

# MICHAEL N. TAPTICH

## CURRICULUM VITAE

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### EDUCATION

- Ph.D. 2015 Department of Civil and Environmental Engineering, Energy, Civil Infrastructure, and Climate Program, University of California at Berkeley.  
*Topic: Aggregation Errors in Life-Cycle Greenhouse Gas Assessments of Heavy-duty Trucks and Buses*
- MS 2012 Department of Civil and Environmental Engineering, Energy, Civil Infrastructure, and Climate Program, University of California at Berkeley
- Certificate 2012 Engineering and Business for Sustainability, University of California at Berkeley
- BS 2010 Department of Civil and Environmental Engineering, Water Resources Eng. Program, Pennsylvania State University.

### EMPLOYMENT

- 2016- Postdoctoral Researcher, Department of Civil and Environmental Eng. University of California at Berkeley.
- 2011-2015 Graduate Student Researcher, Department of Civil and Environmental Eng. University of California at Berkeley.
- 2012-2015 Graduate Student Instructor, Department of Civil and Environmental Eng. University of California at Berkeley
- 2014-2015 Co-Founder, Visualizing Urban Data, Blum Center for Developing Economies IdeaLabs. Berkeley, Ca.
- 2013 Quality Control Engineer, Automatic Labs: Connect Your Car to Your Digital Life. San Francisco, CA.
- 2010-2011 Research Analysis for Environmental Expert Witness, Matson & Associates. State College, PA.

### RESEARCH INTERESTS

Life Cycle Assessment – Climate change mitigation and adaptation; global transportation systems; remote sensing of vehicles; water-energy nexus; infrastructure lock-in; biofuel production and supply chain logistics; energy infrastructure systems

Environmental Data Science – Information and data science; analysis and visualization of spatial data to improve public communication of environmental science and engineering

## **PUBLICATIONS**

- Taptich, M.N., Scown, C.D., Piscopo, K., Horvath, A. Meeting California's 2030 greenhouse gas reduction targets with drop-in biofuels. *In Preparation*.
- Taptich, M.N., Jariyasunant, J., Choudhary, D., Horvath, A., Real-world greenhouse gas emission shortfall among light-duty vehicles in the United States. *In Preparation*.
- Stokes, J., Taptich, M.N., Horvath, A. Optimizing California's Urban Water Supplies for the Future: Data Availability and Consistency Prevents Informed Decisions. *In Preparation*.
- Stokes, J., Taptich, M.N., Horvath, A. Spatially-explicit life-cycle energy-greenhouse gas analysis for water systems in California: 2010 to 2035. *In Preparation*.
- Hendrickson, T.P., Archer, K.N., Taptich, M.N., Kavvada, O., Stokes, J., Scown, C.D. Exports of Water Resources Through Agriculture in Arid Regions of the United States. *Environ. Sci. Technol. Under Review*.
- Taptich, M.N., Horvath, A. Freight on a Low-Carbon Diet: Accessibility, Freightsheds, and Commodities. *Environ. Sci. Technol.* **2015**, 49 (19), 11321-11328.
- Taptich, M.N., Chester, M.V., Horvath, A. Worldwide Greenhouse Gas Reduction Potentials in Transportation by 2050. *Journal Industrial Ecology.* **2015**, 20 (2).
- Nahlik, M.J.; Chester, M.V., Kaehr, A., Horvath, A., Taptich, M. Goods Movement Life-cycle Assessment for Greenhouse Gas Reduction Goals. **2015**, 20 (2).
- Taptich, M.N., Horvath, A. Bias of Averages in Life-Cycle Footprinting of Infrastructure: Truck and Bus Case Studies. *Environ. Sci. Technol.* **2014**, 48 (22), 13045-13052
- Scown, C.D., Taptich, M.N., Horvath, A., McKone, T.E., Nazaroff, W.W. Achieving Deep Cuts in the Carbon Intensity of US Automobile Transportation by 2050: Complementary Roles for Electricity and Biofuels. *Environ. Sci. Technol.* **2013**, 47 (16).

