

**SRINIVAS ALLENA, Ph.D., E.I., M.ASCE.**  
Civil and Environmental Engineering,  
Washington State University Tri cities  
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## **EDUCATION AND CERTIFICATION**

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### **New Mexico State University, Las Cruces, NM**

Doctor of Philosophy in Civil Engineering, May 2010  
Major Area: Structural Engineering  
Dissertation: Ultra-High Strength Concrete Using Local Materials  
Advisor: Dr. Craig M. Newton

### **Gujarat University, Ahmedabad, India**

Master of Engineering in Civil Engineering, September 2001  
Major Area: Structural Engineering  
Thesis: Computer Aided Structural Analysis of a Satellite Payload Structure  
Advisors: Dr. P. V. B. A. S Sharma and Prof. M. N. Patel

### **Andhra University, Visakhapatnam, India**

Bachelor of Engineering in Civil Engineering, April 1998

### **M. R. K. Polytechnic, Veeravasaram, India**

Diploma in Civil Engineering, May 1992

EIT, State of New Mexico, Certificate No: 6773, April 2008

## **APPOINTMENTS**

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**Assistant Professor (Clinical)**, Civil and Environmental Engineering, Washington State University – Tri-Cities, Richland, WA, Aug 2011 – Present.

**Post-Doctoral Research Associate**, Civil Engineering Department, New Mexico State University, Las Cruces, NM, Nov 2010 – Aug 2011.

**Post-Doctoral Research Associate**, Civil and Environmental Engineering Department, Clarkson University, Potsdam, NY, Jul 2010 – Nov 2010.

**Instructor/Graduate Research and Teaching Assistant**, New Mexico State University, Las Cruces, NM, 2005-2010

**Assistant Professor**, Department of Civil Engineering, G. V. P College of Engineering, Visakhapatnam, India, 2002-2005

**Scientist**, Center for Construction Development and Research, National Council for Cement and Building Materials (NCB), Ballabgarh, India, 2001-2002

## **RESEARCH INTERESTS**

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Ultra-high performance concrete  
Engineered cementitious composites  
Early-age and longer term shrinkage of concrete  
Concrete durability  
Reuse/recycling of materials  
Light weight aggregate concrete  
Supplementary cementitious materials

## PUBLICATIONS

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### Journal Papers

**Allena, S.**, and Newtonson, C. M. (2013). "Shrinkage of Ultra High Strength Concrete," submitted to Cement and Concrete Research.

Jesus, M. V., Newtonson, C. M., Weldon, B. D., and Jauregui, D. V., and **Allena, S.** (2012). "Freezing and Thawing Durability of Ultra-High Strength Concrete," *Journal of Civil Engineering and Architecture*, Vol. 6, No. 2 (Serial No. 51).

**Allena, S.**, and Newtonson, C. M. (2012). "Shrinkage of Fiber Reinforced Ultra High Strength Concrete," *ASCE Journal of Materials in Civil Engineering*, Vol. 23, No.5, 612-614.

**Allena, S.**, and Newtonson, C. M., Weldon, B. D., and Jauregui, D. V. (2011). "Mechanical Properties and Durability Issues of Ultra-High Strength Concrete-An Overview," *International Journal of Civil Engineering Review*, Vol. 2, No. 4, 198-207.

**Allena, S.**, and Newtonson, C. M. (2011). "Ultra High Strength Concrete Mixtures Using Local Materials," *Journal of Civil Engineering and Architecture*, Vol. 5, No. 4 (Serial No. 41), 322-330.

**Allena, S.**, and Newtonson, C. M. (2011). "State-of-the-Art Review on Early-Age Shrinkage of Concrete," *The Indian Concrete Journal*, Vol. 85, No. 7, 14-20.

### Manuscripts Under Preparation

**Allena, S.**, and Newtonson, C. M. "Influence of Specimen Shape and Size on Compressive Strength of High and Ultra High Strength Concretes.

### Peer Reviewed Conference Papers

**Allena, S.**, Newtonson, C. M., Tahat, M. N. (2012). "Mechanical Properties of Ultra-High Strength Concrete with Local Material," 2<sup>nd</sup> International Conference on Civil Engineering and Building Materials, Nov. 17-18, 2012, Hong Kong, Proceedings published by CRC Press, ISBN 9780415643429.

Jesus, M. V., Newtonson, C. M., **Allena, S.**, Weldon, B. D., and Jauregui, D. V. (2012). "Freezing and Thawing Durability of Ultra-High Strength Concrete," International Congress on Durability of Concrete, June 18-21, 2012, Trondheim, Norway.

**Allena, S.**, and Newtonson, C. M. (2010). "Ultra High Strength Concrete Mixtures Using Local Materials," Proceedings, *2010 International Concrete Sustainability Conference*, April 13-15, 2010, Tempe, AZ.

