Geoffrey Clapp

Center for Scientific Computation and Mathematical Modeling
University of Maryland, 4116 CSIC Building #406, Paint Branch Drive, College Park, MD 20742
Cell: (410)707-6604
Email: clappge1@umd.edu

EDUCATION

University of Maryland, College Park (UMCP), MD **GPA 4.0**
Ph.D. Applied Mathematics & Statistics and Scientific Computation Expected May 2016
M.S. Applied Mathematics & Statistics and Scientific Computation December 2015

University of Maryland, Baltimore County (UMBC), Baltimore, MD **GPA 4.0**
B.S. Mathematics, Summa Cum Laude May 2011
B.S. Computer Science, Summa Cum Laude May 2011
Departmental Honors in Mathematics
Certificate of General Honors

SKILLS: Proficient in Matlab, Java; Experience in C, Python

LANGUAGES: Russian (Elementary Proficiency), Spanish (Elementary Proficiency)

EXPERIENCE

Research Assistant, under Prof. Doron Levy (DL), UMCP 2012 - present
Collaborated with DL, hematologist Franck Nicolini of Centre Hospitalier Lyon (Lyon, France), and mathematician Thomas Lepoutre of Université de Lyon to develop and apply a novel mathematical model to studying chronic myelogenous leukemia therapy and the role of a patient's immune system

Teaching Assistant, UMCP 2009 - present
- Discussion leader, Differential Equations (2 semesters)
- Discussion leader, Calculus 2 (3 semesters)
- Discussion leader, Calculus 1 (1 semester)
- Discussion leader, Elementary Calculus 1 (2 semesters)
- Grader, Graduate-level Numerical Analysis 2 (1 semester)
- Grader (UMBC) Partial Differential Equations (2 semesters)

Tutor and Mentor
- Organizer, Graduate Fellowship Application "Boot Camp" 2013 - 2015
  Organized and ran weekly meetings to help students apply for prestigious fellowships
- Volunteer tutor, Paul's Place, Baltimore, MD 2014 - 2015
  Tutored math and language arts in preparation for GED exam (63 hours)
- Tutor of undergraduate Calculus 1, Calculus 2, and Linear Algebra students 2011 - present
- Helping the Homeless volunteer, Westside Emergency Men's Shelter, Catonsville, MD 2009 - 2010
  Assisted with resume writing and job searching, tutored in mathematics and computer use
- Mathematics tutor for elementary and middle school students 2008 - 2012

Research Assistant, under Prof. Kathleen Hoffman (KH), UMCP 2008 - 2011
Collaborated with KH and Tim Kiemel of the Kinesiology Department at UMCP to develop and evaluate models of the lamprey spinal cord, to study the role of sensory input in the lamprey's swimming

Northrop Grumman Information Systems Intern Summer 2012
- Implemented a pcap file processor that extracts header data from network packets
- Analyzed packets' time-to-live distributions and other header fields to estimate the network's topology

- Developed Java programs to detect changes in a network's topology by analyzing time-to-live distributions for baseline and observation data sets

Northrop Grumman Information Systems Intern Summer 2011

- Implemented machine learning and feature selection techniques to be used to identify properties of network traffic that indicate malware
- Explored methods of improving zero-day malware detection using machine learning techniques

Northrop Grumman Information Systems Intern Summer 2010

- Utilized Hadoop's Map Reduce framework to apply cloud computing techniques to large data sets, specifically social network graphs
- Created Java programs that calculate the betweenness centrality, closeness centrality, and degree centrality, to identify the most influential and important individuals in a network

NSA Mathematics Summer Employment Program Intern Summer 2009

- Worked as part of a two person team on a classified project
- Conducted analysis of Intel architecture assembly language code to evaluate a specific device's data security
- Created a C program to exploit various vulnerabilities of the device
- Submitted an internal technical paper
- Presented a talk to our peers, mentors, supervisors, and other parties of interest
- Held TOP SECRET/Special Intelligence (TS/SI/TK) security clearance

