

## **Edgar P. Small, Ph.D.**

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### EDUCATION: **State University of New York at Buffalo**

Department of Civil, Structural and Environmental Engineering  
212 Ketter Hall, Buffalo, New York 14260

**Ph.D.** *Degree Conferral:* February 1, 1999 - Civil Engineering  
*Topic:* "Development of a Methodology for the Integration of Seismic Risk Mitigation Activities in Project- and Network-Level Bridge Management Systems"

**M. Eng.** *Degree Conferral:* September 1, 1991 - Civil Engineering  
*Topic:* "Construction Safety Data Recording and Coding Systems"

**B.S.** *Degree Conferral,* June 1, 1989 - Civil Engineering  
*Concentration:* Structural Engineering

### RECENT RESEARCH PROPOSALS (UAE only with in-progress and under-review):

**ALEC, Inc.,** Proposal for video-based productivity studies of on-going construction activities, Grant submitted in the amount of 110,000 for one year. Grant unsuccessful.

**Shapoorji-Pallonji Consulting Services, DMCC,** Development of a Productivity Center of Excellence, Original grant unsuccessful. Currently renegotiating.

**AUD Faculty Teaching Offset** – Project focused on MSCM program refinement and promotion. One-semester course release requested. Grant proposal unsuccessful.

**Emirates Foundation** – Research in Energy Efficiency Grant Proposal, "Exploration of Green Construction Systems", Submitted: February 28, 2010, Notice of award received and funds in the amount of 115,000 AED committed through the grant process.

**UAE NRF Grant, Phase 2,** RSA-1108-00665 – Grant proposal successful. Invited to submit detailed Phase 3 proposal, February, 2009.

**UAE NRF Grant, Phase 3,** RSA-1108-00665 – Phase 3 proposal submitted, "Preservation Models for Bridge and Pavement Management Systems in the United Arab Emirates," Submitted, June 2009, Amount Requested - 977,460 AED. NRF funding discontinued. No award made.

**Emirates Foundation** – Science & Technology Program, Research Grants Project, Background Research and Scanning Tour Investigation of Non-Destructive Evaluation Techniques for Application within the Existing UAE Bridge Network, Submitted – November 2009, Amount requested = 200,000 AED. Proposal unsuccessful.

**Dubai Contracting Company** – "Proposal for Continuing Collaboration between AUD and DCC", Student stipends, scholarships and endowment of a Chaired position requested. Unsuccessful.

**AUD Faculty Teaching Offset Grant** – Project focus for research and publication in infrastructure management systems. One-Semester Course Release. Awarded Spring 2010.

**AUD Undergraduate Research** – "The Use of Web-Cams for Construction Productivity Assessment". Equipment Grant, Awarded - Fall 2007/Spring 2008.

## **EMPLOYMENT HISTORY - ACADEMIA**

9/16 – Present      *The University of Delaware*  
*Department of Civil and Environmental Engineering*  
*Position: Associate Professor, Director of the Construction Engineering and Management Program*

### *Primary Responsibilities:*

- Develop an undergraduate baccalaureate program in Construction Engineering and Management as a third degree offering in the Department of Civil and Environmental Engineering.
- Liaise with potential donors and work with UD development personnel for endowments and securing of program financial support.
- Instruction of undergraduate and graduate courses
- Advisement of students, organization of professional seminars & field experiences.
- Research and program development
- Involvement professional and community service,

(8/07 – 8/16)      **The American University in Dubai**, School of Engineering  
*Position: Assistant Professor of Civil Engineering (Aug. 07 – Aug. 09)*  
*Position: Associate Professor of Civil Engineering (Aug. 09 – Present)*  
*Position: Coordinator of the Construction Management Program (Aug. 11 – Present)*

### *Primary Responsibilities:*

- Program coordinator for the Masters of Science in Construction Management
- Development of undergraduate and graduate-level curriculum and programs,
- Instruction of undergraduate and graduate courses
- Advisement of students, organization of professional seminars & field experiences.
- Research and program development
- Involvement professional and community service,
- Development of laboratory facilities and acquisition of equipment,
- Assisted with accreditation of programs for ABET and MOHE (Civil and Mechanical Engineering Program).
- Advise student professional society chapters (CESA – to be converted to ASCE).
- Developed a graduate-level international construction engineering and management masters program (MSCM) and outlined structure for funded research institute on construction engineering.
- Lead the MOHE accreditation process for the graduate MSCM program

