

# CURRICULUM VITAE

## TIMOTHY F. WELCH

Center for Quality Growth and Regional Development  
Georgia Institute of Technology  
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### RESEARCH INTERESTS:

Transport economics and forecasting; freight movement and economic analysis; transportation-land use interactions; accessibility and equity issues in transportation, public transit systems; land use

### ACADEMIC POSITIONS:

2013- Present Assistant Professor, School of City and Regional Planning, Georgia Institute of Technology

2013- Present Assistant Director, Center for Quality Growth and Regional Development

2013- Present Faculty Affiliate, National Center for Smart Growth Research and Education

2012- 2013 Faculty Research Associate, University of Maryland, National Center for Smart Growth Research and Education

### EDUCATION

- Ph.D. Urban and Regional Planning, University of Maryland, 2013  
Dissertation: *Climate Action Plans – Fact or Fiction? Evidence from Maryland*  
Committee: Gerrit Knaap (co-advisor), Fred Duca (co-advisor), Hiro Iseki, Lei Zhang and Robert Nelson
- M.S.P. Urban and Regional Planning, Florida State University, 2010  
Thesis: *Estimating the Effects of Transportation Infrastructure Proximity Using Multiple Longitudinal Regression Methods: The Case of Atlanta*  
Advisor: Dr. Gregory L. Thompson
- J.D. University of Detroit Mercy, 2008
- LL.B. Bachelor of Laws, University of Windsor, 2008
- B.A. Finance & Business Administration, Washington State University, 2004

## **PUBLICATIONS:**

### *Refereed Journal Articles:*

**Welch, T. F., & Mishra, S. (2014).** A Framework for Determining Road Pricing Revenue Use and Its Welfare Effects. *Research in Transportation Economics*. 44, 61-70

**Welch, T., Mishra, S. (2014)** Envisioning an Emission Diet: Application of Travel Demand Mechanisms to Facilitate Policy Decision Making, *Transportation*. 41 (3), 611-631

Mishra, S., **Welch, T. F.**, Torrens, P., Fu, C., Zhu, H. & Knaap, E (*In Press*). A Tool for Measuring and Visualizing Connectivity of Transit Stop, Route and Transfer Center in a Multimodal Transportation Network. *Public Transportation*

**Welch, T. F. (2013).** Equity in transport: The distribution of transit access and connectivity among affordable housing units. *Transport Policy*, 30, 283-293.  
<http://dx.doi.org/10.1016/j.tranpol.2013.09.020>

**Welch, T. F., & Mishra, S. (2013).** A measure of equity for public transit connectivity. *Journal of Transport Geography*, 33, 29-41. <http://dx.doi.org/10.1016/j.jtrangeo.2013.09.007>

Mishra, S., **Welch, T.** & Chakraborty (2013). An Experiment in Mega-Regional Road Pricing Using Advanced Commuter Behavior Analysis. *Journal of Urban Planning and Development*.  
[http://dx.doi.org/10.1061/\(ASCE\)UP.1943-5444.0000175](http://dx.doi.org/10.1061/(ASCE)UP.1943-5444.0000175)

Erdogan, S., **Welch, T.**, Knaap, G & Ducca, F. (2013). What to Expect In 2030: The Impacts of Fuel Prices and Fuel Efficiency on Land Use and Transportation. *Transportation Research Record: Journal of the Transportation Research Board*, 2397(1), 89-98.

Mishra, S., **Welch, T.**, & Jha, M. K. (2012). Performance Indicators for Public Transit Connectivity in Multi-Modal Transportation Networks. *Transportation Research Part A: Policy and Practice*, 46(7), 1066–1085. doi:10.1016/j.tra.2012.04.006

Mishra, S., **Welch, T.** (2012). A Joint Travel Demand and Environmental Model to Incorporate Emission Pricing For Large Transportation Networks. *Transportation Research Record: Journal of the Transportation Research Board* 2302 (December 1): 29–41. doi:10.3141/2302-04.

### *Refereed Journal Articles Under Review:*

**Welch, T.**, Gehrke, S., Wang, F., A hedonic spatial panel approach to estimating the impact of network access to bike and public transit facilities on housing prices, *Under Review Transport Geography*.

