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**Curriculum Vitae**  
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**HAKAN INAL**

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**Employment**

Visiting Assistant Professor, Virginia Commonwealth University  
Department of Economics, School of Business, 2008- Present  
Center for Public Policy, L. Douglas Wilder School of Government and Public Affairs, 2009- Present

**Fields:** Financial Economics, Law and Economics, Microeconomics, Public Economics

**Education**

University of Minnesota, Ph.D. in Economics  
Dissertation Co-Advisors: Professors Marcel K. Richter and Jan Werner  
“Designing Auction Mechanisms for Multiple Goods,” 2008  
University of Minnesota, M.A. in Economics;  
Bogazici University (Turkey), M.A. in Economics, B.Sci. in Computer Engineering

**References**

|                         |  |   |
|-------------------------|--|---|
| Prof. Marcel K. Richter | (612) 625-7832<br><a href="mailto:richter@econ.umn.edu">richter@econ.umn.edu</a> |   |
| Prof. Jan Werner        | (612) 625-0708<br><a href="mailto:jwerner@econ.umn.edu">jwerner@econ.umn.edu</a> | Department of Economics<br>University of Minnesota<br>4-101 Hanson Hall<br>1925 Fourth Street South<br>Minneapolis, MN 55455, USA |
| Prof. David Rahman      | (612) 625-3535<br><a href="mailto:dmr@umn.edu">dmr@umn.edu</a>                   |   |
| Dr. Simran Sahi         | (612) 625-6353<br><a href="mailto:ssahi@umn.edu">ssahi@umn.edu</a>               |   |
| Prof. Edward L. Millner | (804) 828-1718<br><a href="mailto:emillner@vcu.edu">emillner@vcu.edu</a>         | Snead Hall, Room B3153B<br>301 West Main Street<br>P.O. Box 844000<br>Richmond, VA 23284, USA                                     |

### Honors and Awards

- 2008 *Travel Grant*, Department of Economics, University of Minnesota.  
Fall 2004 *Distinguished Instructor Award*, Department of Economics, University of Minnesota.  
1999-2000 *Graduate School Fellowship*, University of Minnesota.  
1997 Letters of honorary mention from the Rector's office and from the Dean's office for extraordinary services as a teaching assistant, Bogazici University.  
1992-1996 Husamettin Tugac Foundation Scholarship- TUBITAK (Turkish Scientific and Technical Research Council).

### Teaching Experience

#### Graduate Level

- 2009- Ph.D. Program in Public Policy and Administration, L. Douglas Wilder School of Government and Public Affairs, Virginia Commonwealth University. Taught *Ph.D.* level *Economics of Public Policy* course. Graded *Ph.D. Comprehensive Exams*.

#### Undergraduate Level

- 2008- Department of Economics, School of Business, Virginia Commonwealth University. Taught large lecture *Principles of Microeconomics, Managerial Economics and International Economics* classes. Designed and taught *Market Design* (auctions, voting, mechanism design) course.  
2000-2007 Department of Economics, University of Minnesota. Taught *Principles of Microeconomics, Principles of Microeconomics for Honors, Intermediate Microeconomics, International Economics, and Public Economics*.  
1994-1995 On a volunteer basis, for computer design and Pascal programming language courses in Kabatas High School.

#### Guest Lecturer

- 2008 Whitman College, "Current Federal Government Budget Policy and Resulting Debt Issues."  
2002-2003 University of Minnesota, "The Effects of Economic Liberalization on Labor and Market Structure: The Case of Turkey."

#### Teaching Assistant

- 2007-2008 Operations and Management Science Department, Carlson School of Management, University of Minnesota. Teaching Assistant *for Business Statistics*.  
1999-2000 Department of Economics, University of Minnesota. Led recitation sections for *Principles of Microeconomics*.  
1995 Department of Computer Engineering, Bogazici University.

### Research Experience

- 1998-1999 *Research and Teaching Assistant* in the Department of Economics, Bogazici University.  
1997-1998 *Research and Teaching Assistant* in the Department of Mathematics, Bogazici University.

## Publications

“A Heuristic Approach for Finding the Minimum Delay Spanning Tree in Topological Design of Interconnected LANs,” with Cem Ersoy, in *Proceedings of the Eleventh International Symposium on Computer and Information Sciences*, November 1996, vol. II. pp. 785-791.

## Papers

“An Extension of Ausubel's Auction for Heterogeneous Discrete Goods,” (Submitted for publication)  
“Ausubel's Auction for Heterogeneous Discrete Goods When Values are Interdependent,” (Submitted for publication)  
“An Efficient Auction for Heterogeneous Discrete Goods,” (Work in Progress)  
“Unification of Auction and Matching Mechanisms,” (Work in Progress)  
“Axiomatic Analysis of Auction Rules,” (Work in Progress).  
  
