

# Alexander E. Alexeev

## Curriculum Vitae

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### EDUCATION

- Ph.D., Public Affairs, 2010  
Indiana University, School of Public and Environmental Affairs, USA  
Fields: Policy Analysis, Environmental Policy  
Minors: Environmental Science  
Business Economics and Public Policy  
Title: “*Three Essays on Inter-Jurisdictional Competition in Industrial and Environmental Policy*” <http://gradworks.umi.com/34/39/3439545.html>
- MPA and MSES, Public Affairs and Environmental Science, 2003  
Indiana University, School of Public and Environmental Affairs, USA  
Major: Environmental Systems and Modelling
- Ph.D., Physics and Mathematics, 1996  
I.I. Mechnikov Odessa State University, Ukraine  
Field: Physics of Semiconductors  
Title: “*The Structural Properties of Sub-Surface Damaged Layer of Monocrystalline Silicon*” <http://fizmathim.com/strukturnye-svoystva-poverhnoznogo-narushennogo-slova-monokristallov-kremniya>
- B.S., Physics, 1986 (University Diploma with Distinction)  
I.I. Mechnikov Odessa State University, Ukraine  
Title: “*Measurement of Space Distribution of the Dopant in High-Ohmic Silicon by the Electro-Chemical Method*”

### ACADEMIC AND PROFESSIONAL EXPERIENCE

Visiting Lecturer, August 2015 - present time  
Indiana University – Bloomington, School of Public and Environmental Affairs

Teaching.

Graduate Courses:

SPEA-V 506 Statistical Analysis for Effective Decision-making (Fall 2015);

SPEA-P 507 Data Analysis and Statistical Modeling (Spring 2016);

Undergraduate Courses:

SPEA-V 370 Research Methods and Statistical Modeling (Fall 2015);

SPEA-V 450 Research Methods for Applied Research (Spring 2016);

SPEA-V 348 Management Science (Fall 2015, Spring 2016)

Research Associate (part-time):

Risk modeling for the project “Models for Enabling Continuous Reconfigurability of Secure Missions” sponsored by the U.S. Army Research Laboratory (ARL) Cybersecurity Collaborative Research Alliance (Csec CRA)

Other ongoing projects:

“Effect of Global Climate Change on International Migration”;  
“Strategic Benefit-Cost Analysis for the Security Threats”;

Consultant, February 2014 – October 2014.

Odessa, Ukraine - worked remotely for Indiana University-Bloomington as independent contractor)

Research: Developing Risk models for the project: “*Models for Enabling Continuous Reconfigurability of Secure Missions*”, a five-year, \$23.2 million cooperative agreement between Indiana University, Pennsylvania State University, Carnegie Mellon University, University of California Davis, University of California Riverside and the Army Research Laboratory. According to the Contract “The risk piece of the project, which IU will undertake with the assistance of Consultant, requires conceptualizing and then developing a new framework and approach for determining risk of cyber-attacks within the more holistic framework being developed by the operations team.” The tasks are identifying the metrics to be used for each task (development of the operations scenario framework and development of the risk analysis framework), identifying the processes that can be used (and will be useful) in combining the metrics in a predictive model, and development of the modelling framework using environmental, political and economic risk models. Conduct statistical analyses of risk survey data.

Visiting Lecturer, December 2012- December 2013.

Indiana University – Bloomington, School of Public and Environmental Affairs

Graduate Teaching: SPEA-E 526 Applied Mathematics for Environmental Science (Fall 2013), SPEA-V625 Environmental Economics and Policy (Spring 2013)

Undergraduate Teaching: SPEA-V 370 Research Methods and Statistical Modeling (2010-2013, Spring and Fall)

Student Advising: Undergraduate Honors Theses Supervisor:

- Boris Sabotinov: An Examination of U.S. Energy Policy in Terms of Security and Diversity, 2013
- D. Cale Reeves: The Spread of Self-Determinism, 2012

Research: “Weather Disasters and International Migration”; “Foreign Aid and International Migration”; “Optimal Environmental Taxation and Double Dividends” ; “Incorporating Political Risk and Transaction Costs into the Economic Evaluation”

Fulbright Scholarship Admissions: Fulbright Scholarship application and candidate reviewer.

Book/Manuscript Reviewer:

- “Applied Econometrics using the SAS system” (Wiley)
- “Using Stata for Quantitative Analysis” (Sage)

*Visiting Research Scientist /Adjunct Lecturer*, December 2010 – November 2012.  
Indiana University – Bloomington, School of Public and Environmental Affairs

Research. National Academy of Science-funded Project: “Naturalistic Driving Behavior.” (Transportation Research Board/National Academy of Science, \$1,149,000).