**Welch, T.**, Valuing Access: The long-term property value effects of transit investments, *Under Review Transportation*.

Cui, Y., Mishra, S., **Welch, T.**, Land Use Effects on Bicycle Ridership: A Framework for State Planning Agencies, *Under Review Transport Geography (minor revisions)*.

Wang, Y., **Welch, T.**, Yang, Y., Ducca, F., Knaap, G., Wu, B., The Impact of Transit-Oriented Development Scenarios on Transportation: by Mode Share, Trip Distance and Highway Usage in Maryland, *Under Review Journal of Urban Planning and Development (minor revisions)*.

Mishra, S., **Welch, T.**, Wang, Y., Erdoğan, S., An Integrated Travel Demand and Accessibility Model to Examine the Impact of New Infrastructure Using Travel Behavior Responses, *Under Review Transport Policy*.

Ma, T., **Welch, T.**, Ducca, F., Megaregions – the economic ties: A case study of the Chesapeake megaregion, *Under Review Transport Geography*.

**Welch, T.**, Ma, T., Mishra, S., Multimodal transit network resiliency and connectivity: a methodological framework, *Under Review Urban Studies*.

### *Book Chapters*

**Welch, T.**, S. Mishra, & M.K. Jha (2012). Transit Service Indicators for Alternative Route Structure Analysis, in *Applied Mathematics in Electrical & Computer Engineering (Jan. 2012)*, M.K. Jha, M. Lazard, and A. Zaharim (eds.), WSEAS Press, 45-50, *proceedings of the 2012 WSEAS International Conference on Computer Engineering and Applications (CEA' 12)*, Harvard University, Boston, MA, Jan. 25-27, 2012.

### *Book Reviews*

**Welch, T.** and Knaap, G. J. (2012), Perverse Cities: Hidden Subsidies, Wonky Policy, and Urban Sprawl by Pamela Blais. *Journal of Regional Science*, 52: 527–528. doi: 10.1111/j.1467-9787.2012.00780\_13.x

### *Peer-Reviewed Conferences and Proceedings*

Wang, Y., **Welch, T.**, Ducca, F., Bing, W. (2014, January). Impact of Transit-Oriented Development Scenarios on Transportation in Maryland. *93rd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Mishra, S., **Welch, T.**, Torrens, P., Zhu, H., Knaap, E., (2014, January). Locating the Most Connected Transit Stop, Route, and Transfer Center: Tool for Users and Decision Makers. *93rd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Avin, U., **Welch, T.**, Knaap, G., Ducca, F., Mishra, S., Cui, Y., Erdogan, S., (2014, January). Even Smarter Growth? Land Use, Transportation, and Greenhouse Gas Emissions in Maryland. *93rd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Zhu, X., Mishra, S., **Welch, T.** (2014, January). Modeling and Forecasting Household Workers by Occupation in Metropolitan Areas: Mesoscopic Framework. *93rd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Ma, T., Ducca, F., **Welch, T.** (2014, January). Megaregions--The Economic Ties: Case Study of the Chesapeake Mega-Region. *93rd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

**Welch, T.**, Mishra, S. (2013, November). A Framework for Determining Road Pricing Revenue Use and Its Welfare Effects. *60th Annual North American Meetings of the Regional Science Association International*. Atlanta, GA (international)

