES

A. Scholarship

 # Denotes any publication derived from the candidate's thesis/dissertation.
+ Denotes student co-author.
Additional symbols may be used – please define.

1. Articles in Peer-Reviewed Journals – In Print or Accepted

Sample:
1. Smith J# and M Jones, "This is the title", Journal Name, Vol, 1211-1213 (2005).
2. Smith J and S Rodriguez+, "This is the title", Journal Name, Vol, 100-118 (2007).

#1. Chandra, A. and Rogers, R. J., 1983, "The Normal Approach, Contact and Rebound of Lubricated Cylinders," ASME, J. Lub. Tech., vol. 105, pp. 271-279.

#2. Chandra, A. and Mukherjee, S., 1983, "Applications of the Boundary Element Method to Large Strain Large Deformation Problems of Viscoplasticity," IMechE, J. Strain Analysis, vol. 18, pp. 261-270

#3. Chandra, A. and Mukherjee, S., 1984, "A Finite Element Analysis of Metal-Forming Problems with an Elastic-Viscoplastic Material Model," Int. J. Num. Meth. Eng., vol. 20, pp. 1613-1628.

#4. Chandra, A. and Mukherjee, S., 1984, "Boundary Element Formulations for Large Strain-Large Deformation Problems of Viscoplasticity," Int. J. Sol. Struct., vol. 20, pp. 41-53.

#5. Chandra, A. and Mukherjee, S., 1984, "A Finite Element Analysis of Metal Forming Processes with Thermomechanical Coupling, "Int. J. Mech. Sci., vol. 26, pp. 661-676.

6. Chandra, A. and Mukherjee, S., 1985,"A Boundary Element Formulation for Sheet Metal Forming," Appl. Math. Modelling, vol. 9, pp. 175-182.

7. Chandra, A., 1986, "A Generalized Finite Element Analysis of Sheet Metal Forming with an Elastic-Viscoplastic Material Model," ASME, J. Eng. Ind., vol. 108, pp. 9-15.

8. Chandra, A. and Mukherjee, S., 1986, "An Analysis of Large Strain Viscoplasticity Problems Including the Effects of Induced Material Anisotropy," ASME, J. Appl. Mech., vol. 53, pp. 77-82.

9. Chandra, A. and Mukherjee, S., 1986, "Boundary Element Formulations for Large Strain Problems of Compressible Plasticity," Eng. Anal., vol. 3, pp. 71-78.

10. Chandra, A. and Mukherjee, S., 1987, "A Boundary Element Analysis of Metal Extrusion processes," ASME, J. App. Mech., vol. 54, pp. 335-340.

11. Chandra, A., 1987, "Real-Time Identification and Control of Springback in Sheet Metal Forming," ASME, J. Eng. Ind., vol. 109, pp. 265-273.

12. Chandra, A., 1988, "A Synthesized Design for Arc Welding Processes," Robot. Comp. Intg. Mfg., vol. 4, pp. 347-358.

+13. Chandra, A. and Ho, Y.-C., 1988, "A Hybrid Axiomatic-Algorithmic Approach for Design Synthesis of Arc-Welding Processes," ASME, Mfg. Rev., vol. 1,pp. 117-123.

14. Chandra, A., 1989, "Profile Rolling of Gears: A Boundary Element Analysis," ASME, J. Eng. Ind., vol. 111, pp. 48-55.

15. Chandra, A., 1989, "Simulation of Rolling Processes by the Boundary Element Method," Comp. Mech., vol. 4, pp. 443-451.

16. Mukherjee, S. and Chandra, A., 1989, "A Boundary Element Formulation for Design Sensitivities in Materially Nonlinear Problems," Acta Mechanica, vol. 78, pp. 243-253.

17. Chandra, A., and Saigal, S., 1991, "A Boundary Element Analysis of the Axisymmetric Extrusion Processes," Int. J. Nonlin. Mech., vol. 26, pp. 1-13.

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19. Mukherjee, S. and Chandra, A., 1991, "A Boundary Element Formulation for Design Sensitivities in Problems Involving Both Geometric and Material Nonlinearities," Math. and Comp. Modelling, vol. 15, pp. 245-255.

20. Chan, C. L. and Chandra, A., 1991, "An Algorithm for Handling Corners in the Boundary Element Method: Application to Conduction-Convection Equations," Appl. Math. Modelling, vol. 15, pp. 244-255.

21. Saigal, S. and Chandra, A., 1991, "Shape Sensitivities and Optimal Configurations for Heat Diffusion Problems: A BEM Approach," ASME, J. Heat Transfer, vol. 113, pp. 287-295.

22. Chan, C. L. and Chandra, A., 1991, "A Boundary Element Analysis of the Thermal Aspects of Metal Cutting Processes," ASME, J. Eng. Ind., vol. 113, pp. 311-319.

23. Chan, C. L. and Chandra, A., 1991, "A BEM Approach to Thermal Aspects of Machining Processes and Their Design Sensitivities," Appl. Math. Modelling, vol. 15, pp. 562-575.

24. Chandra, A. and Chan, C. L., 1992, "A BEM Formulation for Design Sensitivities in Steady-State Conduction-Convection Problems," ASME, J. App. Mech. vol. 59, pp. 182-190 (1992).

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26. Chandra, A., 1992, "A Boundary Element Formulation for Design Sensitivities in Thermoplastic Problems Involving Nonhomogeneous Media," Eng. Anal., vol. 10, pp. 49-57.

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32. Chandra, A. and Tvergaard, V., 1993, "Void Nucleation and Growth During Plane Strain Extrusion," Int. J. Damage Mech., vol. 2, pp. 330-348.

