

Amy M. Moore, Ph.D.
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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY Atlanta

Doctor of Philosophy in Civil Engineering (December 2016)

- Thesis Title: Meeting Off-Grid Transportation Energy Needs: A Resource Evaluation Model for a Solar Vortex Power Generation System.

Master of Science in Civil Engineering (August 2013)

Master of City and Regional Planning (August 2013)

- Master's Thesis Title: Estimating Freight Costs over a Multi-Modal Network: An Auto Industry Supply Chain Example.

SOUTHERN POLYTECHNIC STATE UNIVERSITY Marietta

Professional Certificate in Information Technology (May 2015)

- Courses taken: Database Management, Java Programming, Information Security, Operating Systems and Hardware, Networking, and Web Development

GEORGIA STATE UNIVERSITY Atlanta

Master of Arts in Geography (May 2011)

Professional Certificate in Geographic Information Science (May 2010)

- Master's Thesis Title: Spatiotemporal Analyses of Child Pedestrian-Vehicle Incidents Occurring During School-Commuting Hours in Metropolitan Atlanta from 2000-2007.

UNIVERSITY OF NORTH GEORGIA Dahlonega

Master of Public Administration (December 2008)

- Who's Who Among Students in American Universities and Colleges
- Pi Gamma Mu (international social-science honor society)
- Pi Sigma Alpha (national political-science honor society)
- Psi Chi (national psychology honor society)

GEORGIA STATE UNIVERSITY Atlanta

Bachelor of Science in Psychology (May 2007)

- Minor in Sociology
- Dean's List, four semesters

EXPERIENCE

OAK RIDGE NATIONAL LABORATORY

Knoxville

Energy Efficient Transportation Planning Engineer – P.I. on Department of Energy (D.O.E.) SMART Mobility Multi-Modal Pillar Task 3.1: “Optimization of Intra-City Freight Movement with New Delivery Methods.” Currently responsible for all GIS and geoanalysis involved in three Department of Transportation (D.O.T.) Pipeline and Hazardous Materials Safety Administration (PHMSA) projects. Responsible for preliminary model development and route optimization for a lab-wide commuter program at ORNL, as part of the Sustainable Campus Initiative. Responsible for GIS and routing involved in project under Nuclear Security and Isotope Technology Division at ORNL (July 2018 – present).

OAK RIDGE NATIONAL LABORATORY

Knoxville

Post-doctoral Research Associate in Transportation Modeling and Energy Analysis- P.I. on Department of Energy (D.O.E.) SMART Mobility Multi-Modal Pillar Task 3.1: “Optimization of Intra-City Freight Movement with New Delivery Methods.” Previously responsible for web development of user interface for two D.O.E. SMART Mobility Multi-Modal Pillar Tasks: “Development of Smart Vehicle Energy Technology (SVET) Passenger Fleet Model” and “Freight Fleet Level Energy Estimation Tool (FFLEET).” Currently responsible for all GIS and geoanalysis involved in three Department of Transportation (D.O.T.) Pipeline and Hazardous Materials Safety Administration (PHMSA) projects. Responsible for preliminary model development and route optimization for a lab-wide commuter program at ORNL, as part of the Sustainable Campus Initiative. Responsible for GIS and routing involved in project under Nuclear Security and Isotope Technology Division at ORNL (May 2017 – June 2018).

GEORGIA INSTITUTE OF TECHNOLOGY

Atlanta

Post-doctoral Research Associate in Civil Engineering- assisted Dr. Michael O. Rodgers with two Georgia Department of Transportation (GDOT) projects involving Georgia crash incident data and improving safety at roundabouts. Developed a GIS model using ArcPy language to obtain crash incident data at intersections using the Road Characteristics (RC) Link Database. (January 2017 – May 2017).

GEORGIA INSTITUTE OF TECHNOLOGY

Atlanta

Graduate Research Assistant- assisted Dr. Michael O. Rodgers with research involving ARPA-E Solar Vortex power generation facilities’ study. Developed GIS model for resource evaluation, site analysis and selection of locations for Solar Vortex power generation facilities using ArcGIS/ArcPy (August 2013 – present).

Teaching Assistant for CE 4610: Multimodal Transportation – graded assignments, attended lectures, graded final poster presentations (August-December 2016).

GEORGIA PERIMETER COLLEGE

Dunwoody

Instructor – GEOG 1101: Introduction to Human Geography - Responsible for all course content: developed all lectures, exams, and assignments (March 2014 – May 2014).

