Gregory S. Macfarlane

Brigham Young University
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Provo, UT 84602

Education

Georgia Institute of Technology

Ph.D., Transportation Systems Engineering — May 2014
Advisor: Laurie A. Garrow
Dissertation: "Using Big Data to Model Travel Behavior: Applications to Vehicle Ownership and Willingness-to-Pay for Transit Accessibility"

M.S., Economics

Brigham Young University

B.S. with University Honors, Civil Engineering — December 2009
Minor degrees in Mathematics and Asian Studies

Professional Experience

Brigham Young University

Assistant Professor — November 2018 -
Researching the application of passive data sets in transport and land use modeling, including spatial and social effects on travel behavior.

Transport Foundry Atlanta, Georgia

Transportation Engineer — April 2017 — October 2018
Developed a data-driven travel demand model from passive data sources.

WSP | Parsons Brinckerhoff Raleigh, North Carolina

Technical Principal, Systems Analysis Group — June 2014 — April 2017
Developed advanced travel demand models for public sector clients.

University of North Carolina, Chapel Hill

Adjunct Lecturer/Teaching Assistant — January 2017 - May 2017
Lectured on transportation data, discrete choice econometrics, and mode choice models in the graduate travel demand analysis course.

Georgia Institute of Technology

Post-doctoral Researcher — January 2014 - May 2014
Developed a curriculum to teach sustainable transportation engineering and analysis, in partnership with the National Center for Sustainable Transportation.

Utah Transit Authority Salt Lake City, Utah

Strategic Planning Intern — May 2009 - June 2010
Developed transit operating scenarios for the Wasatch Front long-range transportation plan and for UTA's internal scenario planning and programming purposes.

Hales Engineering Lehi, Utah

Engineering Intern — July 2008 - May 2009
Prepared traffic impact analyses for commercial and residential developments.

Research Interests

Transportation planning and engineering, travel demand modeling, application of passive data products in transportation planning and forecasting.

Refereed Journal Articles

First author or first faculty author on 5 of 10 total journal articles. †indicates BYU graduate student authors, *indicates BYU undergraduate authors.

A1 **Macfarlane, G.S.**, Sheffield, M.H.†, Bennet, L.S.†, & Schultz, G.G. (2021). The Effect of Transit Signal Priority on Bus Rapid Transit Headway Adherence. *Findings*, June. https://doi.org/10.32866/001c.24499.

A2 **Macfarlane, G.S.**, Hunter, C.*, Martinez, A.*, & Smith, E.* (2021). Rider Perceptions of an On-Demand Microtransit Service in Salt Lake County, Utah *Smart Cities* 4(2): 717-727. https://doi.org/10.3390/smartcities4020036

A3 **Macfarlane, G.S.**, Boyd, N., Taylor, J.E., & Watkins, K. (2021) Modeling the impacts of park access on health outcomes: A utility-based accessibility approach. *Environment and Planning B: Urban Analytics and City Science*, 48(8), 2289–2306. https://doi.org/10.1177/2399808320974027

A4 Glenn, J., Bluth, M.*, Christianson, M.*, Pressley, J.*, Taylor, A., **Macfarlane, G.S.**, & Chaney, R. A. (2020). Considering the Potential Health Impacts of Electric Scooters: An Analysis of User Reported Behaviors in Provo, Utah. *International Journal of Environmental Research and Public Health*, 17(17), 6344. https://doi.org/10.3390/ijerph17176344

A5 **Macfarlane, G.S.**, Garrow, L.A., & Moreno-Cruz, J. (2015). Do Atlanta residents value MARTA? Selecting an autoregressive model to recover willingness to pay. *Transportation Research Part A: Policy and Practice*, 78, 214–230. https://doi.org/10.1016/j.tra.2015.05.010

A6 **Macfarlane, G.S.**, Garrow, L.A., & Mokhtarian, P. L. (2015). The influences of past and present residential locations on vehicle ownership decisions. *Transportation Research Part A: Policy and Practice*, 74, 186–200. https://doi.org/10.1016/j.tra.2015.01.005

