

# Ekundayo Shittu

## *Curriculum Vitae*

Mechanical and Industrial Engineering Department  
University of Massachusetts – Amherst  
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### CURRENT POSITION

2004-present     **Research Assistant** at the *Energy, Environment and Economic Decision Making Laboratory*, Department of Mechanical and Industrial Engineering, University of Massachusetts Amherst

### EDUCATION

2004-present     **Ph.D. Candidate** in Industrial Engineering and Operations Research, Department of Mechanical and Industrial Engineering, University of Massachusetts  
Expected: December 2008  
Dissertation: *Investments in Energy Technological Change Under Uncertainty*  
Committee: Dr. Erin Baker (chair), Dr. Ana Muriel, Dr. John Stranlund

2003                **M.S.** in Industrial Engineering, Interdisciplinary Engineering Programs, American University in Cairo, Egypt – GPA: 3.96/4.00  
Thesis: Applying Genetic Algorithms to the Deterministic Time-Varying Fixed Quantity Lot-sizing Problem  
Committee: Dr. Lotfi Gaafar (chair), Dr. Ashraf Nassef, Dr. Hamdi El-Wany

1998                **B.Eng.** in Electrical Engineering, University of Ilorin, Nigeria – GPA: 4.06/5.00; 2:1

### RESEARCH AND TEACHING INTERESTS

#### Research

- **Environmental Policy and Energy Economics:** economics of environmental regulation, optimal policies for environmental control, social gain/benefit maximization, induced innovation and endogenous learning-by-doing.
- **Investment decisions under uncertainty:** firm-level investment decision under uncertainty, optimal control modeling, deterministic and stochastic two-stage investment decision modeling, stochastic dominance and increasing risk analysis, environmental technology portfolio investment analysis
- **Municipal pollution prevention efforts:** projects aimed at supplying the regulator with tools for environmental protection, control and enforcement; provide a framework for reference to society on optimal choices given alternative options in relation to energy use and consumption.

#### Teaching

- Management science, deterministic operations research
- Economic decision-making
- Systems modeling and optimization
- Supply chain management, and production planning and control
- Introduction to business modeling with emphasis on linear programming
- Mathematics and Statistics; Statistical quality control
- Computer programming and its applications to the domains above

## AWARDS AND SCHOLARSHIPS

- Research Assistantship, Mechanical and Industrial Engineering, University of Massachusetts, Amherst; 2004 – Present.
- Basant Nanda Fellowship – \$5000 award
- Young Scientists Summer Program (YSSP) – International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria; June-August 2008.
- \$8000 funding by the National Academies (NAS) and the National Science Foundation (NSF) for the 3-month YSSP program at IIASA; June-August 2008.
- \$10,000 Isenberg Award, Isenberg School of Management, University of Massachusetts, Amherst; 2005-2006.
- African Graduate Fellowship (AGF), American University in Cairo, Egypt; 2002-2003.
- \$300 Award for best poster presentation, Society for Risk Analysis – New England; June 2005.
- Graduate Research Fellowship, Systems Design Engineering, University of Waterloo, Canada, 2003
- Travel Grants, Graduate School, University of Massachusetts Amherst. \$300 ea. (2005, 2006, 2007)
- Briquette Research Award, American University in Cairo, Egypt, 2003.

## PUBLICATIONS

### A. Refereed Journal Publications

1. *Optimal Energy R&D Portfolio Investments in Response to a Carbon Tax*, IEEE Transactions on Engineering Management (submitted) – with Erin Baker
2. *Technical Change and the Marginal Cost of Abatement*, ***Energy Economics*** (Forthcoming) – with Erin Baker and Leon Clarke
3. *Uncertainty and Endogenous Technical Change in Climate Policy Models*, ***Energy Economics*** (Forthcoming) – with Erin Baker
4. *Profit Maximizing R&D Investment in Response to a Random Carbon Tax*, ***Resource and Energy Economics***, 28:105- 192 (2006) – with Erin Baker
5. *Cleaner Production: The Umbrella for Environmental Globalization*. Interdisciplinary Environmental Review Anthology, 4(2):52-65 (2002)

### B. Published Conference Proceedings

6. *Applying Genetic Algorithms to the Deterministic Time-Varying Fixed Quantity Lot-sizing Problem*. Proceedings of the 34<sup>th</sup> International Conference on Computers and Industrial Engineering, Nov. 2004 – with Lotfi Gaafar and Ashraf Nassef.

