



CURRICULUM VITA

Yoon Duk “Debbie” Kim
Assistant Professor
Construction Engineering
Texas A&M University – Commerce
P.O. Box 3011
Commerce, Texas 75429
Email: Debbie.Kim@tamuc.edu

EDUCATION

PH.D. IN CIVIL AND ENVIRONMENTAL ENGINEERING May. 2010

Georgia Institute of Technology, Atlanta, Georgia

Dissertation: *Behavior and Design of Metal Building Frames with General Prismatic and Web-Tapered Steel I-Section Members*

Advisor: Professor Donald W. White

M.S. IN CIVIL AND ENVIRONMENTAL ENGINEERING Dec. 2004

Georgia Institute of Technology, Atlanta, Georgia

Thesis: *Transverse Stiffener Requirements in Straight and Horizontally Curved Steel I-Girders*

Advisor: Professor Donald W. White

B.S. IN ARCHITECTURAL ENGINEERING Feb. 2001

Hanyang University, Seoul, Korea

Summa Cum Laude

PROFESSIONAL EXPERIENCE

ASSISTANT PROFESSOR Aug. 2015 – Present

Texas A&M University - Commerce, Commerce, Texas

- Teach following classes (all 3 credit hours):

-
- ENGR 213: Engineering Statistics and Probability
 - CONE 211: Statics
 - CONE 212: Dynamics
 - CONE 221: Building Construction
 - CONE 331: Mechanics of Materials
 - CONE 332 (used to be CONE 412): Structural Analysis & Design
 - CONE 411: Steel & Concrete Design
 - CONE 422: Construction Project Management
 - CONE 423: Contracts and Specifications
 - CONE 491: Independent Honors Reading
 - TMGT 336: Construction Estimating
 - TMGT 454: Contracts & Specifications
-
- Serving on the following committees: CONE curriculum committee, QEP committee (university wide)
 - Advising CONE students
 - Faculty Advisor for Student Construction Association (SCA)
-

ASSISTANT PROFESSOR

Jan. 2013 – July 2015

Georgia Perimeter College, Dunwoody, Georgia

- Taught following classes (all 3 credit hours, course evaluation results are listed below):
 - ENGR 1211: Engineering Graphics and Design I (4.33/5)
 - ENGR 1212: Engineering Graphics and Design II (4.57/5)
 - ENGR 2605: Statics (4.50/5)
 - ENGR 2606: Dynamics (4.55/5)
 - ENGR 1603: Introduction to Engineering (4.40/5)
- Advised engineering students especially for RETP (Regent's Engineering Transfer Program) program between GPC and Georgia Institute of Technology. Advised over 150 students from 2014 to 2015.
- Served on engineering curriculum committee
- Served on math faculty search committee
- Served on STEM advisory council

INSTRUCTORJan. 2011 – Aug. 2012

Georgia Institute of Technology, Atlanta, Georgia

- Taught COE 3001, Deformable Bodies (3 credits, *overall course evaluation 4.5/5.0*) in Summer, 2012.
- Taught CEE 4510, Structural Steel Design (3 credits, *overall course evaluation 3.9/5.0*) in Spring, 2012.
- Taught COE 2001, Statics (2 credits, *overall course evaluation 4.5/5.0*) and COE 3001, Deformable Bodies (3 credits, *overall course evaluation 4.5/5.0*) in Fall, 2011.
- Taught COE 2001, Statics (2 credits, *overall course evaluation 4.2/5.0*) in Spring, 2011.

