

# **BRIDGET SPECTOR**

bspector@andrew.cmu.edu

Current Address: SMC 123, 5032 Forbes Avenue, Pittsburgh, PA 15289 (412) 511-4422

Permanent Address: 21 School Avenue, Philadelphia, PA 19111

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- OBJECTIVE** To obtain a summer internship in the field of civil engineering that will utilize my problem solving and leadership skills.
- EDUCATION**
- Carnegie Mellon University** **Pittsburgh, PA**  
Bachelor of Science in Civil Engineering, May 2015  
Overall GPA: 3.20/4.0
- Best High School** **Philadelphia, PA**  
High School Diploma, June 2011  
GPA 3.82/4.0
- PROJECTS**
- Cardboard Structure**, Fall 2011
- Designed and constructed a cardboard bridge meant to support the average adult male.
  - Prepared scale models for analysis of alternatives, prior to final test.
- Brick Wall Scheduling**, Fall 2011
- Developed a bid proposal for building a brick wall.
  - Conducted time studies and generated Gantt charts to investigate most economical method of using resources.
- Traffic Light Timing**, Fall 2011
- Conducted studies on the flow of traffic through three intersections on Forbes Avenue.
  - Designed more efficient traffic light cycles based on collected data.
- WORK EXPERIENCE**
- Pennsylvania Governor’s School for the Sciences** **Pittsburgh, PA**  
Teaching Assistant, Summer 2012
- Graded papers, fielded questions and held review sessions for Organic Chemistry.
  - Led a group of students in the area of Spectroscopic Analysis.
  - Acted as a Residential Assistant for 90 students, providing support, enforcing dorm policy, and sponsoring recreational activities.
- Happy Summer Camp** **Springfield, NJ**  
Camp Counselor, Summer 2010
- Created and coordinated activities for ten campers 10-12 years old.
  - Helped administrators to set-up for parents weekend.
- LEADERSHIP**
- Vice-President, American Society of Civil Engineers (ASCE)**, Spring 2011-present
- Organize monthly speaker series, which has seven corporate and alumni speakers.
  - Motivate the 65 members to attend meetings and events.
- SKILLS**
- Operating Systems:** Windows, MacOS  
**Software:** Microsoft Office, AutoCAD, MathCAD, Maple, Sure Track, MS Project, C++  
**Languages:** Fluent in Spanish; Conversant in French
- ACTIVITIES & HONORS**
- Alpha Phi Omega Service Fraternity, 2011-present  
Kiltie Band, 2011-present  
American Society of Civil Engineers (ASCE), 2011-present  
Orientation Counselor, Fall 2012  
Orchestra, Best High School, 2008-2011  
National Honor Society, Best High School, 2011

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**OBJECTIVE** To obtain a full time position in the field of Civil Engineering that utilizes my analytical and interpersonal skills

**EDUCATION** **CARNEGIE MELLON UNIVERSITY** **Pittsburgh, PA**  
Bachelor of Science in Civil Engineering, May 2012  
Major GPA: 3.22/4.0 Overall GPA: 3.0/4.0

**RELEVANT EXPERIENCE** **Michael Baker Inc.** **Pittsburgh, PA**  
Structures Intern, Summer 2011

- Collaborated on a pre-cast segmental post-tensioned box girder bridge project
- Designed and performed quality control of stress analysis spreadsheets
- Created bridge model and evaluated construction stages using MIDAS/Civil

**PROJECTS**

**Civil Engineering Design**, Spring 2011

- Designed and constructed a solution to water runoff problem at a site adjacent to parking lot
- Project leader for design, scheduling and cost estimation of new site

**Window Power Feasibility Study**, Fall 2010

- Studied the cost benefits and structural ability of installing wind turbines on the roof of a building in Pittsburgh (Pittsburgh Technology Center)
- Gathered relevant cost and system information from manufacturer sales associate

**Intersection Development**, Fall 2010

- Developed alternative designs to improve safety and maintain efficient traffic flow of problematic intersection in Gibsonia, PA
- Delivered oral proposal and final recommendation

**ADDITIONAL EXPERIENCE** **Pennsylvania Governor's School for the Sciences** **Pittsburgh, PA**  
Teaching Assistant, Summer 2010

- Graded papers, fielded questions and held review sessions for the Organic Chemistry core course
- Served as a team project leader for a group of students in the area of Spectroscopic Analysis
- Acted as Resident Assistant for 90 students, providing support, and sponsoring recreational activities

**LEADERSHIP** **Vice-President, American Society of Civil Engineers (ASCE)**, Fall 2010 – present

- Organize monthly speaker series, which has seven corporate and alumni speakers
- Motivate the 65 members to attend meetings and events

