

Curriculum Vitae

Andrew E. Long

Work Address:

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495 Rossford Avenue
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EDUCATION

Miami University, Oxford, OH - Global Field Program
Master of Arts in Teaching, 2011
The University of Arizona, Tucson, AZ -
Ph.D., Applied Mathematics, 1994
Dissertation: "Cokriging, Kernels, and the SVD:
Toward Better Geostatistical Analysis"
Director: Dr. Donald E. Myers
The University of Arizona, Tucson, AZ -
M.S., Applied Mathematics, 1991
California Institute of Technology, Pasadena, CA -
Two terms in Applied Mathematics, 1984-1985
Bowling Green State University, Bowling Green, OH -
B.S. (*Summa Cum Laude*), Mathematics and Physics, 1983

RESEARCH AND PROFESSIONAL INTERESTS

Global Climate Change, Environmental Mathematics, Math Modelling,
Geostatistics and Spatial Analysis, Mathematical Biology,
Computers in Math Instruction and Research, Numerical Analysis

HONORS

Outstanding Junior Faculty Member Award 2002-2003, NKU College of
Arts and Sciences.
Appointed Member, MAA Committee on Mathematics and the Environment
(2003-2005).
Senior Fulbright Scholar, Benin, West Africa. 1997-1998.
Second Prize, Graduate Students in Mathematics and the Physical Sciences,
First Annual Student Showcase, University of Arizona, 1993.
Phi Kappa Phi Graduate Fellowship, 1984.
Phi Kappa Phi and Phi Beta Kappa, 1983.
First Prize in the Regional Kappa Mu Epsilon meetings, 1982, for a talk
concerning numerical solutions of partial differential equations.
Recipient of Undergraduate Physics Research Award, 1983, funding research
on low-temperature physics (superconductivity).

EMPLOYMENT

- 2005-present: Associate Professor, Northern Kentucky University
Department of Mathematics and Statistics
- 2000-2004: Assistant Professor, Northern Kentucky University
Department of Mathematics and Computer Science
- 1998-2000: Senior Post Doctoral Fellow, Department of Epidemiology,
University of Michigan, and Research Scientist, BioMedware, Inc.
Ann Arbor, MI.
- 1997-1998: Senior Fulbright Scholar, Institute of Mathematics and Physics,
Porto Novo, Benin, West Africa.
- 1996-1997: Loyola University Medical Center, Chicago, IL
Research Associate, Department of Preventive Medicine and Epidemiology
- 1995-1996: Ripon College, Ripon, Wisconsin
Visiting Assistant Professor, Mathematics and Computer Science
- 1994-1995: University of Wisconsin-Oshkosh, Oshkosh, Wisconsin
Lecturer, Mathematics Department
- 1991-1997: United States Geological Survey Consultant, Tucson, Arizona
- 1990-1994: University of Arizona, Tucson, Arizona
Graduate Teaching Assistant, Department of Mathematics
Obtaining and maintaining computer software; directing a departmental
seminar on software development and use.
Graduate Research Assistant, Department of Mathematics
Geo-statistical software development and testing, concerning estimation
and interpolation of spatially coherent phenomena.
Graduate Research Assistant, Department of Ecology and Evolutionary Biology
Developing analytical and computer models to describe the origin
of sexuality in primitive organisms.
- 1986-1989: United States Peace Corps Volunteer, Bassar, Togo, West Africa
Served as a mathematics teacher (instruction in French) at the Lycée de Bassar
(\approx U.S. high school level) to students in their final two years
- 1985-1986: Substitute Teacher, Bowling Green City Schools (Jr. High and High School)
- 1984-1985: Teaching Assistant, California Institute of Technology, Pasadena, CA
- 1982-1983: Teaching Assistant, Bowling Green State University, Bowling Green, OH

PUBLICATIONS

- Culbertson-Paoli, M., L. Farro, A. Long, and S. Wilkinson. *In Search of a Climate Change Signal in Nova Scotia: the Alexander Mackay Data, 1901-1923*. The Proceedings of the Nova Scotian Institute of Science, Vol. 50, Part 1, 2019:131-163.
- Long, A. E., and R. Tyson. *Integrating Homo sapiens into ecological models: Imperatives of climate change*. Ecological Complexity, Vol. 20, 2014:325-334.
- Hastings, J. M., C. W. Holliday, A. Long, K. Jones, and G. Rodriguez. *Size-Specific Provisioning by Cicada Killers, Sphecius speciosus, (Hymenoptera: Crabronidae) in North Florida*. Florida Entomologist, Vol. 93, #3, 2010:412-421.
- Lucey, B. T., D. Smith, C. A. Russell, M. L. Wilson, A. Long, L. A. Waller,