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+112. Yu, T., Bastawros, A. F., Chandra, A., 2017, Experimental and modeling characterization of wear and life expectancy of Electroplated CBN Grinding wheel, Int. J. Machine Tools & Mfg., vol. 121, pp. 70-80. https://doi.org/10.1016/j.ijmachtools.2017.04.013

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+118. Sarkar, A., Shrotriya, P., Chandra, A. & Hu, C., (2019), Chemo-economic analysis of battery ageing and capacity fade in lithium-ion battery, J. Energy Storage, vol. 25, 100911-https://doi.org/10.1016/j.est.2019.100911

+119. Sarkar, A., Shrotriya, P., & Chandra, A., (2019), Modeling of separator failure in lithium-ion pouch cells under compression, Journal of Power Sources 435 (2019) 226756, https://doi.org/10.1016/j.jpowsour.2019.226756

+120. Na, Miao, Beavers, T. J., Chandra, A. & Bentil, S., (2020), Simulation of Brain Response to Noncontact Impacts Using Coupled Eulerian–Lagrangian Method, ASME J. BioMech. Eng., ASME, vol. 142, no.5: 051011, https://doi.org/10.1115/1.4045047

+121. Kouhestani, H. M., Liu, L., Wang, R. & Chandra, A., (2023), Data Driven Prognosis of Failure Detection and Prediction of Lithium-Ion Batteries, J. Energy Storage, https://doi.org/10.1016/j.est.2023.108045

2. Articles in Peer-Reviewed Journals – In Review

Follow same format as II.A.1. above.

3. Books Authored or Co-Authored

For each book provide title, author(s), publisher, and year.

1. Chandra, A. and Mukherjee, S., 1997, Boundary Element Methods in Manufacturing, Oxford University Press, New York (*ISBN: 0-19-507921-3*).

4. Books Edited or Co-Edited

For each book provide title, author(s), publisher, and year.

5. Book Chapters and Review Articles

For each chapter provide title of book, chapter number, author(s)/editor(s), publisher, and year.

1. Mukherjee, S. and Chandra, A., 1984, "Boundary Element Formulations for Large Strain Large Deformation Problems of Plasticity and Viscoplasticity," in Developments in Boundary Element Methods, vol. 3, Applied Sci. Pub. London, U.K., pp. 27-58.

2. Mukherjee, S. and Chandra, A., 1987, "Nonlinear Solid Mechanics," in Boundary Element Methods in Mechanics, D. Beskos (Ed.), North-Holland Pub., Amsterdam, pp. 285-331.

3. Mukherjee, S., Chandra, A. and Poddar, B., 1989, "Nonlinear Structural Analysis" in Boundary Element Methods in Structural Analysis (D. Beskos, Ed.), ASCE, New York, 193-234.

4. Chandra, A., 1994, "Analyses of Metal Forming Problems by the Boundary Element Method," International Journal of Solids and Structures, Special Issue on Nonlinear Analyses by the Boundary Element Method, vol. 31, pp. 1695-1736.

5. Chandra, A. and Chan, C. L., 1994, "Thermal Aspects of Machining: A BEM Approach," International Journal of Solids and Structures, Special Issue on Nonlinear Analyses by the Boundary Element Method, vol. 31, pp.1657-1693.

6. Fan, X. J., Zhou, J., Zhang, G. Q. and Chandra, A., 2010, Continuum Theory in Moisture Induced Failures of Encapsulated IC Devices, Moisture Sensitivity of Plastic Packages of IC Devices, Springer, New York, pp. 279-301. (ISBN: 978-1-4419-5718-4).

+7. Chandra, A., Bastawros, A. F., Wang, X. P., Karra, P. and Haugen, M., 2012, An Integrated Wafer Surface Evolution Model for Chemical Mechanical Planarization (CMP), Micro-Manufacturing, (Ed. V.K. Jain), Taylor & Francis, pp. 373-400.

+8. Chandra, A., Bastawros, A. F., Karra, P., Wu, K.-C., Yu, T., 2013, The Effects of Consumables on Material Removal and Scratch Propensity in Chemical Mechanical Planarization, Recent Advances in Abrasive Research (Ed. D. Bahre), Nova Science Publishers (in print).

+9. Chandra, A., Anderson, G., Melkote, S., Gao, W., Haitjema, H. and Wegener, K., 2014, Role of Surfaces and Interfaces in Solar Cell Manufacturing, Annals of CIRP, vol. 63, no. 2, pp.797-819.

6. Formally Invited Lectures and Presentations (selected)

For each item provide title, venue, and year.

NASA-Lewis Research Center, October 1991.
The Technical University of Norway, Division of Production Engineering, September 1991
The Technical University of Denmark, Department of Solid Mechanics, November 1991
Politecnico di Milano, Department of Structural Engineering, March 1992
Ecole Nationale Superior de Cachan, Lab. Mecanique et Technologie, April 1992
Ecole Polytechnique, Palaiseau, Lab. Mecanique des Solides, April 1992
Technische Universitat Wien, Inst. Allgemeine Mechanik, May 1992
Universitat Stuttgart, Mathematisches Inst., June 1992
Technische Universitat Braunschweig, Inst. Mechanik, July 1992
Tsinghua University, Beijing, Inst. of Mechanics, May 1993
Indian Institute of Technology, Kharagpur, Dept. Mechanical Eng., July 1993
Sigma Xi Lecture, Cookeville, Tennessee, January 1994
Motorola Inc., Corporate Manufacturing research Ctr., November 1994
National Institute of Standards and Technology, Boulder, March 1995
University of Connecticut, Storrs, September 1998
National Institute of Standards and Technology, Gaithersburg, October 1999
Ceradyne Inc, Costa Mesa, April 2000
3M Corp, St. Paul, December 2000
Intel Corp., Chandler, March 2002
Speedfam-IPEC, Chandler, March 2002
Strasbaugh Inc., San Luis Obispo, February 2003
CMP-MIC Short Course, Marina del Rey, February 2004
Arizona State University, Tempe, March 2007
Intel Corp. (Advanced Technology Dev.) Chandler, March 2007; Santa Clara, March 2008
Purdue University, West Lafayette, April 2008
Fraunhofer Institute, Aachen, July 2008, Nov 2009
Aesculap, A.G., Tuttlingen, July 2008, Oct 2009, Oct 2012
Am. Soc. Precison Eng. (ASPE), Nov 2010
Universitat Breman, Bremen, Nov 2010
Indian Institute of Technology, Bombay, Oct 2011, Nov 2012
Nanjing University, Nanjing, China, Nov 2013
Texas A&M, College Station, January 2016
Applied Materials, Sunnyvale, July 2019
Indian Institute of Technology, Kanpur, Dept. of Mechanical Eng., March 2023

7. Contributed Lectures and Presentations

For each item provide title, venue, and year.