**Welch, T.**, Mishra, S. (2013, January). Modeling Emission Policies Through Travel Demand Mechanisms: An Analysis of the Best Reduction Strategies. *92nd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Mishra, S., **Welch, T.** & M.K. Jha. (2013, January). Graph Theoretic Approach for Public Transit Connectivity in Multimodal Transportation Networks. *92nd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Mishra, S., **Welch, T.** & Chakraborty, A., (2013, January). An Experiment in Mega-Regional Road Pricing Using Advanced Commuter Behavior Analysis. *92nd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Mishra, S., **Welch, T.**, Moeckel, R., Mahapatra, S., Tadayon, M. (2013, January). Development of the Maryland Statewide Transportation Model and its Application in Scenario Planning. *92nd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Erdogan, S., **Welch, T.**, Knaap, G & Ducca, F. (2013, January). What to Expect In 2030: The Impacts of Fuel Prices and Fuel Efficiency on Land Use and Transportation. *92nd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Zhu, X., Mishra, S. & **Welch, T.**, (2013, January). Framework for Modeling and Forecasting Population Age Distribution in Metropolitan Areas at Level of Transportation Analysis Zone. *92nd Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Mishra, S., Khasnabis, S., and Swain, S. Udentia, F., **Welch, T.** (2012). Evacuation Strategies for an Interdependent Multimodal Transportation Network in Disasters. *29th International Conference on Transportation and Traffic Flow Theory (ISTTT)*, Netherlands, July 2013

**Welch, T.**, Mishra, S. (2012, November). Indicators for Assessing Equity in Public Transport, *59th Annual North American Meetings of the Regional Science Association International*. Ottawa, Ont. Canada (international)

**Welch, T.**, Mishra, S. (2012, November). Planning Policy and Vehicle Emissions Reduction: Do the Results Match the Hype? *Association of Collegiate Schools of Planning conference*. Cincinnati, Ohio (National)

**Welch, T.**, Mishra, S. (2012, November). Analyzing Transit Equity and Connectivity in Multimodal Transportation Networks, *Association of Collegiate Schools of Planning conference*. Cincinnati, Ohio (National)

Erdogan, S., Mishra, S., **Welch, T.F.**, Wang, Y., Knaap, G & Ducca, F. (2012, November). An Integrated Land Use and Transportation Model: Lessons Learned from Maryland Scenario Planning, *Association of Collegiate Schools of Planning conference*. Cincinnati, Ohio (National)

**Welch, T.**, (2012, July). Trends in Mega-Regional Spatial Distribution and Its Implications for Transport and Infrastructure Planning. *Association of European Schools of Planning conference*. Ankara, Turkey (International)

Erdogan, S., **Welch, T.**, Knaap, G & Ducca, F. (2012, July). What to Expect In 2030: The Impacts of Fuel Prices and Fuel Efficiency on Land Use and Transportation. *Association of European Schools of Planning conference*. Ankara, Turkey (International)

Mishra, S., **Welch, T.** (2012, January). A Joint Travel Demand And Environmental Model To Incorporate Emission Pricing For Large Transportation Networks. *91st Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

**Welch, T.**, Mishra, S. (2012, January). Travel Demand Mechanisms for Emission Reduction Strategies: A Case Study of Montgomery County, Maryland. *91st Annual Meeting of the Transportation Research Board*, Washington, D.C. (National)

Mishra, S., Jha, M., & **Welch, T.** (2011, December). An Analytical Modeling Framework to Determine Optimal Connectivity of a Multimodal Transit Network. *Conference of Transportation Research Group of India (CTRG)*. Bangalore, India.

**Welch, T.** (2011, October). The Value of Access: A Longitudinal Study of Transit Proximity Capitalization in Atlanta. *Association of Collegiate Schools of Planning conference*. Salt Lake City Utah.

#### *Refereed Monographs:*

Florida Planning and Development Lab (2005). Taking the High Road: Integrating Hazard Mitigation into Long-Range Transportation Planning, Tallahassee, FL. (*Best Practices manual under contract with the Florida Department of Community Affairs*)

#### *Research Reports*

Ducca, F., **Welch, T.**, Ma, T. (2013). Megaregion Economic Influence and Supply Chain Analysis. Prepared for the Maryland State Highway Administration.

Ducca, F., **Welch, T.**, Mishra, S. (2012). Characterizing the Chesapeake Bay Megaregion. Prepared for the Maryland State Highway Administration.

Mishra, S., Xiaoyu, Z., **Welch, T.** & Ducca, F (2012). A Framework for Travel Demand Model Related Household and Person Level Control. Prepared for the Maryland State Highway Administration.

Ducca, F., Erdogan, S., Knaap, G., Mishra, S., Wang, Y & **Welch, T.** (2012). Maryland Scenarios Project Final Report. Prepared for the Maryland Department of Transportation.