### *Undergraduate Courses Instructed:*

#### 2007/2008:

- CENG 331: Engineering Materials with Lab (Fall 07)
- CENG 400: Construction Management (Fall 07)
- ENGR 300: Probability and Statistics for Engineers (Fall 07)
- CENG 200: Statics (Spring 08)
- CENG 440: Structural Dynamics and Earthquake Engineering (Spring 08)
- ENGR 422: Senior Design Project (Spring 08)
- CENG 311: Dynamics (Summer 08)
- CENG 499: Field Experience (Summer 08)

### Subsequent Semesters

- ECVL 310: Engineering Materials w/ Lab (Fall 08, 09, 10, 11, 12 Spring 11, 12, 13)
- ECVL 420: Construction Engineering & Management (Fall 08, 09, 10, 11, 12, 13, 14)
- ENGG 300: Probability and Statistics in Engineering (Fall 08, Fall 10)
- ECVL 260: Statics w/Lab (Spring 09, Fall 11)
- ECVL 422: Infrastructure Management Systems (Spring 09, 10, 11, 12, 13, 14, 15)
- ECVL 499: Civil Engineering Design Project (Spring 09, 10, 11, Fall 2011)
- ECVL 265: Dynamics (Summer 09, 10, 14)
- ECVL 399: Field Experience in Civil Engineering (Summer 09, 10, 11, 12)
- ECVL 462: Structural Dynamics and Earthquake Engineering (Fall 09, Spring 11)
- ENGG 200: Statistics in Engineering (Spring 11, Summer 11, 12)
- ARCH 312: Structural Design (Spring 12)

### Non-Engineering Courses:

- NYST 275 (2014) / CABR 275 (2015): New York Study Tour

#### *Graduate Courses Instructed:*

- EICM 612: Construction Planning and Scheduling (Fall 2012, 13, 14)
- ENGG 620: Advanced Decision Analysis (Fall 2012)
- EICM 622: Construction Estimating (Spring 2013, 14, 15)
- EICM 642: Construction Equipment and Operations (Summer 2013, 15)
- EICM 616: Construction Productivity (Fall 2013, 14)
- EICM 636: Construction Safety (Spring 2014, 15)

#### *Supervised Graduates Students:*

- Zenah Ibrahim Mattar – M.S. Construction Management – Thesis: Construction Delays and their Effects on the Oil and Gas Industry's Performance and Profitability in the UAE, Scheduled completion: Fall - 2015
- Mansoor Al Mazrooei – M.S. Construction Management – Thesis: Development of a Point-Based System for Evaluation of Sustainability During Construction Operations, Scheduled Completion: Fall - 2015
- Lu'ay Ayyash – M.S. Construction Management – Thesis: Using TQM and Lean Principals for MEP Project Delivery in the UAE: Anticipated and Unexpected Impacts of Making the Job Operate as a Firm, Scheduled Completion – Spring 2016.
- Alexandra Semaan – M.S. Construction Management – Thesis: Simulation and Artificial Intelligence in Construction Planning and Scheduling, Status: Incomplete as student opted for non-thesis studies and completed degree program as MSCM valedictorian, June 2015.
- All MSCM Graduate Students - Responsible for guidance and supervision of all course and project/thesis oriented graduates students in the Masters of Science in Construction Management Masters' degree program.

#### *Committee Service at AUD:*

- Participate in numerous University committees and standing Honor Councils
- Member and Participant - School of Engineering Outreach Committee, Assessment Committee and Laboratory Committees (Academic Year 2007/08).
- Member and Participant – School of Engineering Assessment Committee, Student Affairs Committee and Laboratory Committees (Academic Year 2008/09),

- Chair – School of Engineering, Assessment Committee (AY 2008/09)
- Chair – Engineering Faculty Affairs Committee (AY 2009/10)
- Advisor – Civil Engineering Student Association (AY 2009/10)
- Faculty Advisor – American Society of Civil Engineers (AY 2012/13)
- Chair – Engineering Student Affair Committee (AY 2010/2011)
- Chair – School of Engineering Research Committee (AY 2011/12 and 12/13)
- Member – School of Engineering Marketing Committee (AY 2011/12 and 12/13)
- Chair – Dean and Chair Evaluation Ad Hoc Committee (AY 2013/14)

*Local Ph.D. Dissertation Advisor, School of the Built Environment, University of Salford, UK  
Ph.D. Candidate: Mr. Ghanem Nuseibeh, Advising Period: 2008/2009. Topic: Integrating Sustainability Principles in Building Design Management for Rapid Delivery Projects*