Undergraduate Teaching: SPEA-K 300 Introductory Statistics – Fall 2012; SPEA-E 340; Environmental Economics and Finance – Spring 2011; SPEA-V 370 Research Methods and Statistical Modeling – Spring 2011-Fall 2012;

Student Advising. Advised Undergraduate Honors Theses.

Applicant Reviewer: Reviewed Fulbright Scholarship applications and interviewed the applicants.

*Adjunct/Associate Instructor* (2004-2010)  
Indiana University – Bloomington, School of Public and Environmental Affairs

Teaching: SPEA-K 300 Introductory Statistics – Fall 2004, Spring 2006, Fall 2008, Fall 2012 SPEA-V 370 Research Methods and Statistical Modeling – Spring 2010, Fall 2010.

*Graduate Assistant*: SPEA-E 526 Applied Mathematics for the Environmental Science; SPEA-V 517 Managerial Economics.

*Research Assistant*. Worked as a team member on EPA project (\$180,000) “Looking Inside the Black Box: Microlevel Empirical Analyses of the Impact of State and Federal Policy Instruments on Hazardous Waste Generation and Management.” Responsible for data collection and development, and statistical analysis.

Odessa State Ecological University (former Odessa Hydrometeorological Institute),  
Ukraine.

*Assistant professor (Docent*, since 2001) - Physics and Chemistry Dept., 1995 to 2006. (was on leave 2001-05)

Responsibilities included teaching General Physics; Radioecology; Simulation of Physical and Chemical Processes in Radioecology; Directed and supervised undergraduate and graduate projects in Radioecology, Developed Curriculum.

I.I.Mechnikov Odessa State University, Ukraine.

*Research Associate* - Department of Experimental Physics, 1988 to 1993.  
Conducted research of subsurface region in Silicon semiconductor wafers. Designed the Theoretical models of non-equilibrium phenomenon in semiconductors.  
Designed PC controlled systems for investigations of semiconductors. As a team member participated in 3 scientific projects with “Positron”, Inc (Ivano-Frankovsk, Ukraine) of “Radon” Corp. (Ukraine).

## PROFESSIONAL SOCIETIES

European Association of Environmental and Resource Economists  
Association for Risk Analysis  
American Political Science Association

## FELLOWSHIPS AND GRANTS

Muskie Fellowship (\$60,000), 2001-2003  
PhD Scholarship, Indiana University, (\$30,000) 2003-2006

## PUBLICATIONS AND PRESENTATIONS

- "Environmental Taxation and the Double-Dividend in Decentralized Jurisdictions"  
(with D. Good and K. Krutilla), *Ecological Economics* 122 (2016) 90-100; DOI: 10.1016/j.ecolecon.2015.12.004.
- "Cyber-Attack as a Contest Game " (with K.Krutilla), In A.Kott (ed.) *Proceedings of the NATO IST-128 Workshop: Assessing Mission Impact of Cyberattacks*. US Army Research Laboratory, ARL-SR-0349, 2015, pp. 66-74,  
[www.arl.army.mil/www/default.cfm?technical\\_report=7602](http://www.arl.army.mil/www/default.cfm?technical_report=7602)
- “The Political Transaction Costs and Uncertainties of Establishing Environmental Rights” (with K.Krutilla), *Ecological Economics* 107 (2014) 299–309, DOI: doi:10.1016/j.ecolecon.2014.08.003.
- “Project Establishment Costs: the Normative Implications for Benefit Cost Analysis” (with K.Krutilla), *Journal of Benefit-Cost Analysis*, Volume 3, Issue 2, article 2, ISSN (Online) 2152-2812, DOI: 10.1515/2152-2812.1112, 2012.

### Ongoing projects and papers

“A Quantal Response Equilibrium Model of Jurisdictional Tax Competition” (with D.Good and K.Krutilla) has been accepted for oral presentation at 22nd Annual Conference of the European Association of Environmental and Resource Economists in Zurich, June 22 - 25, 2016.