A7 Brakewood, C., **Macfarlane, G.S.**, & Watkins, K.E. (2015). The impact of real-time information on bus ridership in New York City. *Transportation Research Part C: Emerging Technologies*, 53, 59–75. https://doi.org/10.1016/j.trc.2015.01.021

A8 Binder, S., **Macfarlane, G.S.**, Garrow, L.A., & Bierlaire, M. (2014). Associations among household characteristics, vehicle characteristics and emissions failures: An application of targeted marketing data. *Transportation Research Part A: Policy and Practice*, 59, 122–133. https://doi.org/10.1016/j.tra.2013.11.005

A9 Wall, T.A., **Macfarlane, G.S.**, & Watkins, K.E. (2014). Exploring the use of egocentric online social network data to characterize individual air travel behavior. *Transportation Research Record*, 2400, 78–86. https://doi.org/10.3141/2400-09

A10 McBride, J.H., Keach, R. W., Macfarlane, R.T., De Simone, G.F., Scarpati, C., Johnson, D.J., **Macfarlane, G.S.**, & Weight, R.W.R. (2009). Subsurface visualization using ground-penetrating radar for archaeological site preparation on the northern slope of Somma-Vesuvius:

a Roman site, Pollena-Trocchia, Italy. *Il Quaternario, Italian Journal of Quaternary Sciences*, 22(1), 39–52. https://portal.issn.org/resource/ISSN/0394-3356

Venue Notes

Transportation Research Part A: Policy and Practice is a leading international journal with robust peer review focusing on transportation policy analysis and the planning of transportation systems. CiteScore: 8.5; 17/318 in civil engineering. Impact factor: 5.594. Publisher: Elsevier.

Environment and Planning B: Urban Analytics and City Science is a leading international journal with robust peer review publishing cutting-edge research in analytical methods for urban planning and design. CiteScore 4.6; 6/138 in architecture. 5-year impact factor: 3.889. Publisher: Sage.

Transportation Research Part C: Emerging Technologies is a leading international journal with robust peer review focusing on applications and implications of technology in transportation systems. CiteScore: 14.0; 3/318 in civil engineering. 5-year impact factor: 8.089. Publisher: Elsevier.

Findings is an interdisciplinary, independent, community-led, peer-reviewed, open access journal focused on short, clear, and pointed research results. The journal was established in 2019. Publisher: University of Sydney and McGill University.

International Journal of Environmental Research and Public Health is an interdisciplinary, peer-reviewed, open access journal. CiteScore: 3.4; 179/526 in public health. 5-year impact factor: 2.789. Publisher: MDPI.

Smart Cities is an international, scientific, peer-reviewed, open access journal on the science and technology of smart cities. This journal was established in 2019. Publisher: MDPI.

Under Review

U1 Wang, B.†, Schultz, G.G., **Macfarlane, G.S.**, & McCuen, S.* (2021). Evaluating signal systems using automated traffic signal performance measures. Under initial review at *Journal of Traffic and Transportation Engineering*.

U2 **Macfarlane, G.S.**, Turley Voulgaris, C., & Tapia, T. (2021). If you build it who will come? Equity analysis of park system changes during COVID-19 using passive origin-destination data. Under initial review at *Journal of Transportation and Land Use*.

U3 Turley Voulgaris, C., **Macfarlane, G.S.**, Kaylor, J., Su, T., Bauranov, A. (2021). Whose emissions are these anyway? Estimating vehicle miles traveled to account for site-level climate impacts. Under initial review at *Journal of Planning Education and Research*.

Peer- Reviewed Conference Papers

All listed conference publications are full papers and include at least a single-blind review process with multiple expert reviewers for consideration.

C1 Turley Voulgaris, C., **Macfarlane, G.S.**, Kaylor, J., Su, T., Bauranov, A. (2022). Whose emissions are these anyway? Estimating vehicle miles traveled to account for site-level climate impacts. In *Transportation Research Board Annual Meeting*. Washington, D.C.