*(9/00 to 10/03)*     **The Catholic University of America**

Department of Civil Engineering, 620 Michigan Ave, Washington, DC 20064

*Position:*     Assistant Professor of Civil Engineering

Director – Construction Engineering & Management Program

*Courses Instructed:*

- CE 110 – Computer Applications
- CE 301 – Construction Systems and Planning
- CE 302 – Civil Engineering Systems
- CE 570 – Innovative Infrastructure Management
- CE 670 – Risk and Reliability in CE Systems
- ENGR 309 – Applied Math for Engineers II

*Graduate Program* – Responsible for curriculum, course syllabi and course materials and provided oversight and direction for adjunct professors for the following courses:

- CE 581 – Practical Construction Law
- CE 582 – Value Engineering
- CE 587 – Estimating and Bidding
- CE 588 – Construction Operational Management
- CE 589 – Construction Scheduling Techniques

*Academic Interests and Pursuits:*

- Transportation and construction education.
- Research and development in a wide variety of bridge, transportation, and construction engineering, including: bridge and asset management systems; Life-cycle cost analyses and predictive modeling, IT in bridge engineering; Life-cycle cost analysis
- Development of innovative graduate programs, such as dual architecture-engineering programs, and development of innovative teaching tools to enhance program delivery.

*Sponsored Research and Consulting:*

- Professional consulting for the USDOT/Federal Highway Administration, Office of Bridge Technology and Office of Infrastructure Research and Development.
- Funded Research Applications submitted to the D.C. Dept. of Public Works and the D.C. Department of Transportation Bridge Management Systems. Unfunded research performed on data mining for bridge element failure costs as part of class projects.

*Supervised Graduates Students:*

- R. Brian Pietryka – M.S. Civil Engineering, Area of focus - Infrastructure Management Systems, 2002

- Talal Al-Harbi – Ph.D., Civil Engineering, Area of focus – Infrastructure Management
- All MSCM Graduate Students - Responsible for guidance and supervision of all course and project oriented graduates students in the Construction Management masters program.

*Dissertation Committee/Outside Reader: Dr. Bryan Adey, Ecole Polytechnique Fédérale de Lausanne, Department of Civil and Environmental Engineering, "A Supply and Demand System Approach to the Development of Bridge Management Strategies", 2001*

(9/91 - 9/94)

**State University of New York at Buffalo**

Dept. of Civil, Structural and Environmental Engineering

*Position:* Lecturer

*Courses instructed: Graduate Level Courses*

- CIE 591 – Construction Estimating
- CIE 593 – Construction Planning and Scheduling
- CIE 594 – Computer Application in Construction Management
- CIE 595 – Construction Technology and Equipment
- CIE 597 – Construction Safety and Health Management

*Courses instructed: Undergraduate Level Courses*

- EAS 310 – Numerical Methods for Engineers (no longer offered)

*Additional Responsibilities*

- Developed new courses to enhance the Masters of Engineering program in construction engineering and management.
- Identify opportunities for research and develop/submit research proposals
- Work with the National Center for Earthquake Engineering Research to facilitate highway and transportation research programs at the University.
- Administered the civil engineering PC computer laboratory.

**EMPLOYMENT HISTORY – GOVERNMENT AND PRIVATE SECTOR**

(10/03 – 8/07)

**USDOT - Federal Highway Administration**, Office of Bridge Technology, FHWA, HIBT-30, 400 Seventh St., SW, Washington, DC 20590

*Position:* Senior Structural Engineer – Bridge Program Management

- Responsible for management of national-level bridge programs, including the Highway Bridge Program, the National Historic Covered Bridge Program, the Discretionary Bridge Program and other bridge related funding programs.
- Managed the development of new bridge inspection data specifications for national-level implementation and coordinated national-level review of the proposed NBI Specifications. (two-year effort completed August 2007).
- Interact with Congress, Congressional staff and US House and Senate Committees for the on policy impacts regarding bridge program issues.
- Respond to press inquiries in conjunction with the Office of Public Affairs
- Developed and administered proposed regulatory rulemakings and associated OMB Information Collection clearances.
- Spearhead and lead a Federal-State effort to redevelop the Recording and Coding Guide for the Inventory and Appraisal of the Nation's Bridges and guide proposed



structural, geotechnical and foundation, hydraulic, traffic and geometric design.