- “Malware spreading in heterogeneous networks” (with D.Henshel, et al) submitted to 2016 IEEE 12th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob) - Security on Wireless and Mobile Networks Symposium, New York, USA, October 17-19, 2016
- “Strategic Benefit-Cost Analysis for the Security Threats” (with K.Krutilla) paper presented at 8<sup>th</sup> Annual Meeting of the Society for Benefit-Cost Analysis, March 16-18, 2016, Washington, DC.
- “Systematic and Non-Systematic Risk: Disaggregation of the Risk preferences for internet users” - utilizes empirical data from Mturk survey to reveal systematic and contextual risk behavior, work in progress, 2015.
- “Inter-jurisdictional Competition in Fiscal and Environmental Policy: Empirical evidence”, the manuscript in final preparation for *J. of Regional Science*

### **Invited Presentations**

- “A Meta-analysis for Sustainable Lifestyle Study”. Department of Economics, University of Bath, January 19, 2014, Bath, the U.K.
- “Human Dimension of the Global Warming: Case of International Migration”. Institute for Curriculum and Campus Internationalization (ICCI), May 19-22, 2013, Indiana University, Bloomington

### **Conference Papers**

- “Benefit Cost Analysis in a Strategic and Risky Environment” (with K.Krutilla), included in symposium "Quantifying the risks of armed conflict and social unrest", SRA-2015, Annual Meeting of Society for Risk Analysis, December 6-10, 2015, Arlington, Virginia, USA.
- “Human Actors’ Roles in Holistic Cyber Security Risk Assessment” (with M.Cains, D. Henshel, and P. Rajivan), 4th World Risk Congress of Society for Risk Analysis, 19- 23 July, 2015, Singapore.(poster presentation)
- “Migration and Environment” (with R.Reuveny), European Association of Environmental and Resource Economists 21th Annual Conference, 24 - 27 June 2015, Helsinki, Finland. The paper in preparation for submission to *Climate Change*.
- “Rent-Seeking in Environmental Policy Making: Is the Expected Surplus Dissipated?” (with K.Krutilla), European Association of Environmental and Resource Economists 21th Annual Conference, 24 - 27 June 2015, Helsinki, Finland.
- “Risk Parameters in Holistic Cyber Security Risk Assessment” (with D. Henshel, M.Cains, and P. Rajivan), 4th World Risk Congress of Society for Risk Analysis, 2015, Singapore.
- “Holistic cyber security risk assessment framework” (with Cains MG, Henshel DS, Camp JL, Bertenthal B, Kelley TD, Abbott JE), SRA-2014, Annual Meeting of Society for Risk Analysis , December 7-10, 2014, Denver, Colorado, USA.
- “The Efficiency Cost of Using Environmental Policy to Raise Revenue” (with K.Krutilla), 5th World Congress of Environmental and Resource Economists,

June 28-July 2014, Istanbul, Turkey.

“Optimal Environmental Rent Allocation in Decentralized Jurisdictions” (with K.Krutilla and D.Good), 5th World Congress of Environmental and Resource Economists, June 28-July 2014, Istanbul, Turkey.

“On Weather Disasters and International Migration: Empirical Model and Worldwide Forecast to 2060 under Business as Usual”. (with R.Reuveny). XVIII ISA World Congress of Sociology, July 13-19, 2014, Yokogama, Japan.

“Political Risk, Lobbying Costs, and Economic Evaluation: Using the Tullock Contest Success Function to Improve Regulatory Impact Assessment.” (with K.Krutilla) The 51st Annual Meetings of the Public Choice Society. Charleston South Carolina, March 6-9, 2014.

“The Efficiency Cost of using Environmental Policy to Raise Revenue”. (with K.Krutilla). Sixth Annual Meeting and Conference of the Society of Benefit-Cost Analysis, March 13-14, 2014. (as part of a panel on “Health and Safety Risk Valuation.”)

“Environmental Taxation and Fiscal Competition: Double Dividends and the Race from Efficiency” (with K.Krutilla, and D.H.Good), European Association of Environmental and Resource Economists 20th Annual Conference, 26 - 29 June 2013, Toulouse, France

Public Choice and Benefit Cost Analysis: Incorporating Decision Costs into Environmental Policy Evaluation. (with K.Krutilla)”, European Association of Environmental and Resource Economists 20th Annual Conference, June 26 - 29, 2013, Toulouse, France.

“Public Choice and Regulatory Benefit-Cost Analysis: Incorporating Political Risk and Transaction Costs into the Economic Evaluation”, (with K.Krutilla), 50th Anniversary Conference of The Public Choice Society, March 2013, New Orleans.

Integrating Public Choice into Benefit-Cost Analysis” (with K.Krutilla), Fifth Annual Conference and Meeting of the Society for Benefit-Cost Analysis: Increasing the Utility of Benefit-Cost Analysis, Washington, D.C., February 2013.