### Conferences/Presentations

Craig M. Newtonson, C. M., Lyell E., **Allena, S.**, Jesus Muro., Weldon, B. D., and Jauregui, D. V. (2012). "Improving Sustainability of Ultra-High Strength Concrete," Twelfth International Conference on Recent Advances in Concrete Technology and Sustainability Issues, Oct 31-Nov 2, 2012, Prague, Czech Republic.

**Allena, S.**, and Newtonson, C. M. (2010). "Shrinkage Behavior of Ultra-High Strength Concrete," *Joint Texas and New Mexico Sections ASCE Fall 2010 Meeting*, Oct 6-9, 2010, El Paso, TX.

Deo, O., Sumanasuriya, M. S., Neithalath, N., **Allena, S.** (2010), "Porosity and Packing Base Materials Design of Pervious Concretes for Desired Performance Levels," *2010 ACI Fall Convention*, Pittsburg, PA.

**Allena, S.**, (2010). "Development of Ultra High Strength Concrete Using Local Materials," *ASCE Spring 2010 Meeting*, Las Cruces, NM.

## Discussions

**Allena, S.**, and Newton, C. M. (2007). Discussion of the paper “Optimization of Mechanical Properties and Durability of Reactive Powder Concrete” *ACI, Materials Journal*, Vol. 104, No. 5, p. 547.

## Reports

Weldon, B. D., and Jauregui, D. V., Newton, C. M., **Allena, S.**, Montoya, K. F., and Taylor, C. W. (2010). “Feasibility Analysis of Ultra High Performance Concrete For Prestressed Concrete Bridge Applications,” Report submitted to Research Bureau New Mexico Department of Transportation, Albuquerque, NM, Project No. NM09MSC-01.

**Allena, S.** (2010). “Ultra-High Strength Concrete Materials Using Local Materials, Ph.D. Dissertation, Civil Engineering Department, New Mexico State University, Las Cruces, NM.

**Allena, S.** and Newton, C. M. (2007). “Ultra High Strength Concrete,” Report submitted to the G. C. C Rio Grande, Albuquerque, NM.

## News Articles:

“NMSU researchers develop high performance concrete using local materials,” Article ID: 21456755, Las Cruces Sun News.

## PROPOSALS

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Development of Durable Concrete Mixtures Using Milled Stainless Steel Slag as Cementitious Material and Fine aggregate, Harsco Corporation, \$122,000, Principal Investigator. (Awaiting for Response)

Development of a Course on Sustainable Energy Technologies through Project-Based Learning in Mechanical Engineering, National Science Foundation, \$166, 500, Key Personnel. (Declined)

## RESEARCH EXPERIENCE

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### Washington State University – Tri-Cities, Richland, WA

Civil and Environmental Engineering Department

#### Recycled Concrete as Aggregates (RCA) in Portland Cement Concrete Pavements (PCCP)

- Characterization of RCA properties.
- Develop the RCA mixtures that meet the specifications for PCCP applications.
- Study the effects of RCA on fresh and hardened concrete.
- Evaluation the concrete pavements containing different RCA percentage.

### New Mexico State University, Las Cruces, NM

Civil Engineering Department

#### Ultra High Strength Concrete (UHSC) Using Local Materials

- Developed UHSC mixtures using local materials
- Characterized the mechanical properties of UHSC and compared with the commercially available pre-packaged UHSC.
- Studied the influence of different curing regimens, curing period, and fiber dosage on mechanical properties of UHSC.
- Quantified the early-age (< 24 hours) and longer term (up to 30 days) shrinkage of UHSC

### Improving the Sustainability of UHSC Mixtures

- Modified the UHSC mixtures using fly ash as a partial replacement of cement and silica fume and reducing the peak curing temperature to improve the sustainability.
- Studied the influence of water to cementitious materials ratio and percentage of fly ash on mechanical properties of UHSC.

### Freezing and Thawing Durability of UHSC

- Studied the freezing and thawing durability in terms of relative dynamic modulus of plain and fiber reinforced UHSC cured under different curing regimens.