- Participated within management team for complete design projects from preliminary and conceptual design through completion of plans and specifications and award of construction contract.
- Reinforced masonry design; traffic engineering and geometric design; drainage design and drainage studies.

#### **PROFESSIONAL SOCIETIES, COMMITTEE MEMBERSHIP AND AFFILIATIONS**

Member	UAE Society of Engineers – Technical Committee (2008 - 12) UAE Society of Engineers – Credentials and Accreditation Subcommittee (2008 - 12)
Associations:	American Society of Civil Engineers (Associate Member) ASCE Structural Engineering Institute and Construction Institute AACE International – 2013 to Present
Past–	Int’l Association of Bridge and Structural Engineers (IABSE) Int’l Association of Bridge Maintenance and Safety (IABMAS – Founding Member) TRB Committee on Maintenance of Structures: A3C06 (through 2007) TRB Committee on Bridge Management Systems: A3C17 ASCE Technical Committee on Bridge Management, Inspection, & Rehabilitation ASCE Committee on Safety of Bridges IABSE Working Commission 6 – Maintenance of Bridges Associated Builder & Contractors – Metro Washington Student Chapter Committee IABSE Task Commission on Younger Members, 2002 Technical Coordinating Committee - 1999 TRB Intl. Bridge Management Conference Executive Board – International Association for Bridge Safety and Maintenance Scientific Committee – First Intl Conference on Bridge Maintenance, Safety and Mgmt Sci.Cmt. - 2004 IABSE Symposium: Metr. Habitats & Infrastructure, Shanghai, China ASCE Tech. Committee on Bridge Mgmt., Inspection, & Rehabilitation (past Chair) Assoc. Editor ASCE Journal of Bridge Engineering (1997/98 – 2003)
Service -	Reviewer - SOE Arabian Tunneling Conference – 2014, 2015 Reviewer - 11th Arab Structural Engineering Conference King Fahd University Of Petroleum & Minerals, Saudi Arabia, 25-27 October 2009 Reviewer - 7 <sup>th</sup> International Conference on Composite Science and Technology (ICCST/7), American University of Sharjah, Jan. 2009. Reviewer – Third International Conference on Modeling, Simulation and Applied Optimization, American University of Sharjah, Jan. 2009 Panelist - Panel Discussion: Challenges and Lessons Learned in Mega Projects, 1 <sup>st</sup> UAE Project Management Conference, May 2015 Session Chair at numerous national (US & UAE), and international conferences Moderator - Panel Discussion on Future Construction Market Directions, PMV Live Conference, Dubai, Nov. 2015

Moderator – Panel Discussion on Sustainability in Construction, PMV Live Conference, Dubai, Nov. 2015

Organizer - Arabian Tunneling Conference Younger Engineers Forum 2014/2015

Moderator - Arabian Tunneling Conference Younger Engineers Forum 2014/2015

Moderator - Arabian Tunneling Conference Technical Sessions, 2014/2015

#### **SELECT PRESENTATIONS:**

*Lean Construction and Lean Manufacturing Principles for Heavy-Lift on Construction Job-Sites*, Keynote Lecture, LEEA Lifting and Rigging Conference Middle East, Dubai, December 2015

*Project Management and Value Engineering for Heavy Lift Projects*, Keynote Lecture, LEEA Lifting and Rigging Conference Middle East, Dubai, December 2015

*Construction Risk Analysis*, Professional Seminar delivered at the Big5 UAE, November 2016.

*Lean Construction in Mega Project Delivery: An Exploration of Challenges and Opportunities*, May 25-26, 2015, Dubai, United Arab Emirates.

*Practical Information for Developing Skills for Improved Project Management* – Pre-conference Professional Workshop, Building Future Learning Spaces – Designing, Building and Maintaining Educational Facilities in the MENA Region, March 23 – 25, 2015, Dubai, United Arab Emirates.

*Preservation Models for Bridge and Pavement Management Systems*, Keynote Lecture - International Conference on Global Technology Initiatives (ICGTI-2015), RIZVI College of Engineering, March 29 – 30, 2015, Mumbai, India

*Exploration of Green Construction Systems*, Keynote Lecture - International Conference on Global Technology Initiatives (ICGTI-2015), RIZVI College of Engineering, March 29 – 30, 2015, Mumbai, India

*Using the Project Schedule for Variation Analysis*, UAE FIDIC Conference and Exhibition, November 24 – 25, 2014, Dubai, United Arab Emirates.

