Mark Korlie
March 2012

Associate Professor
Department of Mathematical Sciences
Montclair State University
Montclair, NJ 07043

Office Phone: 973-655-5300
Office Fax: 973-655-7686
korliem@mail.montclair.edu

EDUCATION

Ph.D. Mathematics	University of Texas at Arlington	1996
M.S. Mathematics	University of Texas at Arlington	1992
B.S. Mathematics	University of Liberia, Monrovia, Liberia	1988

PROFESSIONAL EXPERIENCE

Associate Professor	2001-Present
Coordinator of Undergraduate Advising, Late Registration, and Basic Skills	2000-2005
Assistant Professor	1996 -2001

Summer Positions in Special Programs held at Montclair State University (MSU) and the University of Medicine and Dentistry of New Jersey (UMDNJ)

Calculus Instructor, Students for Medicine and Dentistry Program (SMDP) and Minority Medical Education Program (MMEP), UMDNJ, 1999-2001

Mathematics Instructor, Summer Institute of Teaching Mathematics and Science, Co-sponsored by the TRUST (a US Dept. of Education Title II Teacher Quality Enhancement Grant Program) Educational Partnership Project and Lucent Foundation Technologies, MSU, June 28 - July 7, 2000.

MSU Mathematics Faculty Facilitator, MSU Pre-collegiate Training Academy (MSUPTA) Summer Bridge Program, MSU, July 10-July 21, 2000.

Mathematics Instructor (with two Mathematics Education Instructors), Intel Mathematics Course for local K-8 Teachers. This was an intensive 80-hour professional development course developed by Intel Corporation for K-8 teachers. It is an adaptation of part of Dr. Kenneth I. Gross's Vermont Mathematics Initiative, a highly successful, three-year master's degree program at the University of Vermont. Its goals include helping teachers to acquire a sophisticated mathematical understanding of the content that is taught in grades K-8. MSU, August 2008-January 2009.

University of Texas at Arlington (UTA), Department of Mathematics

Graduate Teaching Assistant, 1990-1996

Algebra and Graphics Calculator Instructor, Upper Bound Mathematics and Science Regional Center, UTA, 1996

Mathematical Logic and Algebra Instructor, Texas Pre-freshmen Engineering Program (TexPREP), UTA, Summer 1996

Monrovia, Liberia (in West Africa)

Teaching Assistant and Mathematics Instructor, University of Liberia, 1988-1990
Mathematics and Physics Instructor, Pynesville Community High School, 1989-1990
Teacher, Korlie Town Public School (K- 6th grade), Korlie Town, Margibi County, 1982

TEACHING EXPERIENCE

Montclair State University

Graduate Courses Taught (8 courses):

Applied Industrial Mathematics (MATH 591), Advanced Topics (MATH 590), Selected Topics in Operations Research (MATH 584), Ordinary Differential Equations (MATH 564), Numerical Analysis (MATH 560), Mathematical Computing (MATH 530), Complex Variables I (MATH 525), Real Variables I (MATH 521)

Undergraduate Courses Taught (20 courses):

Undergraduate Research I (MATH 497), Topics for Undergraduates (MATH 495), Mathematical Modeling (MATH 469), Operations Research I (MATH 464), Operations Research II (MATH 465), Numerical Analysis (MATH 463), Complex Variables (MATH 423), Partial Differential Equations (MATH 421), Differential Equations (MATH 420), Vector Calculus (MATH 398), Probability (MATH 340), Linear Algebra (MATH 335), Calculus I (MATH 122), Calculus II (MATH 221), Calculus III (MATH 222), Mathematics for Business I: Linear Algebra (MATH 113), Mathematics for Business II: Calculus (MATH 114), Precalculus Mathematics (MATH 112), Applied Precalculus (MATH 111), and Contemporary Applied Math for Everyone (MATH 106)

New Courses in the Department of Mathematical Sciences developed

Graduate:	Mathematical Computing (MATH 530), Applied Industrial Mathematics (MATH 591)
Undergraduate:	Partial Differential Equations (MATH 421)

