

Alexander MURPH

PERSONAL DATA

PLACE AND DATE OF BIRTH: Pittsburgh, PA | 22 November 1994
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EDUCATION

MAY 2018 Bachelor of Science in MATHEMATICS, **Bucknell University**, Lewisburg
Bachelor of Arts in COMPUTER SCIENCE, **Bucknell University**, Lewisburg
Minor in WOMEN'S & GENDER STUDIES, **Bucknell University**, Lewisburg
magna cum laude | GPA: 3.83/4.0
Thesis: "Comparing Sequences of Finite States with Non-Uniform Time Intervals"
Advisors: Asst. Prof. Abby FLYNT, Assoc. Prof. Brian KING
NOV 2012 Calculus II at **Community College of Allegheny County**, Final Grade: A
NOV 2011 Probability & Statistics at **Duquesne University**, Final Grade: A

RESEARCH EXPERIENCE

JUN 2016 | Bucknell-Geisinger Research Initiative (BGRI)
PRESENT | *Research Assistant*
Developed predictive models to determine whether a patient will go into Septic Shock from Sepsis. Was responsible for researching and coding the models, and developing a database for specific data queries. Trained in dealing with sensitive patient data and various issues of privacy. See <https://github.com/sirmurphalot/sepsis-review-code> for personal contributions to this project.

APRIL 2017 | Honors Thesis Program, BUCKNELL UNIVERSITY
PRESENT | *Honors Candidate*
Manuscript in process for COMPARING SEQUENCES OF FINITE STATES WITH NON-UNIFORM TIME INTERVALS. In this project, I extend common homology search algorithms to handle a particular type of time series data. Responsibilities include organizing and running meetings with faculty advisors, performing a literature review, developing new theory for the algorithm, implementing this theory into code, writing the manuscript, and defending the thesis to Bucknell Faculty.

WORK EXPERIENCE

AUG 2015 | Lead Residential Advisor, Lewisburg
PRESENT | *Bucknell University Residential Education*
Trained extensively on handling student concerns and building positive living communities. Responsibilities include overseeing professional development of a staff of Residential Advisors, motivating and organizing groups effectively, and delegating responsibly. Expected to balance the personal needs of a group of Residential Advisors with the expectations of University staff.

JAN 2017 | Community Conduct Board, BUCKNELL UNIVERSITY
PRESENT | *Student Member*
Hears cases of community and academic misconduct with a select board of faculty and staff. Responsibly handles student information, and holds fellow students accountable for their commitments to the academic community at Bucknell.

JUN 2017	Intern at NIELSEN HOLDINGS, Pittsburgh
AUG 2017	<i>Professional Services Analytics Intern</i> Worked independently on three separate projects to locate and eliminate inefficiencies in the Analytics and Modeling teams, reducing 20 hours from their weekly commitments. Set up and organized personal meetings with Nielsen associates to determine areas of need, and used this information to formulate independent coding projects to meet specific goals.
JAN 2017	Teaching Assistant, BUCKNELL UNIVERSITY
MAY 2017	<i>Introduction to Data Science</i> Worked closely with faculty to provide support to Second Year students learning introductory modeling, R, and various Data Science topics. Held weekly office hours to help students with labs and homework. Graded labs and homework.
AUG 2015	Residential College Teaching Assistant, BUCKNELL UNIVERSITY
AUG 2016	<i>Society & Technology Residential College</i> Designed programs for First Year students living in academic-focused communities. Implemented the first-annual campus-wide scavenger hunt to acclimate students to a wide array of resources.

TALKS AND PRESENTATIONS

MAR 2017	AMIA 2017 Joint Summits on Translational Science, San Francisco <i>Poster Presenter</i> Poster entitled MACHINE LEARNING AND STATISTICAL TECHNIQUES TO PREDICT SEPSIS: UNIFYING PREVIOUS WORK. Summarized the BGRI's findings to professionals in the field of Medical Informatics. Conference provided valuable exposure to numerous presentations by leaders in the field.
NOV 2016	EPaDel Mathematics Conference, VILLANOVA UNIVERSITY <i>Student Speaker</i> Talk entitled SEPSIS SAFARI: PREDICTIVE DATA ANALYSIS ON WILD DATA. Covered topics on training and testing predictive models, and gave a brief overview of my research under the BGRI.

SCHOLARSHIPS

AUG. 2014	Bucknell Mathematics Scholarship (\$ 40,000) The Bucknell Mathematics Scholars Program recognizes a very limited number applicants with strong potential to excel as students of mathematics. Under this program, I have organized three mathematics related social events a semester to facilitate social time between faculty and students.
AUG. 2014	Cancer for College (\$ 5,000)
AUG. 2015	Non-profit organization that grants scholarships to cancer survivors wanting to obtain an undergraduate degree
JULY 2017	GRE®: 328 (Q:166;V:162) 91 st percentile;

COMPUTER SKILLS

Basic Knowledge:	HTML, LINUX
Intermediate Knowledge:	SAS, Java, C, Mathematica, Excel, GIT
Advanced Knowledge:	R, Python, Word, PowerPoint, L ^A T _E X

HONORS

Eagle Scout

Honors Societies: Pi Mu Epsilon, Omnicron Delta Kappa, Mortar Board

Bucknell Awards: Residential Colleges 'Golden Pair', Bucknell Class Award of Excellence '18

EXTRACURRICULAR WORK

Mathematics Association of America Club President, Bucknell

Diversity Outreach Team Volunteer, Bucknell

Arranger and Singer for Offbeats A Cappella, Bucknell

REFERENCES:

Abby Flynt, Ph.D.

Assistant Professor of Mathematics

Bucknell University

abby.flynt@bucknell.edu

Relationship: Thesis Advisor

Brian King, Ph.D.

Associate Professor of Computer Science

Bucknell University

brian.king@bucknell.edu

Relationship: Thesis Secondary Advisor

Nathan Ryan, Ph.D.

Associate Professor of Mathematics

Bucknell University

ncr006@bucknell.edu

Relationship: BGRI Advisor

Cindy Neumann

VP Sales Effectiveness

Nielsen

lutyneumann@yahoo.com

Relationship: Internship Mentor