Southern Polytechnic State University (now Kennesaw State University), Marietta, Georgia

- Taught ENGR 2214, Statics (3 credits, *overall course evaluation 4.3/5.0*) in Spring 2012.
- Taught ENGR 3131, Strength of Materials (3 credits, *overall course evaluation 4.5/5.0*) in Fall, 2011.
- Taught ENGR 3131, Strength of Materials (3 credits, *overall course evaluation 4.5/5.0*) and ENGR 3132, Strength of Materials Lab (1 credit) in Spring, 2011

POSTDOCTORAL FELLOWMay. 2010 – Dec. 2012

Georgia Institute of Technology, Atlanta, Georgia

- Developed design methods for gusset plate joints in steel truss bridges.
- Developed a parametric study matrix and designed corresponding gusset plate joints.
- Performed refined 3D nonlinear finite element analysis of gusset plate joints including geometric imperfections, nonlinear plate materials, and nonlinear strength models for fasteners.
- Performed 3D nonlinear finite element analysis of shear pull tests with bolts and rivets using solid elements.
- Involved in a research developing design requirements for flange bracing systems in metal building structures.

GRADUATE RESEARCH ASSISTANTAug. 2003 - May. 2010

Georgia Institute of Technology, Atlanta, Georgia

- Developed design methods for steel frames with general prismatic and web-tapered members.
- Performed a large number of parametric studies using 3D nonlinear finite element analysis to investigate lateral torsional buckling of prismatic and web-tapered I-section members.
- Provided recommendations for potential improvements in design calculation of lateral torsional buckling for prismatic and web-tapered I-section members.
- Performed 3D nonlinear finite element analysis (FEA) of frame systems with prismatic and web-tapered members.
- Suggested practical methods for calculation of elastic buckling strength for web-tapered members.
- Suggested benchmark problems for finite element analysis with web-tapered members.
- Developed unified design requirements for transverse stiffeners in straight and horizontally-curved steel I-girders.
- Performed 3D nonlinear FEA of transverse stiffeners in steel I-girders.
- Performed 3D nonlinear FEA of gusset plate connections in steel truss bridges.

GRADUATE TEACHING ASSISTANT

Jan. 2003 – May. 2010

Georgia Institute of Technology, Atlanta, Georgia

- Assisted students with homework and projects through help sessions.
- Occasionally served as a substitute lecturer.
- Graded homework and exams for the following classes:
 - COE2001, “Statics”
 - COE3001, “Deformable Bodies”
 - CEE6527, “Advanced Steel Design”
 - CEE6547, “Nonlinear Design”

HONORS, AWARDS, AND SCHOLARSHIPS

-
- **STEM mini grant**, Georgia Perimeter College
“IMPROVEMENT OF STUDENT LEARNING AND PARTICIPATIONS USING ONLINE LEARNING MODULES” Aug. 2013 – May. 2014
 - **Thank a Teacher Certificate**, Georgia Institute of Technology Dec. 2011
 - **Fellowship**, Metal Building Manufacturer Association Jan. 2007-Aug. 2007
 - **Summa Cum Laude**, Department of Architectural Engineering, Hanyang University, Seoul, Korea Feb. 2001
 - **Honor student scholarship**, Hanyang University, Seoul, Korea Mar. 1997-Dec. 2000
-

GRANT

- **Kim, Y.D.** and Yu, C. (2017), “*Investigation of Structural Behavior of Connections with Bolts and Welds,*” Research Proposal prepared for AISC RFP, *submitted*.
-

PUBLICATIONS

BOOKS/BOOK CHAPTERS

- Kaehler, R.C., White, D.W., and **Kim, Y.D.** (2011). “*Frame Design Using Web-Tapered Members,*” AISC Design Guide 25, MBMA/AISC.
- **Kim, Y.D.** and White, D.W. (2010), “*Tapered Columns,*” Section 3.8, Guide to Stability Design Criteria for Metal Structures, Structural Stability Research Council, 6th ed., Wiley.

ARTICLES IN REFERRED JOURNALS

- N-H. Kim, T-O. Kim, S.W. Han, and **Y.D. Kim**, “Effect of Access Hole Configuration Parameters on Cyclic Behavior for WUF-W Connections”, Journal of Architectural Institute of Korea, 2017, *Submitted*.

