

Makarand (Mark) Hastak, Ph.D., PE, CCP

Professor and Head of Construction Engineering & Management
Professor of Civil Engineering
Purdue University

CONTACT INFORMATION

WORK

Division of Construction Engineering & Management
PURDUE UNIVERSITY
550 Stadium Mall Drive, West Lafayette, IN 47907-2051
(765) 494-0641 (W); (765) 430-1981 (C); hastak@purdue.edu
URL: <https://engineering.purdue.edu/CEM>

HOME: 812 Warrick Street, West Lafayette, IN 47906. Ph: (765) 464-8422

EDUCATION

DEGREES

PhD	1994	Civil Engineering (CEM), Purdue University
MS	1991	Civil Engineering (CEM), University of Cincinnati
BE	1987	Civil Engineering, Nagpur University (India)

ADVANCED PROFESSIONAL CERTIFICATES

Certificate	2015	SCUP Planning Institute (including Step I, II, and III workshops for Integrated Planning in Higher Education), The Society for College and University Planning (SCUP) (Step III completed in January 2015).
Advanced Certificate	2014	Strategic Human Resource Management , 12-week Certificate Program, Cornell University (Completed in August 2014)
Certificate	2014	Financial Management , 12-week Certificate Program, Cornell University (Completed in April 2014)
Certificate	2014	Executive Leadership , 12-week Certificate Program, Cornell University (Completed in February 2014)

LEADERSHIP AND ADMINISTRATIVE ACTIVITIES

2014-Present	Member	President's Council on Budget and Affordability, Purdue University
2007-Present	Head	Division of Construction Engineering & Management, College of Engineering, Purdue University.
2013-2016	Past-Chair	Global Leadership Forum for Construction Engineering and Management Programs
2007-2016	Editor-in-Chief	AACE Skills and Knowledge of Cost Engineering, 6 th Ed (Published) and CCP Certification Study Guide, 2 nd Ed.(Published)

2009-2015	Editor-in-Chief	ASCE Journal of Management in Engineering
2013-2014	Fellow of the American Council on Education (ACE) 2013-14	Office of the Vice President, Division of Planning and Budget, Cornell University, Ithaca, NY
2011-2012	Chair	ASCE Construction Research Congress
2010-2013	Chair and Founder (GLF-CEM)	Global Leadership Forum for Construction Engineering and Management Programs
2008-2012	Chair and Past-Chair	National Consortium of Housing Research Centers (NCHRC)
2003-2012	Research Director for Manufactured Housing	Purdue Housing Research Center

ACADEMIC POSITIONS

2011-Present	Honorary Chair Professor	Civil Engineering/Construction Management, Tsinghua University, Beijing, China
2007-Present	Professor and Head	Division of Construction Engineering & Management, Purdue University
2007-Present	Professor	Civil Engineering, Purdue University
2004-2007	Associate Professor	Civil Engineering as well as Construction Engineering & Management, Purdue University
2001-2004	Assistant Professor	Civil Engineering as well as Construction Engineering & Management, Purdue University (Joint Appointment)
1998-2001	Assistant Professor	Civil Engineering, University of Cincinnati <i>Program Coordinator: Construction Engineering & Management</i>
1995-1998	Assistant Professor	Civil Engineering, Polytechnic University (now NYU Tandon School of Engineering) <i>Program Coordinator: CEM and Exec 21 Programs</i>
1994-1995	Post-Doctoral Fellow	Civil and Environmental Engineering, Georgia Institute of Technology
1991-1994	Graduate Assistant	Civil Engineering/Construction Engineering & Management, Purdue University
1989-1991	Graduate Assistant	Civil Engineering, University of Cincinnati
1987-1989	Assistant Design Engineer	STUP Consultants Ltd., New Delhi, India

LICENSES AND REGISTRATIONS

Professional Engineer (Civil), Indiana, 2011 (# PE11100350)
Certified Cost Professional (CCP), 1996 (# 1902)
Instructor – Real Estate-CE, 2006, (# INST000644 – Expired 2013)

FELLOW OF THE AMERICAN COUNCIL ON EDUCATION (ACE) (2013-14) - FOCUS AREAS

The ACE Fellowship, initiated in 1965, is the nation's premier higher education leadership development program. During my fellowship year, I worked at Cornell University with the leadership team of then President David Skorton and Provost Kent Fuchs focusing on:

- **University Governance** (*management issues and decision making*)
- **Public Private Partnerships (PPP) in Academia** (*applications and the pros and cons*)
- **Engaged Institution** (*at the local, state, national and global levels*)
- **Planning & Budgets (RCM and Deferred Maintenance)** – *Analyzed the impact of the Administrative Streamlining Process and the modified RCM based new budget model.*

ACHIEVEMENTS AS HEAD OF CONSTRUCTION ENGINEERING & MANAGEMENT (CEM)

- ❖ **An independent academic unit within the College of Engineering**
 - Degree Program: BS in Construction Engineering
 - Graduate Degrees (MS/PhD) offered through Graduate School
 - The CEM program is based on experiential learning and requires students to complete three 12-week paid internships.
 - One of the earlier ABET accredited programs (established in 1976) and many new programs have emulated our model.
 - While construction engineering is not ranked separately by USN&WR, we are considered as one of the top CEM programs in the country (and around the world) for both UG and Graduate education and research.
- **IMPROVEMENTS TO TEACHING/LEARNING AND STUDENT OUTCOMES**
 - ❖ **Developed Study abroad programs** for CEM students
 - ❖ **Established a Minor** in CEM for all undergraduate majors in engineering
 - ❖ **Led the Division through two successful ABET reviews** and preparations (2007 and 2013) and successful external peer review (2009)
 - ❖ **Provided leadership and vision** in redefining Construction Engineering education - highlighting the multidisciplinary nature of the construction industry, curriculum enhancement, student mentoring, and pedagogical improvements.
 - Implemented a number of new undergraduate and graduate level courses.
 - Pursuing an e-learning initiative through innovative use of Pad technology for enhancing classroom delivery of lecturers.
 - Developed a plan for mentoring CEM undergraduate students at multiple levels: faculty advisors, Internship staff, and Industry mentors.
 - We have had 100% placement of our graduating seniors for most of the past 20+ years that we have kept track.
 - Over 80% of the PhD graduates specializing in CE/CEM from our program have obtained faculty positions in the US and overseas.
 - Restructured the Industry Advisory Board to include 22 Companies.
 - Appointed a task force to establish a procedure to benchmark Purdue CEM program against similar programs around the country.
 - Initiated and produced a program marketing video

- Increase in number of faculty serving as editors, associate editors, and on editorial and other professional boards, as well as chairing professional groups at the national level.
- Integrated many of the attributes of the Engineer of 2020 in the CEM curriculum.
- Redefined the Senior Design Course as well as other project based courses to focus on open-ended community based project.
- Attracted faculty from other areas including NE and ME on courtesy appointments
- Redefining the core curriculum to incorporate interdisciplinary courses.
- Integrated Engineering Projects in Community Service (EPICS) as a 2-semester technical elective at the junior level.

– **ENHANCEMENTS TO THE RESEARCH AND WORK ENVIRONMENT**

❖ **Global Collaborations**

- Initiated research collaborations and faculty/student exchange discussions with multiple universities around the world. As a result:
- Increase in visiting scholars from China, South Korea, Taiwan, Egypt, and Italy.
- Tsinghua University in China bestowed an Honorary Chair professorship upon me
- Increase in faculty invitations to give lectures and keynote addresses around the world as well as global research and engineering partnerships
- Additional collaborative links with multiple universities around the world
- We have initiated shared student advising for MS/PhD collaboration between Purdue CEM faculty and faculty from our global partner universities.

❖ **Establishing a university-industry consortium (EPCOM) for Facility Delivery Work Process Improvement**

- Engaging faculty, students, and industry professionals as experts in creating and disseminating knowledge through industry outreach, research, and training.

❖ **Facilitating research** through the Division by taking and encouraging multidisciplinary initiatives.

- Facilitate faculty engagement in joint proposal activities with colleagues in other Colleges and areas of engineering.
- Joint or courtesy faculty appointments to facilitate collaborative research activities that will help grow the research enterprise.
- Facilitated flow of research funds through the Division business office. Resulting in reduced burden on the PIs in terms of AY contribution and overhead return.
- Faculty, particularly junior faculty are encouraged to undertake interdisciplinary collaborative research.

- ❖ **Served as Research Director**, Purdue Housing Research Center. Provided leadership in setting the research agenda for the center and also representing the center at the NCHRC meetings
- ❖ **Recruited** seven new faculty and six staff positions to the Division as well as four courtesy appointments from different schools of engineering at Purdue over the past ten years.
- ❖ **Faculty and staff development initiatives**
 - Encouraged and supported faculty leadership roles in professional societies and scholarly journals as Editors and Associate Editors.
 - I conduct regular performance review of faculty and staff through one on one meetings.
 - All staff and faculty are encouraged and supported for professional development
 - The student advising in the CEM division has been divided into three categories (a) academic advising (performed by advising staff), (b) career advising (performed by tenure track faculty), and (c) Industry mentors (through three,12 week paid internships).
- ❖ **Managing “Emerging Construction Technologies (ECT)” portal**
 - This website documents information on innovative technologies in construction
 - The ECT website attracts on an average 10,500 hits per month from industry professionals around the world (<http://wpvcemweb02.itap.purdue.edu/ect/default.aspx>)
- ❖ **Initiated and developed the “Academic Breakthroughs in CEM” portal** (<http://wpvcemweb01.itap.purdue.edu/phd2>)
 - The “Academic breakthroughs in CEM” website documents PhD research in CEM from around the world creating a repository of latest development in construction research.
- ❖ **Developed a portal for Construction Industry Health Index** called *Pi-C* (Purdue Index for Construction)
 - The Pi-C index provides a status on the health of the construction industry based on the analysis of several published metrics such as volume of work, labor statistics, etc. (<http://wpvcemweb01.itap.purdue.edu/CEM/Pi-C>)
- **GROWTH/ENHANCEMENT IN THE ENGAGEMENT AND OUTREACH SPACE**
 - ❖ **Global Leadership:** Founder and Chair of GLF-CEM - the Global Leadership Forum for CEM Programs (<http://wpvcemweb01.itap.purdue.edu/qlf/default.aspx>)
 - Resulted in global impact through innovation and community engagement. Leadership in CEM education model for the changing global profession.
 - Initiated in 2010 - This forum established a global body of academic leaders in the area of CEM to exchange experience in administration, research, as well as teaching and learning.
 - The GLF-CEM Forum is held every year at different member universities around the world
 - Current membership of over 60 Universities from around the world
 - ❖ **National Leadership:** Chair of ASCE Construction Research Congress (CRC 2012). An annual event sponsored by ASCE Construction Institute.