University of Texas at Arlington, Arlington, Texas

Calculus I (MATH 1426), Calculus II (MATH 2425), Calculus III (MATH 2326), College Algebra (MATH 1302), Trigonometry (MATH 1303), College Algebra for Economics and Business Analysis (MATH 1315), Mathematics for Economics and Business Analysis (MATH 1316), Algebra and Trigonometry (MATH 1324), and Analytic Geometry (MATH 1325)

University of Liberia, Monrovia, Liberia

Calculus for Decision Making (MATH 203), Mathematics for Decision Making (MATH 108), Precalculus Mathematics (MATH 107), Mathematics for Social Sciences (MATH 104), College Algebra (MATH 101), and Remedial Mathematics (MATH 003)

Pynesville Community High School, Monrovia, Liberia

Algebra, Trigonometry, Geometry, and Physics

STUDENT RESEARCH

Graduate Research

A member of four masters' thesis committees: Mr. Kei Kaneko (2004), Ms. Amy Fiorillo (2006), Ms. Celisa Counterman (2007), and Ms. Jennifer Feiner (2011)

Undergraduate Research

Kristina L. Oriente, *Pricing Stock Options Using the Black-Scholes Equation*, Fall 2005, ROCS (Research Opportunities for Commuters Students), presented a poster at Sigma Xi Student Research Conference, MSU, 2006

Heather Gariazza, *Game Theory and Application*, Spring 1999, MATH 497 – Undergraduate Research I

Tanya Granston, *Chaos and Fractals*, Fall 1999 – Spring 2000, funded under Sokol Faculty/Undergraduate Research grant

HONORS AND AWARDS

Sr. Stephanie Sloyan Award for Distinguished Service to the MAA-New Jersey Section, MAA-NJ Section Spring meeting, Monmouth University, 2009
College of Science and Mathematics Faculty Service Award, MSU, 2004
Project NJ-NExT Fellowship—New Experience in Teaching, the New Jersey Section of the Mathematical Association of America (MAA), 1999-2000
Membership in the National Honorary Mathematics Society (Π M E), 1993-1996, University of Texas at Arlington
Membership in the Honor Society for International Scholars (Φ B Δ), 1993-1996, University of Texas at Arlington
Fulbright Fellow —a two-year US Government fellowship to study for M.S. degree in mathematics at the University of Texas at Arlington, 1990-1992.
Graduate Teaching Assistantship, University of Texas at Arlington, 1990-1996
B.S. in Mathematics with honors, University of Liberia, 1988

AFS (American Field Service) Exchange Program Student Fellowship, 1981-1982, Canajoharie, New York.

PUBLICATIONS and PRESENTATIONS

REFEREED PUBLICATIONS

Korlie, M. S., A. Mukherjee, B.G. Nita, J.G. Stevens, A.D. Trubatch and P. Yecko. 2008. Analysis of flows of ferrofluids under simple shear. *Magnetohydrodynamics* 44(1):51-59.

Korlie, M. S., A. Mukherjee, B.G. Nita, J.G. Stevens, A.D. Trubatch and P. Yecko**.** 2008. Modeling bubbles and droplets in magnetic fluids. *Journal of Physics: Condensed Matter* 20:204143 (5pp).

Korlie, M. S. 2007. 3-D Simulation of Cracks and Fractures in a Molecular Solid under Stress and compression. *Computer & Mathematics with Applications* 54(5): 638-650.

Korlie, M. S. and Okonkwo, Z. C. 2003. Hand-Held Technology and Innovative Pedagogy in Mathematics Education: The Changing Practice of Mathematics Instruction and Learning, *A monograph of research activities,* Albany State University, GA 1: 13–26.

Korlie, M. S. 2000. Three-Dimensional Computer Simulation of Liquid Drop Evaporation. *Computers and Mathematics with applications* 39(12): 43–52.

Korlie, M.S. 2000. 3-D Particle Modeling of Gas Bubbles in a Liquid. *Computers and Mathematics with applications* 39(3–4): 235–246.

Korlie, M. S. and Greenspan, D. 1997. Particle Simulation of Carbon Dioxide Bubbles in Water. *Computers and Mathematics with applications* 34(9): 23–37.

Korlie, M. S. 1997. Particle Modeling of Liquid Drop Formation on a Solid Surface in 3-D. *Computers and Mathematics with applications* 33(9): 97–114.

