Jason Lerner

41923 Banbury Street
Northville, Michigan 48168
(734)-716-6730
jummixc12b@gmail.com,
lernerjs@umich.edu

Objective

A position in a biophysics PhD program (or umbrella program) that will enable myself to become a professor and pursue research in that field.

Education

University of Michigan-Dearborn— *B.S. Degree*

September 2012 - April 2016 (expected date)

Majors in Biochemistry and Physics and minor in Biology. GPA 3.84

Research Projects

Making and Analyzing Gold Nanosurfaces as Biosensors— *May 2013-present date, with Krisanu Bandyopadhyay, PhD.*

Using a TMSPP monolayer on ITO glass surfaces, gold nanoparticles are adsorbed and studied for alterations in conductivity in the presence of uric acid, dopamine, and glucose.

Stochastic Algorithmic Music Generation — *July 2014-present date, Faculty Sponsor: James Hetrick, PhD.*

Using LabVIEW, a program was created and is being further developed that generates music using probabilities of note to note transitions in J.S. Bach fugues. The output is to a MIDI synthesizer, and the number of harmony parts, key, and timbre are input by the user.

Analyzing Capsaicin in Snack Foods — *April 2015-present date, with Judith Bazzi, PhD.*

The capsaicin in Flamin' Hot and Extra Flamin' Hot Cheetos was analyzed using Soxhelt Extraction and GC/MS. Chinese and Middle eastern cuisines are being further tested in this way.

Technical SKILLS

Programming in C++, Visual Basic, Arduino, LabVIEW, Matlab, and Mathematica

Working in LaTEX, MathCad, Excel, and Origin.

Designing and constructing circuits.

Laboratory SKILLS

Proficient with atomic force microscopy, cyclic and differential pulse voltammetry, impedance, X-Ray diffraction, IR, Raman, and UV/Vis spectroscopy, NMR, refractometry, mass spectrometry, ELISA, PCR, fluorescence spectroscopy, HPLC, gas, column, and thin layer chromatography

Awards

Merk Index Award for Organic Chemistry-2014

Languages

English and French (working knowledge)

Making and Analyzing PVDF Films with Ferrous Oxide Nanoparticles — *September 2015-present date, with Vaman Naik, PhD.*

PVDF films are being made using DMF and annealing to a glass surface. Annealing temperature and time and the presence of ferrous oxide nanoparticles are being tested for their effects on the structural properties of the resulting polymer film.

Work Experience

Tutor —*2011 through current date.*

Algebra through Calculus III, Differential Equations, Linear Algebra, Physics I and II, Chemistry I and II, and Organic Chemistry I and II.

Supplemental Instruction —*2013 through current date.*

Physics I and II and Organic Chemistry II

Publications

Stochastic Algorithmic Music Generation — *August 2015*

By Jason Lerner, Faculty Sponsor: James Hetrick, PhD., Meeting of the Minds Journal of Undergraduate Research.

Leadership Skills

Cross Country Club — *President, September 2012-present date*

National Society of Leadership and Success — *January 2014-present date*

Chess Club — *President and founder, April 2014-present date*

References

Dr. Krisanu Bandyopadhyay — *Professor, Phone: (313) 593-5159, Email: Krisanu@umich.edu*

Dr. Judith Bazzi — *Lecturer and Laboratory Coordinator, Phone: (313) 593-5350, Email: Bazzij@umich.edu*

Dr. James Hetrick — *Lecturer, Phone: (313) 593-5544, Email: Jameshet@umich.edu*

Dr. Vaman Naik — *Professor, Phone: (313) 593-5629, Email: Vmnaik@umich.edu*

Dr. Sheila Smith — *Associate Professor and Academic Advisor, Phone: (313) 583-6399, Email: Sheilars@umich.edu*