8. Peer-Reviewed Conference Proceedings (since 1993)– In Print/Accepted

Follow same format as II.A.1. above replacing "Journal Name" with "Proceedings Name". Provide acceptance rate.

1. Kulkarni, N., Chandra, A. and Jagdale, S., 1993, "Feature Based Process Parameter Selection for Dynamic Milling," in Manufacturing Science and Engineering, ASME, PED-64, 513-526.

2. Ren, F., Chandra, A. and Tvergaard, V., 1994, "A Unit Cell Analysis of Ti-Al Powder Compaction at Elevated Temperatures," in Mechanics in Materials Processing and Manufacturing, ASME, AMD-194, 239-260.

3. Anwar, S., Chandra, A. and Ousterhout, K. B., 1994, "Predictive Control of Chatter Instabilities in Single Point Turning," in Manufacturing Science and Engineering, ASME, PED-68(2), 767-782.

4. Chandra, A., Huang, Y., Wei, X. and Hu, K. X., 1994, "A Hybrid Micro-Macro BEM Formulation for Crack Interactions in Electronic Assemblies," Symp. Mech. Mat.in Electronic Packaging (WA-EEP-17), Int. Mech. Eng. Cong., ASME, Chicago.

5. Jiang, Z. Q., Huang, Y. and Chandra, A., 1995, "Thermal Stresses in Layered Electronic Assemblies," Symp. on Mechanics of Surface Mount Assembly, Int. Mech. Eng. Cong., ASME, San Francisco.

6. Huang, Y., Chandra, A. and Li, N. Y., 1997, Void-Nucleation vs. Void-Growth Controlled Plastic Flow Localization in Materials with Non-uniform Particle Distributions, Int. Mech. Eng. Cong., ASME, Dallas.

7. Chandra, A., Wang, K., Huang, Y. and Subhash, G., 1997, "Role of Unloading in Machining of Brittle Materials, Manufacturing Science and Engineering-1997, ASME, MED-Vol. 6-2, pp. 83-90.

8. Chandra, A., Wang, K. P., Huang, Y. and Subhash, 1997, Defect Evolution During Machining of Brittle Materials, Advanced Methods in Material Processing Defects, Elsevier Science, New York, pp. 89-98.

9. Qu. W., Miller, M. H. and Chandra, A., 1998, Effect of Modulation on Single Grit Scratch Tests, ASPE Annual Conference, St. Louis.

10. Anwar, S. and Chandra, A., 1999, Generalized Predictive Kinetic Energy Controller for Vibration Suppression in Turning, SAE Earthmoving Conference, Peoria (Paper 1999-01-1873).

11. Qu, W., Miller, M. H. and Chandra, A., 1999, The Effect of Parallel Modulation on Subsurface Damage, ASPE Annual Conference, Monterey.

12. Loukus, J. E., Subhash, G. and Chandra, A., 2000, Observations on High Strain Rate Single Grit Scratching of Brittle Materials, 2000 NSF Design and Manufacturing Research Conference, Vancouver, Canada.

13. Fu, G., Chandra, A., Guha, S. and Subhash, G., 2000, A Plasticity Based Model for Material Removal During Chemical Mechanical Polishing, Fifth Int. Conf. CMP-MIC 2000, pp. 239-242.

14. Wang, K., Huang, Y., Chandra, A. and Hu, K. X., 2000, Interfacial Shear Stress, Peeling Stress and Die Cracking Stress in Trilayer Electronic Assemblies, Proc. ITHERM 2000, IEEE, vol. 2, pp. 56-64.

15. Fu, G., Chandra, A., Guha, S., 2000, A Generalized Material Removal Model for the CMP Processes, Proc. Seventeenth Int. VMIC 2000 Conf., pp. 113-122.

16. Fu, G., Chandra, A., Guha, S. and Subhash, G., 2001, A Plasticity Based Model of Material Removal in Chemical Mechanical Polishing (CMP), NSF Grantees' Conference, Tampa Bay, 2001

17. Fu, G. and Chandra, A., 2001, A Model for Wafer Scale Variation of Material Removal Rate in Chemical Mechanical Polishing, Sixth Int. Conf. CMP-MIC 2001, pp. 419-426.

18. Eamkajornsiri, S., Fu, G., Narayanaswami, R. and Chandra, A., 2001, Simulation of Wafer Scale Variations in Chemical Mechanical Polishing, Transactions of NAMRI XXIX, SME, pp. 221-228.

19. Eamkajornsiri, S., Narayanaswami, R. and Chandra, A., 2001, Wafer Scale Yield Improvement in Chemical Mechanical Polishing, Interpack 2001.

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21. Fu, G. and Chandra, A., 2002, A Model for Wafer Scale Variation of Material Removal Rate in Chemical Mechanical Polishing (CMP) Based on Viscoelastic Pad deformation, Proc. 7th Int. CMP-MIC Conf., pp. 67-74.

22. Bastawros, A. F., Chandra, A., Guo, Y. and Yan, B., 2002, Pad Effects on Material Removal Rate in Chemical Mechanical Planarization, Symp. on Materials and Processes for Submicron Technologies, TMS Conference, Seattle, February 2002.

23. Ye, Y., Biswas, R., Morris, J., Bastawros, A. and Chandra, A., 2002, Simulation of Nanoscale Polishing of Copper with Molecular Dynamics, Mat. Research Soc. Conference, San Francisco, April 2002.

24. Che, W., Guo, Y., Bastawros, A. F. and Chandra, A., 2002, Mechanistic Understanding of Material detachment during CMP Processing, Mat. Research Soc. Conference, San Francisco, vol. 732E, pp. I.4.3.1-I.4.3.6.

25. Che, W., Guo, Y., Chandra, A. and Bastawros, A. F., 2002, Scratch Intersection as a Material Removal Mechanism in Nano-scale Finishing of Copper, Proc. JSME-ASME Conf. on Materials and Processing 2002 , vol. 1, pp. 331-336.

26. Eamkajornsiri, S., Narayanaswami, R. and Chandra, A., 2002, Yield Improvement in Wafer Planarization: Modeling and Control, IMechE 2002, ASME, November 2002.

27. Fu, G. and Chandra, A., 2002, A Dishing and Step Height Reduction Model for Copper CMP Processes, IMechE 2002, ASME, November 2002.

