Vita

Dr. Mousumi Roy, PE
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Department of Civil and Environmental Engineering
Management and Engineering for Manufacturing (MEM) Program
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EDUCATION:

Doctorate in Civil Engineering and Engineering Mechanics, 1993, *Columbia University, NY, NY*
Master of Engineering in Structural Engineering, 1989, *The Cooper Union, NY, NY*
Bachelor of Civil Engineering, Honors, 1984, *Jadavpur University, Calcutta, India*

ACADEMIC EXPERIENCE:

2015 – present Assistant Professor-in-Residence, *University of Connecticut, Storrs, CT*
Joint appointment in Civil and Environmental Engineering (CEE) Department and Management and Engineering for Manufacturing (MEM) Program since 2019.
2014 - 2015 Instructor, *Wilkes University, Wilkes-Barre, PA*, Dept. of Mechanical Engineering
2006 – 2010* Instructor, *Penn State University, Scranton-Worthington, PA,* Mathematics Dept.
Fall 2008 Lecturer, *Prudential Investment, Moosic, PA*
2004 – 2006 Lecturer, *Johns Hopkins University, MD,* Department of Civil Engineering

*Took time off 2010-2014 to guide my daughter through high school. However, I continued my role as an Independent Scholar.

INDUSTRY EMPLOYMENT:

2001 - 2006 Structural Engineer at *Whitney, Bailey, Cox, Magnani, Baltimore, MD*
1996 - 2001 Structural Engineer at *Weidlinger Associates, Cambridge, MA*
1993 - 1996 Structural Engineer at *Bettigole Andrews & Clark, Inc., Hackensack, NJ,* and *NY, NY*
1984 - 1988 Structural Engineer at *Consulting Engineering Services, Calcutta, India*

Responsibilities included:

- Analysis, design and construction supervision of high-rise office and residential buildings, parking garages, and other types of structures.
- Inspection and preparation of reports including repair details for trusses in *Manhattan Bridge* and other bridges in New York and New Jersey.
- Analysis, designs, and construction supervision of approach highway at Terminal 5 of *Logan International Airport, MA.*

- Business proposal preparation for different construction projects and feasibility study of alternative proposals based on their financial and other merits.
- Project management by preparing construction schedules and attending meetings with design team, construction supervisors, and other related personnel.

COURSES TAUGHT:

a) At UConn:

1. Principles of Construction I
2. Mechanics of Materials (Flipped Format, Distance Learning Mode)
3. Applied Mechanics I (Flipped Format, In-person and in Distance Learning Mode)
4. Probability and Statistics for Civil and Environmental Engr. (In-person and in Distance Learning Mode)
5. Introduction to Manufacturing Systems (Lecture)
6. Introduction to Manufacturing Systems (Lab)
7. Introduction to Management and Engineering for Manufacturing Program
8. Manufacturing Automation
9. Senior Design I for MEM Program
10. Senior Design II for MEM Program
11. Orientation to Engineering

b) At Other Institutions:

12. Concrete Structures
13. Integrated Product Development
14. Quantitative Analysis for Business Managers
15. Differential and Integral Calculus
16. Statistical Analysis

JOURNAL PUBLICATIONS:

1. M. Roy & A. Roy (2021), "The Rise of Interdisciplinarity in Engineering Education in the Era of Industry 4.0: Implications for Management Practice" *IEEE Engineering Management Review,* Forthcoming.
2. M. Roy & A. Roy (2020) "The Evolution of Social Entrepreneurship Initiatives by Women in India: A Longitudinal Assessment Across Sectors," *International Journal of Social Entrepreneurship and Innovation*, Vol. 5, No. 4, pp. 277-293, Inderscience Publishers Ltd.
3. M. Roy & A. Roy (2019), "Nexus of Internet of Things (IoT) and Big Data: Roadmap for Smart Management Systems (SMgS)," *IEEE Engineering Management Review*, vol. 47(2), pp. 53-65.
4. M. Roy (2018), "Asia's Role in the Four Industrial Revolutions," *Education About Asia,* vol. 23, pp. 51-56, Association for Asian Studies.
5. A. Roy, P. Paul, M. Roy, and K. Mukhopadhyay (2018), "Mapping Confucian Values in the Context of Ethical Dimensions: Implications for Contemporary Business Practices," *Business and Professional Ethics Journal*, vol 37(2), pp. 181-212.
6. A. Roy and M. Roy (2015), "Antecedents and Consequences of Impending Population Implosion in the Developed World: Implications for Business Systems," *International Journal of Sustainable Society*, vol. 7(2), pp. 151-172.
7. A. Roy and M. Roy (2010), "Managing and Leveraging Poverty: Implications for Teaching International Business," *Journal of Teaching in International Business*, vol. 21, pp. 4-26.

