

DAVIDE C. FRATAMICO, Ph.D.

New Hudson Façades, LLC
Design & Engineering Department
815 Columbia Ave.
Linwood, PA 19061

fratamico@jhu.edu
267-230-0401
davefratamico.com
U.S. Citizen

EDUCATION

- Ph.D. Civil Engineering**
Johns Hopkins University, Baltimore, MD (2017)
Advisor: Prof. Benjamin W. Schafer
Thesis: Experiments, Analysis, and Design of Built-Up Cold-Formed Steel Columns
- M.S.E. Civil Engineering**
Johns Hopkins University, Baltimore, MD (2016)
- B.S. Architectural Engineering**
Drexel University, Philadelphia, PA (2012)
Pennoni Honors College, GPA: 3.92 (*summa cum laude*)
Minor: Italian Stylistics and Contemporary Cinema and Literature

HONORS AND AWARDS

- Research** Vinnakota Award - Honorable Mention, SSRC Annual Stability Conference (2017)
National Defense Science and Engineering Graduate Fellowship (2013-2016)
Joseph Meyerhoff Fellowship: Civil Engineering, Johns Hopkins University (2012-2013)
- Education** A.J. Drexel Academic and Dean's Scholarships (2007-2012)
Milton Rosenberg Merit Scholarship (2012)
Harry E. Muchnic Merit Scholarships (2) (2010, 2011)
Global Engineering Exchange, Building Engineering, University of Leeds, UK (Fall 2010)
- Service** Civil Engineering Graduate Service Award, Johns Hopkins University (May 2016)

EXPERIENCE

- Research American Iron and Steel Institute**
Graduate Research Assistant, Thesis Work on Design Code Development (2012-2017)
Work: conducted experimental and numerical investigations on built-up cold-formed steel columns to understand their buckling interactions and collapse behavior; quantify composite action and as-constructed performance; augment design codes to incorporate semi-analytical modeling for more accurate strength predictions
- Industry NBM Technologies, Inc.**
Part-Time Research Engineer (2016-2017)
Baltimore, MD
Work: assisted a senior engineer in the testing of a suite of screw, weld, and powder-actuated fasteners commonly used in cold-formed steel deck diaphragms, using monotonic and cyclic shear loading, for characterization of behavior and recording ultimate capacities

Industry Thornton Tomasetti

Structural Engineering Design Intern (2011)
Philadelphia, PA

Work: reviewed shop drawings for reinforced-concrete commercial projects; assisted with structural assessment of Lincoln Financial Field in Philadelphia before and after the 2011 Virginia Earthquake; assessed building envelope performance in a high-rise building; completed BIM and structural finite element modeling of large-scale steel structures (US Capitol dome scaffolding and an A380 hangar at the Jeddah Airport in Jeddah, Saudi Arabia)

CertainTeed Corporation

R&D Lab Technician-Intern (2009-2010)
Blue Bell, PA

Work: completed projects on asphalt-based roofing shingles with experiments on solar-reflectance, weathering, seasonal durability, and mechanical properties of roofing shingles; led project on algae resistance of roofing shingles for residential structures; assisted in the construction of lab apparatus for international collaborators that was used for new product testing and patent development

EXPERIENTIAL SKILLS AND CERTIFICATIONS

Software	ABAQUS, AutoCAD, Revit Structure, Scia Engineer, RISA, MASTAN, CUFSM, SAP2000, MATLAB, Mathematica, LabVIEW
Coding	BASH, MATLAB, Python (introductory), FORTRAN (introductory)
Mechanics	CNC Laser Cutting, CNC Water Jet Cutting, MTS Universal Testing Machine, Laser Imperfection Scanner, Stereolithography-based 3D Printer
Languages	English (native), Italian (fluent), French (basic), Spanish (basic)
Licensing	Engineer-In-Training, Pennsylvania, Certificate #ET017869