- Organized the very first green and paperless international construction research congress (CRC) at Purdue University, May 21-23, 2012.
- Each attendee received an android Pad and was able to download the papers and the presentations from the web.
- Developed an app to annotate presentations with notes while attending the session. This innovation is currently being marketed through 3-iD a CEM affiliate.
- Engaged all our PhD students in the conference activities as “Assistant Track Chairs (ATC)” with responsibility to assist the track chairs in effectively running their sessions.
- CRC 2012 conference at Purdue attracted over 450 participants from the US and around the world. One of the largest participated event in the history of CRC event.
- ❖ **Chair of the National Consortium of Housing Research Centers (NCHRC).**
 - Provided leadership for ~15 housing research centers in the country.
 - Represented the NCHRC at the National Association of Home Builders (NAHB), NAHB-Research Center, HUD, and other government agencies.
 - Provided leadership in setting the research agenda for the consortium.
- ❖ **Editor-in-Chief (2009-2015), ASCE Journal of Management in Engineering.**
 - Significantly improved the Annual Impact Factor from 0.54 to 1.88;
 - Quarterly to bi-monthly
 - One of the best Construction related ASCE journals
 - Increased paper submission; reduced cycle time from an average of 18 months to 9 months for initial submission to publication of an article.
 - Enhanced the Editorial Board by recruiting new members
- ❖ **Editor-in-Chief (2007-2016), AACE Skills and Knowledge of Cost Engineering, 6th Ed (S&K-6, Published) and CCP Certification Study Guide, 2nd Ed. (CCP-CSG-2, Published).**
 - S&K-6 is a premier reference for cost engineering professionals while CCP-CSG is a reference for those wanting to take the Certified Cost Professional (CCP) certification exam.
 - Provided leadership in organizing the team of volunteer champions and authors for the diverse subject matter covered in these books and the subsequent delivery and publication.
- ❖ **Alumni events** at multiple locations within the country
 - Organized periodic CEM alumni events in Chicago, Indianapolis, Houston, Atlanta, Denver, and LA to cultivate the alumni base for future giving. Similar events are being planned for other locations in the country.
- ❖ **Strategic Planning:** Successfully developed a 5-year strategic plan for the CEM Division by
 - Involving all stakeholders including students, alumni, industry, staff, and faculty
 - Redefining the vision and mission statements for the Division
 - Establishing an implementation and assessment plan with faculty and industry champions

- ❖ **Championed development efforts** with alumni and benefactors resulting in gifts and endowments for scholarships, fellowship, and program development
 - Endowment and Scholarship Funds established during my tenure are in excess of \$6.0 M and a few more initiatives are in progress.
- ❖ **Championed the development of Industry contacts** and enhancement of the Internship Program. Our UG Degree program has a three 12-week internships requirement.
 - About 180 companies have worked with the division over the past 40 years. Every summer we place approximately 100+ students with over 35 sponsor companies.
 - Reformulated and expanded the CEM Industry Advisory Board to include 22 companies.
- ❖ **Initiated Expo:** Organized the “Spirit of Construction Engineering @ Purdue – Industry Expo” from 2007-2009 to showcase the construction industry for freshmen and upperclassmen students as well as high schools students interested in a career in construction.
 - Over 15 companies were in attendance each year it was offered
 - The event regularly attracted between 150-200 students.
- ❖ **Budget and Fiscal Management:** Successfully managing the administrative and fiscal responsibilities of the Division.
 - Effective budget management and cost control year after year
 - Generated additional revenue streams through service agreement with a university overseas and through the Spirit of CEM Fund.
- ❖ **Brand Management:** Hired a Media Coordinator to help us manage and promote the CEM brand within and outside Purdue, including:
 - Social media outlets for the CEM Division, such as Facebook, Twitter, and Instagram
 - CEM Newsletter
 - Newsfeed for all promotable activities within the Division.

HONORS AND AWARDS

- **Brian D. Dunfield Educational Service Award** (2017), Association for Advancement of Cost Engineering (AACE) International, Morgantown, WV.
- **Distinguished Visiting Professor** (May 15-19, 2017), General Tedeusz Kosciuszko Military Academy of Land Forces, Wroclaw, Poland.
- **Best Peer Reviewed Paper Honorable Mention** (2016) “Exploratory Framework for Application of Analytics in the Construction Industry.” *ASCE Journal Management in Engineering*.
- **Highly Commended Award Winner** at the Literati Network Awards for Excellence. (2011). “Impact of Flood Damaged Critical Infrastructure on Communities and Industries,” *Journal of Built Environment Project and Asset Management, Emerald Group Publishing Ltd, UK*.
- **Highly Commended Award Winner** at the Literati Network Awards for Excellence (2010). “Disaster impact analysis based on inter-relationship of critical infrastructure and associated industries: A winter flood disaster event” *International Journal of Disaster Resilience in the Built Environment, Emerald Group Publishing Ltd, UK*.
- **Academic Keys Who's Who** in Engineering Higher Education (WWEHE), 2007

- **Scholar-in-Residence** at the National Association of Home Builders (NAHB) Research Center, Upper Marlboro, Maryland, May 29 – July 20, 2006.
- **Roy E. and Myrna Wansik Civil Engineering Research Award** (2006) in recognition of outstanding research in the School of Civil Engineering, Purdue University.
- **Who's Who in Engineering Education** (WWEE), 2002 edition
- **Academic Achievement Award** given by Construction Management Association of America (CMAA), NY/NJ Section for *Exec 21* program established at Polytechnic University in conjunction with colleagues, Polytechnic University (1997). *Exec 21* is a certificate program for executive training in construction engineering and management.

MAJOR ADMINISTRATIVE AND COMMITTEE ROLES

CORNELL UNIVERSITY (2013-14)

- Fellow of the American Council on Education, Office of the Vice President, Division of Planning and Budget (2013-2014)

PURDUE UNIVERSITY (2001-PRESENT)

University

- Member, President's Council on Budget and Affordability (2014-Present)

College of Engineering

- Member, Engineering Leadership Team (2007- Present)
- Member, Engineering Heads Committee (2007- Present)
- Member, Engineering Finance Committee (2007-2010)
- Member, Engineering Facilities Planning Committee (2008-2015)
- Member, Engineering Research Committee (2009-2015)

Construction Engineering and Management

- Head, CEM (2007- Present)
- Coordinator of the CEM Program (Aug 2006 – Dec 2006)
- Chair, CEM Faculty Search Committee (Opportunity Hire) (2005-2006)
- Member, CEM Head Search Committee (2005-2006)

Civil Engineering Committees

- Member, Committee for Graduate Studies (2006)
- Coordinator of Graduate Admissions, CEM Division (2006)
- Member, Undergraduate Curriculum Committee (2005-2006)
- Acting Member, Committee for Graduate Studies (2003-2004)
- Acting Coordinator of Graduate Admissions, CEM Division (2003-2004)

UNIVERSITY OF CINCINNATI (1998-2001)

- Coordinator of Construction Program (1998-2001)
- Advisor Class of 2003 (1998-2001)
- Member, Committee for Integrated Design Sequence (2000-2001)
- Member, Committee for Graduate Studies (2000-2001)
- Member, Undergraduate Curriculum Committee (2000-2001)
- Member, ABET Focus Group (2000-2001)

NYU-TANDON SCHOOL OF ENGINEERING (PREVIOUSLY POLYTECHNIC UNIVERSITY) (1995-1998)

- Member, Undergraduate Curriculum Committee (1995-1998)
- Member, Graduate Curriculum Committee (1995-1998)
- Coordinator of Construction Programs; CEM (1996-98) and Exec 21 (1997-98)
- Chair, Committee for Department Promotion and Outreach (1996-1998)

- Founder and faculty advisor, CMAA Student Chapter (1996-1998)
- Project Manager, Department Co-op Program Initiative (1996-1998)
- Member, Department Facilities Committee (1996-1998)
- Manager and Developer of Department Budget Analysis System (1996-1998)
- Team Member, Department Distance Learning Initiative (1996-1998)

ADDITIONAL SERVICE TO GOVERNMENT OR PROFESSIONAL ORGANIZATION

- Reviewer: (i) Research Grants Council, Hong Kong, China (2000 – Present); (ii) Research Committee, City University of Hong Kong, China (2003); (iii) Natural Sciences and Engineering Research Council (NSERC) of Canada (2007-Present); (iv) NSF Review Panels (2001; 2010)
- Reviewer of ASCE Journals: (a) Construction Engineering & Management; (b) Computing in Civil Engineering; (c) Management in Engineering; (d) Infrastructure Systems, (e) Transportation Engineering
- Reviewer: (a) Journal of Computer-Aided Civil & Infrastructure Engineering, (b) International Journal of Automation in Construction, (c) Journal of Decision Systems, (d) AACEI Cost Engineering Journal, (e) Canadian J. of Civil Engineering
- Member, Editorial Advisory Board, International Journal of Disaster Resilience in the Built Environment, Emerald Group Publishing Ltd., UK.
- External program evaluator for the Commission for Academic Accreditation (CAA) of the Ministry of Higher Education and Scientific Research in the United Arab Emirates for the University of Sharjah (December 2012).
- Organized a session on Analysis of Rehabilitation Needs and Maintenance Strategies at the International Association for Life-Cycle Civil Engineering (IALCCE) 2012 conference, October 3-6, Vienna, Austria.
- Member of the International Disaster and Risk Conference (IDRC) Scientific Committee, IDRC 2012, 2014, 2016 Davos, Switzerland

MEMBERSHIP AND LEADERSHIP ROLES IN ACADEMIC, PROFESSIONAL AND SCHOLARLY SOCIETIES

Global Leadership Forum for Construction Engineering and Management Programs

2010-Present	Member ExCom, GLF-CEM.
2014-2016	Past Chair, GLF-CEM.
2012	Forum Chair, <i>GLF-CEM 2012</i> , Purdue University.
2011	Forum Chair, <i>GLF-CEM 2011</i> , Purdue University.
2010-2013	Founding Chair, GLF-CEM.