28. Fu, G. and Chandra, A., 2003, An analytical Dishing and Step Height Reduction Model for Chemical Mechanical Planarization, Proc. CMP-MIC 2003, pp. 183-186.

29. Fu, G. and Chandra, A., 2003, A Study on the Relationship Between Wafer Surface Pressure and Wafer Backside Loading in CMP, Proc. CMP-MIC 2003, pp. 475-479.

30. Bastawros, A.-F., Chandra, A. and Guo, Y., 2003, The Role of Surface Morphology and Mechanical Properties on the Material Removal Rate in CMP, Proc. CMP-MIC 2003, pp. 365-372.

31. Gouda, S. D., Bastawros, A.-F. and Chandra, A., 2003, Multi-scale Characterization of Pad Role on Material Removal Rate in CMP, Mat. Research Soc. Conference, San Francisco, April 2003.

32. Che, W., Guo, Y., Chandra, A. and Bastawros, A. –F., 2003, A Comprehensive Material Removal Model for Chemical Mechanical Planarization, Proc. VMIC 2003 (Invited Paper), pp. 340-352.

33. Che, W., Guo, Y., Chandra, A. and Bastawros, A. –F., 2004, A Scratch Intersection Model of Material Removal During Chemical Mechanical Planarization, Conf. Soc. Eng. Science, Ann Arbor, MI, Oct 2003.

34. Wang, C. X., Sherman, P., and Chandra, A., 2004, A Stochastic Model for the Effects of Pad Surface Topography Evolution on Material Removal Rate decay in Chemical Mechanical Polishing, Proc. CMP-MIC 2004, pp. 171-180.

35. Gouda, S. D., Bastawros, A. F., and Chandra, A., 2004, A Quantitative Analysis of Multi-scale Response of Wet and Dry CMP Pad, Proc. CMP-MIC 2004, pp. 197-205.

36. Chandra, A. and Bastawros, A. –F., 2004, Role of Forming in micro- and nano-scale material removal mechanisms during surface machining of ductile materials. Proc. NUMIFORM 2004.

37. Wang, C. X., Sherman, P., Chandra, A. and Dornfeld D. A., 2005, Pad Surface Roughness and Slurry Particle Size Distribution Effects on Material Removal Rate in Chemical Mechanical Planarization, CIRP General Assembly, vol. 54/1, pp.309-312 , CIRP 2005, Antalya, Turkey.

37. Che, W., Bastawros, A. F., Chandra, A., 2006, Surface Evolution during the Chemical Mechanical Planarization of Copper, CIRP General Assembly, CIRP 2006, Kobe, Japan.

39. Wang, C., Han, Y., Sherman, P. and Chandra, 2006, Scratch Generation Probability in Chemical Mechanical Planarization, CMP-MIC 2006, Fremont, CA. (Invited Paper).

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41. Zhang, R., Wang, X., Shrotriya, P., Biswas, R. Bastawros, A. F. and Chandra, A., 2006, Molecular Approach to Material Detachment Mechanism during Material Removal Process, CIRP Proc. On High Speed Machining, Vancouver, Canada.

42. Che, W., Bastawros, A. F. and Chandra, A., 2006, Synergy between Chemical Dissolution and Mechanical Abrasion During Chemical Mechanical Planarization of Copper, Proc. Electrochem Soc., Cancun, Mexico. (Invited Paper).

43. Bastawros, A. F., and Chandra, A., 2007, Role of Multi-scale Polishing Pad Response on Evolution of Scratches during CMP, Proc. CMP-MIC 2007, Fremont, CA, pp. 248-257. (Invited Paper)

44. Wang, X., Karra, P., Chandra, A., Bastawros, A. F., Biswas, R., Sherman, P., Yao, L., 2007, A Multi-scale Predictive Model for Wafer Surface Evolution during CMP Process incorporating Slurry Evolution, Proc. CMP-MIC 2007, Fremont, CA, pp. 265-274 (Invited Paper).

45. Chandra, A., Karra, P., Bastawros, A. F., Biswas, R., Sherman, P. J. and Armini, S., 2008, Defectivity in Chemical Mechanical Planarization, Proc. of CMP-MIC 2008, pp. 54-60.

46. Chandra A, Karra P, Dorothy M (2008) Implications of Arrow's theorem in modeling of multiscale phenomena: an engineering approach. In: NSF-DMMI grantee conference, Knoxville, TN, 7–10 Jan 2008.

47. Chandra, A., Bastawros, A. F., and Karra, P., 2009, Understanding Multi Scale Pad Effects in Chemical Mechanical Planarization, Science and Technology of Chemical Mechanical Planarization, MRS, vol., 1157, pp. 17-28.

48. Liu, L., Kim, G. Y. and Chandra, A., 2009, Life Prediction of a Solid Oxide Fuel Cell Under Thermal Cycling Conditions, ASME 2009 7th Int. Conf. Fuel Cell Sc, Eng.Tech. (FUELCELL2009), Newport Beach, CA, Paper no. FuelCell2009-85131 pp. 247-255.

49. Liu, L., Kim, G. Y. and Chandra, A., 2010, Spray Pyrolysis of Porous Anode Film of Solid Oxide Fuel Cell, Proc. 2010 ASME Int. Mfg. Sc. Eng. MSEC2010, Erie, PA.

50. Liu, L., Kim, G. Y. and Chandra, A., 2010, Deposition of Porous Anode Electrode of a Solid Oxide Fuel Cell by Ultrasonic Spray Pyrolysis, Proc. 8th Int. Fuel Cell Sc. Eng.Tech.Conf., June 14-16, 2010, Brooklyn, NY, USA

51. Chandra, A. and Roy, S., 2010, On reducing the influence of Condorcet cycles from pair-wise elections data, Proc. Behavioral and Quantitative Game Theory Conference on Future Directions, May 14-16, 2010, Newport Beach, CA.

52. Roy, S. and Chandra, A., 2010, On reducing the influence of Condorcet cycles from pair-wise elections data, Economic World Congress, Aug 16-21, 2010, Shanghai, P.R. China.

53. Chandra, A., Karra, P. and Bastawros, A. F., 2010, Defectivity Avoidance in Chemical Mechanical Planarization: Role of Multi-Scale and Multi-Physics Interactions, ECS Conf. Las Vegas, NV, Paper: E3-1457.

