

Education

- Ph.D. in Applied Mathematics-Biomathematics, 1992; University of Illinois at Chicago, Chicago, Illinois.
- Master of Science in Mathematics, 1989; University of Illinois at Chicago, Chicago, Illinois.
- Bachelor of Science (Honors) in Mathematics, 1982; University of Science and Technology, Kumasi, Ghana.

Employment Record

- Professor of Mathematics, Department of Mathematics, Elmhurst College; September 2003 – present.
- Associate Professor of Mathematics, Department of Mathematics, Elmhurst College; September 1998 – August 2003.
- Assistant Professor of Mathematics, Department of Mathematics, Elmhurst College; September 1992 – August 1998.
- Director, Elmhurst College Academy in Mathematics and Science; 1995 – present.
- Consultant, Midtown Educational Foundation Summer Program for Inner-City Students, Midtown Center, 1819 North Wood Street, Chicago, Illinois 60622; 1994.
- Consultant and Instructor, Health Careers Opportunity Program, College of Associated Health Professions, University of Illinois at Chicago, Chicago, Illinois; 1993 and 1994.
- Academic Coordinator and Summer Programs Coordinator for Freshmen and Upperclassmen, Minority Engineering Recruitment and Retention Program, College of Engineering, University of Illinois at Chicago, Chicago, Illinois; 1989 -1993.
- Graduate Teaching Assistant, Department of Mathematics, Statistics, and Computer Science, University of Illinois at Chicago, Chicago, Illinois; 1987 -1992.
- Summer Programs Coordinator and Research Assistant, Minority Engineering Recruitment and Retention Program, College of Engineering, University of Illinois at Chicago, Chicago, Illinois; 1988 -1989.
- Assistant Lecturer, Department of Mathematics, University of Science and Technology, Kumasi, Ghana; 1983 – 1987.

Publications

- “Hematologic Disorders and Bone Marrow-Peripheral Blood Dynamics”, with S. Mundle, *Mat. Model. Nat. Phenom.* **5**(3): 15–27 (2010).
- “Mathematical Models of Cancer and Their Relevant Insights”, Wai-Yuan Tan and Leonid Hanin (eds.), *Handbook of Cancer Models with Applications*, pp 173–223, 2008, World Scientific Publishing, NJ.
- “Using Mathematical Models as a Resource in Clinical Trials”, *International Journal of Mathematical Biosciences and Engineering* **2**(3): 421–436 (2005).
- “Growth kinetics of cancer cells prior to detection and treatment: an alternative view”, with Calixto P. Calderón, *J. of Discrete and Continuous Dynamical Systems* **4**(1): 25–28 (2004).
- “Modeling Disseminated Cancers – A Review of Mathematical Models”, with Calixto P. Calderón, *Comments on Theoretical Biology* **8**(2–3): 225–253 (2003).
- “Recovery of normal hemopoiesis in disseminated cancer therapy – a model”, *Math. Biosci.* **172**: 15–32 (2001).
- “Presence of activation-related m-RNA for EBV and CMV in the bone marrow of patients with myelodysplastic syndromes”, with Suneel Mundle *et. al.*, *Cancer Letters* **164**: 197–205 (2001).
- “Use of real time leukaemia data to validate model predictions based on analyses and computer simulations”, *Cell Prolif.* **34**: 331–345 (2001).
- “Diverse Ideas on the Growth Kinetics of Disseminated Cancer Cells”, with Calixto P. Calderón, *Bull.Math. Biol.* **62**: 527–542 (1999).
- “A Remark on Leukemogenesis”, with Calixto P. Calderón, *Int. J. Math. Statist.Sci.*, **8**(2): 199–205 (1999).
- “Some Perspectives on Modeling Leukemia”, with D. E. Bente, *Math. Biosci.* **150**: 113–130 (1998).
- “Cancer Treatment Strategies and Mathematical Modeling”, Mary Ann Horn, Gieri Simonett, and Glenn Webb (eds.), *Mathematical. Models in Medical and Health Sciences*, pp 1–15, 1998.
- “A Brief Look at Normal Cell Decline and Inhibition in Acute Leukemia”, with Calixto P. Calderón, *J. Can. Det. Prev.* **20**(3): 171–179 (1996).
- “Acute Leukemia and Chemotherapy: A Modeling Viewpoint”, *Math. Biosci.* **138**: 79–100 (1996).
- “Thermodynamics of Microwave (Polarized) Heating Systems”, with B. Adu, L. Otten, and P. Groenevelt, *J. Microwave Power and Electromagnetic Energy* **30**(2):

90–96 (1995).