GEORGIA INSTITUTE OF TECHNOLOGY

Atlanta

Graduate Research Assistant- assisted Dr. Frank Southworth with research related to freight network modeling using Caliper's Maptitude software and Oak Ridge National Laboratory's Multi-Modal Freight Network; maintained supply chain geodatabase for project involving Economics department at Georgia Tech; developed Freight Model Improvement Program Website and resource database for Federal Highway Administration (May 2012 – August 2013).

Graduate Research Assistant - assisted director of Center for GIS at Georgia Tech: Dr. Subhro Guhatakurta in transportation-related projects involving TRANSIMS software. Assisted Dr. Ramachandra Sivakumar in generating and maintaining geodatabases for Georgia Tech campus.

Teaching assistant for CP 6514: Introduction to Geographic Information Systems: graded all assignments (August 2011-May 2012).

GEOSTATS, L.P.

Atlanta

GIS Analyst – Responsible for: analyzing, processing, and managing trip data accessed from GPS travel logs using proprietary TIAS software (May 2011-October 2011).

GEORGIA STATE UNIVERSITY

Atlanta

Graduate Research Assistant- GIS/Planning/Transportation Planning/Public Health research for Dr. Dajun Dai: Responsible for analyzing cancer data with regards to built environment in neighborhoods in Atlanta, Georgia using ArcGIS, ArcView, Geoda, and Matlab software (August 2010-May 2011).

FAYETTE COUNTY DEPT OF STORMWATER MANAGEMENT

Fayetteville

GIS Intern – Responsibilities included: analyzing stormwater facilities data using ArcGIS, creating maps for county brochures, surveying retaining/detaining sites for commercial standards' compliance (May 2010-August 2010).

GEORGIA STATE UNIVERSITY

Atlanta

Teaching Assistant - GEOG 1112: Weather and Climate labs; responsible for teaching all lectures, grading assignments, and advising students (September 2009- May 2010).

UNIVERSITY OF NORTH GEORGIA

Dahlonega

Graduate Assistant – Leadership Program (December 2007-December 2008)

Teaching Assistant for PSYC 1001, "Foundations of Leadership": – Responsibilities included: designed, maintained, and operated WebCT site for all PSYC 1001 classes (including quizzes, assignments, and teaching material); advised students, managed office.

HENRY COUNTY BOARD OF EDUCATION

McDonough

Administrative Assistant – Human Resources Department (May 2007 to July 2009)

After-school Instructor – Pleasant Grove Elementary School, Grades 3 and 5 (January 2005-April 2007)

PUBLICATIONS

- 1) Moore, Amy M. *Optimization of Intra-City Freight Movement with New Delivery Methods*. Transportation Research Board Annual Meeting Compendium of Papers. (January 2019).
- 2) Hou, Y., Moore, A., Duran, A., Walkowicz, K., and Smith, D. *A Hybrid Tour-Based Model for Energy Analysis of Multi-Modal Intra-City Freight: A Case Study of Autonomous Electric Vehicles*. Transportation Research Record. (July 2018). Manuscript submitted for publication, November 2018.
- 3) Moore, A., Lapsa, M., Curran, S., and Bittler, A. *Preliminary Routing for a National Laboratory Lab-Wide Commuting Program*. Transportation Research Record. (July 2018). Manuscript submitted for publication, November 2018.
- 4) Zietsman, J., Johnson, J., Ramani, T., Farzaneh, R., Rodgers, M., Yu, Y., Samoylov, A., and Moore, A. *Effectiveness of Idle Reduction Technologies in Reducing Driver Exposure to Diesel Emissions*. (May 2018). Transportation Research Record.
- 5) Oland, B., Lower, M., Moore, A., and Rose, S. *Real-Time Flood Monitoring and Alerting System for Enhancing Safety of Pipelines that Cross Inland Waterways*, (May 2018). Technical Memorandum 2018/243 prepared by the Oak Ridge National Laboratory for Department of Transportation Pipeline and Hazardous Materials Safety Administration.
- 6) LaClair, T. and Moore, A. *DEVELOPMENT OF FLEET ENERGY SAVINGS EVALUATION TOOLS FOR SMART MOBILITY: Smart Vehicle Energy Technology (SVET) Model for Passenger Fleets and Freight Fleet Level Energy Estimation Tool (FFLEET) for Freight Fleets*. (February 2018). Prepared for The National Transportation Research Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee.
- 7) Moore, A. M. *Proposed Methodology for a Tour-Based Freight Model* (September 2017). Technical Memorandum 2017/522 prepared by the Oak Ridge National Laboratory for the Department of Energy.
- 8) Moore, A. M. *A Compendium of Tour-Based Freight Modeling Literature*, (September 2017). Technical Memorandum 2017/519 prepared by the Oak Ridge National Laboratory for the Department of Energy.
- 9) *International Social Science Review* 93 Winter edition (2, 8, 2017) Book Review of Swingle, Mari: *i-Minds: How Cell Phones, Computers, Gaming, and Social Media are Changing our Brains, our Behavior, and the Evolution of our Species*. Dhalonega, G.A.: Nighthawks Open Institutional Repository, 2017.
- 10) Moore, Amy M. *Meeting Off-Grid Transportation Energy Needs: A Resource Evaluation Model for A Solar Vortex Power Generation System*. November 2016. Dissertation; SMARTech: Georgia Institute of Technology.
- 11) Ge Zhang, Subhro Guhathakurta, Amy Moore, Susanna Lee, Lijiao Yan. *Grid-Based Land-use Composition and Configuration Optimization for Watershed Stormwater Management*. Water resources management, 2014, 28:2867-2883.
- 12) Moore, Amy M. *Estimating Freight Costs Over A Multi-Modal Network: An Auto Industry Supply Chain Example*. August 2013. Thesis; SMARTech: Georgia Institute of Technology.
- 13) Southworth, Frank, Moore, Amy, and Wilson, Richard. *A Bibliography of Freight Demand Estimation, Forecasting and Planning Models*, (November 25, 2013). Prepared for The National Transportation Research Center, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