Okonkwo, Z. C. and Korlie M. S. 1994. Numbers and National Stability. *CONPO Review (A Journal of Interdisciplinary Analysis of Nigerian Issues* 3(1): 47-49.

Other publications

Korlie, M.S. 2000. Supplement on Using the TI-83. http://www.csam.montclair.edu/~korlie/ti83.pdf (17 pages)

Research Reported in Magazine for General Public

Research (with Donald Greenspan) on fluid simulation was reported in *Science News*, Vol. 151, No. 3, p. 36, 1997. It was reported under the title "Pumping the fizz into liquid simulations".

SELECTED CONFERENCE PRESENTATIONS

- "Teaching a Hybrid Contemporary Applied Math Course", New Jersey Section of the Mathematical Association of America Spring Meeting, Essex County College, Newark, NJ, April 2, 2011.
- Moderator for Morning Plenary Session, and a presenter in the afternoon of summary of ideas from a break-out session; Statewide Conference on Transfer Articulation in Mathematics, Rutgers University, February 8, 2008. Conference was sponsored by New Jersey Section of the Mathematical Association of America, Mathematics Association of Two Year Colleges of New Jersey, and New Jersey Association of Mathematics Teacher Educators
- "Mathematical Modeling of Elastic Snap Through", Joint Mathematics Meeting, New Orleans, LA, January 8, 2007.
- "Students Readiness to Cope with College Mathematics Requirements", Tutors Training and Orientation, the Center for Academic Development and Assessment, MSU, September 9, 2005. Oral Presentation. Invited.
- "A 3-D Molecular Mechanics Simulation of Cracks and Fractures in a Solid under Stress". Joint Mathematics Meeting, Atlanta, Georgia, January 8, 2005.
- "Iteration: A Powerful Mathematical Idea", Math Day, MSU, March 29, 2004.
- "Iteration: A Powerful Mathematical Idea", Math Day, MSU, March 26, 2003.
- "3-D Particle Modeling of Gas Bubbles in a Liquid", Department of Mathematical Sciences Seminar Series, New Jersey Institute of Technology, February 14, 2003.
- "A Discrete Model for Elastic Strings", Joint Mathematics Meetings, Baltimore, Maryland, January 17, 2003.
- "Computer Simulation of Cracks and Fractures", Department of Mathematical Sciences, MSU, October 8, 2001.
- "Particle Modeling of Gas Bubbles in a Liquid", the Digital Perspective Project Distinguished Lecture Series, National Science Foundation, Arlington, Virginia, July 26, 2001. Invited.
- "Molecular Dynamics Simulation of Cracks and Fractures in a Solid", Joint Mathematics Meetings, New Orleans, LA, January 12, 2001.
- "3-D Particle Modeling of Gas Bubbles in a Liquid", The New Jersey Section of the Mathematical Association of America Spring Meeting, Georgian Court College, Lakewood, NJ, April 8, 2000. Invited.
- "Particle Modeling of Liquid Drop Evaporation", Joint Mathematics Meetings, San Antonio, TX, January 13, 1999.
- "3-D Particle Modeling of Gas Bubbles in a Liquid", Department of Mathematics and Computer Science Seminar Series, Alabama State University, Montgomery, AL, July 21, 1998. Invited.
- "Computer Simulation of Liquid Drop Formation on a Solid Surface in 3-D". A Wealth of Resources in New Jersey: Showcasing Research, a conference organized by the New Jersey Research Consortium, Kean University, Union, New Jersey, March 27, 1998.
- "TI-92 Graphics Calculator" SMUG Workshop, Montclair State University, February 13 and March 6, 1998.

- "Particle Modeling of Gas Bubbles in a Liquid in 3-D. Joint Mathematics Meetings, Baltimore, Maryland, January 9, 1998.
- "Exploring Mathematics with the TI-92 Graphics Calculator", Calculator Workshop for Math Teachers, Montclair State University, 1997. Invited.
- "The Joy of Mathematics", Twenty-eighth Annual Mathematics Day, Montclair State University, March 26, 1997.
- "Molecular Dynamics Simulations", Presented to Sigma Xi Chapter, Montclair State University, March 26, 1997. Invited.
- "Creating Scientific Latex Documents Using Scientific Workplace", SMUG Workshop, Montclair State University, February 7 and May 2, 1997.
- "Particle Simulation of Carbon Dioxide Bubbles in Water", Joint Mathematics Meetings, San Diego California, January 8, 1997.
- "Particle Modeling of Liquid Drop Formation on a Solid Surface in 3-D", Joint Mathematics Meetings, Orlando, Florida, January 12, 1996.