“Environmental Benefit-Cost Analysis with Political Transaction Costs” (with K.Krutilla), Annual Meeting of The Society For Environmental Law And Economics, IU Maurer School of Law, Bloomington, IN, June 2012.

“Benefit-Cost Analysis of Environmental Projects Influenced by Political Decision-Making” (with K.Krutilla), Spanish-Portuguese Association of Natural Resource and Environmental Economics, V AERNA Conference – Faro, May-June 2012.

“Tax Shifting in a Model of Interjurisdictional Competition”. (with K.Krutilla and D. Good), European Association of Environmental and Resource Economists 19th Annual Conference, Prague, June 2012.

“Modifying the Benefit-Cost Standard to Reflect Political Costs: A Behavioral-Economic Approach”. (with K. Krutilla). The Fourth Annual Conference and Meeting of the Society for Benefit-Cost Analysis, Washington, DC, October 2011.

“Climate Change, Weather Disasters, and International Migration” (with D.H. Good and R. Reuveny ) European Association of Environmental and Resource

Economists 18th Annual Conference, Rome, July 2011.

- “Inter-Jurisdictional Competition in Fiscal and Environmental Policy: Empirical Evidence for Strategic Policy setting” (with David H. Good and Kerry Krutilla). 4th World Congress of Environmental and Resource Economists, Montreal, Canada, June 2010.
- “The Effects of Natural Disasters on International Migration” (with David H. Good and Rafael Reuveny ) Association of Public Policy Analysis and Management International Conference, Maastricht, Netherlands, February 2010.
- “Inter-Jurisdictional Competition in Fiscal and Environmental Policy: A Quantal Response Equilibrium Analysis”, (with David H. Good and Kerry Krutilla) Association of Public Policy Analysis and Management Fall Research Conference, Washington DC, November 2009.
- “An Empirical Evaluation of Inter-jurisdictional Competition in Fiscal and Environmental Policy” (with David H. Good and Kerry Krutilla) Association of Public Policy Analysis and Management Fall Research Conference, Los Angeles, CA November 2008; revised version presented at European Association of Environmental and Resource Amsterdam, the Netherlands, June 2009.
- “Inter-Jurisdictional Competition in Industrial and Environmental Policy: Double Dividend, or Race to the Bottom?” (with D.H. Good and K. Krutilla) Association of Public Policy Analysis and Management Fall Research Conference, Washington, DC November 2007; revised version presented at European Association of Environmental and Resource Economists, Gothenburg, Sweden, June 2008.
- “Environmental Race to the Bottom: Mixed Agent-Based Model.” (with D.H. Good) *Proc. of the Agent 2005 Conference on Generative Social Processes, Models, and Mechanisms*, Chicago, IL, October 13 15, 351-359, 2005.  
<http://www.dis.anl.gov/pubs/57255.pdf>

## Posters

- “Different States – Different Economic Development and Environmental Policies” (with D.H. Good), Association of Public Policy Analysis and Management Fall Research Conference, Washington, DC, November 2011.
- “State Fiscal and Environmental Policy Determinants of New Firms’ Location Decisions” (with D.H. Good and K. Krutilla) Association of Public Policy Analysis and Management Conference, Boston, MA, November 2010.

## Publications and Presentations in Physics and Mathematics

- Fractal structure of Surface Defect Layer of Crystalline Silicon Generated by Laser Annealing. Abstract TuP75, ECOSS-19. 19th Europ. Conf. On Surface Science. Madrid (Spain). Sept. 5-8, 2000.
- On the Structure of Surface Defect Layer of Crystalline Silicon. Abstract ThP052. Europhysics conference abstracts vol.23G. 18 Europ. Conf. On Surface Science. Vienna (Austria). Sept. 21-24, 1999.
- Influence of the disturbed subsurface layer on photovoltaic effects in crystalline silicon. Abstracts of the VI Int. Conf. on Structure of Surfaces, Univ. of British Columbia, Vancouver, Canada, July 26-30, 1999.