14) Moore, Amy M. *Spatiotemporal Analyses of Child Pedestrian-Vehicle Incidents Occurring during School-Commuting Hours in Metro Atlanta from 2000 to 2007*. May 2011. Thesis. ScholarWorks: Georgia State University.

15) *International Social Science Review* 86 Fall edition (Nos. 3-4, 2011) Book review of Kihato, Caroline Wanjiku, Mejgan Massoumi, Blair A. Ruble, Pep Subriós, and Allison M. Garlans eds. *Urban Diversity: Space, Culture, and Inclusive Pluralism in Cities Worldwide*. Baltimore: The Johns Hopkins University Press, 2010.

16) *International Social Science Review* 85 Fall edition (Nos. 1-2, 2010) Book review of Pickering, Andrew, and Guzik, Keith, eds. *The Mangle in Practice: Science, Society, and Becoming*. Durham, N.C.: Duke University Press, 2008.

RESEARCH PROJECTS

Oak Ridge National Laboratory

1) Department of Energy: SMART Mobility Multi-Modal Pillar Task 1: development of web-based tool for Tim Laclair's Smart Vehicle Energy Technology (SVET) passenger fleet model - \$50,000

2) Department of Energy: SMART Mobility Multi-Modal Pillar Task 8: development of web-based tool for Tim Laclair's Freight Fleet-Level Energy Estimation Model (FFLEET) - \$75,000

3) (P.I.) Department of Energy: SMART Mobility Multi-Modal Pillar Task 9: Optimization of Intra-City Freight Movement and New Delivery Methods: development of complete literature review and proposed methodology for a tour-based freight model for Columbus, Ohio - \$50,000

4) (P.I.) Department of Energy: SMART Mobility Multi-Modal Pillar Task 3.1: Optimization of Intra-City Freight Movement and New Delivery Methods: development and implementation of tour-based freight model for Columbus, Ohio – (FY 2017 – 2019: \$545,000)

5) Department of Transportation: Pipeline and Hazardous Materials Safety Administration: development of geodatabase and map document to be used for training purposes.

6) Department of Transportation: Pipeline and Hazardous Materials Safety Administration: GIS analysis for risk assessment using ORNL's Landscan data.

7) Department of Transportation: Pipeline and Hazardous Materials Safety Administration: GIS analysis of river crossings.

8) Department of Energy: Sustainable Campus Initiative program at ONRL: Development of GIS model and preliminary routing scenario for lab-wide commuter program at ORNL (FY 2018: \$14,000)

9) Department of Energy and the James Martin Center for Nonproliferation Studies: preliminary GIS and routing model development of project under Nuclear Security and Isotope Technology Division at ORNL

Georgia Institute of Technology

1) Graded Civil Engineering Senior Design/Capstone course group presentation at Lithonia City Hall in Lithonia, Georgia (April 2017)

2) Participated in surveying and emissions data collection fieldwork and analysis in: Calhoun, Georgia; Bakersfield, California; and Houston and College Station, Texas, and managed all GIS

data and performed statistical analyses for Federal Motor Carrier Safety Administration (FMCSA) truck cabin emissions study under direction of Dr. Yanzhi Xu and Dr. Alexander Samoylov (January-July 2016).