### C. Working Paper

7. *Uncertainty, Technical Change, and Policy Models*, Technical Report 1028, College of Management, University of Massachusetts, Boston – with Erin Baker, Leon Clarke, Jeffrey Keisler.
8. *Stochastic Modeling of Endogenous Technological Learning*, Technical Report, Young Scientists Summer Program, International Institute for Applied Systems Analysis

## CONFERENCES AND PRESENTATIONS

1. *Profit-maximizing Investments in Energy Technology under Carbon Tax Uncertainty*, International Energy Workshop (IEW); Paris, Jun. 29-Jul. 3, 2008.
2. *Optimal Energy R&D Portfolio Investments under Carbon Tax Uncertainty*, INFORMS General Meeting; Seattle, Nov. 7, 2007.
3. *R&D Investment under Uncertain Carbon Tax*, INFORMS General Meeting; Pittsburgh, Nov. 8, 2006.
4. *Solving a Production Scheduling Challenge with Project Scheduling – Genetic Algorithms Heuristic*, INFORMS General Meeting, San Francisco, CA, Nov. 15, 2005
5. *Technical Change that Increases Marginal Abatement Cost: Examples and Implications*, INFORMS General Meeting; San Francisco, Nov. 14, 2005
6. *Profit Maximizing R&D Investment in Response to a Random Carbon Tax*, Society for Risk Analysis – New England Chapter, 2005.
7. *Cleaner Production: The Umbrella for Environmental Globalization*. Proceedings of the 8<sup>th</sup> International Interdisciplinary Conference on the Environment, Toronto, Canada, 2002.

## TEACHING EXPERIENCE

- 2008 Fall     **Teaching Assistant** for Production Planning and Statistical Quality Control, Department of Mechanical and Industrial Engineering, University of Massachusetts Amherst
- 2008 Spring **Instructor** for *Economic Decision Making*, graduate class, Department of Mechanical and Industrial Engineering, University of Massachusetts Amherst
- 2005-2007    **Ad-hoc Instructor** for *Deterministic Operations Research*, undergraduate class, Department of Mechanical and Industrial Engineering, University of Massachusetts Amherst
- 2005 Spring **Teaching Assistant** for *Computer Applications*, Visual Basic undergraduate class, Department of Mechanical and Industrial Engineering, University of Massachusetts Amherst
- 2005-2006    **Instructor** for *Economic Decision Making*, off-campus graduate class, Department of Mechanical and Industrial Engineering, University of Massachusetts Amherst
- 1999           **Graduate Assistant** for *Computer Programming*, undergraduate class, Department of Electrical Engineering, University of Ilorin, Nigeria
- 1998-1999    **Science Teacher** for high school Physics and Mathematics, Federal Government College, Nise, Nigeria

## SELECTED INDUSTRY EXPERIENCE

- 2002           **Nigerian Breweries Plc**, Lagos, Nigeria (Automation Engineer; 1 year and 5 months)  
Hands-on experience at managing men and maintaining machines for an uninterrupted beverage production line.

- 2000      **Universal Trust Bank (now United Bank for Africa)**, Lagos, Nigeria (Customer service, 5 months) Managed the customer service desk at a major branch in Lagos and Port-Harcourt, Nigeria.
  
- 1997      **Nigerian Telecommunications**, Ilorin, Nigeria (Fault monitoring, 3 months) Internship in analogue-digital communication networks.
  
- 1995      **Ideal Flour Mills**, Kaduna, Nigeria (Production planning and automation, 6 months) Industrial attachment in a wheat-to-flour production environment.

#### BUSINESS PLAN WRITING EXPERIENCE

- **Online Web-based Learning (OWL):** Wrote a business plan with a team of inter-disciplinary students to re-package for possible marketing of a university-owned software technology, OWL – a web-based platform for teaching and learning, 2005.

#### WORKSHOP

- **Society for Risk Analysis – New England** Boston, July 2005

#### LEADERSHIP AND SERVICE

- 2005-2006    **Vice President** of African Graduates' and Scholars' Association (AGASA), University of Massachusetts Amherst
  
- 2002-2003    **President** of African Students' Association (ASA), American University in Cairo, Egypt
  
- 1998-1999    **Youth corps member** in the National Youth Service Corps (NYSC), Federal Government College, Nise, Nigeria

#### PROFESSIONAL MEMBERSHIP

- International Institute for Applied Systems Analysis (IIASA)
- Institute For Operations Research and the Management Sciences (INFORMS)
- International Association for Energy Economics (IAEE)
- Decision Analysis Society (DAS), INFORMS Subdivision
- Institute of Industrial Engineers (IIE)
- INFORMS Computing Society (ICS), INFORMS Subdivision
- University of Massachusetts Amherst Student Chapter of INFORMS
- Alpha Pi Mu, Industrial Engineering Honors Society