*The Role of Public Owners in Energizing Substantial and Sustainable Productivity Improvements*, Dubai International Project Management Forum, Sept. 28 – 30, 2014, Dubai, United Arab Emirates.

*Experiences using Disparate Mobile Computing Devices and Multiple Operating Systems to Enable Paperless Research Collaboration*, EDULEARN 2013, July 2013, Barcelona, Spain.

*Experiences using a Blended Learning Approach Facilitated with Adobe Connect to Expand Part-Time Student Options in Graduate Studies and Accommodate Remote Classroom Participation*, EDULEARN 2013, July 2013, Barcelona, Spain.

#### **SELECT PUBLICATIONS:**

**Small, E.** and Baqer, M., Examination of Job-Site Layout Approaches and their Impact on Construction Job-Site Productivity, Accepted for the Elsevier Creative Construction Conference, Budapest, Hungary, June 2016, Published in Elsevier's *Procedia Engineering Journal*, *Procedia Engineering* 164 ( 2016 ) 383 – 388, doi: 10.1016/j.proeng.2016.11.634

**Small, E.** and Al Mazrooei, M., Evaluation of Construction-Specific Provisions of Sustainable Design Codes and Standards in the United Arab Emirates, Accepted for the International Conference on Sustainable Design, Engineering and Construction (ISCDEC), May, 2016 – Published in Elsevier's *Procedia Engineering Journal*, *Procedia Engineering* 145 ( 2016 ) 1021 – 1028, doi: 10.1016/j.proeng.2016.04.132

**Small, E.** and Al Mazrooei, M., Alternative Approaches for the Development of a Construction-Specific Decision Support Tool for Sustainable Construction Operations, Accepted for the International



Conference on Sustainable Design, Engineering and Construction (ISCDEC), Published in Elsevier's Procedia Engineering Journal, Procedia Engineering 145 ( 2016 ) 1013 – 1020, doi: 10.1016/j.proeng.2016.04.131

**Small, E.,** Kianmehr, P, Al Mazrooei, M., and Al Marashi, M.H., *Experiences using Disparate Mobile Computing Devices and Multiple Operating Systems to Enable Paperless Research Collaboration*, Proc. EDULEARN 2013. Barcelona, Spain, July 2013.

**Small, E.,** El Arnaout, H. and Girgis, M., *Experiences using a Blended Learning Approach Facilitated with Adobe Connect to Expand Part-Time Student Options in Graduate Studies and Accommodate Remote Classroom Participation*, Proc. EDULEARN 2013. Barcelona, Spain, July 2013.

Bazzi, W. and **Small, E.,** *Learning Outcomes Assessment using Statistical Hypothesis Testing and Instant Response System Technology*, Proc. EDULEARN 2011. Barcelona, Spain, July 2011.

**Small, E.,** and Christy, C., *Experiences with Extracurricular and Course-based Engineering Student Competitions in a Multi-Cultural Environment*, Proc. 2009 NE ASEE Conference: Engineering in the New Global Economy, American Society of Engineering Education, Univ. of Bridgeport, 2009.

**Small, E.,** *First Year Experiences in the Development and Implementation of an Integrated Assessment Process for Program Evaluation*, Proc. 2009 NE ASEE Conference: Engineering in the New Global Economy, American Society of Engineering Education, Univ. of Bridgeport, 2009.

**Small, E.,** *Experiences Capitalizing on the Multicultural Engineering and Construction Community of Dubai to Enhance Engineering Student Program*, Proc. 2009 NE ASEE Conference: Engineering in the New Global Economy, American Soc. of Engineering Education, Univ. of Bridgeport, 2009.

**Small, E.,** Chapter 15 – Bridges, *2004 Status of the Nation's Highways, Bridges and Transit: Conditions and Performance – Report to Congress*, U.S. Department of Transportation, Federal Highway Administration, Federal Transit Administration, Washington, DC.  
<http://www.fhwa.dot.gov/policy/2004cpr/pdfs/chap15.pdf>

**Small, E.** and McCormick, R., Chapter 11 – Bridges, *2002 Status of the Nation's Highways, Bridges and Transit: Conditions and Performance – Report to Congress*, U.S. Department of Transportation, Federal Highway Administration, Federal Transit Administration, Washington, DC.  
<http://www.fhwa.dot.gov/policy/2002cpr/p3.htm>

Cooper, J.D., McCormick, R.J. and **Small, E.P.,** *Balancing Bridge Management and System Preservation Needs Against The Need To Replace And Rehabilitate Deficient Bridges*, Proc. First International Conf. on Bridge Maintenance, Safety and Management, Barcelona, Spain, July 2002.