54. Chandra, A., Karra, P., Bragg, A., Wang, J. and Kim, G. Y., 2013, Chip Segmentation In Machining: A Study Of Deformation Localization Characteristics In Ti6Al4V, Proc. 2013 ASME Int. Mfg. Sc. Eng. MSEC2013, Madison, WI.

55. Roy, S., Wu, K-C., Chandra, A., 2014, Uncovering the "Will of the People": Heterogeneity and Polarization within Electorates, Midwest Economic Theory Conference, May29-31, 2014, Indianapolis, IN.

56. Yu, T., Bastawros, A. F., Chandra, A., 2014, Characterization of Electroplated CBN Grinding Wheel Wear: Topology Evolution and Interfacial Toughness, Proc. 2014 ASME Int. Mfg. Sc. Eng. MSEC, June 9-13, 2014, Detroit, MI.

57. Roy, S., Wu, K-C., Chandra, A., Uncovering the "Will of the People": Heterogeneity and Polarization within Electorates, Proc. 63rd Annual Mtg. French Economic Assoc., June 16-18, 2014, Lyon, France.

58. Chandra, A., Anderson, G., Melkote, S., Gao, W., Haitjema, H. and Wegener, K., 2014, Role of Surfaces and Interfaces in Solar Cell Manufacturing, CIRP General Assembly, Nantes, France, Aug 25-29, 2014 (Keynote Presentation).

59. Poosarla, P. A., Bastawros, A. F., and Chandra, A., 2015, Atmospheric Pressure Plasma Enhanced Reduction in Hardness of Single Crystal Sapphire for Precision Polishing, Material Research Soc. (MRS) Spring Meeting, April 2015, San Francisco, CA.

60. Yu, T., Bastawros, A. F., Chandra, A., 2015, Modeling Of Electroplated Cbn Grinding Wheel Wear, Proc. 2015 ASME Int. Mfg. Sc. Eng. MSEC 2015-9319, MSEC, June 8-12, 2015, Charlotte, NC.

61. Roy, S., Wu, K-C., Chandra, A., 2015, Uncovering the "Will of the People": Heterogeneity and Polarization within Electorates, World Congress of Econometric Soc., Montreal, Canada, Aug 17-21, 2015.

62. Wu, K-C. Chandra, A., Shao, Z., 2017, Integrating transcriptome analysis and data driven prognosis to decipher catabolite repression (paper ID: 2665359), American Chemical Soc., San Francisco, April 2017.

63. Poosarla, P., Emadi, H., Chandra, A., Bhattacharya, S., 2017, Modeling and control of surface quality in chemical mechanical planarization (CMP) ASME 2017 Dynamic Systems and Control Conference, DSCC 2017, DOI: 10.1115/DSCC2017-5240

64. Sarkar, A., Shrotriya, P., & Chandra, A. (2017). Multiscale Model to Predict Thermal Performance of Lithium Ion Batteries. *Materials Research Society*, Phoenix, Spring 2017.

65. Sarkar, A., Chandra, A., & Shrotriya, P. (2017). Life Expectancy of Lithium Ion Batteries with Silicon Particle. *Materials Research Society*, Phoenix, Spring, 2017.

66. Sarkar A., Chandra A., & Shrotriya, P. (2018). Multiscale Thermomechanical Model to Predict Thermal Runaway in Lithium-ion Batteries. *Materials Research Society*, Phoenix, Spring 2018.

9. Other Conference Proceedings, Bulletins, or Reports – In Print or Accepted

Follow same format as II.A.8. above.

10. Other Scholarly Contributions

Format as appropriate for item.

B. Patents, Disclosures, and Technology Transfer

For each item provide invention name, inventor(s), identification number, and year patent issued/ invention disclosed.

1. Subhash, G., Chandra, A. and Koeppel, B. J., 2002, Apparatus and method for determining the dynamic indentation hardness of materials, U.S. Patent No. 6,343,502, issued February 5, 2002.
2. Subhash, G., Chandra, A. and Koeppel, B. J., 2004, Apparatus and method for determining the dynamic indentation hardness of materials, Canadian Patent No. 2,207,354, issued September 28, 2004.
3. Chandra, A., Eamkajornsiri, S. and Kadavasal, M. S., 2009, Die Scale Control of Chemical Mechanical Polishing, U. S. Patent 7, 544, 617 issued June 9, 2009.
4. Chandra, A., Bastawros, A. F., Mitra, A. K. And Lemaire, C. A, 2011, Apparatus For Focused Electric-Field Imprinting For Micron And Sub-Micron Patterns On Wavy Or Planar Surfaces, U. S. Patent 7, 998, 323 issued August 16, 2011.
5. Mitra, A. K. and Chandra, A., Herreman, C. D. and Dunham J., 2012, System and Method for Problem Solving through Dynamic/Interactive Concept Mapping, U. S. Patent 8,112,384 issued February 7, 2012.

6. Mitra, A. K., Bastawros, A. F., Chandra, A., and Lemaire, C. A, 2013, Method For Focused Electric-Field Imprinting For Micron And Sub-Micron Patterns On Wavy Or Planar Surfaces, U. S. Patent 8, 617, 378 issued December 31, 2013.
7. Bastawros, A. F., Chandra, A. and Shih, T. I-P., 2014, Method and Apparatus for Energy Harvesting through Phase Change Induced Pressure Rise Under Cooling Conditions, U.S. Patent 8,683,803 issued April 1, 2014.
8. Mitra, A. K., Bastawros, A. F., Chandra, A., and Lemaire, C. A, 2015, Apparatus For Focused Electric-Field Imprinting For Micron And Sub-Micron Patterns On Wavy Or Planar Surfaces, U. S. Patent 9,150,979 issued October 06, 2015.
9. Mitra, A. K., Bastawros, A. F., Chandra, A., and Lemaire, C. A, 2017, Method For Focused Electric-Field Imprinting For Micron And Sub-Micron Patterns On Wavy Or Planar Surfaces, U. S. Patent 9, 624, 591 issued April 18, 2017.