**RELEVANT COURSES**

Air Quality Engineering	Engineering Economics	Technical Communications
Solid Mechanics	Fluid Mechanics	Design and Construction
Engineering Statistics	Soil Mechanics	Civil Engineering Design

**SKILLS** **Computer:** Microsoft Office, AutoCAD, MathCAD, Maple, MS Project, MIDAS/Civil  
**Languages:** Fluent in French; Conversant in Spanish

**ACTIVITIES & HONORS**

Chi Epsilon, Civil Engineering Honor Society, Spring 2010-present  
American Society of Civil Engineers, Fall 2008-present  
Varsity Volleyball, Carnegie Mellon, Fall 2008-present  
Pittsburgh Cares Volunteer and Project Coordinator, 2009-2011  
Orientation Counselor, Fall 2009  
College of Engineering Dean's List (GPA 3.75 and above), Spring 2010, Fall 2010

# BRIDGET SPECTOR

bspector@andrew.cmu.edu

Current Address: SMC 123, 5032 Forbes Avenue, Pittsburgh, PA 15289 (412) 511-4422

Permanent Address: 21 School Street, Harrisburg, PA 18111

**OBJECTIVE** To obtain a full time position in the field of Civil Engineering that utilizes my analytical and interpersonal skills

**EDUCATION** **CARNEGIE MELLON UNIVERSITY** **Pittsburgh, PA**  
Master of Science in Civil & Environmental Engineering, May 2012  
Concentration: Advanced Infrastructure Systems

**CORNELL UNIVERSITY** **Ithaca, NY**  
Bachelor of Science in Civil Engineering, May 2011  
Overall GPA: 3.20/4.0

**RELEVANT EXPERIENCE** **MICHAEL BAKER JR., INC** **Pittsburgh, PA**  
Structures Intern, Summer 2011

- Collaborated on a pre-cast segmental post-tensioned box girder bridge project
- Designed and performed quality control of stress analysis spreadsheets
- Created bridge model and evaluated construction stages using MIDAS/Civil

**LEHIGH UNIVERSITY ATLSS PITA – REU** **Bethlehem, PA**  
Student Researcher, Summer 2010

- Analyzed axial forces carried by suspension rods of Reiglesville Bridge (ASCE National Historic Landmark) which spans the Delaware River from Reigelsville, PA to Reigelsville, NJ

**PROJECTS** **High Speed Rail Sensor Network Proposal**, Fall 2011

- Developing proposal for sensor network research for application to high speed rail health monitoring for *Infrastructure Management* term project
- Proposing a synthesis of robust technologies to incorporate in an embedded sensor network for real-time rail flaw detection

**Transportation Efficiency Study**, Fall 2010

- Developing framework for determining and evaluating student use of available transportation options, with respect to university expenditures and students' preferences, for *Decision Analysis and Decision Support Systems* term project

**Civil Engineering Design**, Spring 2010

- Designed and constructed a solution to a water runoff problem at a site adjacent to parking lot
- Project leader for design, scheduling and cost estimation of new site

**RELEVANT COURSES** **Graduate Courses:** Finite Element Method  
Advanced Elasticity  
Structural Dynamics

**Undergraduate Courses:** Structural Steel Design  
Construction Management  
Advanced Mechanics of Materials

**SKILLS** **Computer:** Microsoft Office, AutoCAD, MathCAD, Maple, MS Project, MIDAS/Civil  
**Languages:** Fluent in French; Conversant in Spanish

**ACTIVITIES & HONORS** American Society of Civil Engineers, Treasurer, 2009-2010; Member 2008-Present  
Pittsburgh Cares Volunteer and Project Coordinator, 2010-Present  
Chi Epsilon, Civil Engineering Honor Society, Vice President, 2009-2011  
Orientation Counselor, Fall 2009  
College of Engineering Dean's List, Spring 2010, Fall 2010  
The Alice C. Smith Scholarship, 2010

# **BRIDGET SPECTOR**

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Pittsburgh, PA 15213  
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(412) 555-5225

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## **RESEARCH INTERESTS**

Environmental, social and economic impacts of energy production and use; current and future electricity generation, transmission and distribution technologies; full supply chain life-cycle assessment of energy systems; hybrid life -cycle inventory and assessment

## **EDUCATION**

**Carnegie Mellon University, Pittsburgh, PA**

Ph.D. Civil & Environmental Engineering and Engineering & Public Policy, May 2012

- Advisors: H. Scott Matthews, Lester B. Lave, Jay Apt, Chris T. Hendrickson
- Thesis title: “An Electricity-focused Economic Input-output Tool: Life-Cycle Assessment and Policy Implications of Future Electricity Generation Scenarios”