- Complex structural properties of defect distribution in subsurface region of crystalline silicon. Abstracts of the VI Int.Conf. on Structure of Surfaces, Univ.of British Columbia, Vancouver, Canada, July 26-30, 1999.
- Analytical model for the description of semiconductor photosensors. Abstract SS.PTu.Pl. 118: Abstract of Int. Congress IVC-14/ICSS-10, Birmingham (UK), 31 August- 4 September 1998.
- Conductance Properties of Dry Granular Systems within Restricted Geometry. Abstract T0013: PO09/1, Book of Abstr. of XXth Int. Conf. IUPAP in Statistical Physics, Paris, July 20-24, 1998.
- 3D model for semiconductor sensors of visible irradiation. Proc. of EUROSENSORS-NEXUSPAN Workshop "Sensors springtime in Odessa", 29-30 May. Odessa (Ukraine), 1998, pp.94-95.
- The description of the form of lines in spectra of fluctuations in semiconductor converters with the help of classical problem of moments A *ibid.*, pp.96-97.
- Electricity and Magnetism: Methodical Notices on Laboratory Course in General Physics. Odessa, 1998, 28 p. (in Ukrainian).
- Tests on General Physics Course. Kiev, 1997, 44 p. (in Ukrainian).
- The structural properties of subsurface damage layer of monocrystalline silicon. Ph.D. Thesis, Mechnikov State University of Odessa. Odessa, 1996, 134p. (in Russian).
- The model calculation of density of injected extrinsic carriers under local surface photo-excitation of semiconductor. Preprint ITP-95-12R Inst, for Theoretical Physics of Ukrainian Academy, of Sci., Kiev,1995, 17p.
- Effect of defect formation in implanted silicon on the lifetime of nonequilibrium carriers. *Sov. Technical Physics Lett*, 1992, v.18, N 6, pp.360-361.  
<http://journals.ioffe.ru/pjtf/1992/11/p59-62.pdf>
- Structural reorganization of a cluster of microdefects in single-crystal silicon by the action of high-power laser radiation. *Sov. Technical Physics Lett*, 1992, v. 18, N 5, pp.315-317. <http://journals.ioffe.ru/pjtf/1992/10/p39-43.pdf>
- Nonlinear diffusion of a dopant and decoration of the vacancy component of a surface microdefect cluster in silicon A *Sov. Phys. - Solid State*, 1991,v.33, N7, pp.1212-1215. <http://journals.ioffe.ru/ftt/1991/07/p2153-2158.pdf>
- PHOTOCOM complex for nondestructive Testing Wafer Damage Degree. Proc. 2nd Mideuropean Symp. \& Exhibition on Semiconductor Equipment and Technology (SET-91). Warsaw, Poland, Oct. 19-21, 1991. Hi-Tech Ltd.,1991, p.7.
- PHOTOSYM - testing complex for semiconductor surface superlattice symmetry analysis. *ibid*, p.9.
- Order-disorder phase transition stimulated by a silicon surface superlattice in a twist nematic. *Sov. Technical Physics Lett*, 1990, V.16,N 8, pp.593-595. (In Russian <http://journals.ioffe.ru/pjtf/1990/15/p77-81.pdf>)
- Laser annealing of post-implanted defects in silicon. In A Simulation of defects and processes in metals. *Annals of. Ioffe Phys.-Tech. Institute*, Leningrad, 1990, pp.98-99 (in Russian).
- Defects evolution in subsurface region in silicon under laser annealing. Conf. Physics and Technology of Thin Films, Ivano-Frankovsk,Ukraine, Oct. 9-12, 1990 . Abstr. v.2, p.208 (in Russian).



Infralow frequency anomaly in the dielectric constant of nematic liquid crystals. Sov. Phys.: JETP Lett, 1986, v.43, N 6, pp.356-358.  
[http://www.jetpletters.ac.ru/ps/1404/article\\_21316.pdf](http://www.jetpletters.ac.ru/ps/1404/article_21316.pdf)

## **SOFTWARE**

STATA, SAS, MAPLE, MATLAB, NAG, NETICA

“Simulation of Physical and Chemical processes. Numerical and symbolic Integration using MATLAB.” Course-notes for Radioecologists. Hydro-Meteorological Inst., Odessa, 2000, 30p. (in Ukrainian.).

“Simulation of Physical and Chemical Processes. Part 1. Programming in MATLAB”. Course-Book: for Radioecologists. Odessa, 1998, 72p. (in Ukrainian.).

## **LANGUAGES**

English (fluent), Russian (native), and Ukrainian (fluent).

## **REFERENCES**

- Rafael Reuveny, [reuveny@indiana.edu](mailto:reuveny@indiana.edu)
- Kerry Krutilla, [krutilla@indiana.edu](mailto:krutilla@indiana.edu)
- Barry Rubin, [rubin@indiana.edu](mailto:rubin@indiana.edu)
- Diane Henshel, [dhenshel@indiana.edu](mailto:dhenshel@indiana.edu)
- Nan Stager, [nstager@indiana.edu](mailto:nstager@indiana.edu)