## **REPORTS**

- United Nations Environmental Programme (UNEP). 2016. Energy Efficiency: the Benefits, Risks, and Trade-offs of Low Carbon Energy Technologies. Report of the International Resource Panel. Suh, S., Bergesen, J., Gibon, T. J., Hertwich, E., Taptich M. *Under Review*.
- Scown, C.D., Taptich, M.N., Piscopo, K., Horvath, A. 2016. The Future of Drop-in Fuels. Submitted to the California Air Resources Board (CARB), 90pp, March 2016.
- Taptich M.N., and Horvath. 2014. Future Greenhouse Gas and Criteria Air Emissions Reduction Opportunities for Californian Freight Trucking by 2020 and 2040. University of California Transportation Center (UCTC).
- Taptich M.N., Chester, M., Horvath. 2012. Analysis of a Cash-for-Clunkers Program for Heavy-duty Trucks, Final Report for Track 4, Submitted to the California Air Resources Board (CARB), 26pp, July 2012.

## **CONFERENCE PAPERS**

- Taptich M.N., and Horvath. 2016. Aggregation Errors in Life-Cycle Assessments of Heavy-duty Trucks and Buses. Society of Environmental Toxicology and Chemistry (SETAC) Europe, Nantes, FR.
- Taptich M.N., and Horvath. 2014. Greenhouse Gas Emissions from Heavy-duty Trucks in California and the Potential Benefits of Alternative Fuels. Transportation Research Board 94<sup>th</sup> Annual Meeting.

Taptich M.N., Chester, M., Horvath. 2013. Emission Saving Potentials of Accelerated Vehicle Retirement Programs: A California Case Study. University of California Transportation Center (UCTC) 2013 Meeting

Taptich, M.N, and MN Gooseff. 2010. Should the Clean Water Act follow stream water underground? Managing beyond the stream banks. American Geophysical Union Fall Meeting, San Francisco, CA (H24C-01)

### **CONFERENCE/SEMINAR PRESENTATIONS**

2016. Measuring Low-Carbon Accessibility in the United States: Trucks vs. Trains. UC Berkeley Institute of Transportation Studies. Berkeley, CA.

2015. Freight on a Low-Carbon Diet: Accessibility, Freightsheds, and Commodities. UC Berkeley Air Resources Group. Berkeley, CA.

2014. Bias of Averages in Life-cycle Footprinting of Infrastructure: Truck and Bus Case Studies. UC Berkeley Air Resources Group. Berkeley, CA.

2014. Improving the Sustainability of Transportation Systems in the United States. C-3 (Chile-California Conference). Stanford University, CA.

2010. Should the Clean Water Act follow stream water underground? Managing beyond the stream banks. American Geophysical Union Fall Meeting, San Francisco, CA

### **TEACHING EXPERIENCE**

Lecturer                      2016    Engineered Systems and Sustainability (CE11, Undergrad)  
Department of Civil and Environmental Engineering,  
University of California at Berkeley.

   2015, 2014    Introduction to Data Visualization (Professional Training)  
Berkeley D-Lab, Science Academy  
University of California at Berkeley

Graduate Student Instructor    2015, 2013    Civil Systems and the Environment (CE268, Grad)  
Department of Civil and Environmental Engineering,  
University of California at Berkeley.

   2014    Engineered Systems and Sustainability (CE11, Undergrad)  
Department of Civil and Environmental Engineering,  
University of California at Berkeley.

*AWARD: Outstanding Graduate Student Instructor*

   2014    Construction Engineering (CE166, Undergrad)  
Department of Civil and Environmental Engineering,  
University of California at Berkeley.

### **AWARDS AND DISTINCTIONS**

Outstanding Graduate Student Instructor Award, Engineered Systems and Sustainability, University of California at Berkeley, 2015

Civil Engineering Valedictorian, The Pennsylvania State University, 2010

Civil Engineering Student Marshal, The Pennsylvania State University, 2010

Evan Pugh Scholar Award, The Pennsylvania State University, 2010

Undergraduate Student Award for Excellence in Water Resources Engineering, Pennsylvania State University, 2010

William & Wyllis Leonhard Engineering Scholars, The Pennsylvania State University, 2010