- J. E. Childs, and L. A. Real. *Spatio-Temporal Analysis of Epizootic Raccoon Rabies Propagation in Connecticut, 1991-1995*. Vector Borne and Zoonotic Diseases, Vol. 2, #2, 2002:77-86.
- Long, A. and C. Long. *Surface Approximation and Interpolation Via Matrix SVD*. The College Mathematics Journal, Vol. 32, #1, January, 2001:20-25.
- Long, A. *A brief, non-comprehensive, biased introduction to freely available spatial statistical software*. Geographic Information Sciences, Vol. 5, #2, December, 1999.
- Long, A., M. Wilson, G. Jacquez, and L. Estberg. 1999. The GeoMed project: GIS and spatial/temporal statistics in public health. In: Proceedings of the International Society for Photogrammetry and Remote Sensing Vol. 17 6W7. L. Mussio, B. Crippa, and G. Forlani, eds. London: RICS Books. pp. 299-305.
- Long, A. E., T. E. Prewitt, J. S. Kaufman, C. N. Rotimi, R. S. Cooper, and D. L. McGee. *Weight-Height Relationships among Eight Populations of West African Origin: the Case against Constant BMI Standards*. International Journal of Obesity, 22:842-846, 1998.
- Luke, A., A. Long, R. Cooper, T. Forrester, R. Wilks, F. Bennett, and O. Ogunbiyi. *Leptin and Body Composition Among Nigerians, Jamaicans, and US Blacks*. American Journal of Clinical Nutrition, March 1998.
- Hern, T., C. Long, and A. Long. *Order of Integration and a Minimal Surface*. The College Mathematics Journal, Vol. 29, #2, March 1998:128-133.
- Kaufman, J. S., A. E. Long, Y. Liao, R. S. Cooper, and D. L. McGee. *The Relationship between Race/Ethnicity, Income, and Mortality in the United States: Observations and hypotheses from the National Health Interview Survey (1986-1990)*. Epidemiology, Vol 9, #2, 1998.
- Kaufman, J. S., M. C. Asuzu, J. Mufunda, T. Forrester, R. Wilks, A. Luke, A. E. Long, and R. S. Cooper. *Relationship Between Blood Pressure and Body Mass Index in Lean Populations*. Hypertension, Vol. 30, #6, December, 1997:1511-1516.
- Liao, Y., R. S. Cooper, G. Cao, J. S. Kaufman, A. E. Long, and D. L. McGee. *Mortality from coronary heart disease and cardiovascular disease among adult US Hispanics: findings from the National Health Interview Survey (1986 to 1994)*. JACC, Vol. 30, #5, November 1, 1997:1200-5.
- Long, A. E., J. G. Brown, and D. J. Gellenbeck. *Statistical analysis of nitrate in ground water, West Salt River Valley, Arizona*. U.S. Geological Survey Water Resources Investigations Report 97-4185, 38 p. 1997.
- Long, A., and D. Myers. *A New Form of the Cokriging Equations*. Mathematical Geology, 29:685-703, 1997.
- Xie, T., D. Myers, and A. Long. *Fitting Matrix-Valued Variogram Models by Simultaneous Diagonalization*. Mathematical Geology 27(7):877-888, 1995.
- Long, A., and R. Michod. *Origin of Sex for Error Repair: I. Sex, Haploidy, and Diploidy*. Theoretical Population Biology, 47(1):18-55, 1995.
- Michod, R. and A. Long. *Origin of Sex for Error Repair: II. Rarity and Extreme Environments*. Theoretical Population Biology, 47(1):56-70, 1995.

GRANTS

2023:

KYNETIC Hearing Aid grant, National Institutes of Health U01 HL152392
funded by NCI, NEI, NHGRI, NIDCR, the Commonwealth of Kentucky
and administered by NHLBI
UofL-NSF I-Corps Grant

2016:

College of Arts and Sciences Collaborative Faculty Student Project Award

2012:

CINSAM Course Release Grant, awarded to permit me time to create a course on
global climate change for STEM majors.
Sabbatical, Fellowship, and Project Grant, awarded for academic year 2013-2014.
Theme: Global climate change, particularly in the forests of Canada.
In association with the Canadian Ecology Centre, Mattawa, ON.

2008:

CURM (Center for Undergraduate Research in Mathematics) mini-grant for the
2008-2009 academic year (supports three undergraduate researchers).

