Stephen Mazurchuk

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Stephen.Mazurchuk

Education

University at Buffalo, The State University of New York — **Buffalo**
B.S. Biomedical Engineering, 3.89 /4.0 — *2013–2017*

The Medical College of Wisconsin — **Milwaukee**
MD/PhD — *2017–2025*

Areas of Interest / Skills

- Focus on Phsyics
- Non-linear Dimensionality Reduction
- Image Acquisition, Processing, and Analysis
- Diagnostic Medical Imaging
- MATLAB
- Mathematica
- Working Knowledge of Python
- Liposomal Synthesis

Experience

Research

NSF, BioXFEL — **Milwaukee, WI**
Funded Summer Researcher, 2 years — *2015–2016*
As a member of this organization's undergraduate research program for two summers, my . My work (both years) has centered on writing scripts to better reconstruct 3-D protien models from hetergenous data sets

- Wrote and modified MATLAB scripts for single particle reconstructions of Cryo-EM snapshots
- Focused on accurately measuring conformational changes for heterogenous particle sets through SVD based reconstructions, and designing filtering kernels
- Worked with the MATLAB Parallel Computing tool box
- Presented work at the conclusion of both summers (as seen **here**)

Dr. Jonathan Lovell — **Buffalo**
Summer Researcher — *2014*
My work at the Lovell Lab focused on the better characterization of *in-vivo* release of novel "pop" liposomes. These are nano-carriers which release their contents upon being exposed to NIR light

- Synthesized, loaded, and remotely released gadolinium loaded liposomes *in vivo*, in conjunction with MR imaging. Optimizing related parameters was also explored
- Took 5 IACUC certification courses to learn approved small animal handling techniques
- Presented the findings at an undergraduate research conference (**here**)

Roswell Park Cancer Institute Summer Research Program — **Buffalo**
Summer Research Student — *2012*
During my Junior year of High School, I worked in the lab of Dr. Arindem Sen on the synthesis and imaging of dually labeled liposomes

Employment

Western New York Psychotherapy — **Amherst, NY**
Clerical Assistant — *2013–Present*

I work to verify insurance information in the intake department of a professional out-patient mental health facility during summers and other academic breaks.

Elderwood of Williamsville **Williamsville, NY**
Dietary Aide *2014–2015*
I predominantly worked the dinner shift in the nursing home, and my responsibilities centered on delivering meals and cleaning dishware. I worked 3-4 nights a week throughout the school year

Pautler's Drive-In of Clarence **Clarence, NY**
Food Service Worker *2012–2013*
I had various responsibilities such as dishwashing, customer interaction, and food preperation

Awards and Campus Activities

Study Abroad Scholarship: Recieved monetary support from the UB Honors College for travel abroad

BioXFEL Travel Funding: Recived funding from BioXFEL to visit laboraties in Stanford and Berkely

2014 Undergraduate Dean's Research Conference Scholarship: Presented my research from Lovell Lab

Universit at Buffalo Honors College: Member throughout entire undergraduate study

University at Buffalo Academic Bowl: Throughout my four years I have been an active member of the universities trivia club

Relevant Courses

- MTH 152, 241, 311, 418/518
- EAS 230
- EAS 305
- BE 304
- BE 307
- BE 308
- BE 403
- BE 460/560
- BE 493
- PHY 207
- PHY 401
- PHY 431
- BIO 205 & 330

Calc 2 Honors, Calc 3, Diff Eqs, Partial Diff Eqs
Engineering Computation
Applied Probability and Statistics
Principles of Medical Imaging
Biomedical Circuits and Signals
Biofluid Mechanics
Biomedical Instrumentation
Introduction to MRI
Capstone Course
Physics III (Modern Physics)
Quantum Mechanics
Mathematical Physics
Biochemistry & Special Topics on Genetic Disease

Expanded List found **here**