C2 **Macfarlane, G.S.**, Copley, M.*, & Stucki, E.†. (2021). Utility-Based Accessibility to Community Resources: An Application of Location-Based Services Data. In *North American Regional Science Conference*. Denver, Colorado.

C3 **Macfarlane, G.S.**, & Tapia, T. (2020). Developing a Park Activity Location Choice Model from Passive Origin-Destination Data Tables. In *Transportation Research Board Annual Meeting*. Washington, D.C.

C4 Zhang, B., **Macfarlane, G.S.**, Wall, T.A., & Watkins, K.E. (2014). Friendship Influences on Air Travel: A Social Autoregressive Analysis. In *North American Regional Science Conference*. Washington, D.C.: Regional Science Association International.

C5 **Macfarlane, G.S.**, Moreno-Cruz, J., & Garrow, L. A. (2013). Does Atlanta value MARTA? Selecting an autoregressive model to recover willingness-to-pay. In *North American Regional Science Conference*. Atlanta, Georgia.

C6 **Macfarlane, G.S.**, Saito, M., & Schultz, G.G. (2011). Delay underestimation at free right-turn channelized intersections. In *6th International Symposium on Highway Capacity and Quality of Service* (Vol. 16, pp. 560–567). https://doi.org/10.1016/j.sbspro.2011.04.476

C7 **Macfarlane, G.S.**, Saito, M., & Schultz, G.G. (2011). Driver perceptions at free right-turn channelized intersections. In *T&DI Congress 2011: Integrated Transportation and Development for a Better Tomorrow* (Vol. 398, pp. 108–108). ASCE. https://doi.org/10.1061/41167(398)108

Reports

These are technical reports completed under contract for the sponsoring agency; each report was reviewed by a technical advisory committee prior to publication.

R1 **Macfarlane, G.S.**, Lant, N.J.†, (2021). Estimation and Simulation of Daily Activity Patterns for Individuals Using Wheelchairs (No. UT-21.10). Utah Dept. of Transportation. Division of Research. `https://rosap.ntl.bts.gov/view/dot/54639/dot_54639_DS1.pdf`

R2 Schultz, G. G., **Macfarlane, G.S.**, Wang, B.†, & McCuen, S.* (2020). Evaluating the Quality of Signal Operations Using Signal Performance Measures (No. UT-20.08). Utah Dept. of Transportation. Division of Research. `https://rosap.ntl.bts.gov/view/dot/54639/dot_54639_DS1.pdf`

R3 **Macfarlane, G.S.** & Copley, M.J.* (2020). *A Synthesis of Passive Third-Party Data sets used for Transportation Planning.* (No. UT-20.20). Utah Dept. of Transportation. Division of Research. `https://rosap.ntl.bts.gov/view/dot/54890/dot_54890_DS1.pdf`

R4 Zalewski, A., Sonenklar, D., Cohen, A., Kressner, J., & **Macfarlane, G.S.** (2019). *Public Transit Rider Origin–Destination Survey Methods and Technologies.* TCRP Synthesis of Transit Practice 138. Transportation Research Board. `http://www.trb.org/Main/Blurbs/179008.aspx`

R5 Miller, H., O'Kelly, M., Jaegal, Y., Bachman, W., Huntsinger, L., & **Macfarlane, G.S.** (2017) Estimating External Travel Using Purchased Third-Party Data. Research Report 134877, the Ohio Department of Transportation, Office of Statewide Planning & Research.

R6 Cruz, J., **Macfarlane, G.S.**, Xu, Y., Rodgers, M.O., & Guensler, R. (2015). Sustainable Transportation Curricula. National Center for Sustainable Transportation.

Presentations

This includes invited presentations to academic and non-academic audiences, as well as presentations resulting from abstract-only submission. This includes lectern sessions and posters.

P1 Turley Voulgaris, C., **Macfarlane, G.S.**, Kaylor, J., Su, T., Bauranov, A. (2021). Whose emissions are these anyway? Estimating vehicle miles traveled to account for site-level climate

impacts. In *Association of Collegiate Schools of Planning Annual Conference*. Lectern presentation. Miami, Florida.

