

## BIOGRAPHICAL NOTES

Name: Eric Williams	Country: United States
Candidate for which position? Council	ISIE member since: 2006
PLEASE GIVE YOUR REASONS FOR RUNNING FOR THIS POSITION (150 WORD LIMIT)	
<p>As a council member my hope is to contribute to enhanced engagement of the IE community with two stakeholders. One stakeholder is employers of graduates with industrial ecology related degrees. There is an increasing demand in industry, government and consulting for IE related skills. I hope ISIE can play a larger role in understanding the job market, identifying and implementing activities to raise awareness. The second stakeholder is policymakers, by policy I mean both governmental compliance and voluntary certifications/standards. IE is increasingly being used for the latter in particular, I hope that an enhanced dialog with the decision-making community can inform research and enhance the profile of the field.</p>	
DESCRIBE YOUR CURRENT PROFESSIONAL AND/OR ACADEMIC ACTIVITIES (100 WORD LIMIT)	
9.2011-present	Associate Professor, Golisano Institute for Sustainability (GIS), Rochester Institute of Technology (RIT)
<p>I am an associate professor at the Golisano Institute for Sustainability at Rochester Institute of Technology. A number of our faculty are very active in Industrial Ecology research and our M.S. and PhD programs include a core course in Industrial Ecology. Currently my research focuses on environmental and economic assessments of energy technologies. I am very interested in accounting for technological progress and geographical heterogeneity of benefits and costs. Methods I work with include LCA, MFA, energy experience curves, risk assessment and thermodynamic limits. I am very interested in working on policy-relevant questions.</p>	
LIST PREVIOUS PROFESSIONAL AND/OR ACADEMIC POSITIONS (100 WORD LIMIT)	
8.2006 – 7.2011	Assistant Professor, School of Sustainable Engineering and the Built Environment & School of Sustainability, Arizona State University
9.2005 - 7.2006	Visiting Assistant Professor, Department of Civil and Environmental Engineering, Carnegie Mellon, Pittsburgh
9.2001 - 7.2006	Project Coordinator, United Nations University/Centre, Tokyo
EDUCATION	
B.A. in Physics, Macalester College, St. Paul, MN	
PhD in Physics, State University of New York at Stony Brook, Stony Brook, NY	
AWARDS/MERITS	
<ul style="list-style-type: none"> <li>• AT&amp;T Foundation Industrial Ecology Fellow, three times</li> <li>• Member on three committees developing reports for the U.S. National Academy of Sciences Fuel cycle of Appliances, Vehicle Technology Program, and Sustainable Algal Biofuels</li> <li>• Gave testimony to U.S. House of Representatives Committee on Science and Technology at hearing about electronic waste bill.</li> <li>• Organizational roles in IE-related conferences: ISIE, International Symposium for Sustainable Systems and Technologies, EcoDesign.</li> </ul>	
PUBLICATIONS	
Journal articles since 2002:	