8. A Roy and M. Roy (2010), "Reengineering an Urban Slum: A Case Study of Dharavi, India", *International Journal of Sustainable Society*, vol. 2(4), pp. 420- 437.
9. M. Roy (1995), "Theoretical and Experimental Study of Buckling of Built-up Column," *ASCE Journal of Engineering Mechanics*, 1995, vol. 121(10), pp.1200-1208.
10. M. Roy (1995), "Buckling Loads for Built up Columns with Stay Plates," *ASCE Journal of Engineering Mechanics,* 1995, vol. 121(11), pp.1200-1208.

BOOK CHAPTERS:

1. M. Roy (2021) "Solar as a Sustainable Energy," in *Encyclopedia of Sustainable Management*, Samuel O. Idowu and René Schmidpeter, Eds. pp. S1-6
2. M. Roy (2019), "Burr Truss Bridge" in *Technical Innovation in American History: An Encyclopedia of Science and Technology*, R. Welch and P. A. Lamphier, Eds. ABC-CLIO, vol.1, pp. 91-92.
3. M. Roy (2019), "Internal Combustion Engine" in *Technical Innovation in American History: An Encyclopedia of Science and Technology*, R. Welch and P. A. Lamphier, Eds. ABC-CLIO, vol.1, pp. 119-121.
4. M. Roy (2019), "Suspension Bridge" in *Technical Innovation in American History: An Encyclopedia of Science and Technology*, R. Welch and P. A. Lamphier, Eds. ABC-CLIO, vol.1, pp. 155-157.
5. M. Roy (2019), "Wind Energy," in *Technical Innovation in American History: An Encyclopedia of Science and Technology*, R. Welch and P. A. Lamphier, Eds. ABC-CLIO, vol. 3, pp. 242-244.
6. M. Roy (2018), "Population Growth," in *The SAGE Encyclopedia of Business Ethics and Society*, R. W. Kolb, Ed. Sage, pp. 2681-2685.
7. M. Roy (2018), "Technology Assessment," in *The SAGE Encyclopedia of Business Ethics and Society*, R. W. Kolb, Ed. Sage, pp. 3371-3372.
8. M. Roy (2018), "Workplace Safety," in *The SAGE Encyclopedia of Business Ethics and Society*, R. W. Kolb, Ed. Sage, pp. 3687-3688.
9. M. Roy (2018), "Diversity in the Workplace," in *The SAGE Encyclopedia of Business Ethics and Society*, R. W. Kolb, Ed. Sage, pp. 941-945.
10. M. Roy (2018), "Lean Manufacturing: Principles, Tools and Practices," in *Handbook of Research on Applied Optimization Methodologies in Manufacturing Systems,* B. Christiansen, Ed. Hersey, PA: IGI Global, pp. 334-352.
11. M. Roy and A. Roy (2015) "Identity, Marketing," in *The SAGE Encyclopedia of Economics and Society,* F. F. Wherry and J. B. Schor, Eds. Sage, pp. 901-904.
12. M. Roy and A. Roy (2015), "Quality of Life," in *The SAGE Encyclopedia of Economics and Society,* F. F. Wherry and J. B. Schor, Eds. Sage, pp. 1363-1367.
13. M. Roy (2012), "Clean Air Act" in *Encyclopedia of Consumption and Waste: The Social Science of Garbage*, C. A. Zimring and W. L. Rathje, Eds., SAGE, pp. 123- 125.
14. M. Roy (2012), "Rittenhouse Mill" in *Encyclopedia of Consumption and Waste: The Social Science of Garbage*, C. A. Zimring and W. L. Rathje, Eds., SAGE, pp. 760-762.
15. M. Roy and J. Coleman (2011), "Environmental Indicators," in *Green Business: An A-to-Z Guide*, P. Robbins and N. Cohen, Eds. SAGE.