- “A Remark on a Nonlinear Integral Equation”, with Calixto P. Calderón, *Revista de la Union Matematica Argentina* **39**: 223–227 (1995).
- “Models of Acute Myeloblastic Leukemia and its Chemotherapy”, with D. E. Benti, *Computational Medicine, Public Health, and Biotechnology, Part I* World Scientific Series in Mathematical Biology and Medicine **5**: 397–412 (1995).
- “Modeling Tumor Growth”, with S. C. Archambault and I. Anand, Proceedings of the University of Hartford Workshop on Computers in the Teaching of Mathematics (1994).

Selected Invited Lectures

- “Perspectives on the Current Successes and Challenges of Cancer Growth and Treatment”, The Third Conference of Computational and Mathematical Population Dynamics, May 31 – June 4, 2010, University of Bordeaux, Bordeaux, France.
- “Some Thoughts on the Development and Control of Hematopoietic Disorders”, International Conference on Mathematical Models in Systems Biology, January 4 – 7, 2010, Tel Aviv University, Tel Aviv, Israel.
- “Perspectives on Modeling Biomedical Phenomena”, Benedictine University, April 24, 2008, Lisle, Illinois, USA.
- “Capturing Physical Reality with Mathematical Models”, College of DuPage, April 22, 2008, Glen Ellyn, Illinois, USA.
- “Hematopoietic Dynamics in the Bone Marrow, The Myelodysplastic Syndromes, and Issues Related to Control of this Disease”, International Conference on System Modeling and Applications, July 23 – 28, 2007, Krakow, Poland.
- “Growth in the Bone Marrow, the Myelodysplastic Syndromes, and Hematopoietic Dynamics”, Annual Conference of the Illinois Section of the Mathematical Association of America, Western Illinois University, March 30 – 31, 2007, Macomb, Illinois, USA.
- “Perspectives on and Appraisal of Cancer Models”, Marrakesh World Congress on Differential Equations and Applications, Cadi Ayyad University of Marrakesh, June 15 – 20, 2006, Marrakesh, Morocco.
- “The Role of Mathematics in Biomedicine”, Annual Conference of the Illinois Section of the Mathematical Association of America, North Central College, April 7 – 8, 2006, Naperville, Illinois, USA.
- “Cancer Modeling – Pitfalls and Perspectives”, The Fourth World Congress of Nonlinear Analysts, June 30 – July 7, 2004, Orlando, Florida.
- “The Role of Cancer Models in Clinical Trials”, Joint Conference MPD 7 – DeStoBio