GRANT AWARDS

August 2000. Travel Grant (From NSF through the American Mathematical Society) to attend the conference: Mathematical Challenges of the 21st Century. UCLA, Los Angeles, CA.

1999-2000. Chaos and Fractals. Sokol Faculty/Undergraduate Research Grant. Undergraduate Student: Tanya Granston.

PROFESSIONAL SERVICE

University Based

University service

University Senate Representative to the University Undergraduate Curriculum Committee (UUCC)	2007-Present
Chairperson of the UUCC	2011-Present
Vice Chair of the UUCC	2010-2011
Technical Subcommittee of the UUCC	2008-Present, (Chair 2011- Present)
University Scholastic Standing Appeals Committee	1998-Present
University Grade Grievance Committee Representing the College of Science and Mathematics	2008, 2010
College of Science and Mathematics Representative to the University Distinguished Teacher Award Committee	2007-2008
Chair (2004), University Grade Grievance Committee Representing the College of Science and Mathematics	2004-2005
University Basic Skills Committee	2000-2005

College service

College Curriculum Committee	2003-Present

Associate Dean for Academic Services Search Committee	2007-2008

Departmental service

Coordinator of Basic Skills Mathematics Courses and Intermediate Algebra (Math 100)	2000-Present 2000-Present
Readiness and Placement Tests Committee Chair: 2000-Present	1999-Present
Chair, Undergraduate Curriculum Committee	2009-2011
Undergraduate Scholarship and Honors Committee (Chair: 2000 – 2011)	1998-2011
Member, Promotion Action Committee (DPAC)	2008-2010
Help with new student registration during the summer of each year	2005-2009
Pure and Applied Mathematics New Faculty Search Committee	2007-2008
Representative/Liaison, American Mathematical Society (AMS), Mathematical Association of America (MAA)	1998-2007
Chair, Undergraduate Brochures Committee (with Profs. Mary Lou West, Thomas Devlin, and Diana Thomas). I wrote the draft of the brochures for the Department of Mathematical Sciences, Math major, Math Ed, Applied math, and Physics major. The Committee edited these drafts.	2006
Help Prof. Youngna Choi, with Prof. Helen Roberts helping also, to edit and write part of the BS Mathematics of Finance Concentration program proposal	2005-2006
Department Representative, MSU Open House, during the fall and spring of each year	1997-2005
Pure and Applied Mathematics New Faculty Search Committee	1998-2005
Member, Promotion Action Committee (DPAC)	2001-2003
Graduate and Westerdahl Committee	1998-2002
Department Chairperson Designee for the Faculty Range Adjustment Applications, Reviewed applications for 7 candidates and wrote recommendation for each candidate, Spring 2002	2002
Chair, Pure and Applied Mathematics Special Interest Group	1998-2000
New Student Orientation, Advising and Registration, summer of each year	2001-2005
Chair, Committee that wrote new versions of the MSU Mathematics Placement Tests and the Department of Mathematical Sciences' Math Readiness Tests (for the courses: MATH 100, 111, 112, 114, 116, 122)	2004
Wrote MATH 114 Readiness Test (with Prof. John Stevens), Spring 2002	2002
Wrote four brochures for the undergraduate programs in the Department of Mathematical Sciences, one brochure for each of the four concentrations (Math, Math Ed., Applied Math, and Physics), Spring 2002	2002

Wrote draft of brochure for the Pure and Applied Math graduate program, edited by Graduate Committee (I was a member) 1999

Other Students Related Activities

Have taught over 53 students in independent studies through the following courses