3) Graded/judged poster presentation sessions for CE 4090: Capstone Design (April 2015, November 2015, April 2016).

4) Edited final draft of GDOT Project Number 12-15 report: Applying the Highway Safety Manual to Georgia (August 2015).

5) Assisted Dr. Franklin Gbologah in data collection for roundabout illumination study in Evans, Georgia (received acknowledgement in Dr. Gbologah's dissertation at Georgia Tech) (August 2015).

6) Assisted Dr. Thomas Wall and Dr. Aaron Greenwood in data collection for Hartsfield Jackson Airport mode choice study (May 2014).

7) Assisted Dr. Michael Hunter and Dr. Angshuman Guin in data collection and managed license plate scanning devices/software for before/after study of Diverging Diamond interchange at Interstate 85 and Jimmy Carter Boulevard in Gwinnett County, Georgia (October-November 2013).

PRESENTATIONS

- 1) INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS 21ST INTERNATIONAL CONFERENCE ON INTELLIGENT TRANSPORTATION SYSTEMS, Maui, Hawaii (November 4 – 7, 2018), presentation with Victor Walker – “Designing for Energy - Lessons in Future Freight Delivery Methods and the Impacts of Drones on Energy and Business Efficiency”
- 2) DEPARTMENT OF ENERGY ANNUAL MERIT REVIEW, Crystal City, Arlington, Virginia (June 18 – 21, 2018), presentation – “Optimization of Intra-City Freight Movement and New Delivery Methods”
- 3) UNIVERSITY CONSORTIUM FOR GEOGRAPHIC INFORMATION SCIENCE SYMPOSIUM, Madison, Wisconsin (May 22 – May 24, 2018), presentation – “Development of a GIS-Based Model to Examine Alternative Scenarios for Last-Mile Freight Delivery”
- 4) AMERICAN PLANNING ASSOCIATION NATIONAL PLANNING CONFERENCE, New Orleans, Louisiana (April 21 – April 24, 2018), poster presentation – “Modeling Innovative Last-Mile Freight Delivery Scenarios”
- 5) OAK RIDGE NATIONAL LABORATORY EARTH DAY, Oak Ridge, Tennessee (April 18, 2018), poster presentation – “Optimization of Intra-City Freight Movement with New Delivery Methods”
- 6) AMERICAN ASSOCIATION OF GEOGRAPHERS ANNUAL MEETING, New Orleans, Louisiana (April 10 – April 14, 2018), presentation – “Development of a Tour-Based Freight Model to Examine Last-Mile Delivery Scenarios in Columbus, Ohio”
- 7) URBAN DYNAMICS INSTITUTE AT THE OAK RIDGE NATIONAL LABORATORY, Oak Ridge, Tennessee (March 28, 2018), poster presentation – “Optimization of Intra-City Freight Movement with New Delivery Methods”