P2 **Macfarlane, G.S.**, Boyd, N., Taylor, J.E., & Watkins, K.E. (2019). Modeling the impacts of park access on health outcomes: a choice-based accessibility approach. In *Greater and Greener 2019.*. Workshop presentation. Denver, Colorado.

P3 Bernardin, V., Gallup, A., Lee, B., Johnson, C., **Macfarlane, G.S.**, Elgar, I., Wertman, R. (2019). How to be a Good Big Data Consumer. In *Transportation Planning Applications Conference*. Panel discussion. Portland, Oregon.

P4 **Macfarlane, G.S.**, & Kressner, J.D. (2018). Comparing the Daily Schedules in the NHTS from 2009 and 2017. In *National Household Travel Survey (NHTS) Data for Transportation Applications Workshop*. Poster. Washington, D.C.

P5 **Macfarlane, G.S.**, Bettinardi, A.O., & Donnelly, R. (2017). SWIMR: Visualizing complex longitudinal indicators for a statewide integrated land use and transport model in Oregon. In *Transportation Planning Applications Conference*. Lectern presentation. Raleigh, North Carolina.

P6 Boyd, N., **Macfarlane, G.S.**, Watkins, K.E., & Ederer, D. (2017). Accessibility to urban parks and health outcomes on the neighborhood level. In *American Public Health Association Annual Meeting*. Poster. Atlanta, Georgia.

P7 **Macfarlane, G.S.**, & Kressner, J.D. (2017). Modeling automated vehicles with a passive data model. In *Transportation Planning Applications Conference*. Poster. Raleigh, North Carolina.

P8 Kressner, J.D., **Macfarlane, G.S.**, Donnelly, R., & Huntsinger, L.F. (2016). Using passive data to build an agile tour-based model: A case study in Asheville. In *Innovations in Travel Modeling Conference*. Lectern presentation. Denver, Colorado.

P9 **Macfarlane, G.S.**, & Kressner, J. D. (2016). Fusing Passive Data for Transportation Planning. In *Transportation Research Board Annual Meeting*. Poster. Washington, D.C.

P10 **Macfarlane, G.S.**, & Moreno-Cruz, J. (2015). The association between public transportation infrastructure and home price growth and stability. *In Transportation Research Board Annual Meeting*. Washington, D.C.

P11 **Macfarlane, G.S.**, & Garrow, L. A. (2012). Estimating a vehicle ownership model from targeted marketing data. In *Travel Surveys: Moving from Tradition to Practical Innovation*. Poster. Dallas, Texas.

P12 Kressner, J.D., & **Macfarlane**, G.S. (2012). Evaluating household credit reports as a replacement for episodic travel surveys. In *Transportation Research Board Annual Meeting*. Committee presentation. Washington, D.C.

P13 **Macfarlane, G.S.**, Saito, M., & Schultz, G.G. (2011). Are free right-turn channelized intersections performing as they should? In *Institute of Transportation Engineers Annual Meeting and Exhibit 2011*.

External Funding

As Principal Investigator, totalling $305,000:

1 **Macfarlane, G.S.** & Schultz, G.G. 2021. *Optimizing Traffic Incident Management Deployment in Utah.* $70,000, Utah Department of Transportation.

2 **Macfarlane, G.S.**, Redelfs, A.H., & Spruance, L.A. 2021. *Equitable Access to Nutrition in Utah.* $70,000, Utah Department of Transportation.

3 **Macfarlane, G.S.** 2020. *Identifying Microtransit Service Areas through Microsimulation.* $20,000, Utah Department of Transportation

4 **Macfarlane, G.S.** 2019. *A synthesis of passive third-party datasets used for transportation planning.* $25,000, Utah Department of Transportation

5 **Macfarlane, G.S.** 2019. *Modeling the demand and operating characteristics for wheelchair-accessible, on-demand mobility services.* $60,000, Utah Department of Transportation

6 **Macfarlane, G.S.** 2019. *Evaluating the Systemic Redundancy of Critical Highway Facilities.* $60,000, Utah Department of Transportation

As Co-Principal Investigator, totalling $1.16 million ($235,000 to BYU):

1 Schultz, G.G. & **Macfarlane, G.S.**. 2021. *Analysis of performance measures of UDOT's traffic incident management program: Phase III.* $30,000. Utah Department of Transportation.