JOURNAL PAPERS

- (1) Torabian, S., Fratamico, D.C., Schafer, B.W. (2016). "Experimental response of cold-formed steel Zee-section beam-columns." *Thin-Walled Structures*, 98, 496-517, (DOI:10.1016/j.tws.2015.10.016).
- (2) Fratamico, D.C., Torabian, S., Zhao, X., Rasmussen, K.J.R., Schafer, B.W. (submitted 2017). "Experimental study on the composite action in sheathed and bare built-up cold-formed steel columns." *Thin-Walled Structures*, (in review).
- (3) Fratamico, D.C., Torabian, S., Zhao, X., Rasmussen, K.J.R., Schafer, B.W. (submitted 2017). "Experiments on the global buckling and collapse of built-up cold-formed steel columns." *Journal of Constructional Steel Research*, (in review).
- (4) Fratamico, D.C., Kechidi, S., Castro, J.M., Bourahla, N., Schafer, B.W. (submitted 2017). "Simulation of screw connected built-up cold-formed steel columns." (in review).

CONFERENCE PAPERS

- (1) Fratamico, D.C., Schafer, B.W. "Numerical Studies on the Composite Action and Buckling Behavior of Built-Up Cold-Formed Steel Columns." Proc. of the 22nd International Specialty Conference on Cold-Formed Steel Structures, St. Louis, MO, 2014.
- (2) Fratamico, D.C., Torabian, S., Schafer, B.W. "Composite Action in Global Buckling of Built-Up Columns Using Semi-Analytical Fastener Elements." Proc. of the Annual Stability Conference, Structural Stability Research Council, Nashville, TN, 2015.

- (3) Torabian, S., Fratamico, D.C., Schafer, B.W. "Experiments on cold-formed steel Zee-shaped stub beam-columns." Proc. of the Annual Stability Conference, Structural Stability Research Council, Nashville, TN, 2015.
- (4) Fratamico, D.C., Torabian, S., Rasmussen, K.J.R., Schafer, B.W. "Experimental Studies on the Composite Action in Wood-Sheathed and Screw-Fastened Built-Up Cold-Formed Steel Columns." Proc. of the Annual Stability Conference, Structural Stability Research Council, Orlando, FL, 2016.
- (5) Lama Salomon, A., Fratamico, D.C., Zhao, X., Schafer, B.W., Moen, C.D. "Full field 4D cold-formed steel column buckling measurements with high resolution image-based reconstruction." Proc. of the Annual Stability Conference, Structural Stability Research Council, Orlando, FL, 2016.
- (6) Fratamico, D.C., Torabian, S., Rasmussen, K.J.R., Schafer, B.W. "Experimental Investigation of the Effect of Screw Fastener Spacing on the Local and Distortional Buckling Behavior of Built-Up Cold-Formed Steel Columns." Proc. of the Wei-Wen Yu International Specialty Conference on Cold-Formed Steel Structures, Baltimore, MD, 2016.
- (7) Fratamico, D.C., Torabian, S., Rasmussen, K.J.R., Schafer, B.W. "Buckling and Collapse Behavior of Screw-Fastened, Built-Up Cold-Formed Steel Columns of Varying Cross-Section Size: Experimental Investigation." Proc. of the Annual Stability Conference, Structural Stability Research Council, San Antonio, TX, 2017.
- (8) Kechidi, S., Fratamico, D.C., Castro, J.M., Bourahla, N., Schafer, B.W. "Numerical study on the behavior and design of screw connected built-up CFS chord studs." Proc. of the Annual Stability Conference, Structural Stability Research Council, San Antonio, TX, 2017.
- (9) Kechidi, S., Fratamico, D.C., Bourahla, N., Castro, J.M., Schafer, B.W. "Numerical modeling and validation of post-buckling behavior of screw connected built-up CFS chord studs." Proc. of the 8th European Conference on Steel and Composite Structures (EUROSTEEL), Copenhagen, DK, 2017; *ce/papers*, 1, 1543-1552, (DOI:10.1002/cepa.197).

