Peter Revay

PhD candidate

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Education

2014-present **PhD**, *George Mason University*, Fairfax, VA.
Computational Social Science

2011-2015 **MA**, *Masaryk University*, Brno, Czech Republic.
Sociology

2012-2014 **MS**, *University of Vermont*, Burlington, VT.
Mathematics

2007-2012 **BS**, *Masaryk University*, Brno, Czech Republic.
Mathematics

2007-2010 **BA**, *Masaryk University*, Brno, Czech Republic.
Sociology and Media Studies

Employment

Summer 2017 **Research Intern**, *Goup W*, Vienna, VA.
- Development of and agent-based simulation of autonomous logistics systems and the sensitivity of their performance with respect to different control architectures.

2014–2017 **Graduate Research Assistant**, *Department of Computational and Data Sciences*, George Mason University, Fairfax, VA.
- Development of computational models aimed at predicting the effects of global climate change on large-scale human migration.

2016 **Graduate Research Assistant**, *Department of Geography and GeoInformation Sciences*, George Mason University, Fairfax, VA.
- Quantitative analysis of data produced from simulations and live subject testing aimed at understanding social and geospatial activity in goal-oriented teams of humans.

Summer 2015 **Research Assistant**, *Smithsonian Museum of Natural History*, Washington, DC.
- Development of software tools for visualizing and analyzing output of computer simulations aimed at predicting the effects of global climate change on large-scale human migration.

2012–2014 **Graduate Teaching Assistant**, *Department of Mathematics and Statistics*, University of Vermont, Burlington, VT.
- Teaching and curriculum development of undergraduate mathematics courses (Pre-Calculus, Calculus I).

Publications

Under Review

2018 **"Modeling the Co-Evolution of Culture, Signs and Network Structure"**, *Peter Revay and Claudio Cioffi-Revilla*, Journal of Artificial Societies and Social Simulation.

2018 **"A Model of Co-Evolution of Signs and Cultural Traits"**, *Peter Revay and Claudio Cioffi-Revilla*, Advances in Complex Systems.

2018 **"Survey of Evolutionary Computation Methods in Social Agent-Based Modeling Studies"**, *Peter Froncek*, Journal of Computational Social Science.

Peer-reviewed publications

2015 **"The Effect of Network Structure on the Emergence of Norms in Adaptive Populations"**, *Peter Froncek*, Journal of Artificial Societies and Social Simulation.

Presentations

Peer-reviewed conference articles

2017 **"Modeling the Co-Evolution of Culture, Signs and Network Structure"**, ***P. Froncek Revay*** *and C. Cioffi-Revilla*, SBP-BRiMS 2017, Washington, DC.

2016 **"A Dual-Inheritance Model of Cultural Evolution with Agents"**, ***P. Froncek Revay*** *and C. Cioffi-Revilla*, CSSSA 2016 – Annual Conference of the Computational Social Science Society of the Americas, Santa Fe, NM.

2016 **"MASON NorthLands: A Geospatial Agent-Based Model of Coupled Human-Artificial-Natural Systems in Boreal and Arctic Regions"**, *C. Cioffi-Revilla, J.D. Rogers, P.S. Schopf, S. Luke, J.Bassett, A. Hailegiorgis, W.G. Kennedy,* ***P. Revay****, M. Mulkerin, M. Shaffer and E. Wei*, CSSSA 2016 – Annual Conference of the Computational Social Science Society of the Americas, Santa Fe, NM.

2016 **"A Comparison of Languages and Frameworks for the Parallelization of Agent Models"**, *S. McCabe, D. Brearcliffe, P. Froncek, M. Hansen, V. Kane, D. Taghawi-Nejad, and* ***R.L. Axtell***, AAMAS 2016 – Conference on Autonomous Agents and Multi-Agent Systems, Singapore.

Poster presentations

2016 **"Model Selection as Mate Selection: Four PhD students walk into a bar..."**, *B. Auble, T. Briggs, C.W. Dillon, P. Froncek Revay*, International Congress on Agent Computing, Fairfax, VA.

2014 **"MASON NorthLands: A Geospatial Agent-Based Model of Climate Change and Societal Impacts in the Northern Boreal and Arctic Regions"**, *P. Schopf, C. Cioffi-Revilla, S. Luke, J. D. Rogers, J. Bassett, A. Hailegiorgis, A. Elders, P. Froncek, B. Fuhs, J. Harrison, J. M. Magallanes, H. McFarlane, E. Wei*, 2014 American Geophysical Union Fall Meeting, San Francisco, CA.

Workshops, seminars, etc.

2015 **"The Role of Symbolic Interaction and Learning in the Process of Cultural Evolution: An Agent-Based Modeling Approach"**, *Workshop on Considering Cultural Complexity in Agent-Based Modeling*, Cologne, Germany.

2015 **"A Community Approach to Norms on Various Spatial Topologies"**, *GMU CSS Seminar*, Fairfax, VA.

Teaching experience

Spring 2013–Spring 2014 **Fundamentals of Calculus**, *University of Vermont*, Class size: 20-50 students, Responsibility for lecture preparation, lecturing, preparing and grading exams, holding office hours.

Fall 2012 **Pre-Calculus**, *University of Vermont*, Class size: 30 students, Responsibility for lecture preparation, lecturing, preparing and grading exams, holding office hours.

Fall 2012–Spring 2014 **Math Help Sessions**, *University of Vermont*, Helping and tutoring small groups of students. Variety of undergraduate topics such as Calculus I-III, Linear Algebra, Discrete Math, Statistics.

Awards, Fellowships and Certificates

2016 **Summer Research Fellowship**, *Office of the Provost*, George Mason University, Fairfax, VA.

2016 **Certificate of Completion**, *Preparing for Careers in the Academy*, Office of the Provost, George Mason University.
Fairfax, VA

Professional Service

2016 **Member**, *Faculty Search Committee Graduate Student Advisory Panel*, Department of Computational and Data Sciences, George Mason University.
Fairfax, VA

2016-present **Referee**, *Physics Letters A*.

2015-present **Referee**, *Journal of Artificial Societies and Social Simulation*.

2015-present **Referee**, *Journal of Mason Graduate Research*.

2015 **Volunteer**, *International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction and Behavior Representation in Modeling and Simulation*, March 31-April 3, 2015, Washington, D.C..

Computational skills

programming: Proficient in Python, R, Java, Matlab.
- Experience developing code for scientific computation, agent-based models, data cleaning, statistical analysis, etc.

databases: SQL
- Experience managing and querying large relational databases.

agent-based modelling: MASON, NetLogo
- Experience designing and testing complex large-scale agent-based models (millions of agents).

statistical packages: SPSS, R, Excel.

other: Experience with data cleaning and analysis (plyr, dplyr in R, etc.), implementing and utilizing machine learning algorithms (in R, Matlab), big data manipulation (GraphLab Create), web-crawling (BeautifulSoup, Selenium in Python), regular expressions, network analysis (Gephi).