2 Watkins, K.E. (PI), Hunter, M.S., Van Hentenryck, P., Peeta, S., Brakewood, C., Erhardt, G.D., & **Macfarlane, G.S.** 2020. *T-SCORE: Transit Serving Communities Optimally, Responsibly, and Efficiently.* $1,000,000, United States Department of Transportation.

3 Schultz, G.G. (PI), **Macfarlane, G.S.** 2020. *Evaluating Signal Performance Measures: a Longitudinal Analysis.* $70,000, Utah Department of Transportation

4 Schultz, G.G. (PI), **Macfarlane, G.S.** 2019. *Evaluating ramp meter delay in Utah.* $65,000, Utah Department of Transportation

No unfunded proposals.

Internal Competitive Funding

Funded research:

- **Macfarlane, G.S.**, Guthrie, W.S., Mazzeo, B. 2021. *Measuring pavement smoothness from the perspective of e-scooters.* $25,000, Mentored Research Grant, Brigham Young University.

Unfunded proposals:

- **Macfarlane, G.S.**, Hooley, C., Redelfs, A., South, M. 2020 *Using Mobile Device Data to Measure Isolation and Mental Health.* $40,000, Brigham Young University Interdisciplinary Research Grant.

Courses

CCE 201: Sustainable Infrastructure

The inter-related aspects of the different civil engineering disciplines of environmental, geotechnical, structural, transportation, and water resources and how they come together to develop an infrastructure system. Time value of money and application to the infrastructure investment alternatives.

Semester	Enrolled	Student Rating (Historical)	Average GPA
Fall 2020	33	4.1 - 4.7 (4.1)	3.41
Fall 2021			

CE 361: Introduction to Transportation Engineering
Transportation systems characteristics, traffic engineering and operations, transportation planning, geometric design, pavement design, transportation safety, freight, public transport, sustainable transportation.

Semester	Enrolled	Student Rating (Historical)	Average GPA
Winter 2020	42	4.4 - 4.8 (4.4)	3.13
Winter 2021	38	4.1 - 4.7 (4.4)	3.21

CE 565: Urban Transporation Planning
Characteristics of urban transportation planning and decision making, intermodal transportation, land-use transportation interrelationships, transportation demand modeling, site impact analysis, sustainable transportation, and livable cities.

Semester	Enrolled	Student Rating (Historical)	Average GPA
Fall 2019	12	3.9 - 4.9 (4.4)	3.41
Fall 2020	19	4.1 - 4.7 (4.4)	3.46
Fall 2021			

CE 594R: Data Science for Engineers
A first-semester graduate course in programming and data science techniques: literate programming in Markdown and LaTeX, version control with git, data manipulation and visualization with R, object-oriented programming with Java.

Semester	Enrolled	Student Rating (Historical)	Average GPA
Fall 2019	4	4.8 - 5.0 ()	3.85
Fall 2020	9	3.5 - 4.7 ()	3.81
Fall 2021			

CE 662: Transport Simulation and Analysis
An advanced graduate course in traffic flow theory and simulation. Topics include shock wave analysis, discrete event simulation of queues and daily activity pattern choices, car following models, and traffic simulation. Laboratory assignments use MATSim and PTV Vissim simulation softwares.

Semester	Enrolled	Student Rating (Historical)	Average GPA
Winter 2019	2	4.6 (4.3)	3.70
Winter 2020	3	5.0 - 5.0 (4.4)	3.00

CE 694R: Advanced Choice Modeling
An advanced graduate course in discrete choice modeling. Theory of choice models, including estimation and validation techniques. Mode choice models for work and non-work trip purposes using

multinomial and nested logit models.