American Society of Civil Engineers (ASCE)

2010-2012	Chair, ASCE 2012 <i>Construction Research Congress</i> , Purdue University.
2009-2015	Editor-in-Chief, ASCE <i>Journal of Management in Engineering</i> .
2008-Present	Member (288614)
2007-Present	Member, Construction Engineering Education Committee
1997-2001	Member, Computing in Construction (CIC)
1997-1998	Member, National Task Committee on Continuing Professional Development/Education in the Professional Practice Area of ASCE
1994-Present	Member, Construction Research Council (CRC)
1990-2008	Associate Member

The Association for the Advancement of Cost Engineering (AACE International)

2007-2016	Editor-in-Chief, Skills and Knowledge of Cost Engineering, 6th Ed. (Published) and CCP Certification Study Guide, 2nd Ed. (Published)
2006-Present	Full Member, Academic Council
2004-2016	Full Member, Education Board
2004-2008	Member, Grant Funding Task Force
2003-2004	Contributing Member, Education Board
1990-Present	Associate Member (03681)

Construction Industry Institute (CII)

2015-2016	Chair, Academic Committee Subcommittee on Webinars
2012-2014	Member, CII Project Team 307 – <i>Mitigating Threats of Counterfeit Materials in the Capital Projects</i>
2006-2008	Member, CII Project Team 241 – <i>Maximizing the Value of Construction in Pre-Project Planning</i>
2005-2016	Member, Academic Committee
2004-2006	Member, CII Project Team 214 – <i>Cost Schedule Tradeoff</i>
2002-2004	Member, CII Project Team 193 – <i>Radical Reduction in Project Cycle Time</i>
2000-2007	Member, Globalization Committee
1998-2001	Member, CII Research Team 154 – <i>Electronic Simulation in Construction</i>
1994-1995	Research Associate, CII RT 112 – <i>A Framework and Practices for Cost-Effective Engineering in Capital Projects in the A/E/C Industry</i>
1992-1993	Research Assistant, CII Research Team 90 – <i>The Future Needs of the Construction Industry's Worldwide Customers</i>

National Consortium of Housing Research Centers (NCHRC)

2010-2012	Past-Chair of NCHRC
2008-2010	Chair of NCHRC
2006-2008	Secretary of NCHRC
2001-2012	Member, representing Purdue Housing Research Center

Chi Epsilon (Civil Engineering Honor Society)

2004-Present	Member
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Construction Management Association of America (CMAA)

1996-1998	Academic Member
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Allied Construction Industry Education Committee, Cincinnati, Ohio

1999-2001	Member
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INVITED LECTURES AND KEYNOTE PRESENTATIONS

1. "Decision Support Methods in Project Management." **Invited Speaker** at the 5th Annual Canadian Construction Research Forum, University of Alberta, Edmonton, Alberta, Canada. October 5-6, 1998.
2. **Invited Speaker**, Forum on *Emerging Trends in Construction Technology*, Sponsored by Indiana Construction Roundtable, Indianapolis, IN. January 23, 2002.
3. "Cost Effective Management & Maintenance of Urban Infrastructure" **Invited Speaker** at the National Institute of Construction Management & Research (NICMAR), Pune, India, Oct 17, 2005.

4. "A Decision Support System for Infrastructure Rehabilitation Planning" **Invited speaker** at the International Infrastructure Management Seminar, organized by the Korean Institute of Construction Technology (KICT), Seoul, Republic of Korea, Nov 28, 2005.
5. "Infrastructure Risk Management in Preparedness of Extreme Events." **Keynote Speaker** at the ICCEM & ICCPM 2009, The 3rd International Conference on Construction Engineering and Management, The 6th International Conference on Construction Project Management, Global Convergence in Construction, Jeju, Korea, 27-31 May 2009.
6. "Post Disaster Housing – A U.S. Perspective." **Invited Speaker** at the International Symposium on Wenchuan Earthquake Reconstruction Efforts (ISWERE), Dujiangyan City, Sichuan Province, China, September 11-13, 2009
7. "Challenges in Infrastructure Management" **Invited speaker** at the International Infrastructure Asset Management Seminar, organized by the Korean Institute of Construction Technology (KICT), Seoul, Republic of Korea, Nov 19, 2010.
8. "Impact Analysis of Natural Disasters on Critical Infrastructure, Associated Industries, and Communities." **Public Lecture**, Hong Kong Polytechnic University, Hong Kong, June 22, 2011.
9. "New Trends and Challenges in Civil Engineering." **Keynote Speaker** at the 10th International Congress on Advances in Civil Engineering, October 17-19, 2012, Ankara, Turkey.
10. "Sovereign Disaster Risk and Critical Infrastructure Management for Developing Countries." **Keynote Speaker** at the 2nd International Conference on Sustainable Built Environment (ICSBE 2012), December 14-16, 2012, Kandy, Sri Lanka.
11. "Risk Management and Profitability in Construction." **Invited Lecture** organized by the Institute for Lean Construction Excellence (ILCE) at IIT Delhi (Dec 13, 2012) and at the Chamber of Commerce, Mumbai, India (Dec 21, 2012).
12. "Construction Project Delivery Methods in the US." **Invited Speaker** at the Department of Civil Engineering, College of Engineering Pune, Pune, India (Dec 20, 2012).
13. "Effective Debris Management for a Resilient Community." **Keynote Speaker** at the 7th International Structural Engineering and Construction Conference (ISEC-7), June 18-23, 2013, Honolulu, Hawaii.
14. "Infrastructure & Resource Planning Perspective to Make Communities More Resilient to Natural Hazards." **Invited Lecture** at Guizhou Institute of Technology, Guizhou, China, July 15, 2013.
15. "Strategic Capacity Building for Making Communities more Resilient to Natural Hazards," **Invited Lecture** at the Korean Institute of Construction Technology (KICT), Seoul, Republic of Korea, July 23, 2013.
16. "Planning of Multiyear Optimal Rehabilitation Strategies for Infrastructure," **Invited Lecture** at the Korean Institute of Construction Technology (KICT), Seoul, Republic of Korea, July 23, 2013.
17. "Profitability and Risk in Construction," **Invited Lecture** at Yonsei University, Seoul, Republic of Korea, July 23, 2013.
18. "Strategic Capacity Building for Making Communities more Resilient to Natural Hazards." **Invited Speaker** at the Stellenbosch University, South Africa, May 7, 2014.
19. "Capacity Building and Resilience for Disaster Risk Reduction." **Invited Speaker** at the Innovation in Construction Forum 2014, University of Alberta, June 4-5, 2014, Edmonton, Canada.

20. "Ex-Ante Infrastructure Capacity Building for Improving Community Resilience to Natural Disasters." **Keynote Speaker** at the First International Conference on Infrastructure Failures and Consequences (ICIFC), July 16-20, 2014, Melbourne, Australia
21. "Ex-Ante Infrastructure Capacity Building for Improving Community Resilience to Natural Disasters." **Invited Speaker** at the 3rd National Symposium on Engineering Risk & Insurance Research, August 1-3, 2014, Yichang, China.
22. "A System of Systems Approach to Profitability Analysis of Construction Companies." **Keynote Speaker** at the 19th International Symposium on the Advancement of Construction Management and Real Estate (CRIOCM 2014), Nov 8-9, 2014, Chongqing, China.
23. "Optimal Capacity Building - A Post Disaster Recovery Perspective." **Invited Speaker** at the Indian Institute of Public Administration (IIPA), Dec 15, 2014, New Delhi, India.
24. "Profitability Analysis of Construction Companies." **Invited Speaker** at the RICS School of Built Environment, Amity University, Dec 16, 2014, New Delhi, India.
25. "Enhancing Post Disaster Recovery by Optimal Infrastructure Capacity Building." **Keynote Speaker** at the Professional Engineers: Challenges in Disaster Management Conference, Dec 18-19, 2014 at GITAM University campus, Visakhapatnam, India.
26. "An Approach towards Expediting Post Disaster Community Recovery." **Invited Speaker** at the International Conference on Disaster and Safety Management of Water Infrastructure for Safe Korea." March 26, 2015, Daejeon, South Korea.
27. "A Model for Profitability Analysis of a Construction Company." **Invited Speaker** at the 2015 Global Leadership Forum for CEM Programs (GLF-CEM 2015), June 5-7, 2015, Weimar, Germany.
28. "Optimal Capacity Needs for Community Resilience during Post Disaster Recovery." **Keynote Speaker** at the 5th Building Resilience Conference." July 15-17, 2015, Newcastle, Australia.
29. "Post Disaster Capacity Needs for Improving Community Resilience." **Keynote Speaker** at CONSTRUCT15. July 28-31, 2015, Perth, Australia.
30. "Emerging Careers in Engineering." **Invited Speaker**, Education and Health International (EHI) Science, Technology, Engineering, and Math (STEM) Symposium. New Delhi, India, November 22, 2015.
31. "Purdue Index for Construction (Pi-C): The need for Construction Performance Review and International Benchmarking." **Invited Speaker**, First International Construction Innovation Conference. The University of Hong Kong, Hong Kong, December 16, 2015.
32. "The Role of Infrastructure in Improving Resilience of Disaster Affected Communities." **Keynote Speaker**, WBC 16, CIB World Building Congress, Tampere, Finland, May 30-June 3, 2016.
33. "The Role of Infrastructure Capacity in Building Resilience for Disaster Affected Communities," **Keynote Speaker**, 12th International Conference of International Institute for Infrastructure Resilience and Reconstruction (IIIRR), August 5 - 7, 2016, Peradeniya, Sri Lanka.
34. "Improving Building Industry Resilience through Strain Capacity Analysis," **Keynote Speaker**, BRANZ NSC: Building better homes, towns, cities, 6th Building Resilience Conference, September 7-9, 2016, Auckland, New Zealand.
35. "Theory of an Intelligent Planning Unit (IPU) for the Complex Built Environment." **Keynote Speaker** at the 21st International Symposium on the Advancement of Construction Management and Real Estate (CRIOCM 2016), Dec 14-16, 2016, Hong Kong.

36. "Role of Infrastructure in Mitigating Risk from Natural Hazards" **Invited Speaker** at the National Institute of Construction Management & Research (NICMAR), Pune, India, July 25, 2017.
37. "Global Challenges in Infrastructure Management" **Invited Speaker** at the JSPM's Rajarshi Shahu College of Engineering at Tathawade, Pune, India, July 26, 2017.
38. "Theory of an Intelligent Planning Unit (IPU) For Lean Construction of Complex Built Environment" **Keynote Speaker** at the Indian Lean Construction Conference (ILCC 2017), IIT Madras, July 28-29, 2017.