- 8) ENERGY, UTILITY, AND ENVIRONMENT CONFERENCE, San Diego, California (March 4 – March 7, 2018), presentation – “Modeling Energy-Saving Freight Delivery Scenarios”
- 9) ENERGY, UTILITY, AND ENVIRONMENT CONFERENCE, San Diego, California (March 4 – March 7, 2018), presentation – “Meeting Off-Grid Transportation Energy Needs: A Resource Evaluation Model for a Solar Vortex Power Generation System”
- 10) WOMEN IN STEM SYMPOSIUM AT THE UNIVERSITY OF TENNESSEE, Knoxville, Tennessee (March 1, 2018), presentation – “GIS Tour-Based Freight Delivery Model with Alternative Multi-Modal Energy-Saving Scenarios”
- 11) AMERICAN COLLEGIATE SCHOOLS OF PLANNING CONFERENCE, Denver, Colorado (October 12, 2017), presentation given by Dr. Steven P. French – “CMMI Data Repository”
- 12) OAK RIDGE POSTGRADUATE ASSOCIATION (ORPA) 5th ANNUAL RESEARCH SYMPOSIUM, Oak Ridge, Tennessee (August 18, 2017), poster presentation – “Overview of Freight Tour-Based Modeling Methodology and Considerations for Future Model Development”
- 13) ARPA-E ENERGY INNOVATION SUMMIT, National Harbor, Maryland (February 29 – March 2, 2016), poster/booth presentation during Technology Showcase – “Power Generation Using Anchored, Buoyancy-Induced Columnar Vortices: The Solar Vortex (SoV)”
- 14) ENERGY, UTILITY, AND ENVIRONMENT CONFERENCE, San Diego, California (February 16 – February 18, 2015), presentation – “A GIS-Based Model for Evaluation of Solar Vortex (SoV) Power Generation”
- 15) ARPA-E ENERGY INNOVATION SUMMIT, National Harbor, Maryland (February 9 – February 11, 2015), poster/booth presentation during Technology Showcase – “Power Generation Using Anchored, Buoyancy-Induced Columnar Vortices: The Solar Vortex (SoV)”
- 16) NORTH AMERICAN MEETING OF THE REGIONAL SCIENCE ASSOCIATION INTERNATIONAL, Atlanta, GA (November 13-16, 2013), paper presented by Ge Zhang. “Grid-Based Land-use Composition and Configuration Optimization for Watershed Stormwater Management”
- 17) TRANSPORTATION RESEARCH BOARD 92nd ANNUAL MEETING, Washington D.C. (January 13, 2013), poster/booth presentation given by Dr. Frank Southworth during Workshop 175: Assessing the Future of Freight: Energy and Environmental Modeling in the Freight Sector – “Freight Flow Modeling and Carbon Emissions in Metropolitan Areas, Freight Significant Corridors, and Enterprise Supply Chains”
- 18) SOUTHEASTERN DIVISION OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS ANNUAL MEETING, Birmingham, Alabama (November 22, 2010) Presented *paper* – “Geospatial Analysis of Child Pedestrian Crashes Around Public Schools in Atlanta, Georgia”
- 19) AMERICAN PUBLIC HEALTH ASSOCIATION 138th ANNUAL MEETING AND EXPO, Washington D.C. (November 8, 2010), Poster presentation given by Dr. Dajun Dai during Transportation-Related Injury session – “Using Geospatial and Statistical Methods to Evaluate the Effect of Personal Factors and Environmental Conditions on Pedestrian Injury Risk and Identifying High Risk Road Segments”

- 20) GEORGIA PUBLIC ADMINISTRATION ACADEMIC CONFERENCE, Milledgeville, Georgia (March 6, 2009) Presented *paper* – “Policy Analysis: Interstate 3”
- 21) GEORGIA PUBLIC ADMINISTRATION ACADEMIC CONFERENCE, Dahlonega, Georgia (March 7, 2008) Presented *paper* – “Strategic Planning--Essential for Effective and Efficient HRM in the Public-School System”

AWARDS

American Planning Association – 2014 American Institute of Certified Planners Student Project Award: Contribution of Planning Contemporary Issues for Tracking the Effect of Sea Level Rise

SOFTWARE AND COMPUTER SKILLS

ArcGIS, ArcPy, ArcView, CSS, C++, ERDAS IMAGINE, FORTRAN, Geoda, HCS (Highway Capacity Software), HTML, JAVA, Javascript, JGrasp, Maptitude, MATLAB, Microsoft Office (Word, Excel, Powerpoint, Access), MS SQL, Python, R, SPSS, SQL, SUMO, TIAS (Geostat/Westat), TransCAD, TRANSIMS

PROFESSIONAL MEMBERSHIPS

Institute of Electrical and Electronics Engineers Intelligent Transportation Systems Society
(Technical reviewer: IEEE ITSS Journal (June 2018))

American Planning Association

Association of American Geographers

American Society of Highway Engineers

American Society of Civil Engineers

American Society of Public Administrators

Institute of Transportation Engineers - Georgia Tech Chapter

INVITED TALKS

- 1) University of Tennessee, Department of Civil and Environmental Engineering – Transportation Engineering Seminar Series (September 27, 2018), “Optimization of Intra-City Freight Movement with New Delivery Methods.”
- 2) Northwestern Middle School, Milton, Georgia – Career Day (March 2015), “GIS Applications in Transportation Systems Engineering.”
- 3) Northwestern Middle School, Milton, Georgia – Career Day (March 2014), “Geographic Information Systems.”

JOURNAL EDITOR/REVIEWER

- 1) Transportation Research Record, (September 2018)
- 2) Institute of Electrical and Electronics Engineers, Intelligent Transportation Society Journal, (May 2018)