- **Kim, Y.D.** and White, D.W. (2014). "Transverse Stiffener Requirements to Develop the Shear Buckling and Post-Buckling Resistance of Steel I-Girders," *Journal of Structural Engineering*, Vol. 140, No. 4.
- White, D.W. and **Kim, Y.D.** (2008). "Unified Flexural Resistance Equations for Stability Design of Steel I-Section Members – Moment Gradient Tests," *Journal of Structural Engineering*, Vol.134, No. 9, pp. 1471-1486.
- **Kim, Y.D.**, Jung, S.-K., and White, D.W. (2007). "Transverse Stiffener Requirements in Straight and Horizontally Curved Steel I-Girders," *Journal of Bridge Engineering*, Vol. 12, No. 2, pp. 174-183.
- White, D.W., Surovek, A.E., Alemdar, B.V., Chang, C.J., **Kim, Y.D.**, and Kuchenbecker, G.H. (2006). "Stability Analysis and Design of Steel Building Frames Using the 2005 AISC Specification," *International Journal of Steel Structures*, No. 6, pp. 71-91.

CONFERENCE PROCEEDINGS

- White, D.W, **Kim, Y.D.**, Mentes, Y., and Leon, R. T. (2016). "Finite Element Simulation and Assessment of the Strength of Riveted and Bolted Gusset-Plate Connections in Steel Truss Bridges," *Proceedings, Connections in Steel Structures VIII*, Boston, MA, May.
- **Kim, Y.D.** and White, D.W. (2013). "Analytical Assessment of the Strength of Steel Truss Bridge Gusset Plates," *Proceedings, Annual Technical Session, Structural Stability Research Council, Missouri University of Science and Technology*, Rolla, MO, April.
- Mentes, Y., **Kim, Y.D.**, Zobel, R.S, White, D.W., Leon, R.T, and Ocel, J.M. (2011). "Analytical and Experimental Assessment of Steel Truss Bridge Gusset Plate Connections," *Proceedings, International Bridge Conference*, Pittsburgh, PA, June.
- Bishop, C.D, White, D.W., Sharma, A. and **Kim, Y.D.** (2011). "Flange Bracing Requirements for Stability of Metal Building Systems," *Proceedings, Annual Technical Session, Structural Stability Research Council, Missouri University of Science and Technology*, Rolla, MO, May.
- **Kim, Y.D.** and White, D.W. (2010). "Lateral Torsional Buckling Strength of Prismatic and Web-Tapered Beams: Reliability Assessment," *Proceedings, Annual Technical Session, Structural Stability Research Council, Missouri University of Science and Technology*, Rolla, MO, May.

- **Kim, Y.D.** and White, D.W. (2008). "Concepts and Calculations based on New MBMA/AISC Guide to Frame Design Using Web-Tapered Members," *Proceedings*, Structures Congress, ASCE, Vancouver, BC, Canada, April.
- **Kim, Y.D.** and White, D.W. (2008). "Lateral Torsional Buckling Strength of Prismatic and Web-Tapered Beams," *Proceedings*, Annual Technical Session, Structural Stability Research Council, Missouri University of Science and Technology, Rolla, MO, April.
- **Kim, Y.D.** and White, D.W. (2007). "Lateral Torsional Buckling Strength of Web-Tapered Members: Design Provisions vs Nonlinear FEA Simulations and Experimental Tests," *Proceedings*, 18th Engineering Mechanics Division Conference, ASCE, Blacksburg, VA, June.
- **Kim, Y.D.** and White, D.W. (2007). "Practical Buckling Solutions for Tapered Beam Members," *Proceedings*, Annual Technical Session, Structural Stability Research Council, University of Missouri, Rolla, MO, April.