GRANTS AND CONTRACTS

1. Towards a Resilient Grid: An Investment Prioritization Decision Framework that Integrates the Growing Risks of Severe Weather- Induced Outages. Aug 2017-July 2020, National Science Foundation (NSF – Final Approval Pending), \$468,851 (M. Hastak, PI, Roshnak Nateghi Co-PI, Wallace Tyner, Co-PI)
2. Simplified Construction Scheduling for Field Personnel – SPR 3907, Jan 2015 – April 2016, Joint Transportation Research Program (JTRP), \$85,000 (M. Hastak, PI).
3. Intelligent Compaction of Asphalt Pavement Implementation – SPR 3804, Oct 2013 – Feb 2015, Joint Transportation Research Program (JTRP), \$50,000 (M. Hastak, PI).
4. Enhanced Treatment Selection for Reflective Joint Cracking in Composite Pavements (PHASE-2) – SPR 3626, Jan 2013 – Apr 2014, Joint Transportation Research Program (JTRP), \$55,000; Extension granted for May 2014 – Apr 2015 for \$49,500; Second Extension granted from May 2015-Aug 2015 for \$14,777 (M. Hastak, PI).
5. Mitigating Threats of Counterfeit Materials in the Capital Projects (RT307), Sept 2012 – August 2014, Construction Industry Institute (CII), \$255,000 (M. Hastak, PI, Sanjiv Gokhale, Vanderbilt Co-PI, Mehmet Emre Bayraktar, Florida International University Co-PI - \$128,665 at Purdue, balance awarded to Vanderbilt and FIU).
6. Comparing Stabilized/Unstabilized Subbase for Unsealed Joints in PCCP – SPR 3510, Jan 2011 – Dec 2013 (extended at no cost until 2016), Joint Transportation Research Program (JTRP), \$88,750 (M. Hastak, PI and Yigong Ji, INDOT, Co-PI).
7. Performance Evaluation of Crack Sealing and Filling Materials with Pavement Preservation Treatments, SPR 3533, Jan 2011 – Dec 2014 (extended until Oct 31, 2015), Joint Transportation Research Program (JTRP), \$80,000 + \$37,506 (M. Hastak, PI and Jusang Lee, INDOT, Co-PI).
8. Project Evaluation Methods For Pavement Preservation Treatments, Jan 2011 – April 2013, Joint Transportation Research Program (JTRP), \$80,000 (M. Hastak, PI and Jusang Lee, INDOT, Co-PI).
9. Enhanced Treatment Selection for Reflective Joint Cracking in Composite Pavements (PHASE-1), SPR-3626, Jan 2012 – Apr 2013, Joint Transportation Research Program (JTRP), \$50,000 (M. Hastak, PI).
10. Quantify the Benefits of Pavement Preservation, Jan 2010 – Apr 2011, NCP till May 2011, Joint Transportation Research Program (JTRP), \$50,000 (M. Hastak, PI).
11. Secretarial Support for the Journal of Management in Engineering, Annual Recurring Fund since 2009, American Society of Civil Engineers (ASCE), \$5,000 (2015); \$20,000 (2014-15); \$18,466 (2013-2014); \$17,997 (2012-2013); \$13,100 (2011-2012); \$11,700 (2009-2011), \$6400 (2009) (M. Hastak, PI).

12. NSF SGER: Short Term Investigation of 2008 Midwest Floods, Sept 2008 – Feb 2009, No Cost Extension, Aug 2009, National Science Foundation (NSF), \$50,000 (M. Hastak, PI and Eric Dietz Co-PI).
13. Maximizing the Value of Construction in Pre-Project Planning, October 2006 – Dec 2008, Construction Industry Institute (CII), \$182,300 (M. Hastak, Co-PI, Sanjiv Gokhale, Vanderbilt PI - \$106,904 at Purdue, balance awarded to Vanderbilt University).
14. Acquisition and Analysis of Earthwork Pay Quantity Verification Data, Nov 2006 – Feb 2008, Joint Transportation Research Program (JTRP), \$35,000 (M. Hastak, PI).
15. Cost Schedule Tradeoff, March 2004 – December 2006, Construction Industry Institute (CII), \$205,910 (M. Hastak, PI, Sanjiv Gokhale, Vanderbilt Co-PI - \$124,176 at Purdue, balance awarded to Vanderbilt University).
16. US-India Joint Workshop on Urban Housing and Supporting Infrastructure, Aug 2005 – July 2006, National Science Foundation (NSF), \$30,000 (M. Hastak, Co-PI; Mike Mullins, UCF, Co-PI, Matt Syal, MSU, PI – all funds expended from MSU).
17. Manufactured Housing Production Process Planning and Facility Design, Sept 2002 – Aug 2005. No Cost Extension, Aug 2006, National Science Foundation (NSF), \$270,000 (M. Hastak, PI; Matt Syal, MSU, Co-PI – \$147,500 at Purdue, balance awarded to MSU).
18. Housing Research Agenda Workshop, Aug 2003 – July 2004, National Science Foundation (NSF), \$35,000 (M. Hastak, Co-PI; Mike Mullins, UCF, Co-PI, Matt Syal, MSU, PI – all funds expended from MSU).
19. Achieving Radical Reduction in Project Cycle Time, March 2002 – December 2004, Construction Industry Institute (CII), \$174,957 (M. Hastak, PI, Sanjiv Gokhale, Vanderbilt Co-PI - \$110,133 at Purdue, balance awarded to Vanderbilt University).
20. Constructability, Maintainability, and Operability of FRP Bridge Deck Panels, Nov 2002 – October 2004, Joint Transportation Research Program (JTRP), \$75,000 (M. Hastak, PI and D.W. Halpin, Co-PI).
21. Modeling of Manufactured Housing Production and Material Utilization, July 2000 – June 2003, National Science Foundation (NSF), \$143,000 (M. Hastak, Co-PI and Matt Syal, MSU, PI – \$55,000 for Hastak balance at MSU).
22. The Evaluation of Warranty Provisions on ODOT Construction Projects, Nov 2000 – December 2003, Ohio Department of Transportation (ODOT), \$186,402 (M. Hastak, PI and Issam Minkarah, Co-PI).
23. NCHRP 20-58(1)/ Detailed Planning for Research on Accelerating the Renewal of America's Highways, April 2002 – March 2003, National Cooperative Highway Research Program (NCHRP), \$350,000 (Team Member-\$8,500; Lead Institution: Iowa State University; Purdue Team: Jan Olek, Becky McDaniel, M. Hastak, T. Pellinen, J Weiss, and A. Bobet).
24. Electronic Simulation in Construction, Sept. 1998 - Jan. 2002, Construction Industry Institute (CII), \$150,251 (M. Hastak, PI).
25. NCHRP 12-53/ Connection Between Simple-Span Precast Concrete Girders Made Continuous, July 1999 – Dec 2002, National Cooperative Highway Research Program (NCHRP), \$300,000 (R. Miller, PI; M. Hastak, A. Mirmiran, and B. Shahrooz, Co-PIs – University of Cincinnati).
26. Development of an ITS Cost Analysis Framework for Evaluating Program and Project Level Costs and Practices, June 1998 – August 1998, NYS-DOT and Transportation Infrastructure Research Consortium (TIRC), \$250,000 (Co-PI Polytechnic University -

\$20,000; Falcocchio (Co-PI), Polytechnic University; Jean-Claude Thill, PI, U. of Buffalo). Project handed over to Dr. Falcocchio before leaving Polytechnic in Aug. 1998).

27. Preventive Maintenance Management System for New York City Bridges: An Update, Jan 1998 – December 1998, The Mayor's Office of Construction, City of New York, \$349,000 (H. Ali, M. Hastak, M. Iskander, Co-PIs, Polytechnic Univ - \$54,300). Rimas Vaicaitis (PI), and F. H. (Bud) Griffis (Co-PI), Columbia University). Project handed over to Dr. Iskander before leaving Polytechnic in Aug. 1998.
28. Organization and Development of Executive Construction Management Program (Exec 21) at Polytechnic University, Jan 1997 – August 1998, Paul Soros Investment, Inc., New York, NY, \$350,000 (M. Hastak, I. Juran, E. Fasulo, Co-PIs).

PUBLICATIONS

BOOKS

1. Goodman, Alvin S. and **Makarand Hastak**. (2006). *Infrastructure Planning Handbook: Planning, Engineering & Economics*. McGraw Hill/ASCE, New York, NY.
2. Goodman, Alvin S. and **Makarand Hastak**. (2015). *Infrastructure Planning, Engineering & Economics*. 2nd Ed., McGraw Hill/ASCE, New York, NY.
3. **Hastak, Makarand** (Editor) (2015). *Skills and Knowledge of Cost Engineering*, 6th Edition, Association for Advancement for Cost Engineering (ACE), Morgantown, WV.
4. **Hastak, Makarand** (Editor) (2016). *CCP Certification Study Guide*, 2nd Edition, Association for Advancement for Cost Engineering (ACE), Morgantown, WV.

FULL ARTICLES IN REFEREED PUBLICATIONS

1. **Hastak, Makarand**, Jorge A. Vanegas, and Manuel Puyana-Camargo. (1993). "Time-Based Competition: Competitive Advantage Tool for A/E/C Firms." *Journal of Construction Engineering & Management*, ASCE, Vol. 119, No. 4, pp. 785-800.
2. **Hastak, Makarand** and Miroslaw J. Skibniewski. (1993). "Automation Potential of Pipe Laying Operations." *International Journal of Automation in Construction*, Elsevier Science Publishers, Vol. 2, pp. 65-79.
3. **Hastak, Makarand** and Issam Minkarah. (1994). "An Interactive Algorithm to Evaluate Project Cost Escalation." *Journal of Civil Engineering Systems*, Gordon & Breach Publishers, London, England, Vol. 11, pp. 179-195.
4. **Hastak, Makarand**, Daniel W. Halpin, and Jorge Vanegas. (1996). "COMPASS- New Paradigm for Project Cost Control Strategy and Planning." *Journal of Construction Engineering & Management*, ASCE, Vol. 122 No. 3, pp. 254-264.
5. **Hastak, Makarand**. (1998). "Advanced Automation or Conventional Construction Process?" *International Journal of Automation in Construction*, Elsevier Science Publishers, Vol. 7, No. 4, pp. 299-314.
6. **Hastak, Makarand**. (1999). "COMPASS: A DSS for Cost Management Planning." *Journal of Decision Systems*, Hermes Science Publishing, Paris, France, Vol. 8(2), pp.157-174.
7. **Hastak, Makarand** and Sanjiv Gokhale. (2000). "System for Evaluating Underground Pipeline Renewal Options." *Journal of Infrastructure Systems*, ASCE, Vol. 6, No. 3, September 2000, pp. 105-113.