C. Funded Grants and Contracts

For each grant list:
Investigators (and their institutions), Principal Investigator first:
Title of grant/contract:
Funding agency:
Dates:
Total dollar amount of grant (and dollar amount allocated to this candidate):
Role on project:

TOPIC	SPONSOR	DATES	AMOUNT
A Flexible Manufacturing Cell for Design Synthesis	NSF	1 July 1986 - 31 Dec 1987	$ 126,875
Design for Manufacturing: An Integrated Approach	NSF	1 Oct 1987 - 30 Sept 1993	$ 312,500
Damage Evolution in Metal Forming," Instron Corporation	Instron Corp.	1 Oct 1989 – 30 Sept 1993	$ 79,345
High Speed Machining of Ceramics	Hughes Aircraft Co.	1 Oct 1988 – 30 Sept 1993	$ 62,500
Surface and Subsurface Damage in Grinding of Ceramics	Advanced Ceramics Research Corp.	1 Jan 1991 – 31 Dec 1994	$ 95,800
Design Sensitivities and Shape Optimization in Nonlinear Problems of Solid Mechanics by BEM (co-PI with S. Mukherjee)	NSF	1 Jun 1990 – 31 May 1992	$ 116,269
Concurrent Preform and Process Design for Formed Products	NSF & ALCOA	1 Jan 1992 – 30 Jun 1993	$ 50,000

Damage Evolutions and Their Sensitivities During Metal Forming Processes (P.I.; V. Tvergaard, co-P.I.).	NSF US-Denmark Cooperative Research Program	15 Mar 1992 – 28 Feb 1994	$ 14,400
Development of a Nonlinear Multivariate Control System for Sheet Forming Processes (co-P.I. with K. Ousterhout).	NSF	1 Nov 1993 – 31 Oct 1996	$ 187,500
Interfacial Issues in Multi-Chip Module Conductive Adhesive Interconnects	NSF & NIST	15 Oct 1995 – 14 Oct 1997	$ 50,000
Development of an Aluminum stamping die with active drawbeads (co-P.I. with K. J. Weinmann).	DOE & ALCOA	1 Oct 1996 – 31 Dec 1997	$ 244,662
On-Line Machine Tool Monitoring via Optic Interferometric Sensing (P.I.; J. Sutherland, co-P.I.).	NSF/Univ. Michigan Eng. Res. Ctr. on Re-Configurable Manufacturing Systems	1 Sep 1996 – 31 Aug 1998	$ 42,458
Avenues for High Speed Ceramic Grinding (P.I.; Y. Huang, G. Subhash, co-P.I.).	NSF	1 Aug 1997 – 31 Jul 2000	$298,956 + 24,000 (REU)
Applications of Strain-Gradient Plasticity: Modeling and Experiments (co-P.I. with Y. Huang).	NSF	1 Jul 1997 – 30 Jun 2000	186,625
Yield Improvements in Chemical Mechanical Polishing Process for Microelectronics (P. I.; A. F. Bastawros, co-P.I.)	Carver Trust, ISU	15 Apr 2000 – 31 Jul 2001	25,000
Mechanics of Chemical Mechanical Polishing of Microelectronic Materials (P. I.; A. F. Bastawros, co-P.I.)	NSF	1 Sep 2000 – 31 Aug 2003	325,422 +12,000 (REU)
Modeling and Control of Wafer Scale Yield Improvement in Chemical Mechanical Planarization (PI, co-	NSF	1 Jul 2003 – 30 Jun 2007	456,881 + 36,000 (REU)

PIs: A. F. Bastawros, A. Kelkar, R. Narayanaswami)			
Wire Sawing – Mechanics and Design Space Exploration (PI, co-PI: A. F. Bastawros)	NSF	1 Jul 2004 – 30 Jun 2007	355,277
Development of Software for Design & Control of CMP Process	ISURF	1 Jul 2004 - 30 Jun 2005	20,000
Testing & Development of Software for Design & Control of CMP Process	ISURF	1 Jul 2005 – 30 Jun 2006	17,500
Vertical Intg. Of Computer, Electrical & Mechanical Eng. Education (co-PI with D. Rover, J. A. Dickerson, M. Mina, D. Flugrad, M. Shelley, G. Luecke)	NSF	1 Aug 2004 – 31 Jul 2005	99,986
Multiscale Modeling: Combining strengths & avoiding weaknesses PI, co-PI D. G. Saari)	NSF	1 Aug 2006 – 31 Jan 2009	99,996
Focused Electric Field Induced Ion Transport; A Patterning Process (co-PI with A. F. Bastawros)	NSF	1 Jul 2007 – 30 Jun 2010	318,965
A Nanoscale Approach to Onset of Fretting Corrosion leading to Crack Nucleation in Metallic Implants (PI, co-PI P. Shrotriya)	Braun-Aesculap, AG, Germany	1 Dec 2007 – 31 Dec 2010	200,099
Rapid Process Development for Chemical Mechanical Planarization (PI, co-PI: A. F. Bastawros)	NSF	1 Jul 2009 – 30 Jun 2012	476,449
Chemical Mechanical Paired Grinding (CMPG) (PI, co-PI: A. F. Bastawros)	NSF	1 Jul 2011 – 30 Jun 2015	414,970 +12,000 (REU)
Grinding Wheel Attrition (PI, co-PI: A. F. Bastawros)	Pratt & Whitney	1 Jul 2012 – 30 Jun 2013	50,000
Additive Manufacturing Review for Iowa Industry (co-PI, PI: E. Agba)	CIRAS	16 Feb 2015 – 15 Aug 2015	109,456

D. Pending Grants and Contracts

Follow same format as II.C. above.

E. Grants and Contracts Submitted but Declined (submitted in the last three years)

Follow same format as II.C. above.

III. TEACHING / EDUCATION ACTIVITIES

A. Instruction for ISU

Provide information for undergraduate and graduate courses, both on and off campus. Include semester, course identifier, course name, number of credit hours, lab/no lab, number of students in class, and number of TAs.

For example:

1. Spring 2009: ENGR XXX – "Course I Title", 3 Credits, No Lab, 145 students, 2 TAs.
2. Fall 2010: ENGR XXX – Course II Title", 4 Credits, Lab, 35 students, no TA.