Semester	Enrolled	Student Rating (Historical)	Average GPA
Winter 2021	5	4.0 - 5.0 ()	3.48

Graduate Mentoring

Students mentored as graduate committee chair (6 total, 4 current):

G1 Gillian Martin Riches. MS scheduled December 2022.

G2 Christopher Day. MS scheduled December 2022.

G3 Emma Stucki. MS scheduled December 2022.

G4 Natalie Gray. MS scheduled December 2022.

G5 Max Barnes, *Resiliency of utah's road network: a logit-based approach.* MS scheduled December 2021.

G6 Nate Lant, *Estimation and simulation of daily activity patterns for individuals using wheelchairs.* MS granted June 2021.

Students mentored as graduate committee member (11 total, 4 current, 2 non-BYU):

GM1 Tomas Barriga. MS scheduled December 2022.

GM2 Tanner Daines. MS scheduled April 2022.

GM3 Samantha Lau. MS scheduled April 2022.

GM4 Wang Bangyu (Bruce). Ph.D. proposed May 2021.

GM5 Logan Bennett, *Analysis of benefits of an expansion to UDOT's incident management program.* MS granted August 2021.

GM6 Camille Lunt, *Crash analysis methodology for segments of Utah highway.* MS granted April 2021.

GM7 Chad Vickery, *Quantifying the conditioning period for geogrid-reinforced aggregate base materials through cyclic loading.* MS granted August 2020.

GM8 Michael Sheffield, *Impacts of changing the transit signal priority requesting threshold on bus performance and general traffic: a sensitivity analysis.* MS granted June 2020.

GM9 Michael Adamson, *An analysis of decision boundaries for left-turn treatments.* MS granted April 2019.

GM10 Nico Boyd, *Accessibility to urban parks and health outcomes on the neighborhood level.* MS granted August 2018 (at Georgia Tech).

GM11 Zhang Bingling, *Friendship influences on air travel: a social autoregressive analysis.* MS granted August 2014 (at Georgia Tech).

Undergraduate Mentoring

Students mentored on funded research projects (15 total):

1 Dylan Apelu, undergraduate research assistant in e-scooters and pavements (2021 -).

2 Hayden Atchley, undergraduate research assistant in demand microsimulation (2020 -)

3 Nicole Anderson, undergraduate research assistant in e-scooters and pavements (2021 -).

4 Liv Neeley, undergraduate research assistant in e-scooters and pavements (2021 -).

5 Kaeli Monahan, undergraduate research assistant in community resources and passive data (2020 -).

6 Corey Ward, undergraduate research assistant in ramp meter evaluation, jointly mentored with Grant Schultz (2020 -).

7 Michael Copley, undergraduate research assistant in third-party passive data (2018 -).

8 Christopher Day, undergraduate research assistant in demand microsimulation (2020 - 2021). Now MS student at BYU.

9 Emma Stucki, undergraduate research assistant in community resources (2020 - 2021). Now MS student at BYU.

10 Gillian Martin Riches, undergraduate research assistant in community resources (2020 - 2021). Now MS student at BYU.

11 Natalie Gray, undergraduate research assistant in network resiliency (2019 - 2021). Now MS student at BYU.

12 Kim Munseok, undergraduate research assistant in demand microsimulation (2020 - 2021). Now BS student in computer science at BYU.

13 Christian Hunter, undergraduate research assistant in demand microsimulation (2018 - 2019). Now MS student at University of Texas at Austin.

14 Christian Vanderhoeven, undergraduate research assistant in demand microsimulation (2019). Now MS student at University of Washington.

15 Emily Andrus, undergraduate research assistant in signal peformance data, jointly mentored with Grant Schultz (2019). Now working as an engineering consultant.

16 Sabrina McCuen, undergraduate research assistant in signal peformance data, jointly mentored with Grant Schultz (2019 - 2020). Now working as an engineering consultant.