8. **Hastak, Makarand** and Daniel W. Halpin. (2000). "Assessment of Life-Cycle benefit-Cost of Composites in Construction." *Journal of Composites for Construction*, ASCE, Vol. 4, No. 3, August 2000, pp. 103-111.
9. **Hastak, Makarand** and Aury Shaked (2000). "ICRAM-1: Model for International Construction Risk Assessment." *Journal of Management in Engineering*, ASCE, Vol. 16, No. 1, pp. 59-69.
10. Gokhale, Sanjiv and **Hastak, Makarand**. (2000). "Decision Aids for the Selection of Installation Technology for Underground Municipal Infrastructure Systems." *Journal: Trenchless Technology Research*, Elsevier Science Publishers, Oxford, England, Vol. 15, No. 1, pp 1-11.
11. Gokhale, Sanjiv and **Hastak, Makarand**. (2001). "Decision Support System for Evaluation of Underground Pipeline Construction Technologies." *Journal of Construction Research*, World Scientific Publishing, Singapore, No. 2, pp. 1 - 11.
12. Mirmiran, A., Kulkarni, S., Miller, R., **Hastak, M.**, Shahrooz, B., and Castrodale, R. (2001) "Positive Moment Cracking in the Diaphragms of Simple-Span Prestressed Girders Made Continuous." *ACI SP 204: Design and Construction Practices to Mitigate Cracking*, Nawy, E.G., Barth, F.G., and Frosch, R.J. (Eds.), ACI, 117-134. . Special publication of ACI with peer reviewed journal quality papers on cracking.
13. Mirmiran, A., Kulkarni, S., Castrodale, R., Miller, R., and **Hastak, M.** (2001) "Nonlinear Continuity Analysis of Precast Prestressed Girders with Cast-in-place Decks and Diaphragms." *PCI Journal*, PCI, 46(5), pp. 60-81.
14. **Hastak, Makarand** and Maher M. Abu-Mallouh (2001). "MSRP: Model for Station Rehabilitation Planning." *Journal of Infrastructure Systems*, ASCE, Vol. 7, No. 2, pp. 58-66.
15. **Hastak, Makarand** and Earl J. Baim (2001). "Risk Factors Affecting Management & Maintenance Cost of Urban Infrastructure." *Journal of Infrastructure Systems*, ASCE, Vol. 7, No. 2, pp. 67-76.
16. **Hastak, Makarand** and Maher Abu-Mallouh. (2002). "Rehabilitation Planning of Transit Systems." *Journal of Decision Systems*, Vol. 11, N°3-4/2002, pp. 431-444, Hermes Science Publishing, Paris, France.
17. **Hastak, Makarand**, Amir Mirmiran, Richard Miller, Ronak Shah, and Reid Castrodale. (2003) "State of Practice for Positive Moment Connections in Prestressed Girders Made Continuous." *Journal of Bridge Engineering*, ASCE, Vol. 8, No. 5, pp. 267-272.
18. **Hastak, Makarand**, Amir Mirmiran, and Deepak Richard. (2003). "A Framework for Life-Cycle Cost Assessment of Composites in Construction." *Journal of Reinforced Plastics and Composites*, Sage Publications, London, UK, Vol. 22, No. 15, pp. 1409-1430.
19. **Hastak, Makarand**, Sanjiv Gokhale, and Vamshidhar Thakkallapalli. (2004). "Decision Model for Assessment of Underground Pipeline Rehabilitation Options." *Urban Water Journal*, Vol. 1, No. 1, March 2004, 27 – 37, Taylor and Francis Ltd, London, UK.
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21. Senghore, O., **M. Hastak**, T. S. Abdelhamid, A. AbuHammad, and M. G. Syal. (2004). "Production Process for Manufactured Housing." *Journal of Construction Engineering and Management*, ASCE, Vol. 130, No. 5, September/October 2004, pp. 708-718.

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23. Bayraktar, Mehmet Emre, Qingbin Cui, **Makarand Hastak**, and Issam Minkarah. (2004). "The State-of-Practice of Warranty Contracting in the US." *Journal of Infrastructure Systems*, ASCE, Vol. 10, No. 2, June 2004, pp. 60-68
24. Mehrotra, N., M. G. Syal, and **M. Hastak**. (2004). "Manufactured Housing Trends and Codes in Michigan." *The American Professional Constructor*, Journal of the American Institute of Constructors, AIC, St. Petersburg, FL. April, pp. 26-36. (2nd tier category)
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26. Barriga, Edgar, Jae Jeong, **Makarand Hastak**, and Matt Syal. (2005). "Material Requirements Planning for a Manufactured Housing Facility." *Journal of Architectural Engineering*. ASCE, Vol. 11, No. 3, Sept 2005, pp. 91-98.
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31. Dimmerling, A, Miller, R. A., Castrodale, R, Mirmiran, A., **Hastak, M.** and Baseheart, T. M. (2005). "Connections between Simply Supported Concrete Beam Made Continuous; the Results of NCHRP Project 12-53," *Transportation Research Record*, No. 1928, Dec. 2005, pp. 126-133.
32. Bayraktar, Mehmet Emre, Qingbin Cui, **Makarand Hastak**, and Issam Minkarah. (2006). "An Evaluation of Warranty Contracting in United States." *Canadian Journal of Civil Engineering*. Vol 33, No. 1, January 2006, pp 1-9.
33. Jae Jeong, **Makarand Hastak**, and Matt Syal. (2006). "Supply Chain Analysis and Modeling for the Manufactured Housing Industry." *ASCE Journal of Urban Planning and Development*. Vol. 132, No. 1, March 2006, pp. 1-9
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35. Sukumaran, Praveen, Mehmet Emre Bayraktar, TaeHoon Hong, and **Makarand Hastak**. (2006). "Model for Analysis of Factors Affecting Construction Schedule in Highway Work Zones." *ASCE Journal of Transportation Engineering*. Vol. 132, No. 6, June 2006, pp. 508-517
36. Sukumaran, Praveen, TaeHoon Hong, Mehmet Emre Bayraktar, and **Makarand Hastak**. (2006). "Validation of a Model for Predicting Schedule Changes in Highway Work Zones

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37. Hong, TaeHoon and **Makarand Hastak**. (2006) “Life-Cycle Performance Model for FRP Bridge Deck Panels” *Journal of Civil Engineering and Environmental Systems*. Taylor and Francis Ltd, London, UK, 23(1), pp. 35-56
38. Hong, TaeHoon, and **Hastak, Makarand** (2006). “Construction, Inspection and Maintenance of FRP Deck Panels.” *ASCE Journal of Composites for Construction*, 10(6), 561-572.
39. Jae Jeong, **Makarand Hastak**, and Matt Syal. (2006). “Supply Chain Simulation Modeling for the Manufactured Housing Industry.” *ASCE Journal of Urban Planning and Development*. Vol. 132 (4), pp. 217-225.
40. Hong, TaeHoon and **Makarand Hastak**. (2007). “Evaluation and Determination of Optimal MR&R Strategies in Concrete Bridge Decks” *International Journal of Automation in Construction*, Elsevier Science Publishers, 16(2), p. 165-175
41. Richard, Deepak, TaeHoon Hong, **Makarand Hastak**, Amir Mirmiran, and Osama Salem. (2007). “Lifecycle Performance Model for Composites in Construction.” *Composites Part B-Engineering Journal*, Elsevier Publication, 38(2), Mar 2007, pp. 236-246.
42. Hong, TaeHoon and **Hastak, Makarand**. (2007). “Simulation Study on Construction Process of FRP Bridge Deck Panels.” *International Journal of Automation in Construction*, Elsevier Science Publishers, 16 (5), p.620-631
43. **Hastak, Makarand**, Sanjeev Gokhale, Kartik Goyani, TaeHoon Hong, and Bhavin Safi (2007). “Project Manager’s Decision Aid for a Radical Project Cycle Reduction.” *ASCE Journal of Construction Engineering and Management*, Vol. 133 (6), pp. 437-446.
44. Hong, TaeHoon, and **Hastak, Makarand**. (2007). “Life-Cycle Cost Assessment Model for Fiber Reinforced Polymer Bridge Deck Panels.” *Canadian Journal of Civil Engineering*, Vol. 34, August, pp. 976-991.
45. Cui, Q., Johnson, P, Quick, A. and **Hastak, M.** (2008). “Valuing the Warranty Ceiling Clause on New Mexico Highway 44 Using a Binomial Lattice Model.” *ASCE Journal of Construction Engineering and Management*, Vol. 134, No. 1, January 2008, pp. 10-17.
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92. **Hastak, M.** and Debella, F. M. (2017). "Theory of an Intelligent Planning Unit (IPU) for Lean Construction of Complex Built Environment," the Indian Lean Construction Conference (ILCC 2017), IIT Madras, July 28-29, 2017.

REFEREED CONFERENCE SUMMARIES OR ABSTRACTS

1. Pearce, Annie, **Makarand Hastak.** (1995). "Selecting Sustainable Construction Material." Abstract in: *Proceedings of the 6th International Conference on Computing in Civil & Building Engineering*, Berlin, Germany, July 12-15.
2. Patel, S. and **Hastak, M.** (2012). "Risks for Financial Agencies in Providing Affordable Disaster Insurance to Developing Countries." *Proceedings of International Disaster and Risk Conference (IDRC 2012)*, Davos, Switzerland, August-2012.
3. Deshmukh, A. and **Hastak, M.** (2014). "Enhancing community resilience: Optimal capacity building for expediting post disaster recovery." *Proceedings of International Disaster and Risk Conference (IDRC 2014)*, Davos, Switzerland, August-2014.
4. Kim, J., Yu, D., and **Hastak, M.** (2016). "Impact of a collective action in a disaster-affected community to site a temporary debris management site." *6th International Disaster and Risk Conference IDRC Davos 2016, August 28 - September 1, 2016, Davos, Switzerland.*

ABSTRACTS IN NON-REFEREED CONFERENCE PROCEEDINGS

1. **Hastak, Makarand** and Issam Minkarah. (1991). "PWPCE: A Computerized Model to Evaluate Probable Weighted Percentage Cost Escalation in Estimated Project Cost." In: *Proc of 9th Nat Conf on Microcomputers in Civil Engineering*. Orlando, FL. pp. 138-142.
2. Pearce, Annie, **Makarand Hastak**, and Jorge Vanegas. (1995). "A Decision Support System for Construction Materials Selection Using Sustainability as a Criterion." In: *Proceedings of the 28th Annual Conference, National Conference of States on Building Codes and Standards*. Albuquerque, New Mexico, November 1-4.
3. **Hastak, Makarand** (1997). "AUTOCOP: System for Automation Option Evaluation for Construction Processes." *Construction Industry Cooperative Alliance (CICA) Bulletin*, Clemson University.
4. **Hastak, Makarand** (1997). "COMPASS: Cost Management Planning Support System." *Construction Industry Cooperative Alliance (CICA) Bulletin*, Vol. 9-1, Clemson University.

5. Cui, Qingbin, Mehmet Emre Bayraktar, **Makarand Hastak**, Issam Minkarah. (2003). "Warranty as a Real Option for DOT Projects." In: the proceedings of the AACEI Annual Conference in Orlando, Florida, June 22-25, 2003.
6. Patel, S. and **Hastak, M.** (2012). "Sovereign Disaster Risk and Critical Infrastructure Management for Developing Countries." Keynote Speech presented by **Hastak, M.** In the proceedings of the 2nd International Conference on Sustainable Built Environments (ICSBE 2012), Kandy, Sri Lanka, December 2012.
7. Sinha, A., Patel, S., and **Hastak, M.** (2013). "Capacity Building to Achieve Sustainable Water Management System in Arid and Semi-Arid Lands (ASALs)." In the proceedings of the World Building Congress 2013, Brisbane, Australia, May-2013.