3 Mathematical and Computational Population Dynamics, University of Trento, June 21 – 25, 2004, Trento, Italy.

- “Prerequisites for Making Progress Against Cancer”, Harvey Mudd College, January 2003, Claremont, California.
- “Perspectives on Modeling the Cancers and the Myelodysplastic Syndromes”, Gordon Research Conferences in Theoretical Biology and Biomathematics, June 9 – 16, 2002, Tilton School, Tilton, New Hampshire.
- “Modeling the Cancers and the Myelodysplastic Syndromes – Which Way Forward?”, International Conference on Topics in Biomathematics and Related Computational Problems at the Beginning of the Third Millennium (BIOCOMP2002), June 3 – 9, 2002, Vietri sul Mare, Italy.
- “Some Insights into Modeling the Disseminated Cancers and the Precancerous Disorders”, Special International Conference on Mathematical Models in Cancer, May 3 – 5, 2002, Vanderbilt University, Nashville, Tennessee.
- “Real Time Patient Data and Mathematical-Theoretical Models - Evidence of Common Ground”, International Conference of Mathematical and Theoretical Biology and Joint Annual Meeting of the Society for Mathematical Biology and the Japanese Association for Mathematical and Theoretical Biology, July 16 - 19, 2001, Hilo, Big Island, Hawaii. **Chaired Scientific Sessions on Wound Healing, Morphogenesis, and Pattern Formation.**
- **Six lectures** on “Mathematics in the Service of Biomedicine”, Fifth Edward A. Bouchet Regional College on Functional Analysis and its Application to Differential Equations, Accra, Ghana; July 1999.
- “The Elmhurst College Academy in Mathematics and Science”, Joint Annual Meeting of the Society for Mathematical Biology and the Society for Industrial and Applied Mathematics, Toronto, Canada, July 1998.
- “Cytokine Priming in Disseminated Cancer Therapy – A Model”, Fifth International Conference on Mathematical Population Dynamics, Zakopane, Poland, June 1998.
- “Controlling the Growth and Development of Leukemia – A Model”, Society for Mathematical Biology Annual Meeting, Raleigh, North Carolina, August 1997.
- “Insights from Biomathematical Modeling of Malignant Phenomena”, Symposium on: *Bioinformatics and the Clinic: From Disease Modeling to Patient Outcome*, Northwestern University, July 1997.
- **Plenary Address** on: “Modeling the Malignant Diseases - Approaches and Perspectives”, International Conference on Mathematical Models in Medical and Health Sciences, Vanderbilt University, Nashville, Tennessee; May 1997.
- “Approaches to Modeling the Hematologic Disorders”, Cell Proliferation Society Annual Meeting, Johns Hopkins University Baltimore, Maryland; March 1997.

- “The Disorganization of the Normal Neutrophil Production System in Acute Leukemia”, Third International Congress on Industrial and Applied Mathematics, Hamburg, Germany; July 1995. **Chaired Session on Biochemical Modeling and Biological Oscillations.**
- “Some Perspectives on Malignant Domination and Destruction of the Granulopoietic System in Acute Leukemia”, Annual Meeting of the Society for Mathematical Biology, Oaxtepec, Morelos, Mexico; May 1995.
- “Some Approaches to Modeling Acute Myeloblastic Leukemia”, Joint Annual Meeting of the Society for Industrial and Applied Mathematics and the Society for Mathematical Biology, San Diego, California; July 1994.
- “Models of Acute Myeloblastic Leukemia (AML) and its Chemotherapy”, First World Congress on Computational Medicine, Public Health, and Biotechnology, Austin, Texas; April 1994.

Selected Graduate and Undergraduate Courses Taught

- Math 617/618, Operations Research & Mathematical Modeling
- Mth 498, Mathematical Statistics.
- Mth 450, Senior Paper/Independent Study.
- Mth 434, Complex Variables.
- Mth 421, Probability Theory.
- Mth 381, Advanced Calculus.
- Mth 362, Linear Algebra.
- Mth 342, Applied Analysis (Partial Differential Equations).
- Mth 341, Differential Equations.
- Mth 346, Statistics for Scientists.
- Mth 301, Discrete Mathematics.
- Mth 251, Multivariable Calculus (Calculus III).
- Mth 152, Calculus II.
- Mth 151, Calculus I.

- Mth 162, Business Calculus.
- Mth 132, Elementary Functions-Precalculus.
- Mth 121, College Algebra.
- Mth 111, Introduction to Concepts in Math & Computing.

Honors and Awards

- National Science Foundation (NSF) Biomathematical Research Grant, 1999 – 2002.
- National Science Foundation Biomathematical Research Planning Grant, 1998.
- Faculty Summer Research Fellowship Grant, Elmhurst College; 1994, 1995, 1997 – 2000, 2006 – 2009.
- Mathematical Association of America (MAA) TENSOR-SUMMA Grant for Enhancing the Elmhurst College Academy in Mathematics & Science; \$12,000 (2009 and 2010).
- SIAM-Awarded NSF Fellowship Travel Grant, 1991 and 1995.
- Committee on Diversity Study Grant, Elmhurst College; 1994 and 1997.
- The Marie L. Johnson Award, University of Illinois at Chicago; 1993.
- U.S. Department of Education Fellowship; 1992.
- Associate Member, Ghana Institute of Mathematical Sciences.
- Phi Kappa Phi National Honor Society.

Selected Professional Societies and Organizations

- Society for Industrial and Applied Mathematics (SIAM); 1988 – present.
- Society for Mathematical Biology (SMB); 1991 – present.
- Mathematical Association of America (MAA); 1992 – present.