1. Ashok Sekar, Eric Williams and Mikhail Chester, "Siting is a constraint to realize environmental benefits from Carbon Capture and Storage", *Environmental Science and Technology* 48 (19), 11705–11712 (2014)
2. Michael Waller, Eric Williams, Schuyler Matteson and Thomas Trabold. "Current and theoretical maximum well-to-wheels exergy efficiency of options to power vehicles with natural gas", *Applied Energy* 127, 55-63 (2014)
3. M. Mutchek and E. Williams, "Moving Towards Sustainable and Resilient Smart Water Grids", *Challenges* 5, 123-137 (2014)
4. S. Herron and E. Williams, "Modelling cascading diffusion of new energy technologies: case study of residential solid oxide fuel cells in the U.S. and internationally", *Environmental Science and Technology* 47 (15), 8097–8104 (2013)
5. J. Koomey, H. Scott Matthews and E. Williams, "Smart Everything: Will Intelligent Systems Reduce Resource Use?", *Annual Reviews of Environment and Resources* 38, 311–43 (2013)
6. E. Williams, R. Kahhat, M. Bengtsson, S. Hayashi, Y. Hotta, and Y. Totoki, "Linking informal and formal electronics recycling via an interface organization", *Challenges* 4(2), 136-153 (2013)
7. R. Kahhat and E. Williams, "Materials Flow Analysis of E-waste: Domestic Flows and Exports of Used Computers from the United States", *Resources, Conservation and Recycling* 67, 67–74 (2012)
8. S. Frija, S. Guhathakurta, and E. Williams, "Functional unit, technological dynamics and scaling properties for the life cycle energy of residences", *Environmental Science and Technology* 46 (3), 1782–1788 (2012)
9. P. Zhai and E. Williams, "Analyzing consumer acceptance of photovoltaics (PV) using fuzzy logic model", *Renewable Energy* 41, 350-357 (2012)
10. E. Williams, "Environmental Effects of Information and Communication Technologies", *Nature* 479, 354–358 (2011)
11. C. Babbitt, E. Williams, and R. Kahhat, "Institutional disposition and management of end-of-life electronics: case study of U.S. universities", *Environmental Science & Technology* 45, 5366–5372 (2011)
12. L. Deng, C. Babbitt, and E. Williams, "Economic-Balance Hybrid LCA Extended with Uncertainty Analysis: Case Study of Laptop Computer", *Journal of Cleaner Production* 19(11): 1198-1206 (2011)
13. L. Deng and E. Williams, "Functionality versus "Typical Product" Measures of Energy Efficiency: Case study of Semiconductor Manufacturing", *Journal of Industrial Ecology* 15 (1) : 108–121 (2011)
14. M. Mutchek and E. Williams, "Design Constraints to Realize Economic and Carbon Benefits for Smart Irrigation Controllers in Southwestern United States", *Journal of Industrial Ecology* 14(5): 727-739 (2010)
15. P. Zhai and E. Williams, "Dynamic hybrid life cycle assessment of energy and carbon of multi-crystalline silicon photovoltaic (PV) systems", *Environmental Science & Technology* 44(20): 7950-7955 (2010)
16. C. Mattick, E. Williams, and B. Allenby, "Historical Trends in Global Energy Consumption", *IEEE Technology and Society* 29 (3): 22-30 (2010)
17. N. Forrest and E. Williams, "Life Cycle Environmental Implications of Residential Swimming Pools", *Environmental Science & Technology* 44(14), 5601–5607 (2010)
18. J. Yu, E. Williams, M. Ju, and C. Shao, "Managing e-waste in China: Policies, pilot projects and alternative approaches", *Resources, Conservation and Recycling* 54, 991–999 (2010)
19. C. Harto, R. Meyers, and E. Williams, "Life Cycle Water Use of Low-Carbon Transport Fuels", *Energy Policy* 38, 4933–4944 (2010)
20. J. Yu, E. Williams and M. Ju, "Analysis of material and energy consumption of mobile phones in China", *Energy Policy* 38, 4135–4141 (2010)
21. J. Yu, E. Williams, M. Ju, and Y. Yang, "Forecasting global generation of obsolete personal computers", *Environmental Science & Technology* 44 (9), 3232–3237 (2010)
22. R. Kahhat and E. Williams, "Adoption and Disposition of New and Used Computers in Lima, Peru", *Resources, Conservation and Recycling* 54 (8), 501-505 (2010)
23. R. Meyers, E. Williams, and H. Matthews, "Scoping the potential of monitoring and control