M.S. Civil & Environmental Engineering, May 2008

- Advisor: H. Scott Matthews
- Concentration in Green Design

**University of California-Berkeley, Berkeley, CA**

B.S. Electrical Engineering & Computer Science, May 2002

## **PROFESSIONAL EXPERIENCE**

**Project Scientist/Engineer, Green Design Institute, 2012-Present**

Carnegie Mellon University, Pittsburgh, PA

- Post-doctoral research on next-generation electricity generation

**Adjunct Faculty, Civil & Environmental Engineering Department, Fall 2012**

University of Pittsburgh, Pittsburgh, PA

- Teach introductory sustainable engineering course for undergraduates

**Graduate Research Assistant, Carnegie Mellon Electricity Industry Center, 2007-2011**

Carnegie Mellon University, Pittsburgh, PA

- Conducted life-cycle assessment of power generation construction and operation
- Researched environmental impacts of interstate electricity trading
- Examined climate change implications of U.S. nuclear fleet decommissioning

**Technical Marketing Engineer, Optical Network Equipment, 2005-2007**

DYNARC, San Jose, CA

**Systems Engineer, Network Traffic Engineering, 2003-2005**

Telcordia Technologies, Piscataway, NJ

## **TEACHING EXPERIENCE**

Adjunct Faculty, Engineering and Sustainable Development, Fall 2011

Guest Lecturer, Advanced Life-cycle Assessment, Spring 2011

Teaching Assistant, Guest Lecturer, Quantitative Policy Analysis, Fall 2009, 2010

Teaching Assistant, Policy Analysis Project, Spring 2009

Teaching Assistant, Civil Systems Investment, Planning & Pricing, Fall 2008

### **TEACHING EXPERIENCE (continued)**

Guest Lecturer, Technology and the Environment, Spring 2008  
Teacher, Green Design Apprenticeship Program, Allegheny Intermediate Unit, Fall 2008 – 2010

### **OUTREACH & LEADERSHIP ACTIVITIES**

#### **Green Design Apprenticeship Program, 2008-Present**

- Volunteer instructor and coordinator for group of local high school students interested in environmental engineering and green design

#### **Green Design Reading Group, 2007-2010**

- Prepare readings for a graduate student journal club

#### **Coordinator, Graduate Student Association Volleyball League, 2009-2011**

### **PROFESSIONAL ACTIVITIES & AWARDS**

Michael Baker Corporation Graduate Fellowship, 2007-2008  
International Society of Industrial Ecologists, Member, 2007-Present  
Institute of Electrical and Electronics Engineers, Member, 2003-2005  
Stephen Omar Lee Award for Outstanding Policy Project, 2004

### **PUBLICATIONS & WORKING PAPERS**

Spector, B., Matthews, H. S., “Disaggregating the power generation sector for input-output life-cycle assessment”. In preparation.

Matthews, D., Hawkins, T., Jaramillo, P., Spector, B., Sharrard, A., “Green Design Outreach: Teaching Sustainability to High School Students.” In preparation.

Spector, B., Matthews, H. S., “Comparative Life-cycle Assessments Using Electricity Consumption and Generation Mixes”. In preparation.

Spector, B., Matthews H.S., “Environmental Effects of Interstate Power Trading on Electricity Consumption Mixes”. *Environmental Science & Technology* 2011; vol 39, 22.

“Wireless Communications for Emergency Response in Allegheny County,” Policy Analysis Project Class Final Report to Allegheny County Emergency Services, December 2010.

Spector, B., “Increase in GWP from Decommissioning U.S. Nuclear Power Plants”. Unpublished research paper, December 2009.

### **CONFERENCE PRESENTATIONS**

“Moving Towards a Mixed-unit Input-output LCA Model for Power Generation.” Accepted to International Life Cycle Assessment/Life Cycle Management Conference, Portland, OR, September 2012.

“Opportunities for Industrial Ecology in Power Generation Supply Chains.” Presented at International Society for Industrial Ecology Conference, Toronto, Ontario, June 2012.

“Policy Implications of Power Generation Life-cycle Assessment.” Presented at the Electric Utilities Environmental Conference, Tucson, AZ, January 2012.

“Building an Electricity-focused Economic Input-output LCA Tool to Analyze Future Power Generation Scenarios.” Presented at International Life Cycle Assessment/Life Cycle Management Conference, Washington, DC, October 2011.

“Comparative Life-cycle Assessments Using Electricity Consumption and Generation Mixes.” Presented at International Life Cycle Assessment/Life Cycle Management Conference, Washington, DC, October 2011.

“Improving the Life-Cycle Assessment of Electricity.” Presented at International Society for Industrial Ecology Conference, Stockholm, Sweden, June 2011.