TEST BANK:

Roy, M. (2016). Prepared the Test Bank for the Textbook, "*Product Design and Development,* 6th edition" by Karl T. Ulrich and Steven D. Eppinger, McGraw-Hill, Irwin.

WORK IN PROGRESS:

1. "Remote/Hybrid delivery of CE courses at UConn and the lessons learned," (co-authored with Jung, S. Motaref, S., and Roy, M)
2. "Making Cities Sustainable: Cases from around the World" (co-authored with Roy A)
3. "Convergent and Discriminant Validities of Sustainability Measures across Two Major Indices"

JOURNAL AND CONFERENCE REVIEWS:

- *IEEE Engineering Management Review Journal* (2019, 2020, 2021).
- *ASEE Annual Conference and Exposition* (2020, 2021)
- *International Journal of Space Structure* (2020)
- *California Management Review Journal* (2018)

CONFERENCE PROCEEDINGS:

1. "The Growth of Interdisciplinarity in Engineering Education in the 21st Century," Proceedings of the *Technological and Engineering Literacy/Philosophy of Engineering (TELPhE) Division for the 2021 ASEE Annual Conference and Exposition* (2021)
2. "Global Manufacturing Competitiveness and Environmental Performance Indices as Drivers of Competitiveness Ranking of Nations," *Proceedings of the American Society for Competitiveness Conference*, Washington DC., October 2019.
3. "The Role of Internet of Things (IoT) and Big Data as a Roadmap for a Smart Management System: Case Studies Across Industries," *Proceedings of the ASEE Annual Conference and Exposition*, Utah, June 2018.
4. "Redeveloping an Urban Slum: A Case Study and Macro-marketing Implications," *Proceedings of the Macro-marketing Society*, Clemson, SC, June 2008 [with A.Roy].

CONFERENCES/ SEMINARS/ WORKSHOPS ATTENDED:

- *Eastec Conference and Exhibition* in Spring 2019, Springfield, MA
- *North American Bitcoin and Blockchain Conference and Exhibition* in Spring 2019, Miami, FL
- *7th Annual Women in Manufacturing SUMMIT* in Fall 2017, Hartford, CT.
- *Inside 3D Printing Conference and Expo* in Spring, 2017, New York, NY.
- *President's series on Teaching Excellence* by Dr. Mitch Green in Spring 2017, Storrs, CT.
- *Manufacturing conference Mfg4* in Spring, 2016, Hartford, CT.
- *Entrepreneurship in Africa* Conference at Syracuse University, April 2010 Syracuse, NY.
- *Workshop, Political and Social Networks Conference and Workshop* at Harvard Kennedy School of Government in June 2009, Cambridge, MA.

Workshops attended at the Center for Excellence in Teaching and Learning at UConn:

- *DIY Closed Captioning & Creating Accessible Digital Content Workshop* by CETL, Spring 2021
- *Distance Learning Assessment Strategies*, *Using Student Response Systems in Synchronous Class Sessions,* and "*Assessment 2.0: Meaningful Assessment in Distance Education*, Fall 2020
- *Preparing for Distance Education* - A Short Course by CETL, Spring 2020
- Teaching Workshop: *Theater Delta*, and "*Teaching Philosophy" statement workshop* by CETL, Fall 2019
- *Faculty Teaching Workshop* on Helping STEM students to develop high level skills in Fall 2017.

SERVICE:

A. Professional Contribution:

Reviewer/ Panelist:

- Reviewed articles for *Engineering Management Review* (2019-2020, 2020-2021), *Engineering Management Division for the 2020 ASEE Annual Conference and Exposition* (2019-2020, 2020-2021), for *International Journal of Space Structure* (2020) and for the *California Management Revie*w (2018-2019)
- Served as a panelist for the Civil Engineering Discipline of the NSF Graduate Research Fellowship Program in 2019
- Served as a panelist for the Mechanical and Operation Research Disciplines of the *NSF Graduate Research Fellowship Program* in 2018

Conference Presentations at the National Level:

- ASEE Annual Conference and Exposition in June 2021
- Presented at American Society for Competitiveness Conference in Fall 2019
- ASEE Annual Conference and Exposition in June 2018

B. Institutional Contribution:

Committee member:

- Teaching Observation Committee (2020-2021)
- Community of Practice (2020 - present)
- Undergraduate Curriculum and Course (C&C) (2019-2020)
- Structural Engineering and Applied Mechanics (STAM) (2019-present)
- Women in Math, Science & Engineering (WIMSE) (2015-present)