CONFERENCE PRESENTATIONS

- (1) "Numerical Studies on the Composite Action and Buckling Behavior of Built-Up Cold-Formed Steel Columns." 22nd Int'l Specialty Conference on Cold-Formed Steel Structures, St. Louis, MO, 2014.
- (2) "Composite Action in Global Buckling of Built-Up Columns Using Semi-Analytical Fastener Elements." Annual Stability Conference, Structural Stability Research Council, Nashville, TN, 2015.
- (3) "Semi-Analytical and Numerical Studies of the Composite Action in Built-Up Cold-Formed Steel Columns with Intermittent Fasteners." Engineering Mechanics Institute Conference, Stanford, CA, 2015.
- (4) "Experimental Studies on the Composite Action in Wood-Sheathed and Screw-Fastened Built-Up Cold-Formed Steel Columns." Annual Stability Conference, Structural Stability Research Council, Orlando, FL, 2016.
- (5) "Experimental Investigation of the Effect of Screw Fastener Spacing on the Local and Distortional Buckling Behavior of Built-Up Cold-Formed Steel Columns." Wei-Wen Yu International Specialty Conference on Cold-Formed Steel Structures, Baltimore, MD, 2016.
- (6) "Numerical study on the behavior and design of screw connected built-up CFS chord studs." Annual Stability Conference, Structural Stability Research Council, San Antonio, TX, 2017.
- (7) "Buckling and Collapse Behavior of Screw-Fastened, Built-Up Cold-Formed Steel Columns of Varying Cross-Section Size: Experimental Investigation." Annual Stability Conference, Structural Stability Research Council, San Antonio, TX, 2017.

SERVICE

- Volunteer** Maryland Wood Bridge Challenge, Instrumentation Volunteer (2015, 2016)
Director of Communications for the Civil Engineering Graduate Association (2014-2015)
NSF: STEM Achievement in Baltimore Elementary Schools, Activities Mentor (2013-2016)
Lead Coordinator for Graduate Seminar Series at Johns Hopkins University (2013-2014)
ISSNAF: Italian Scientists and Scholars of North America Foundation
Volunteer/mentor for international students (2013-present)
- Teacher** EN.500.111-Steel At It! History, Design, and Innovation of Steel Structures, HEART
Program Course Instructor (co-taught with Dr. Deniz Ayhan), JHU (2016)
EN.560.141-Perspectives on the Evolution of Structures, Teaching Assistant, JHU (2016)
EN.560.201-Statics and Mechanics of Materials, Lab Teaching Assistant, JHU (2015,2016)
Preparing Future Faculty: Summer Teaching Institute, JHU Program Participant (2015)
AE391-Architectural Engineering Design, Teaching Assistant, Drexel University (2012)
Drexel University Learning Center Tutoring in Science, Math, and Italian (2009-2010)
- Reviewer** Journal of Constructional Steel Research
Thin-Walled Structures

RELATED GRADUATE COURSEWORK

- Johns Hopkins University** Structural Mechanics
Applied Mathematics for Engineering
Finite Element Methods
Multi-Hazard Risk Mitigation
Mechanics of Solids and Materials
Structural Stability
Cold-Formed Steel Design
Advanced Steel Design
Aerospace Structures and Materials (Audit)
- Drexel University** Dynamics of Structures (I and II)
Sustainability Principles and Practices
Construction Materials

MEMBERSHIPS AND AFFILIATIONS

- Societies** American Society of Civil Engineers (ASCE), Associate Member (2008-present)
ASCE: Structural Engineering Institute (SEI), Member (2013-present)
American Institute of Steel Construction (AISC), Student Member (2013-present)
Cold-Formed Steel Engineers Institute, Student Member (2013-present)
Cold-Formed Steel Research Consortium, Student Member (2013-present)
National Society of Professional Engineers, Member (2012-present)
Structural Stability Research Council, Student Member (2013-present)

INTERESTS

Outdoor sports, trail running, hiking, traveling, woodworking, book and music collection, bicycle repairs and enhancements, international cuisine/cooking, volunteering in STEM outreach for younger students