AWARDS

- 2015 SIAM Travel Grant to present at 8th International Congress on Industrial & Applied Mathematics
- **National Science Foundation Graduate Research Fellowship Program** (Fall 2013 - present)
- **Gold Medal in Teaching Excellence Award from the UMCP Mathematics Department (2012)**
- Distinguished Teaching Assistant Award from UMCP (2012)
- University of Maryland Dean's Fellowship (Fall 2011 - Spring 2013)
- UMBC Outstanding Graduating Senior in Mathematics Award (2011)
- Phi Beta Kappa member
- **Barry M. Goldwater Scholarship** (2010)
- UMBC Undergraduate Research Award Scholarship 2010-11
- **Winner of undergraduate poster competition at 2010 SIAM Annual Meeting (Pittsburgh, PA, USA)**
- UMBC Undergraduate Research Award Scholarship 2009-10
- UMBC Outstanding Senior in Mathematics Award (2009)
- Premier Scholar Award from UMBC (2007)
- Maryland Distinguished Scholar (2007)
- Phi Kappa Phi Honor Society member (2008-9)
- Pi Mu Epsilon Mathematical Honor Society member (2008)
- Selected for UMBC Honors College membership (2007)

PUBLICATIONS

- Clapp G, Lepoutre T, El Cheikh R, Bernard S, Ruby J, Labussiere-Wallet H, Nicolini FE, and D Levy. (2015) Implication of the autologous immune system in BCR-ABL transcript variations in chronic myelogenous leukemia patients treated with imatinib. *Cancer Res.* 75(19):4053-4062.
- Clapp G, Lepoutre T, Nicolini FE, and D Levy. (2015) BCR-ABL Transcript Variations in Chronic Phase Chronic Myelogenous Leukemia Patients on Imatinib First-Line: Possible Role of the Autologous Immune System. *OncoImmunology*. accepted
- Massarelli N, Clapp G, Hoffman K, and T Kiemel. (2015) Entrainment ranges for chains of forced neural and phase oscillators. *Math Neurosci.* accepted

- Clapp G and D Levy. (2014) Incorporating Asymmetric Stem Cell Division in to the Roeder Model for Chronic Myeloid Leukemia. *Mathematical Models of Tumor-Immune System Dynamics***.** Springer Proceedings in Mathematics and Statistics. 107:1-20.
- Clapp G and D Levy. (2014) A Review of Mathematical Models for Treating Leukemia and Lymphoma. *Drug Discov Today: Dis Model*, http://dx.doi.org/10.1016/j.ddmod.2014.10.002
- Clapp G. (2011) Modeling Sensory Input to the Lamprey Spinal Cord. *UMBC Review* (undergraduate journal)

PRESENTATIONS

Applying Mathematical Modeling to Leukemia Therapy

- AMSC student seminar, UMCP, College Park, MD, USA — September 2015

The Potential Role of the Immune System in CML

- 8th International Congress on Industrial and Applied Mathematics, Beijing, China — August 2015
- Monroe-Martin Spotlight Talks, UMCP, College Park, MD — May 2015
- Graduate Research Interaction Day, UMCP, College Park, MD — April 2015
- AMSC student seminar, UMCP, College Park, MD, USA — March 2015

A Review of Mathematical Models for Treating Leukemia and Lymphoma

- Presented to INRIA, University of Lyon, Lyon, France — December 2013

Modeling Sensory Input to the Lamprey Spinal Cord

- Undergraduate Research and Creative Achievement Day (URCAD), UMBC, Baltimore, MD — April 2011
- SIAM Annual Meeting, Pittsburgh, PA — July 2010
- URCAD, UMBC, Baltimore, MD — April 2010
- 1st Chesapeake SIAM Student Chapter Conference, UMBC, Baltimore, MD — April 2010
- URCAD, UMBC, Baltimore, MD — April 2009
- Neuroscience 2008 Annual Meeting, Washington, D.C. — November 2008

OTHER CONFERENCES ATTENDED

- Workshop on Agent-Based Modeling (Brown University, March 21-22, 2015)
- Physical Sciences and Oncology Symposium (NIH, April 9, 2014)
- Translating Cancer Data and Models to Clinical Practice (IPAM, UCLA, February 10-14, 2014)
- Conference in honor of Michael Mackey's 70th birthday (INRIA, University of Lyon, June 3-6, 2013)
- Multiscale Modeling in the Life Sciences Summer School (INRIA, University of Lyon, May 27-31, 2013)