MATH 560 Numerical Analysis (Fall 99, and Spring 00, 02, 04)
MATH 525 Complex Variables (in Spring 06)
MATH 530 Mathematical Computing (in Spring 03, 09)
MATH 423 Complex Variables (Summer 08)
MATH 420 Differential Equations (Summer 02)
MATH 497 Research I (Spring 99 and Fall 05)
MATH 465 Operations Research II (Fall 99)
MATH 495 Topics for Undergraduates: Game Theory (Summer 99, 01)
MATH 495 Topics for Undergraduates: Calculus with Applications Using Maple (Fall 00, 04)
MATH 495 Topics for Undergraduates: Linear Algebra with Applications using Maple (Fall 00, 01, 02, 03, 04, 05, 06, 07; Spring 01, 02, 03, 04, 05, 07; and Summer 03, 07)
MATH 495 Topics for Undergraduates: Numerical Methods for Solving Differential Equations with Applications (Spring 10)
Masters Comprehensive Exams: Have coordinated the pure and applied math sections of the exam (Fall 1998-Spring 2002); have written questions for Real Variables, Complex Variables, Numerical Analysis, Differential Equations, Operations Research, and Applied Industrial Mathematics; and have graded questions in all of these subjects areas many times.

Discipline-Based

Member, Mathematical Association of America (MAA) Board of Governors, representing the New Jersey Section of the MAA. This is a three-year term that ends in June 2012. 2009-Present
Member, MAA Committee on Panels, Poster Sessions, and Workshops 2010-Present
Member, Mathematics Advisory Council 1999-Present
Passaic County Community College, Paterson, New Jersey
Member, MAA-NJ Section Awards Committee 2006-Present
Member, MAA-NJ Section Nominating Committee 2006-Present
Member, Organizing Committee of the MAA-NJ Section Meetings 2001-Present

Member of the Host Committee, MAA-NJ Section Fall meeting, Montclair State University, October 29, 2011. 2011

External Reviewer of the Passaic County Community College (PCCC) Mathematics Department Programs. Campus visit to PCCC was on April 14, 2011. During the campus visit, I met with the Mathematics Department 2011

Chair, faculty members, students enrolled in college-level mathematics courses, and Dean of Academic Affairs. Further, I visited Mathematics Labs. Written report of the review with recommendations was submitted to the Dean of Academic Affairs.

Organizer and Presider of the contributed papers section: Online Courses, MAA-NJ Section Spring meeting, Essex County College, April 2, 2011 — 2011

Coordinator, Lunch Discussion Table on Online Courses, MAA-NJ Section Spring meeting, Middlesex County College, April 10, 2010; MAA-NJ Section meeting, Essex County College, April 2, 2011 — 2010-2011

Member, the Garden State Undergraduate Mathematics Conference (GSUMC) Advisory Board, MAA-NJ Section — 2006-2008

Member, Statewide Conference on Transfer Articulation in Mathematics Planning Committee; Conference was held on February 8, 2008 at Rutgers University. Represented the MAA-NJ Section on this committee — 2007-2008

Chair, New Jersey Section of the Mathematical Association of America (MAA-NJ) — 2005-2007

National Project NExT (New Experiences in Teaching) Consultant, MAA. Consult for the 2005-2006 Project NExT Fellows, Mentor to a Project NExT Fellow in New Jersey. Project NExT is a professional development program of he MAA for new or recent PhDs in the mathematical sciences. Each year 60 to 80 new PhDs receive Project NExT Fellowships, which allow them to attend special events at MathFest and at the Joint Mathematics Meetings. — 2005-2006

Chair, MAA-NJ Section 50th Anniversary Meeting Committee — 2004-2006

Member, MAA-NJ Section By-laws Revision Committee — 2004-2005

Judge, Undergraduate Student Poster Session, Joint Mathematics Meetings, Baltimore, Maryland, January 17, 2003; and Atlanta, Georgia, January 7, 2005 — 2003 & 2005

Secretary, MAA-NJ Section — 2000-2004

National Project NExT (New Experiences in Teaching) Consultant, MAA. Consult for the 2001-2002 Project NExT Fellows, Mentor to a Project NExT Fellow in New Jersey. — 2001-2002 / 2001-2002

PROFESSIONAL MEMBERSHIPS

American Mathematical Society (AMS)
Mathematical Association of America (MAA)
Society for Industrial and Applied Mathematics (SIAM)