Reviewer/Judge:

- One of the Judges for Senior Design Projects for CEE department (2020-2021)
- One of the Judges for Senior Design Projects for MEM Program (2015 – Present)

Advisor/Mentor:

- Guided Honors Conversion projects for 16 students from CEE Department and MEM Program (2015 - Present)
- Advised two teams for MEM Senior Design Projects, 2020-2021
- Provided mentorship interviews to several students in one-to-one and group settings (2016-present)

Speaker/Coordinator/Event Organizer:

- Guest Speaker “Developing a unified undergraduate engineering statistics course” in Spring 2021
- Participated as one the Speakers in the Mentor Day activities in Spring 2021
- Presented in a Faculty Speaker series in Orientation to Engineering course in 2017
- Presented Sponsors for Senior Design Projects and introduced Program Director for MEM Annual Banquet in 2018
- Coordinated students in Undergraduate Commencement Ceremony as a Commencement Marshall for MEM Program in 2018

- Organized Manufacturing Day Events tours and accompanied students from Mechanical Engineering and MEM students to *JVS* in 2016, 2017
- Organized Demo Day event for MEM Program in 2018
- Organized MEM Program booth for Connecticut Invention Convention Event, 2017, 2018

Other Events:

- Volunteered in Student Advising in Spring 2021
- Participated in New Faculty appointment process in CEE Department (2020-2021)
- Prepared documents for my courses to support ABET accreditation.
- Attended faculty meetings for School of Engineering, Civil and Environmental Engineering Dept., MEM Program and APIRs, 2015-2020.
- Attended Career Fairs, Department Seminars, Undergraduate Award Distribution event, and Open houses for MEM Program, 2015-2020
- Accompanied students to *Mastercam* and *Dymotek* on Manufacturing Day Events in 2017, and ACM Workforce Fair Event in 2017

C. Public and Community Service:

- UConn Community Events:
  - ◊ Faculty and Staff of Color End of Year Celebration, Spring 2021
  - ◊ Opening Ceremony for the Black History Month, Spring 2021
  - ◊ Engineers Week Celebration, Spring 2020
  - ◊ Annual Open Houses and Holiday Celebration from CETL Spring 2018, 2019
  - ◊ Inauguration of University President Thomas Katseoulas, Fall 2019
  - ◊ UConn NSBE Chapter Reception Celebrating the 50th Anniversary of the African American Cultural Center, Spring 2018
  - ◊ Annual Faculty/Staff and Students Coffee house meeting, Fall 2017, and 2016
  - ◊ Farewell to Provost Mun Chio and Mei Wei, Spring 2017
  - ◊ WIMSE meetings and Annual Banquet, 2015-2020
  - ◊ Spring Gathering at the Nathan Hale Inn organized by the African American Faculty and Staff Association, The Asian American Faculty and Staff Association, The Association of Latina/o Faculty and Staff and Graduate Student of Color Association in Spring 2017
- Served as one of the Judges for 3D printing competition for *Access Independence* in 2017

HONORS/CERTIFICATE/GRANTS:

- Awarded *UNH-Integrated E-Learning Modules Mini-Grant*, University of New Haven (KEEN & Connecticut Innovations), University, Spring 2018
- Received Travel Grants for presenting and attending conferences in 2019, 2018, 2017
- Guided two teams to win first & third prizes in 2018-2019, and three teams to win first, second, and third prizes in 2017-2018 for senior design annual competition

- Selected as a Commencement Marshall at the Commencement Ceremony for Management and Engineering for Manufacturing (MEM) Program, 2018
- Received letter of recognition for Excellence in Teaching from office of the Provost at University of Connecticut in 2016
- Runner up for "Modernizing Dharavi: If you build, will they come?" with A. Roy in *Oikos Case Writing Competition* in Corporate Sustainability Track in 2013

SOFTWARE SKILLS:

SolidWorks, *STAAD, RAM, MATLAB, AUTOCAD*, *R, UCINET, SPSS*

PROFESSIONAL LICENSURE AND MEMBERSHIP:

PE in Civil Engineering
American Society of Civil Engineers (ASCE);
Association of Engineering Education (ASEE)
Society of Manufacturing Engineers (SME)
Institute of Electrical and Electronics Engineers (IEEE)