## **TEACHING EXPERIENCE**

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### **Washington State University – Tri-Cities, Richland, WA**

Civil and Environmental Engineering Department

#### **Spring 2013**

CE 215 Mechanics of Materials  
CE 322 Transportation Engineering  
CE 430 Indeterminate Structural Analysis

#### **Fall 2012**

CE 211 Statics (Evaluations: 4.96/5.00)  
CE 330 Introduction to Structural Engineering (Evaluations; 5.00/5.00)  
Cst M 254 Construction Graphics (Evaluations: not available)

#### **Spring 2012**

CE 431 Structural Steel Design (Evaluations: not available)  
CE 322 Transportation Engineering (Evaluations: 4.67/5.00)  
Cst M 254 Construction Graphics (Evaluations: not available)

#### **Fall 2011**

CE 211 Statics (Evaluations: 4.79/5.00)  
CE 433 Reinforced Concrete Design (4.82/5.00)  
CE 435 Foundations (4.76/5.00)

### **New Mexico State University, Las Cruces, NM**

Civil Engineering Department

#### **Courses Taught:**

Instructor: CE 311 Civil Engineering Materials (Fall 2008 and Fall 2009)  
CE 311L Civil Engineering Materials Laboratory (Fall 2008 and Fall 2009)  
F.E Review: Mathematics and Construction Management

Teaching Assistant: CE 501 Advanced Mechanics of Materials  
CE 477 Construction Engineering and Project Management (Co-taught)  
CE 151 Introduction to Civil Engineering

### **G. V. P College of Engineering, Visakhapatnam, India**

Department of Civil Engineering

#### **Courses taught:**

Engineering Mechanics (Statics & Dynamics)	Strength of Materials
Structural Analysis	Finite Element Method
Reinforced Concrete Design	Design of Steel Structures
Concrete Technology	Soil Mechanics

### **Undergraduate Research Projects Supervised:**

Suitability of Indian Standard Recommended Guidelines for Concrete Mix Design (IS: 10262) for the Present Day Indian Cements, 2002.

Effect of Type of Cement, Curing Period, and Curing Regimen on Rate of Hardening of Concrete, 2003.

## **INDUSTRIAL EXPERIENCE**

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### **National Council for Cement and Building Materials**

Construction Development and Research Division

- Team leader for the project “Technical Audit and Quality Assurance for Reconstruction of Buildings in Gujarat, India.”
- Performance studies on concrete made with different cementitious materials, admixtures, and fibers.
- Evaluation of aggregates for alkali-aggregate reactivity.
- Laboratory testing of construction materials and concrete mix designs

## **PROFESSIONAL DEVELOPMENT**

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Participated at the 45<sup>th</sup> Annual Quality Concrete School held at New Mexico State University, Las Cruces, Jan., 2009.

Participated in the workshop on “Seismic Design Code, IS: 1893 (Part1)-2002,” held at Visakhapatnam, India, June, 2004.

Participated at the national conference on “Modern Cement Concrete and Bituminous Roads,” conducted by the department of Civil Engineering, GITAM University, Visakhapatnam, India, Dec. 2003.

Participated in the short term course on “Present Practices for Design of Transmission Line and Telecommunication Towers,” organized by GVP College of Engineering, Visakhapatnam, India, Dec. 2003.

Attended the workshop on “Advanced Concrete Technology and Construction Practices,” held at GVP College of Engineering, Visakhapatnam, India, Jan. 2003.

Attended the “International Workshop on Seismic Reconstruction, Repair, and Retrofitting,” held at Ahmedabad, India, Aug. 2001.

## **AWARDS**

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Outstanding teaching assistant award, New Mexico State University, 2008

## **PROFESSIONAL AFFILIATION**

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American Society of Civil Engineers, ASCE  
American Concrete Institute, ACI  
Transportation Research Board, TRB  
Tau Beta Pi

## **TECHNICAL COMMITTEES**

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American Concrete Institute Committee 239 (Ultra-High Performance Concrete)  
American Concrete Institute Committee 544 (Fiber Reinforced Concrete)  
Transportation Research Board Committee AFN 40 (Concrete Materials and Placement Techniques)  
Transportation Research Board Committee AFN 20 (Properties of Concrete)

## **PEER REVIEW ACTIVITY**

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Reviewer and Panelist for *National Science Foundation*, 2010  
Reviewer for *ACI Materials Journal*  
Reviewer for *ASCE Journal for Materials in Civil Engineering*  
Reviewer for *Journal of Experimental Techniques*  
Reviewer for *Journal of Transportation Research Board: Transportation research Record*  
Reviewer for *ASTM Journal of Advances in Civil Engineering Materials*

## **GRADUATE DEGREE COMMITTEES**

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M. S. Students

Timothy Spry (current)  
Daniel Gilbert Mjelde (current)  
Boyle Spencer (current)

## **DEPARTMENTAL/UNIVERSITY SERVICE**

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Undergraduate Curriculum Task Committee, Civil and Environmental Engineering, Washington State University.

Undergraduate Program Committee, Civil and Environmental Engineering, Washington State University.

Scholarship Readers Committee, Washington State University Tri-Cities

Graduate Studies Committee, Civil and Environmental Engineering, Washington State University: 2011 -2012