- technologies to reduce energy use in U.S. homes”, *Energy and Buildings* 42(5), 563-569 (2010)
24. M. Xu, E. Williams, and B. Allenby, “Assessing Environmental Impacts Embodied in Manufacturing and Labor Input for the China-U.S. Trade”, *Environmental Science & Technology* 44(2), 567–573 (2010)
  25. E. Williams, C. Weber and T. Hawkins, “Hybrid Approach to Managing Uncertainty in Life Cycle Inventories”, *Journal of Industrial Ecology* 15(6), 928-944 (2009)
  26. R. Kahhat and E. Williams, “Product or Waste?: Importation and end-of-life processing of computers in Peru”, *Environmental Science & Technology* 43(15), 6010–6016 (2009)
  27. C. Babbitt, R. Kahhat, E. Williams, and G. Babbitt, “Evolution of product lifespan and its role in the environmental assessment and management of products: a case study of personal computers in higher education”, *Environmental Science & Technology* 43 (13), 5106–5112 (2009)
  28. Y. Yang and E. Williams, “Logistic Model-based Forecast of Sales and Generation of Obsolete Computers in the U.S.”, *Technological Forecasting and Social Change* 76, 1105–1114 (2009)
  29. J. Kim, M. Xu, R. Kahhat, B. Allenby, and E. Williams, “Designing and Assessing a Sustainable Networked Delivery (SND) System: Hybrid Business-to-Consumer Book Delivery Case Study”, *Environmental Science & Technology* 43 (1), 181-187 (2009)
  30. E. Williams, R. Kahhat, B. Allenby, E. Kavazanjian, J. Kim and M. Xu, “Environmental, social and economic implications of global reuse and recycling of personal computers”, *Environmental Science & Technology* 42(17), 6446-6454 (2008)
  31. E. Williams, B. Warr, and R. Ayres, “Efficiency dilution: Long-term exergy conversion trends in Japan”, *Environmental Science & Technology* 42 (13), 4964–4970 (2008)
  32. R. Kahhat, J. Kim, M. Xu, B. Allenby, E. Williams, and P. Zhang, “Exploring e-waste management systems in the United States”, *Resources, Conservation and Recycling* 52, 955–964 (2008)
  33. C. I. Davidson, C. T. Hendrickson, H. Scott Matthews, M.W. Bridges, B. Allenby, J. Crittenden, Y. Chen, E. Williams, D. Allen, C. Murphy, and S. Austin, “Adding Sustainability to the Engineer’s Toolbox: A Challenge for Engineering Educators”, *Environmental Science & Technology* 41(14), 4847-4850 (2007)
  34. P. Marcotullio and E. Williams, “Limited provision of roads as a bottleneck on vehicle CO<sub>2</sub> emissions in Asia: an international comparison of national trends”, *International Journal of Environment and Pollution* 30(7), 27-43 (2007)
  35. Terazono, S. Murakami, N. Abe, B. Inanc, Y. Moriguchi, S. Sakai, M. Kojima, A. Yoshida, J. Li, J. Yang, M. H. Wong, A. Jain, I. Kim, G. L. Peralta, C.C. Lin, T. Mungcharoen, and E. Williams, “Current status and research on E-waste issues in Asia”, *J. Material Cycles and Waste Management* 8(1), 1-12 (2006)
  36. K. Tokimatsu, T. Kosugi, T. Asami, E. Williams, and Y. Kaya, “Evaluation of lifecycle CO<sub>2</sub> emissions from the Japanese electric power sector in the 21st century under various nuclear scenarios”, *Energy Policy* 34(7), 833-852 (2006)
  37. P. Marcotullio, E. Williams and J. Marshall, “Faster, sooner, and more simultaneously: how recent transportation CO<sub>2</sub> emission trends in developing countries differ from historic trends in the United States of America”, *Journal of Environment & Development* 13 (3), 125-148 (2005)
  38. H.S. Matthews and E. Williams, “Telework adoption and energy use in building and transport sectors in the US and Japan”, *Journal of Infrastructure Systems* 11(1), 21-30 (2005)
  39. E. Williams, “Energy intensity of computer manufacturing: hybrid analysis combining process and economic input-output methods”, *Environmental Science & Technology* 38(22), 6166 - 6174 (2004)
  40. E. Williams, “The environmental impacts of semiconductor fabrication”, *Thin Solid Films* 461(1), 2-6 (2004)
  41. R. Ayres and E. Williams, “The digital economy: where do we stand?”, *Technological Forecasting and Social Change* 71(4), 315-339 (2004)
  42. E. Williams, “Forecasting material and economic flows of the global production chain for silicon”, *Technological Forecasting and Social Change* 70(4), 341-357 (2003)
  43. E. Williams and T. Tagami, “Energy use in sales and distribution via B2C E-commerce and conventional retail: a case study of the Japanese book sector”, *Journal of Industrial Ecology* 6(2), 99-114 (2003)
  44. H. Scott Matthews, E. Williams, C. Hendrickson, and T. Tagami, “Energy implications of online book

retailing in the United States and Japan”, *Environmental Impact Assessment Review* 22(5), 493-507 (2002)

45. E. Williams, R. Ayres, and M. Heller, “The 1.7 kg microchip: energy and chemical use in the production of semiconductors”, *Environmental Science & Technology* 36 (24), 5504-5510, Dec. 15 (2002) (cover story)

PROFESSIONAL ASSOCIATIONS (I.E. BOARD MEMBERSHIPS, PROFESSIONAL SOCIETIES, ETC)

Board Memberships:

Journal of Industrial Ecology, Member, Editorial Board, October 2013-present

Center for Sustainable Engineering: Member, Executive Board, 2009-present

Professional Societies:

ISIE (obviously)

Society for Risk Analysis

International Association for Energy Economics