2006:

Sabbatical awarded for academic year 2006-2007.
Theme: Sustainable development and education in Ranquitte, Haiti.
In association with Christian Flights International, Kentucky.
“Calculus Lab: Recipe for Retention and Academic Success for the
STEM Disciplines”, an NKU Strategic Enrollment Management
grant, with Kirsty Fleming (Mathematics).

2005:

Coauthor of “Working Together to Build Better Brains”,
An NKU University-Community Partnerships grant (\$50,000, two
years), with David Agard and Michael Waters (Mathematics).

2004:

Image Processing CINSAM grant, with Don Krug (Mathematics) and Greg
Dahlem (Biology).
Fuzzy Set Ordination, FCTLT Grants for Faculty Scholarship and Creative
Activity, with Rick Boyce (Biology).

2003:

Principal Investigator on “SBHC Evaluation Project: A Partnership of
Northern Kentucky University’s Department of Mathematics and
Computer Science and The Kentucky School Based Health Center
(SBHC) Collaborative” An NKU University-Community Partnerships
grant (\$75,000, two years).

2002:

Subcontractor on American Heart Association Grant (#0130229N)
“Physical Activity in the Context of the Environment”
(with researchers at UNC, January, 2001- January, 2003)
Faculty summer fellowship. Investigations in the Design of a Computer-Driven
Classroom Function Demonstrator (the Function Box project)
Faculty project grant (in support of the Function Box project)
CINSAM grant (in support of the Function Box project)

“Supercomputer on the Cheap: A Small KLAT2-like Cluster of PCs”
CINSAM grant

2001:
“Summer Experience for Young Scientists” CINSAM grant, with Macel
Wheeler (History and Geography).

TALKS

2018:
*Climate Change in Togo, West Africa: 3 degrees C hotter (or so) by
the end of the century.*; Nipissing University, Ontario, Canada (11/2018),
and the Kentucky Section of the MAA (3/2019)

2017:
*Modeling Climate Change: Seasonal Changes in Early 20th Century
Nova Scotia*; Nipissing University, Ontario, Canada (9/2017).
Five Easy Pieces: Mathematics and Music; NKU Pop-up conference on
Mathematics and Music, 4/2017
*Modeling Climate Change: Seasonal Changes in Early 20th Century
Nova Scotia*; Joint Mathematics Meetings, Atlanta, Georgia, 1/2017
(with three colleagues).

2016:
Systems and Systems Modeling. Spring Connections Speaker for CINSAM.

2015:
Climate Conversations: Monthly Discussions of Climate Change.
With CINSAM and NKU’s Center for Environmental Education

2014:
*Planetary Emergency: the Carbon Crisis Across the
Curriculum*. CINSAM Series on Transdisciplinarity, NKU.

2013:
January: *Global Climate Destabilization: Optimal Opportunity for the
Mathematics of Planet Earth*. Joint Mathematics Meetings, San Diego, CA.

2011:
January: *Global Warming-based Calculus*. Joint Mathematics
Meetings, New Orleans, LA.

2008:
January: *A Computer-Controlled Function Box for Plotting Surfaces*
Joint Mathematics Meetings, San Diego, CA; repeated in March at
the KYMAA meeting, Western Kentucky University.
March: *Optimal Placement of Fixed Solar Panels*, KYMAA meeting,
Western Kentucky University.
May (invited talk): *Lies, Damned Lies, and Spatial Statistics: Can Variance
Be Our Friend?*. The Confluence of Biology and Mathematics in
the Commonwealth. Murray State University.

2005:
January: *Raccoons Gone Mad! Modeling an Epidemic of Raccoon Rabies*.
Joint Mathematics Meetings, Atlanta, GA; MAA Session on Environmental
Mathematics and the Interdisciplinary

2004:
March: *The Creation, Care and Feeding of an Undergraduate-Centered*

Mathematical and Statistical Consulting Center. AMS-MER Workshop on Excellence in Undergraduate Mathematics: Mainstreaming In-Depth Mathematical Experiences for Students.

April: *Fun with Rabies: modeling of an epidemic, or an epidemic of modeling?* Kentucky Section of the Mathematical Association of America Annual Meeting.

2000:

Curvemesh Interpolation (Miami University of Ohio)

1999:

Simple Skins for Matrices (and Other Meshes) Surface Fitting via Matrix SVD (Ohio MAA Conference, Wooster, OH)

News from the Educational Front: Teaching Advanced Public Health Students Spatial Epidemiology (University of Michigan)

1998:

The GeoMed Project: GIS and Spatial/Temporal Statistics in Public Health (Benin Conference, Benin, West Africa)

Raccoon rabies: Characterizing the Space-Time Spread in Connecticut, USA (Geomed Conference, Paris, France)