SELECTED REPORTS

- **Kim, Y.D.** (2014). "Improvement of Student Learning and Participations using Online Learning Modules," Final report for STEM Mini Grant Research, Georgia Perimeter College, Dunwoody, GA.
- White, D.W., Leon, R.T, **Kim, Y.D.**, Mentes, Y., and Bhuiyan, M.T.R. (2013). "Finite Element Simulation and Assessment of The Strength Behavior of Riveted and Bolted Gusset-Plate Connections in Steel Truss Bridges," Report to Federal Highway Administration and NCHRP Transportation Research Board of the National Academics, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA.
- **Kim, Y.D.** and White, D.W. (2008). "Design Calculations for Two Representative Modular Metal Building Frames," Structural Engineering, Mechanics and Materials Report No. 08-25, School of CEE, Georgia Institute of Technology, Atlanta, GA, May.
- **Kim, Y.D.** and White, D.W. (2007). "Assessment of Nominal Resistance Calculations for Web-Tapered I-Section Members: Comparison to the Results from Experimental Tests and to Finite Element Simulations of Experimental Tests," SEMM Report No. 57, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA, June.

- **Kim, Y.D.** and White, D.W. (2007). "Assessment of Nominal Resistance Calculations for Web-Tapered I-Section Members: Comparison to the Results from Experimental Tests and to Finite Element Simulations of Experimental Tests," SEMM Report No. 57, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA, June.
- **Kim, Y.D.** and White, D.W. (2006). "Full Nonlinear Finite Element Analysis Simulation of the LB-3 Test from Prawel et al. (1974)," Structural Engineering, Mechanics and Materials Report No. 56, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA, September.
- **Kim, Y.D.** and White, D.W. (2006). "Benchmark Problems for Second Order Analysis of Frames with Tapered-Web Members," Structural Engineering, Mechanics and Materials Report No. 53, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA, March.
- White, D.W. and **Kim, Y.D.** (2006). "A Prototype Application of the AISC (2005) Stability Analysis and Design Provisions to Metal Building Structural Systems," Report to Metal Building Manufacturers Association, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA, March, pp. 157.

PRESENTATIONS

(Presentations that were given at various conferences are listed under "conference proceedings" above.)

- "Concepts and Calculations of the AISC Design Guide 25, Frame Design Using Web-Tapered Members," Lecture Seminar #01, Hanyang University, Seoul, Korea, June 23, 2016 (invited).
- "Structural Steel Design, Special Topics," Lecture Seminar #02, Hanyang University, Seoul, Korea, June 28, 2016 (invited).
- "Improvement of Learning Experiences and Student Participations in Engineering Graphics and Design Classes," American Society of Engineering Education Southeastern Conference, Macon, GA, April 1, 2014.
- "Analytical Assessment of the Strength of Steel Truss Bridge Gusset Plates," Annual KWiSE Meeting, Duluth, GA, April , 2013.
- "Lateral Torsional Buckling Strength of Web-Tapered Beams," Annual MBMA Researcher Symposium, Tampa, Florida, February 11, 2009.
- "*Frame Design using Web-Tapered Members*," Annual MBMA Researcher Symposium, Arlington, Texas, February 12, 2008.

- *“Design of Metal Building Frames using AISC 2005: Research Studies,”* Annual MBMA Researcher Symposium, Nashville, Tennessee, February 15, 2006.

AFFILIATIONS

- Member, Korean Women in Science and Engineering (KWiSE)
- Member, Korean-American Scientists and Engineers Association (KASEA)
- Member, Structural Stability Research Council (SSRC)
- Member, American Society of Civil Engineers (ASCE)
- Member, SEI Technical Activities Division Structural Members Committee of the Technical Administrative Committee on Metals
- Member, American Institute of Steel Construction (AISC)
- President, Korean Student Association in Civil Engineering, Georgia Institute of Technology, Atlanta, Georgia, Jan. 2007 – Dec. 2007
- Vice President, Korean Student Association (KSA) of Georgia Institute of Technology, Atlanta, Georgia, Aug. 2006 – July 2007

LICENSE

- Engineer-in-Training, Certificate No. EIT 130151, January 25, 2008.
-