BOOK REVIEWS

1. Griffis, F. H and Farr, J. V. (2000). *Construction Planning for Engineers*, McGraw-Hill, New York, New York.

GOVERNMENT, UNIVERSITY, OR INDUSTRIAL REPORTS

1. **Hastak, Makarand** (1991). "Study of Factors Causing Variability in Project Estimate." M.S. Thesis, University of Cincinnati, Cincinnati, Ohio.
2. Halpin, Daniel W., Rong-Yau Huang, **Makarand Hastak**, S. Peter Dozzi, R. David Unkefer and Peter H. Bopp (1993). "The Future Needs of the Construction Industry's Worldwide Customers." A report to the Construction Industry Institute, the University of Texas at Austin, **CII Source Document 90**.
3. **Hastak, Makarand** (1994). "Decision Support System for Project Cost Control Strategy and Planning." Thesis in partial fulfillment of the requirements for the degree of Doctor of Philosophy, at Purdue University, West Lafayette, Indiana.
4. Vanegas, Jorge, **Makarand Hastak**, Annie Pearce, and Francisco Maldonado. (1998). "A Framework and Practices for Cost-Effective Engineering in Capital Projects in the A/E/C Industry." A report to the Construction Industry Institute, the University of Texas at Austin, May 1998. **CII Research Report 112-11**
5. **Hastak, Makarand**, A. K. Singh, and V. Thakkallapalli. (2001). "Electronic Simulation in Construction." A report to the Construction Industry Institute, the University of Texas at Austin, December 2001. **CII Research Report 154-11**
6. Syal, M., **Hastak, M.**, Senghore, O, and Mehrotra, N. (2002). "Continuing Education Package –Manufactured Housing Production Process," NSF-PATH Project Report No.2, Michigan State University, MI.
7. Syal, M., **Hastak, M.**, Banerjee, D., and Mehrotra, M. (2003). "Continuing Education Package –Manufactured Housing Facility layout," NSF-PATH Project Report No.4, Michigan State University, MI.
8. **Hastak, M.**, Minkarah, I.A, Cui, Q., and Bayraktar, M.E. (2003). "Evaluation of Warranty Provisions on ODOT Construction Projects." A project report to Ohio Department of Transportation (ODOT), Columbus, Ohio.
9. **Hastak, Makarand** (Contributing Author). (2003). "Detailed Planning for Research on Accelerating the Renewal of America's Highways." NCHRP Project 20-58(1) Renewal, Final Report Prepared for the National Cooperative Highway Research Program, Transportation Research Board, National Research Council, April 2003. Main authors/editors: Stephen J. Andrie, E. Thomas Cackler, T. Ferragut, and R. McDaniel.

10. **Hastak, Makarand** (Contributing Author). (2003). "Connection Between Simple Span Precast Concrete Girders Made Continuous." NCHRP Project 12-53, Final Report Prepared for the National Cooperative Highway Research Program, Transportation Research Board, National Research Council, October 2003. Main authors/editors: Richard Miller, Reid Castrodale, Amir Mirmiran, and Makarand Hastak.
11. Syal, M., **Hastak, M.**, Banerjee, D., Mehrotra, N., "Continuation Education Module – Manufactured Housing Facility Layout," NSF Project Report, MSU and Purdue, March 2004
12. Syal, M., **Hastak, M.**, and Mullens, M. (August 2004). Final Report, NSF-PATH Housing Research Agenda, NSF and U.S. Department of HUD, Washington DC. (<http://www.pathnet.org/sp.asp?id=12201>)
13. **Hastak, M.**, S. Gokhale, K. Goyani, T. Hong, and B. Safi. (2004). "Radical Reduction in Project Cycle Time." A report to the Construction Industry Institute, the University of Texas at Austin, June 2004. ***CII Research Report 193-11***
14. **Hastak, M.**, Halpin, D. W., and Hong, TaeHoon (2004). "Constructability, Operability, Maintainability of Fiber Reinforced Polymer (FRP) Bridge Deck Panels." A project report to Joint Transportation Research Program (JTRP), INDOT, West Lafayette, Indiana.
15. **Hastak, M.** and Alex Duran (2006). "Decision Model to Evaluate Decentralized and Centralized Wastewater Treatment Options for Residential Land Development." A report to the NAHB-Research Center for the National Housing Endowment Scholar-In-Residence Program. Report number AT629.160_081506, Upper Marlboro, Maryland.
16. **Hastak, M.**, S. Gokhale, Bhavin Safi, and Emre Bayraktar. (2006). "Trade-off between Cost and Schedule." A report to the Construction Industry Institute, the University of Texas at Austin, Oct 2006. ***CII Research Report 214-11***
17. **Hastak, M.** and Sharvil Shah (2008). "Acquisition and Analysis of Earthwork Pay Quantity Verification Data." A project report to Joint Transportation Research Program (JTRP), INDOT, West Lafayette, Indiana.
18. Gokhale, Sanjiv, **Makarand Hastak**, and EunHo Oh. (2008). "Optimizing Construction Input in Front End Planning (FEP)." A report to the Construction Industry Institute, the University of Texas at Austin, Aug 2008. ***CII Research Report 241-11***
19. **Hastak, M.**, Oh, EunHo, and Deshmukh, Abhijeet, (2009) "SGER: Short Term Investigation of 2008 Midwest Floods" NSF Project Report, Purdue University, August 2009.
20. Shah, Hiral, Yoojung Yoon, **M. Hastak**, Jusang Lee. (2011). "Benefits and Assessment of Budget Allocation for Pavement Preservation." A project report to Joint Transportation Research Program (JTRP), INDOT, West Lafayette, Indiana.
21. Yoon, Yoojung, Saumyang Patel, Yigong Ji, and **Makarand Hastak**. (2013). "Enhanced Treatment Selection for Reflective Joint Cracking in Composite Pavements – Phase-I." A project report to Joint Transportation Research Program (JTRP), INDOT, West Lafayette, Indiana.
22. Lee, J., **M. Hastak**, D. Harris, and H. J. Ahn. (2013). "Subsurface Condition Evaluation for Asphalt Pavement Preservation Treatments." Publication FHWA/IN/JTRP-2013/05. Joint Transportation Research Program, Indiana Department of Transportation and Purdue University, West Lafayette, Indiana, 2013. DOI: 10.5703/1288284315187. (<http://dx.doi.org/10.5703/1288284315187>)
23. **M. Hastak**, Gokhale, S., Bayraktar, E., Naderpajouh, N., Arif, F, and Iyer, A. (2014). "Mitigating Threats of Counterfeit Materials in Capital Projects Industry." A report to the

Construction Industry Institute, the University of Texas at Austin, Sept 2014. ***CII Research Report 307-11***

24. Yoon, S., **Hastak, M.**, and Lee, J. (2015). "Intelligent compaction of asphalt pavement implementation," (Joint Transportation Research Program Publication No. FHWA/IN/JTRP-2015/05). West Lafayette, IN: Purdue University. <http://dx.doi.org/10.5703/1288284315524>
25. Kang, K., Yoon, S., Patel, S., Yoon, Y., Ji, Y., & **Hastak, M.** (2015). *Enhanced treatment selection for reflective joint cracking in composite pavements* (Joint Transportation Research Program Publication No. FHWA/IN/JTRP-2015/21). West Lafayette, IN: Purdue University. <http://dx.doi.org/10.5703/1288284316006>
26. Lee, J., **M. Hastak**, and H. J. Ahn. (2015). "Crack Sealing/Filling: The Best Practices." (Joint Transportation Research Program Publication, No. FHWA/IN/JTRP-2015/23). West Lafayette, IN: Purdue University. <http://dx.doi.org/10.5703/1288284316008>
27. Khallaf, R., Yoon, S., **Hastak, M.**, and Nantung, T. (2016). *Simplified construction scheduling for field personnel* (Joint Transportation Research Program Publication No. FHWA/IN/JTRP-2016/28). West Lafayette, IN: Purdue University. <https://doi.org/10.5703/1288284316355>

PLANNED OR ANTICIPATED JOURNAL PUBLICATIONS

1. **Hastak, M.**, Alex Duran, Nader Naderpajouh, and Soojin Yoon. (20xx). "Decision Model to Evaluate Decentralized and Centralized Wastewater Treatment Options for Residential Land Development." In preparation.
2. Shah, S, Nader Naderpajouh, and **M. Hastak**. (20xx). "Use of Cold Formed Steel as a Structural Material in a Manufactured House Construction." In preparation.
3. Garcia, J. P., Nader Naderpajouh, **M. Hastak**, and M. Syal. (20xx). "Alternative Housing System: Hybrid Home." In preparation.
4. Choi, Juyeong, Abhijeet Deshmukh, and **M. Hastak**. (20xx). "The Concept of Seven Layers of Critical Infrastructure for Community Resilience." In Preparation.
5. Choi, J., Naderpajouh, N., Yue, D. J., and **Hastak, M.** (20xx). "Improving Robustness of Critical Infrastructure to Natural Disasters by Functional Stress-Strain Capacity Analysis." To be submitted to the Natural Hazards.
6. Naderpajouh, N., Yoon, S., and **Hastak, M.** (20xx). "Decision Model for Selection of Alternatives in Sustainable Infrastructure Development." In Preparation
7. Khallaf, R., Naderpajouh, N., and **Hastak, M.** (20xx). "Systematic Approach to Developing Risk Registry Frameworks for Construction Projects." In Preparation.
8. Khallaf, R., Naderpajouh, N., and **Hastak, M.** (20xx). "Modeling Renegotiation Risks in Public Private Partnership Projects." To be submitted to the International Journal of Project Management, Springer.
9. Kim, J. and **Hastak, M.** (20xx). "Social Network Analysis: The Role of Social Media to Propagate Emergency Information During and After a Disaster." In Preparation.

