

## ALLISON OLDHAM LUEDTKE

## Assistant Professor of Economics

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### EDUCATION:

Ph.D., The University of Virginia May 2018  
Dissertation: "Endogenous Network Formation: Theory and Applications"  
M.A. Economics, The University of Virginia Jan 2015  
B.A. Mathematics, *Summa Cum Laude*, *Phi Beta Kappa*, The College of William and Mary May 2013

### FIELDS OF INTEREST:

Network Economics, Mathematical Economics, and Macroeconomics

### PUBLICATIONS AND WORKING PAPERS:

"Fortifying the Banks" Working Paper  
Joint work with Eric Young

*In this paper we study the costs associated with government guarantees in a network model of banking. We characterize a minimal set of banks such that every bank has a neighbor – defined using directed edges – in this set; we call this set a fortification. The government is permitted to transfer resources only to elements of the fortification, similar to historical rules governing deposit insurance. We explore what features of the network lead to small or large fortifications, as well as more costly or less costly fortifications.*

"It's Who You Know: Why Networks Matter in Economics" Working Paper

*Networks are becoming more and more popular as a modeling tool throughout the different fields of economics. The ability to trace changes at the microeconomic level to their corresponding macroeconomic effects is what makes networks such powerful economic tools. However, very small changes in the network structure - who is connected with whom - can lead to extreme changes in the aggregate. This paper uses a model of interbank lending to characterize this extreme discontinuity. A network consisting of the same banks borrowing the same amount of money with the same risk of failure that differs only in who borrows from whom can lead to a percentage of loan repayment that differs by an order of magnitude. If an estimation procedure creates a network that differs from the real one by only a small amount, the predictions made by using that network can be extraordinarily incorrect.*

["Endogenous Network Formation: Theory and Application"](#)

Under review at the  
Journal of Public Economic Theory

*Economic networks have become a useful modeling tool. However, most of the current literature on economic networks takes the networks themselves as given. This paper presents a model of endogenous network formation which features a new definition of an equilibrium network. Individual economic agents choose to form relationships with one another, thereby forming the links of a network. I describe an application of this model to the context of firms choosing input suppliers, forming a production network and I analyze the outcome of a single firm losing its equilibrium input supplier. I show that when one of these firms loses its input supplier, aggregate output may actually increase. Simulations of the model indicate that this increase in output is more likely when (1) the firm that loses its supplier has fewer customers prior to losing its supplier and more customers after losing its supplier and (2) the production network as a whole is less interconnected prior to the input removal and more interconnected after the input removal. In the absence of this endogenous network formation, the answers to some economic questions may not only be quantitatively incorrect but qualitatively incorrect.*

["Optimal Open-Locating Dominating Sets in Infinite Triangular Grids"](#) *Discrete Applied Mathematics* (2015)  
As "Allison Oldham," with Rex Kincaid and Gexin Yu Vol. 193 p.139-144

*An open-locating-dominating set (OLD-set) is a subset of vertices of a graph such that every vertex in the graph has at least one neighbor in the set and no two vertices in the graph have the same set of neighbors in the set. This is an analogue to the well-studied identifying code in the literature. In this paper, we prove that the optimal density of the OLD-set for the infinite triangular grid is  $4/13$ .*

["An Experimental Study of Jury Voting Behavior"](#)

As "Allison Oldham," with Charles Holt, Katri Sieberg,  
and Lisa Anderson

*The Political Economy of Governance*  
Editors: N. Schofield and G. Caballero

*This chapter uses experimental analysis to test the Feddersen and Pesendorfer (American Political Science Review 92(1):23–35, 1998) theoretical results regarding the Condorcet jury theorem. Under the assumption that jurors will vote strategically (rather than sincerely based on private information), Feddersen and Pesendorfer derive the surprising conclusion that a unanimity rule makes the conviction of innocent defendants more likely, as compared with majority rule voting. Previous experimental work largely supported these theoretical predictions regarding strategic individual behavior, but failed to find support for the conclusions about the relative merits of unanimity and majority rule procedures in terms of group decisions. We extend this literature with an experiment in which the cost of convicting an innocent defendant is specified to be more severe than the cost of acquitting a guilty defendant. This payoff asymmetry results in a higher threshold of reasonable doubt than the 0.5 level used in earlier studies. We find very little evidence of the strategic voting predicted by theory (even for our asymmetric payoff structure) and no difference between the use of unanimity and majority rules. Overall, it was very difficult for the juries in our experiment to achieve a conviction, and no incorrect convictions occurred. Our experimental results suggest that the standard risk neutrality assumption can lead to misleading conclusions. We argue that a high cost associated with convicting the innocent can interact with risk aversion to produce an even higher threshold of reasonable doubt than would result from risk neutrality, which tends to neutralize the negative effects of strategic voting under a unanimity rule.*