Students mentored as civil engineering capstone team advisor (15 total):

2021-2022 Carbon footprint of daily commuting to BYU campus. Sponsored by BYU Sustainability Office. Students: Nicole Anderson, Hayden Atchley, Kyle Leatham, and Daniel Jarvis.

2020-2021 Forecasting demand for future FrontRunner scenarios. Sponsored by Utah Transit Authority. Students: Gillian Martin Riches, Tomas Barriga, Landon Pratt, and Cole Larsen.

2019-2020 UTA microtransit pilot evaluation. Sponsored by Utah Transit Authority. Students: Christian Hunter, Austin Martinez, and Elizabeth Smith.

2018-2019 Demand for wheelchair-accessible vehicles. Sponsored by Utah Transit Authority. Students: Nate Lant, Byron Yates, Cody Irons, and Matthew Strong.

Awards and Honors

Dwight David Eisenhower Graduate Fellowship Full doctoral funding from the Federal Highways Administration 2011-2013, one of five awards nationally. Awarded supplemental grant in 2013.

Eno Center for Transportation Leadership Development Conference Participated in the 2012 program; nominated by the Ivan Allen, Jr. College of Liberal Arts at Georgia Tech.

Parsons Brinckerhoff - Jim Lammie Engineering Scholarship Awarded to the top engineer in the 2011 American Public Transportation Foundation (APTF) competition. Sponsored by Mike Allegra, general manager of the Utah Transit Authority. Renewed in 2012.

Gordon W. Schultz Graduate Fellowship Given to the Georgia Tech student in travel demand modeling who exhibits innovation, problem-solving, and practical application.

National Science Foundation Graduate Fellowship Program Honorable Mention in 2011 and 2012, as a first- and second-year graduate student.

Jim McGee Memorial Scholarship Cash award from the Georgia chapter of the American Society of Highway Engineers, one of two awards in 2011.

Georgia Department of Transportation Scholarship One of ten cash awards in 2010 to students from the southeastern United States.

Office of Research and Creative Activities (ORCA) Grant Competitive research grant to survey Chinese transportation planning practices, one of several undergraduate research awards from Brigham Young University.

Freeman-Asia Award Grant to study Chinese finance and globalized engineering at Nanjing University in the People's Republic of China from the Institute for International Education.

External Citizenship

Registered professional engineer in North Carolina, license #044518

Transportation Research Board of the National Acadmies of Science:

- AEP50: Travel Demand Forecasting Member of the committee (2019 —) on travel demand forecasting. Chair of the travel forecasting resources subcommittee and editor of `tfresource.org`.
- AMS20: Economics and Land Development Member of the committee (2014 —). formerly standing committee on transportation and land use.
- Young Members Council (2019 — 2021). Planning and Environment subcommittee chair.

Reviewer for the following journals:

- Transportation Research Part A: Policy and Practice
- Transportation Research Record
- Environment and Planning B: Urban Analytics and City Science
- International Journal of Sustainable Transport
- Journal of Transportation

Member of the following professional organizations:

- Zephyr Foundation (2020 -).
- Institute of Transportation Engineers (2009-2013, 2018-2020)
- Tau Beta Pi (Utah β '09).
- Young Professionals in Transportation (2013-2018); organizing co-chair of Triangle NC chapter.
- American Public Transportation Association scholar task force (2011 - 2013).

Media

McCann, A. (2021). Best and worst cities to drive in. *WalletHub*. Quoted expert opinion. August 31, 2021. `https://wallethub.com/edu/best-worst-cities-to-drive-in/13964#expert=Gregory_Macfarlane`

Macfarlane, G.S.. (2020). No, Utah County does not have to choose between preservation and growth. *Deseret News*. Guest Opinion, August 21, 2020. `https://www.deseret.com/opinion/2020/8/21/21376479/`

Internal Citizenship

Department honors coordinator (2019 —). Encourage students to participate in the honors program, and participate on honors thesis committees in the department.

Department undergraduate committee (2021 —).

Department faculty development and capital improvement committee (2018 — 2021).