*Invited Presentations:*

**Welch, T.** (2012, April). Planning Policy and Emissions Reduction: Do the Results Match the Hype? *Paper presented to University of Maryland PhD Paper Series*, College Park, MD.

**Welch, T.** (2009, December). To Build or Not To Build: An Examination of the External Benefits and Costs of Transportation Infrastructure. *Paper presented to the Big Bend Institute of Transportation Engineers*, Tallahassee, FL.

*Editorial Responsibilities:*

Law Review Member, Windsor Review of Legal and Social Issues, University of Windsor, Faculty of Law, 2006-2008

**TEACHING**

CP 6321 Transportation Planning Methods and Investment Decisions

CP 6331 / CEE 6624 Transportation and Land Use Interactions

CP 6542 Transportation and GIS

**MEMBER OF DOCTORAL DISSERTATION SUPERVISORY COMMITTEES**

Kia Mostaan, Civil Engineering (current)

**MEMBER OF MASTER'S RESEARCH THESIS/PAPER SUPERVISORY COMMITTEES**

Jeff Ultee, Urban and Regional Planning/Civil Engineering (Current)

George Maier, Urban and Regional Planning/Civil Engineering (Current)

Charlene Mingus, Urban and Regional Planning/Civil Engineering (Current)

Kyle James, Urban and Regional Planning/Civil Engineering (Current)

Carlton Ingram, Urban and Regional Planning (Current)

Robert Guthart, Urban and Regional Planning (Current)

Landon Reed, Urban and Regional Planning/Civil Engineering (2013)

Ryan Sager, Urban and Regional Planning/Civil Engineering (2014)

Sean McTague, Urban and Regional Planning (2014)

**GRANTS AND AWARDS:**

“A Data Driven Approach to State Transportation Investment Decisions: a Transportation Project Investment and Evaluation Resource (T-Pier),” **PI**, \$150,000, November 2013 - July 2015.

“Freight Impacts on Small Urban and Rural Areas,” **Co-PI**, \$140,000, November 2013 - May 2014.

“National MAP-21 Implementation and Monitoring,” **Co-PI**, \$100,000, October 2013 - October 2015.

“Atlanta Parks Demand Survey Statistical Analysis,” **PI**, \$15,000, July 2014 - November 2015.

**CONSULTING:**

2010 Principal Consultant, Citilabs (CUBE) & Florida Department of Transportation, Systems Planning Office

**ACADEMIC HONORS, FELLOWSHIPS AND SCHOLARSHIPS**

**University of Maryland**

- Eno Leadership Development Conference Fellow, 2013
- Jacob K. Goldhaber Travel Award, University of Maryland, 2011
- Dean’s Fellowship, University of Maryland, 2010-2011, 2011-2012
- Golden Key Honour Society, University of Maryland, 2010-2012

**Florida State University**

- Institute of Transportation Engineers, Scholarship Recipient, 2009
- McClure Award for Academic Achievement, 2010
- Dean’s List, Florida State University, 2008-2009, 2009-2010
- Golden Key Honour Society, Florida State University, 2008-2009, 2009-2010

**University of Detroit**

- American Inns of Court, Pupil, 2007-2008
- Mennen Williams Moot Court Competition, Quarter Finalist, 2006

**University of Windsor**

- Law Review, 2006-2008
- Law Review Business Management Committee, 2006 – 2008

**SERVICE TO THE ACADEMY:**

Georgia Tech Faculty Senate, Member (2013 – current)

Transportation Research Board (TRB), Transportation and Air Quality Committee, Young Member (2014–2017)

**Reviewer for** Transportation Research – Part A, Journal of Planning Education and Research, Urban Studies; Journal of Transport Geography; Transportation; Applied Mathematical Models, Journal of Regional Science; Transportation Research Board; Transportation Behaviour and Society, Computers, Environment and Urban Systems; Journal of Transportation and Society; Journal of Planning Literature; Journal of Housing and the Built Environment, Journal of Environmental Planning and Management

Subject Matter Expert Reviewer for the International Governmental Panel on Climate Change, Fifth Assessment Report (IPCC AR5)