STUDENT RESEARCH SUPERVISION

#	NAME	DEGREE	GRAD DATE	TITLE	UNIV.
PHD STUDENTS					
1	Maher Abu-Mallouh	Ph.D.	S99	Development of a Station Rehabilitation Planning System for NYC Transit Authority	NYU-Poly
2	Ayman Abu-Hammad (Co-Chair, Dr. O. Salem)	Ph.D.	F03	A Decision Support System for Manufactured Housing Production Process Planning and Facility Design	UC
3	TaeHoon Hong	Ph.D.	S05	Evaluation of Life Cycle MR&R requirements of Composite Materials in Construction	Purdue
4	Qingbin Cui	Ph.D.	Su05	A Dynamic Model for Profitability Analysis of Construction Firms: Towards Complexity, Learning, and Uncertainty	Purdue
5	Jae Gyu Jeong	Ph.D.	Su06	A Framework for Supply Chain Modeling and Optimization for the Manufactured Housing Industry	Purdue
6	Mehmet Emre Bayraktar	Ph.D.	Su06	A Decision Model to Determine the Optimal Time-Cost Trade-Off in Highway Work Zone Projects	Purdue
7	EunHo Oh	Ph.D.	S10	Impact Analysis of Natural Disasters on Critical Infrastructure, Associated Industries, and Communities	Purdue
8	Yoojung Yoon	Ph.D.	Su12	Planning of Optimal Rehabilitation Strategies for Infrastructure Using Time Float and Multiyear Prioritization Approach	Purdue
9	Nader Naderpajouh	Ph.D.	F13	Interactional Analysis of Emergent Risks in Institutionally Diverse Construction Projects	Purdue
10.	Abhijeet Deshmukh	Ph.D.	Su16	Capacity Building for Recovery and Resilience of Communities to Natural Hazards	Purdue
11.	Arash Mahdavi	Ph.D.	Su16	A System-of-Systems Approach to Ex-Ante Analysis of Profit Potential of a Project Portfolio	Purdue

#	NAME	DEGREE	GRAD DATE	TITLE	UNIV.
12.	Rana Khallaf	Ph.D.	F16	Interactional Risks Associated with Parties to a PPP Project	Purdue
13.	Sayanti Mukhopadhyay	Ph.D.	Exp Su17	Strategic Decision-making and Policy Analysis for Resilience in Power Grid Infrastructure	Purdue
14.	Saumyang Patel	Ph.D.	Exp S18	Pooling & Assessing Risks of Disaster Insurance & Infra Finance (working title)	Purdue
15.	Soojin Yoon	Ph.D.	Exp S18	Deferred Maintenance Planning (working area)	Purdue
16.	Jooho Kim	Ph.D.	Exp F17	Debris Management post Disaster (working area)	Purdue
17.	Juyeong Choi	Ph.D.	Exp S18	Strain Capacity Analysis of 7-layered Coupled Infrastructure Systems under Natural Disasters	Purdue
18.	Kyubyung Kang	Ph.D.	Exp S18	Disaster Risk Reduction and Supply Chain (working area)	Purdue
19.	Fekadu Melese	Ph.D.	Exp F18	Profitability and Lean Construction (working area)	Purdue
20.	Jenan Almullaali	Ph.D.	Exp F21	Disaster Risk Management using GIS (working area)	Purdue
MS THESIS STUDENTS					
21.	Aury Shaked	M.S.C.E. Thesis	S97	A Risk Assessment Model for Strategic Evaluation of International Market Expansion for A/E/C Firms	NYU-Poly
22.	Arun Chandran	M.S.C.E. Thesis	W00	Data Integration for Construction Management Using Relational Database Approach	UC
23.	Ronak Shah	M.S.C.E. Thesis	S01	Constructability Issues for Connection Between Simple Span Precast Concrete Girders Made Continuous	UC
24.	Ayman Abu-Hammad	M.S.C.E. Thesis	W02	Simulation Model for Manufactured Housing Processes	UC
25.	Arun K. Singh	M.S.C.E. Thesis	W02	Electronic Simulation in Construction	UC
26.	Jie Situ	M.S.C.E. Thesis	Su02	Application and Validation of ICRAM-1 for China	UC
27.	Deepak Richard (Co-Chair, Dr. O. Salem)	M.S.C.E. Thesis	F03	Life-Cycle Performance Model for Composite Materials in Civil Engineering	UC

#	NAME	DEGREE	GRAD DATE	TITLE	UNIV.
28.	TaeHoon Hong	M.S. Thesis	S03	Evaluation of Maintenance, Repair, and Rehabilitation Strategies in Bridges using Conventional Material	Purdue
29.	Edgar Barriga	M.S.C.E. Thesis	S03	Materials Management in a Manufactured Housing Facility	Purdue
30.	Mehmet Emre Bayraktar	M.S.C.E. Thesis	Su03	A Scoring Approach to Construction Bond Risk Assessment	Purdue
31.	Praveen Sukumaran	M.S. Thesis	F03	System for Analyzing the Factors Affecting Construction Schedule in Highway Work Zones	Purdue
32.	Jae Gyu Jeong	M.S. Thesis	F03	Supply Chain Management in Manufactured Housing	Purdue
33.	Kartik Goyani	M.S.C.E. Thesis	F03	Achieving Radical Reduction in Project Cycle Time	Purdue
34.	Juan Pablo Garcia	M.S.C.E. Thesis	Su05	Hybrid Housing	Purdue
35.	Bhavin Safi	M.S.C.E. Thesis	S05	Cost Schedule Tradeoff	Purdue
36.	Marcela Fernandez	M.S.C.E. Thesis	S07	Risk Management for International Projects in Mexico	Purdue
37.	EunHo Oh	M.S. Thesis	S08	Interrelationship between Infrastructure and Associated Industries – Application to Flood conditions	Purdue
38.	Sharvil Shah	M.S. Thesis	S08	Use of Cold Formed Steel as a Structural Material in a Manufactured House Construction – an Investigative Study	Purdue
39.	Ziad Tamer	M.S. Thesis	S09	A Protocol for Data Collection and Analysis of Profitability for Construction Companies.	Purdue
40.	Saumyang Patel	M.S. Thesis	Su10	Post Disaster Housing for 200 families	Purdue
41.	Abhijeet Deshmukh	M.S. Thesis	S10	Economic and Social Impact of Critical Infrastructure damaged due to Natural Disasters on Associated Industries and Communities	Purdue
42.	Hiral Shah	M.S. Thesis	S11	A Model to Quantify the Benefits of Pavement Preservation	Purdue

#	NAME	DEGREE	GRAD DATE	TITLE	UNIV.
43.	Erik Wright	M.S. Thesis	S12	Assessment of U.S. Construction Industry Capabilities for Successful Delivery of Nuclear Power Projects	Purdue
44.	Akanksha Sinha	M.S. Thesis	F12	Capacity Building For Indigenous Water Management Ways In Turkana District, Kenya	Purdue
45.	Hyungjun Ahn	M.S. Thesis	Su14	Evaluation of Asphalt Pavement Interface	Purdue
46.	Joocho Kim	M.S. Thesis	Su14	A Framework of Effective Debris Management for a Resilient Community	Purdue
47.	Juyeong Choi	M.S. Thesis	Su15	Stress-Strain Capacity Analysis for the Impact of Natural Disasters on Coupled Infrastructure Facilities	Purdue
48.	Brandon Fulk	M.S. Thesis	Exp FS18	Pedagogical Improvements in CEM (working area)	Purdue
49.	Ashwini Jain	M.S. Thesis	Exp F17	Construction Analytics (working area)	Purdue
50.	Sulyn Gomez	M.S. Thesis	Exp S18	Lean Construction (working area)	Purdue
51.	Vamshidhar Thakkallapalli	ALM Thesis	Exp S18	Capital Cost Implications of Improving Indoor Air Quality	Harvard
MS NON THESIS STUDENTS					
52.	Dewan Singh	M.S.C.E.	F96	Constructability on Rubber Fender Pier Protection System	NYU-Poly
53.	Igor Fridlin	M.S.C.E.	F96	Opportunities for US Construction Firms in Russia and Eastern European Countries	NYU-Poly
54.	Francis Pescetto	M.S.C.E.	Su98	The Importance and Effectiveness of Strategic Planning for Public/Private Firms	NYU-Poly
55.	Earl Baim	M.S.C.E.	Su98	A Study on Life Cycle Management and Maintenance Requirements of Select Urban Infrastructure Categories and the Influencing Factors	NYU-Poly
56.	Rohan Warmington	M.S.C.E.	S99	A Study of Rehabilitation Planning Procedure for NYC School Construction Authority	NYU-Poly
57.	Nagy Gad	M.S.C.E.	S99	Construction Claims	NYU-Poly

#	NAME	DEGREE	GRAD DATE	TITLE	UNIV.
58.	Velibor Ivanic	M.S.C.E.	S99	Model for Life Cycle Cost Assessment of Composite Materials in Construction	NYU-Poly
59.	Alex Constantinides	M.S.C.E.	S02	3D Static Simulation in Construction	NYU-Poly
60.	Sangjeun Lee	M.S.C.E.	S03	Construction Project Risk Assessment Model using "COMPASS" Methodology	Purdue
61.	Carlos Felipe Gonzalez	M.S.C.E.	F04	Capital Investment Planning for Sewer Systems	Purdue
62.	Ravi Kumar Agrawal	M.S.C.E.	S06	Intermodal Transportation Planning for Modular Const.	Purdue
63.	Craig Clutts	M.S.E.	S10	Profitability versus Construction Equipment Maintenance	Purdue
64.	Akhila Boppana	M.S.C.E.	S11	Const. Industry Health Index	Purdue

POST DOCTORAL AND RESEARCH ASSOCIATES

1.	Rui Liu	2007-2008	North China Electric Power University, Beijing, China
2.	Zengzhong Wang	2008-2009	Shanghai Normal University, Shanghai, China
3.	Fengyong Zhai	2009-2010	Harbin Institute of Technology, Harbin, China
4.	Kyuman Cho	2010-2012	University of Seoul, Seoul, South Korea
5.	Hyunseok Moon	2012-2013	University of Seoul, Seoul, South Korea
6.	Jeeha Lee	2012-2013	Korean Railroad Research Institute, Seoul, South Korea
7.	Yoojung Yoon	2012-2013	Purdue University
8.	Nader Naderpajouh	2013-2015	Purdue University
9.	Muhammad Jamaluddin Thaheem	2013-2014	Politecnico di Torino, Turin, Italy
10.	KunHui Ye	2014-2015	Chongqing University, China
11.	Choongwan Koo	2015-2016	Yonsei University, South Korea
12.	Jimin Kim	2017-2018	Yonsei University, South Korea

OTHER COMMITTEE INVOLVEMENT

PhD	15	Eskander, Lukusa, Boudodimos, and Cho (NYU-Poly); Martinez, Baik, Jen, Park, Nitithamyong, Jeong, Chung, Kim, Zevgolts, Peralta, and Prashant (Purdue)
MSCE Thesis	14	Thongnuaekheng, Juran, Levy, and Levy (Polytechnic Univ.); Zou, Agarwal, Ula, Arcot, Hua, Hossain, Lenski, and Kulkarni (Univ. of Cincinnati), Andrzejak, Williams (Purdue)
MSCE/ MSE	27	Han, Eldridge, Lee, Gonzalez, Iftikhar, Hancock, O'Donnell, Gandhi, Chung, Obermiller, Chavarria, Celtikcioglu, Salcedo, Santoso, Lynch, Jors, Turke, Anderson, Nima, Jaworska-Garrett, Szymanski, Wrobel, Chiquilani, Vega, Elmore, Haroon, Ramadan (Purdue)

UNDERGRADUATE SPECIAL PROJECTS DIRECTED

DATE	NAME	DEGREE	PROJECT TITLE (FUNDED)
Jan-May 2001	Matt Lucarelli	UG Senior CE (UC)	The Evaluation of Warranty Provisions on ODOT Construction Projects
June-Aug 2002	Juan Pablo Garcia	UG Junior CE (Purdue)	Modeling of Manufactured Housing Production and Material Utilization.
Aug 03–Dec04	Chris Ports	UG Junior CEM (Purdue)	Manufactured Housing Production Process Planning and Facility Design.