“Choice of Law Enforcement,” (Submitted for publication)  
“Private vs. Public Externalities and Enforcement.”

## Presentations

“An Extension of Ausubel's Auction for Heterogeneous Discrete Goods,”  
Whitman College, 2009; Central Michigan University, 2009; GAMES 2008, Third World Congress of the Game Theory Society, Kellogg School of Management, Northwestern University, Evanston, Illinois, 2008; SED 2008, 5th Conference on Economic Design, University of Michigan, Ann Arbor, Michigan, 2008; Virginia Commonwealth University, 2008.

## Other Papers

“The Design of an Experimental Study on Elections and Some Negative Results on Strong Nash Implementation,” unpublished M.A. Thesis, Bogazici University, 1999.  
“On Strongly Implementable Social Choice Correspondences,” mimeo., Bogazici University, 1998.  
“Notes on the Refinements of the Broad Majoritarian Compromise,” with Murat R. Sertel, mimeo., Bogazici University, 1998.

## Book Reviews

International Economics, Robert C. Feenstra and Alan M. Taylor  
Managerial Economics, W. Bruce Allen, Keith Weigelt, Neil Doherty, and Edwin Mansfield

## Professional Experience

|           |   |
|-----------|---|
| 1999      | Software designer and developer for an economics experiment at Bogaziçi University. |
| 1999      | Data processor and software controller for Sisli City Planning Project, Turkey.     |
| 1995-1997 | Software expert in a software company (SFS-MAN) in Turkey.                          |

## Computer Skills

Various software programs (Word, Excel, PowerPoint, LaTeX, etc.) and programming languages (C, C++, Pascal, Visual Basic, HTML, etc.). Experience in designing software projects using both structured programming and object-oriented programming.

## Languages

English (fluent), Turkish (native).

## Abstracts of Recent Papers

### **Essay 1: *An Extension of Ausubel's Auction for Heterogeneous Discrete Goods [Job Market Paper]***

Ausubel's dynamic private-values auction for heterogeneous discrete goods, Ausubel (2006), yields an efficient equilibrium outcome but it is designed for a limited class of environments. If bidders' values for bundles of goods are not integers, then the auction mechanism may not yield an efficient allocation without any information on bidders' values. In this paper, I extend Ausubel's auction for heterogeneous discrete goods to real-valued quasilinear utility functions. The mechanism I propose reaches a Walrasian equilibrium price vector in finite "steps" without any additional information on bidders' values. In the extension of Ausubel's auction, truthful bidding constitutes an efficient equilibrium. (*Submitted for publication.*)

### **Essay 2: *Ausubel's Heterogeneous Goods Auction When Values are Interdependent***

When heterogeneous goods are to be auctioned in environments where bidders have interdependent values, no auction has been designed that yields efficient allocation. In interdependent-values setting, each bidder's value for a bundle of goods depends on the profile of signals in the society. So, bidders do not know their own values for goods. Therefore, bidders do not know at what price to lower the quantity they demand to maximize their utilities as the price increases. Perry and Reny (2005) introduce strategies and show that these strategies, Perry-Reny strategies, constitute an efficient equilibrium in Ausubel's homogeneous goods auction, Ausubel (2004). In this paper, I show that an extension of these Perry-Reny strategies for heterogeneous goods constitute an efficient equilibrium in Ausubel's heterogeneous goods auction, Ausubel (2006), when there are two bidders with interdependent values and utilities are separable in goods. (*Submitted for publication.*)

### **Essay 3: *Choice of Law Enforcement***

I derive preferences of people over equilibrium enforcement levels and show that it is impossible to have agents with "completely opposite" preferences over the enforcement level in the same society. (*Submitted for publication.*)

### **Essay 4: *Private vs. Public Externalities and Enforcement***

Law and enforcement policy is among the key elements of a civil society that ensures the achievement of a higher social welfare. I study socially optimal law and enforcement policy making under two different environments. In the first environment, private externalities, an activity a person engages harms equally likely everyone in the society. In the second environment, public externalities, it harms the whole society. I show that social welfare functions of these two problems are the same under certain conditions. Polinsky and Shavell (1984) show that the optimal level of punishment in equilibrium is such that expected level of punishment is less than the harm it causes. I generalize their result to public and private externality environments where all agents are either risk neutral or risk averse with respect to uncertainties in harms they face. On the other hand, by allowing private and public externality acts in the same environment, I show that even though contribution of agents to the public harm is greater than the harm they may cause by choosing private externalities, the punishment level of a private externality may be greater than the punishment level of public externality if agents are sufficiently risk averse. This result shows the limitation of a result in Shavell (1992), and also shows that the distinction between private and public externalities is important.