ME 322	Materials and Manufacturing II (2000S)
ME324	Manufacturing Engineering (2000F, 2001F, 2002F, 2003F, 2004F, 2005F, 2006F, 2007S, 2007F, 2011S, 2013S, 2014S, 2015S, 2016S, 2016F, 2017F, 2018F, 2019F, 2020F)
ME325	Machine Design (2012S)
ME527	Mechanics of Machining and Finishing Processes (2001S, 2003S, 2005S, 2006S, 2009S, 2015S)
ME528	Nanomanufacturing (2012S, 2014S, 2016S)
ME521/590L	Composite Manufacturing (2007S)
ME270	Introduction to Mechanical Engineering Design (2001F, 2002F, 2004S)

B. Curriculum Development Activity for ISU

Provide course identifier, course name, year of development/modification, and description of contribution.

1. Development of Mechanics of Manufacturing Lab., 2011. (ME 324, Me 527, ME 528)

C. Service as Major Professor on Graduate Student Committees

For each graduate student supervised, provide the student's name, level (e.g. MS, PhD), co-advisor (if any), dates work was supervised, thesis title if known, and the student's placement / current status.

For example:

1. Mary Cooper, PhD, June 2000-July 2005, "Dissertation Title", now at Intel.
2. John Smith, MS, (Jim Atafaris, co-advisor), June 2003-July 2005, work in progress - degree expected August 2005.

Ph.D - 21 completed, M.S. - 18 completed)

Partial list (1989-date):

1. K. X. Hu (Ph.D), Stress and fracture analysis for systems with inhomogeneities (completed December 1993)
2. X. Wei (Ph.D), Design sensitivities and optimization of forming processes (completed November 1994).
3. S. Anwar (Ph.D), Modelling and predictive control of chatter instabilities in single point turning (completed March 1995).
4. H. Kim (Ph.D), Dynamics of ceramic grinding: regeneration and stability (completed March 1995).
5. Z. Q. Jiang (Ph.D), Damage evolution in electronic assemblies due to thermal cycle fatigue

(completed February 1996).

6. K.-P. Wang (Ph.D), Mechanics of defect evolution during machining of brittle materials (completed October 1998)
7. W. Qu (Ph.D) Vibration Assisted Grinding (completed November 1999).
8. C. S. Su (M.S), The optimal design of cutting speed in machining: an approach based on physical constraints of tool wear mechanisms (completed June 1990).
9. T. Y. Tsang (M.S), Shear localization in plane strain forming (completed July 1990).
10. N. Kulkarni (M.S), Modelling of end milling operation to predict achievable surface finish and tolerance (completed January 1993).
11. A. Gupta (M.S), A BEM analysis for steady state conduction - convection problems with variable velocities (completed May 1993).
12. F. Ren (MS), Analysis of sinter forming processes for intermetallics (completed May 1993).
13. G. Tandri (M.S), Inverse dynamics for end milling (completed June 1994).
14. J. L. Kuehn (M.S) Wafer scale effects in Chemical Mechanical Polishing (completed February 2000)
15. W. Zhang (Ph.D), Finite element analysis of induced damage due to indentation and scratching on brittle materials (August 2001)
16. H. Wang (Ph.D), Mechanics of Material Removal during the Formation of Single Grit Rotating Scratch with a Conical Tool (August 2001)
17. G. Fu (Ph.D), Chemical Mechanical Polishing of Microelectronic Materials (June 2002)
18. W. Che (M.S), Particle Scale Modeling of Chemical Mechanical Polishing (May 2002)
19. S. Eamkajornsiri (MS), Wafer Scale Yield Improvement in Chemical Mechanical Polishing (May 2002)
20. W. Che (Ph.D), Role of Coupling between Chemical and Mechanical Aspects in CMP Processes (August 2004)
21. S. Eamkajornsiri (Ph.D), Control of Wafer Scale Nonuniformity in Chemical Mechanical Polishing (December 2005))
22. S. Doddabasanagouda (M.S), Effects of Pad Characteristics in CMP Processes (August 2003)
23. S. Seetharaman (M.S), Characterization of nano-scale adhesion forces & post-CMP cleaning (August 2004)
24. K. S. Muthukkumar (M.S), Role of Process Parameters on Wafer Scale Nonuniformities in CMP Processes (February 2005)
25. D. Law (M.S), Characterization and Control of Long Wavelength Oscillations during Wire Sawing of Silicon Wafers (July 2005)
26. C. X. Wang (Ph.D) Stochastic Modeling of Pad Surface Evolution during CMP Processes (January 2005)
27. X. P. Wang (M. S) Multi-scale models for wafer surface evolution in chemical mechanical planarization (April 2006)
28. B. H. (Carls) Chua (M.S) Investigation into the stress assisted damage of copper surface under single asperity: influence of contact pressures, surfaces stress states and environments (January 2008)
29. E. Teomete (Ph. D) Mechanics of wire saw machining process: Experimental analyses and modeling (June 2008)
30. P. Karra (Ph.D) Multi-scale Modeling of Defectivity in Chemical Mechanical Planarization (March 2009)
31. D. Paul (M.S) Multiphysics modeling of Focused Electric Field Induced Ion Transportation (May 2010)
32. D. Asplund (MS), Chemical Mechanical Paired Grinding (May 2011)
33. L. Liu (Ph.D) Solid Oxide Fuel Cell Reliability And Performance Modeling And Fabrication By Spray Pyrolysis, (Jan 2012)
34. O. Kar (MS) Data Driven Prognosis, (Aug 2012)

35. J. Wang (MS) Effect of Tolerances in Skew Rolling (Jun 2014)
36. T. Y. Yu (Ph.D) Improving Life Expectancy of Grinding Wheels (expected Dec 2016)
37. P. Poosarla (Ph.D) Chemical Mechanical Plasma Processing (Dec 2017)
38. A. Sarkar (Ph.D) Multiphysics Analysis of Electrochemical and Electromagnetic System addressing Lithium-ion Battery and Permanent Magnet Motor (Dec 2018)
39. M. Na (Ph.D) Head Impact Simulation Using Coupled Eulerian Lagrangian Approach (Aug 2019).

D. Service on other Graduate Student Committees

For each graduate student provide the student's name, year of graduation, level (e.g. MS, PhD), department, and your role on committee (e.g. minor representative, committee member).