TEACHING ACTIVITIES**GRADUATE COURSES**

Infrastructure Planning
 Risk Management in Construction
 Computer Applications in Construction
 Construction Graduate Seminar
 Construction Operations Analysis (UC)
 Strategic Planning (UC)
 Construction Innovation Seminar (UC)
 Project Costing and Financial Mgmt. (ADU)
 Project Management Professionalism (ADU)

UNDERGRADUATE COURSES

Construction Plans and Estimates
 Construction Management
 Construction Practice Project
 Life Cycle Engrg & Mgmt. of Constructed Facilities
 Project Control & Life Cycle Execution of Const Facilities
 Measurements in Civil Engineering (NYU-Poly)

DEVELOPMENT AND TEACHING OF SHORT COURSES AND WORKSHOPS:

1. "Constructability and Modularization & Preassembly." Construction Industry Institute (CII) Continuing Education Short Courses for Project Management, Sponsored by the Construction Industry Cooperative Alliance (CICA), Clemson University, Clemson. September 18-23, 1994.

2. "Project Management." Project Management Training to the Department of Aviation (DOA) Employees in preparation for the Hartsfield Improvement Program (HIP-96) initiative, Department of Aviation (DOA), Hartsfield International Airport, Atlanta, Georgia (in collaboration with colleagues), Atlanta, Georgia. 1995.
3. "Constructability." Continuing Education Short Courses for Project Management. Fernald Environmental Restoration Management Corporation (FERMCO) in cooperation with the Construction Industry Cooperative Alliance (CICA), Clemson University. Cincinnati, Ohio. September 23, and September 30, 1995.
4. "Introduction to Factorized and Prefabricated Production in Construction Projects: Preassembly and Modularization." Training program for the delegation from the Ministry of Chemical Industry, P.R. China, US-CHINA Business Co., New York, New York. Nov. 7, 1995.
5. "Educational Training Module for Constructability, Value Engineering, and Inputs to Design," part of the Continuing Education Short Courses for Project Management, Georgia-Pacific Corporation in cooperation with the Construction Industry Cooperative Alliance (CICA), Clemson University. Developed at Georgia Institute of Technology, Atlanta, Georgia in collaboration with colleagues. 1995.
6. "Educational Training Module for Constructability," part of the Continuing Education Short Courses for Project Management, Fernald Environmental Restoration Management Corporation (FERMCO) in cooperation with the Construction Industry Cooperative Alliance (CICA), Clemson University. Developed at Georgia Institute of Technology, Atlanta, Georgia in collaboration with colleagues. 1995.
7. "Constructability." Continuing Education Short Courses for Project Management, Georgia-Pacific Corporation in cooperation with the Construction Industry Cooperative Alliance (CICA), Clemson University, Cedar Springs, Georgia. September 9, 1996.
8. "Introduction to Factorized and Prefabricated Production in Construction Projects: Preassembly and Modularization." Training program for the delegation from the Ministry of Chemical Industry, P.R. China, US-CHINA Business Co., New York, New York. Dec. 4, 1996.
9. "Probability, Statistics, & Optimization," AACE International Certification training program for CCC and CCE, AACE International, Metropolitan New York Section, New York. May 1, 1997.
10. "Engineering Economics," NYU P.E. Certification training program, NYU, School of Continuing Education, New York. March 12, 1998.
11. "AACEI CCE/CCC (CCP since 2012) Certification Review Course" Organized by the Association for Advancement of Cost Engineering International during the Annual Conference (Las Vegas 2006; Nashville 2007, Toronto 2008, Seattle 2009, Atlanta 2010, Anaheim 2011, San Antonio 2012, Washington DC 2013, New Orleans 2014, Las Vegas 2015, Toronto 2016, Orlando 2017).
12. "Managing Construction Projects in Tennessee" Professional Education Seminar, Chattanooga, TN (Jan 2006), Nashville, TN (Feb 2006), Knoxville, TN (April 2006).
13. "Program/Project Management for Leadership Development." Short course organized for the Leadership Development Program at the Boeing Company by ProEd, College of Engineering, Purdue University, Palmdale, CA (Summer, 2006, Spring 2007).
14. "Construction Project Management Skills in Indiana" Professional education short course, Indianapolis, IN. Summer 2006.

15. "Construction Project Management Skills" Professional education short course for the US Customs and Border Protection, Indianapolis, Dallas, and Laguna Niguel. Summer 2006.
16. "Construction Project Management Skills" Professional education short course for the US Naval Academy, Public Works, Annapolis, Maryland. August 2006.
17. "Strategic Planning and Decision Making for Construction Executives." Professional Education Short course organized by ProEd, College of Engineering, Purdue University, Indianapolis, IN. October 2006.
18. "Construction Project Planning and Scheduling." Professional Education Short course organized by ProEd, College of Engineering, Purdue University, Indianapolis, IN. November 2006.
19. "Program/Project Management." Short course organized for Butler International, Inc., by ProEd, College of Engineering, Purdue University, West Lafayette, IN. October 2007.
20. "Skills and Knowledge of Cost Engineering" Organized by the Association for Advancement of Cost Engineering International for Enbridge Inc., Edmonton, Canada. Jan 2008 and May 2010.
21. "Skills and Knowledge of Cost Engineering" Organized by the Association for Advancement of Cost Engineering International for DoE, Washington, DC. April 2010.
22. "Introduction to Skills and Knowledge of Cost Engineering" Organized by the Association for Advancement of Cost Engineering International for the Russian Section, Saint Petersburg, Russia. April 2013 and December 2013.
23. "Skills and Knowledge of Cost Engineering-Cost Planning" Organized by the Association for Advancement of Cost Engineering International for the Russian Section, Saint Petersburg, Russia. December 2013.
24. "Skills and Knowledge of Cost Engineering" Organized by the Association for Advancement of Cost Engineering International for Tasnee, Jubail, Saudi Arabia. February 2014.
25. "Project Costing and Financial Management." Intensive Course for Master of Project Management (MPM) degree program, Abu Dhabi University, UAE. Feb 8-19, 2015.
26. "Project Management Professionalism." Intensive Course for Master of Project Management (MPM) degree program, Abu Dhabi University, UAE. Jan 10-Feb 6, 2016.

INDUSTRY INTERACTION, WORKSHOPS, AND SHORT COURSES ATTENDED

1. Attended Trenchless Technology Mini-Directional Drilling Field Seminar sponsored by Trenchless Technology Magazine and North American Society for Trenchless Technology in cooperation with Trenchless Technology Center, Nashville, TN. October 23-26, 1994.
2. Invited Member, Construction Management Task Group, American Institute of Steel Construction (AISC). 2000-2001.
3. Attended the "Diversity Forum", Workshop sponsored by Schools of Engineering, Purdue University. September 30-October 2, 2001.
4. Attended the "Gender Forum", Workshop sponsored by Schools of Engineering, Purdue University. March 6-7, 2002.
5. Participated in the "All Engineering Strategic Planning Session", Forum sponsored by Schools of Engineering, Purdue University. March 21-22, 2002.

6. Invited Member of CEMEX Delphi Research Project. Participated as one of the 48 experts from 9 countries who collaborated to envision the challenges and opportunities facing the construction industry in Mexico. Organized and conducted by CEMEX Mexico, Monterrey, Mexico. Fall 2002.
7. Organized a NSF Sponsored “National Housing Research Agenda Workshop” as a Co-PI with MSU and Central Florida at Orlando, FL. Feb 12-14, 2004. Focus Area Leader: Construction Management and Production.
8. Attended Leadership in Energy & Environmental Design (LEED-NC) Technical Review Workshop for New Construction and Major Renovation organized by the US Green Building Council, Washington DC. July 28, 2005.
9. Organized a NSF Sponsored “Joint US-India Workshop on Urban Housing and Supporting Infrastructure” as a Co-PI with MSU and Central Florida at New Delhi, India. Oct 20-22, 2005. Focus Area Leader: Supporting Infrastructure.
10. Attended “Chairing the Academic Department - *A Workshop for Division and Department Chairs and Deans*,” Organized by the American Council on Education (ACE), fall 2007, Austin, TX.
11. Invited to participate in the NIST sponsored NRC workshop on *Advancing the Competitiveness and Productivity of the US Construction Industry*. November 19-20, 2008, Keck Center of the National Academies, Washington DC.
12. Developed Estimating MyKIT for Pearson Education. March 2010.
13. Developed Course-in-a-box, CCE/CCC Certification course for AACE. Jan 2011.
14. Attended SCUP Planning Institute workshops Step-I (Foundations of Planning in Higher Education in 2013) and Step-II (Focused Knowledge for Integrated Planning Processes in 2014), and Step-III (Integrated Planning—Working with Relationship Realities in 2015). Offered by the Society for College and University Planning (SCUP).
15. Performance Assessment for P.T. Tripatra Engineers and Constructors, Jakarta, Indonesia through Purdue Enterprise Company (PEC) LLC and the EPCOM Center at Purdue University, July-Aug, 2016.
16. Expert Witness Service; Procopio, Cory, Hargreaves & Savitch LLP (2017-)
17. Expert Witness Service; Sudekum, Cassidy & Shulruff, Chtd (2017-)
18. Attended the “Safe Zone Workshop.” Training program that empowers participants to support LGBTQ students, staff, and faculty. Purdue University, Jan 12, 2017.
19. Attended the “Leadership Skills for Engineering and Science Faculty,” Workshop by Leiserson and McVinney at Purdue University, March 27-28, 2017.

PERSONAL INFORMATION

Languages:

Fluent: English, Hindi, and Marathi

Working knowledge: German, Spanish, Punjabi, Urdu, and Sanskrit

Hobbies:

Martial Arts (3rd Degree Black Belt in Taekwondo)

Running Marathons (8-Marathons; 6-Half Marathons since 2010)