#### TEACHING EXPERIENCE:

Assistant Professor Saint Michael's College

EC 101, Principles of Macroeconomics Spring 2019

EC 327, Topics in Economics: Game Theory Spring 2019

EC 391, Introduction to Econometrics Fall 2018

EC 311, Macroeconomic Theory Fall 2018

Instructor University of Virginia

Econ 3020, Intermediate Macroeconomics Summer 2016

Teaching Assistant University of Virginia

Econ 5090, Mathematical Economics (Graduate Course) Fall 2015

Econ 2020, Principles of Macroeconomics Spring 2015, 2016, 2017

Econ 2010, Principles of Microeconomics Fall 2014, 2015, 2016

Teaching Assistant College of William and Mary

Math 214, Foundations of Mathematics Fall 2012

Econ 372, Econometrics Fall 2010 – Spring 2013

**PRESENTATIONS:**

45 <sup>th</sup> Annual Eastern Economic Association Conference, New York, NY	March 2019
“Endogenous Network Formation”	
3 <sup>rd</sup> Annual UVA Economics Research Colloquium, Charlottesville, VA	May 2017
“Aggregate Output on Production Networks”	
13 <sup>th</sup> Annual Jefferson Fellows Symposium, Charlottesville, VA	Feb 2015
Joint Mathematics Meeting Poster Session, Boston, MA	Jan 2012

**AWARDS AND FELLOWSHIPS:**

Saint Michael’s College	
Saint Michael’s College Faculty Development Grant	Nov 2018
Saint Michael’s College Junior Faculty Summer Research Grant	Dec 2018
University of Virginia	
The Jefferson Fellowship	Feb 2013
<i>The Jefferson Fellowship is awarded to top University of Virginia students pursuing a doctorate who demonstrate strong leadership, the ability to communicate their research and teaching to a broad audience, and passion for interdisciplinary work.</i>	
The Bankard Pre-Doctoral Fellowship	Jan 2017
<i>The Bankard Pre-Doctoral Fellowship is awarded to University of Virginia students whose research will most strongly influence and engender the development of public policy necessary for a healthy private business system and national economy.</i>	
Tomorrow’s Professor Today Teaching Fellowship	July 2016
<i>Tomorrow’s Professor Today is a professional development fellowship awarded to University of Virginia students who display a talent for teaching and interdisciplinary work. Fellows attend research, teaching, and department specific workshops and seminars, produce syllabi and other classroom materials, and work with students and faculty outside their department to gain an understanding of classes, departments, and administration across the school as a whole.</i>	
Raven Society Membership	March 2017
Economics Department Teaching Fellowship	Fall 2014-Fall 2016
College of William and Mary	
NSF CSUMS Research Grant (Award Number: 0703532)	Summer 2012
NSF CSUMS Research Grant (Award Number: 0703532)	Summer 2011

**SERVICE POSITIONS:**

Saint Michael’s College	
Co-Organizer, Social Science Research Luncheons	Oct 2018 – Present
Economics Department Graduate School Coordinator	Oct 2018 – Present
University of Virginia	
Chief Organizer of the Economics Graduate Student Workshop	Aug 2016 – May 2017
Assistant Organizer of the Economics Graduate Student Workshop	Aug 2015 – May 2016
Raven Society Selections Co-Chair	April 2017 – April 2018
Chief Organizer and Creator of the	
Jefferson Fellows Women in Academia Reading Group	Aug 2015 – Aug 2017
President of the Graduate Economics Club	May 2016 – May 2017