**Small, E.P.,** *A Proposed Approach for Consideration of Seismic Risk Mitigation in US Bridge Management Systems*, Proc. First International Conference on Bridge Maintenance, Safety and Management, Barcelona, Spain, July 2002.

**Small, E.P.,** *Approaches for the Consideration of Safety in US Bridge Management Systems*, First USA – Italy Workshop on Bridge Design and Construction, Rome, Italy, July 2002.

McCormick, R. and **Small, E. P.** *Federally Assisted Bridge Programs in the United States: Past, Present and Future*, 16<sup>th</sup> US-Japan Workshop on Bridge Engineering.

**Small, E. P.,** *Preservation, Improvement and Natural Hazard Considerations in Bridge Management Systems*, 16<sup>th</sup> US-Japan Workshop on Bridge Engineering.

McCormick, R. and **Small, E. P.,** *Federally Assisted Bridge Programs in the United States: Past, Present and Future*, 16<sup>th</sup> US-Japan Workshop on Bridge Engineering.

Grazia-Bruchi, M. and **Small, E. P.,** *The Process of Bridge Management in the United States*, published in Italian, XVIII Congresso C.T.A., sul tem “Nuove Sfide per l’Acciaio”

**Small, E. P.**, *Evaluation of the National Bridge Inventory: Composition and Conditions of the Nations Highway Bridges Based On Superstructure Materials and Designs*, Series of Papers produced for each State, Puerto Rico and for the entire US Population of Bridges, Each paper published individually by the Federal Highway Administration.

**Small, E.P.**, *The Process of Bridge Management in the United States*, Invitational Presentation at the 1999 Polish Bridge Engineering Conference. Translated to Polish and published within the Proceedings, Krynica, Poland, Sept. 1999.

**Small, E.**; Philbin, T; Fraher, M.; and Romack, G., *Current Status of Bridge Management System Implementation in the United States*, International Bridge Management Conference, 4/99.

**Small, E.** and Swisher, M., *Integration of Bridge and Pavement Management Systems: A Proposed Strategy for Asset Management*, International Bridge Management Conference, 4/99.

**Small, E.**, *Examination of Alternative Strategies for Integration of Seismic Risk Considerations in Bridge Management Systems*, International Bridge Management Conference, 4/99.

Chase, S.; Nutakor, C.; and **Small, E.**, *In Depth Analysis of the National Bridge Inventory Database Utilizing Data Mining, GIS and Advanced Statistical Methods*, International Bridge Management Conf, 4/99.

Thompson, P.D.; **Small, E. P.**; Johnson, M., and Marshall, A., *The AASHTOWare Pontis Bridge Management System*, Structural Engineering International, Journal of the International Association for Bridge and Structural Engineering, Volume 8, No. 4, Nov. 1998, pp. 303-308.

Hawk, H. and **Small, E. P.**, *The BRIDGIT Bridge Management System*, Structural Engineering International, Journal of the International Association for Bridge and Structural Engineering, Volume 8, No. 4, November 1998, pp. 309-314.

**Small, E.**, and Cooper, J., *Condition of the Nation's Bridges: A Look at the Past, Present and Future*, TRNews, Transportation Research Board, No. 194, Jan. – Feb. 1998.

**Small, E.**, and Cooper, J., *Bridge Management Software Programs*, TRNews, Transportation Research Board, National Research Council, No. 194, Jan. – Feb. 1998.

Chase, S.; Harris, B.; **Small, E.**; and Nutakor, C., *Associating Factors Influencing Deterioration and Load Carrying Capacity With Bridges: A GIS Approach*, presented at the 1998 TRB Annual Meeting, Currently Under Review for TRB Publication.

**Small, Edgar P.** and Chase, Steven B., *Developing a Methodology for Vulnerability Assessment Within Bridge Management Systems*, Proc. - ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability, 8/96.

*Produced numerous reports, press releases, executive summaries and white-papers for internal distribution in the Federal Highway Administration and within other US governmental agencies. Substantially contributed to numerous FHWA collective reports, including system characteristics, system conditions, national highway system and interstate highway system chapters of the 2002/2004 and 2006 Condition and Performance Report to the US Congress. Prepared and delivered numerous presentations to government agencies and committees, Congressional subcommittee staffers, colleges and Universities and professional societies.*