E. Supervision of Post-Doctoral Students and Professional Staff

For each post-doctoral student supervised provide the student's name, dates of supervision, project name, and the student's placement / current status.

F. Supervision of Undergraduate Research and Independent Study

For each project provide the name(s) of student participant(s), dates of supervision, and project name.

I have served as independent study advisor and / or advisor for sponsored REU projects of several undergraduate students (31 in 2000-13).

G. Non-ISU Instruction (e.g. Short Courses, Workshops, Training)

For each item provide name of activity, date(s), and location.

H. Other Teaching Contributions

For each item provide name of activity, date(s), and nature of contribution.

IV. EXTENSION/PROFESSIONAL PRACTICE ACTIVITIES

A. Editorial Service for Journals

For each item provide name of journal, nature of activity (e.g. senior editor, associate editor, reviewer), and dates of service.

Associate Editor , IEEE (CPMT) Trans. Electronics Packaging Manufacturing, 2005-date.
Associate Editor, J. Mechanics and Industry, 2014-Date.
Assoc. Editor, J. Micromanufacturing, 2018-2022.
Subject Editor for Micro-machining Systems, Int. J. Mechatronics and Manufacturing Systems, 2014-2016.
Editorial Board Member, Int. J. Mechatronics and Manufacturing Systems, 2017-2021.
Editorial Advisory Board Member, J. Manufacturing and Material Processing, 2018-Date

Offices Held in Professional Societies

For each office provide name of society, office held, and dates of service.

Coordinator between the Manufacturing Science and Technology Program and the Electrical and Electronic Packaging Division of ASME, 1987-1991

Chairman, Symposium on Computer Modelling and Simulation of Manufacturing Processes, ASME Winter Annual Meeting, Dallas, Texas, November 1990

Chairman, Symposium on Nonlinear Boundary Element Analysis, First U.S. National Congress on Computational Mechanics, Chicago, Illinois, July 1991

Member of Scientific Committee, International Association of the Boundary Element Method, 1992-1999.

Chairman, Symposium on Applications of Boundary Element Methods, Third U.S. Nat. Cong. Computational Mechanics, Dallas, Texas, June 1995.

Organizer, Symposium on Multi-scale Analysis, Int. Mech. Eng. Cong., ASME, Dallas, November 17-21, 1997.

Scientific Committee of Euro-Conference on Computational Mechanics, 2001-2010.

Member of Scientific Committee, NUMIFORM, 2002-2013.

Member, Technical Committee on Materials Processing, Applied Mechanics Div., ASME, 2002-date

Member, Technical Committee on Manufacturing Processes, Manufacturing Eng. Div., ASME, 2002-date

Member, Scientific Committee for Proci-A, CIRP, 2013-2018.

Member, ITherm 2021 Best Paper Awards Committee, 2021.

Member, ASME Electronic & Photonic Packaging Division Awards Committee, 2022-25.
Member, ITherm Best Paper Awards Committee (Mechanics & Reliability), 2023-25
Member, Sigma Xi Iowa State University Chapter Executive Committee (2019-23), President (2021-22).

B. Grant Review Panels

For each panel provide name of funding agency, dates of service, and role on panel (e.g. panel member, chair of panel)

Several since 1987.

C. Government, Educational, or Corporate Advisory Committees

For each committee provide name of organization, dates of service, and services rendered.

In summer 2003, I proposed to the IABEM Governing Board to establish an award of excellence to honor Professor Frank J. Rizzo (Professor Emeritus of ISU). The IABEM Board established this award in their bi-annual meeting in May 2004. Prof. Rizzo was the first recipient.

D. Public Service Activities

For each service role provide title, date(s), and services rendered.

E. Other Extension/Professional Practice Activities

For each activity provide title, date(s), and services rendered.

Life Fellow, ASME
Member, IEEE
Member, Sigma Xi

V. INSTITUTIONAL SERVICE ACTIVITIES

A. University-Level Service

For each service role provide title and date(s).

B. College-Level Service

For each service role provide title and date(s).

Member, ME Chair Search Committee, Aug 2002- 03
Member, COE Diversity Committee, 2006-08
Member, COE Faculty Development Committee, 2010-18
Member, COE Strategic Com. on Education, 2016-17

C. Department-Level Service

For each service role provide title and date(s).

Mechanical Systems Group Leader (Member, Administration Group), Jan 2001- Jun 2003.
Member, Promotion and Tenure Committee, Aug 2001-2004 (chair 2003-2004), Aug 2006-2009 (chair 2008-09), 2011-17, 2019-20 (Fall), 2021-22, 2022-23.
Chair, Faculty Recruitment Committee, Aug 2001- Aug 2002,
Member, Faculty Recruitment Committee (Chair, sub-committee on Adv. Mfg.) Aug 2016-17
Chair, Dossier Committee for Judy M. Vance, Aug 2002-2003
Chair, Honors and Awards Committee, Aug 2003—2006
Member, Honors and Awards Committee, Aug 2015-16
Chair, Dossier Committee for Abir Z. Qamhiyah, Aug 2003-2004
Chair, Distance Education Committee, Aug 2004-2006
Chair, Manufacturing Laboratory Committee, Aug 2008-09
Member, ME Graduate Studies Committee, Aug 2007-09, 11-13.
Member, Sriram Sundararajan Dossier Committee, Aug 2007-08
Member, Shankar Subramanium Dossier Committee, Aug 2007-08
Member, Pranav Shrotriya Dossier Committee, Aug 2008-09
Program Director, Design & Manufacturing Innovation Program (ME), Aug 2008-09
Chair, Manufacturing Lab Usage Committee, Aug 2008-09
Chair, Song Zhang Dossier Committee, Aug 2013-14
Member, Sriram Sundararajan Dossier Committee (Full Professor), Aug 2013-14.
Member, ME CILC Com. On Undergraduate Education, Aug 2016-17
Member (ex-officio), ME Safety Committee, Jan 2017- Jun 2017

Assoc. Chair and Director of Graduate Education, Nov 2015 – May 2018
Chair, Travis Sippel Dossier Committee, 2018-19
Chair, Jackie Baughman Review Committee, 2019
Chair, Course development Committee (CDC) on Mechanics & Manufacturing, 2015-19

For each service role provide title and date(s).