

CONTACT INFORMATION	Department of Mathematics, University of Michigan Ann Arbor, MI 48109	Website jptyler@umich.edu
RESEARCH INTERESTS	Mathematical modeling of biological clocks.	
EMPLOYMENT	NIH Postdoctoral Fellow, University of Michigan Medical School 2020-2021 Mentor: Sung Won Choi, MD	
	Postdoctoral Assistant Professor, University of Michigan 2019-2022 Mentor: Daniel Forger	
EDUCATION	Texas A&M University Mathematics Thesis Title: <i>Mathematical Modeling of Biological Clocks</i> Advisors: Anne Shiu and Jay Walton	Ph.D. , August 2019
	University of Kentucky Major: Mathematics, Minor in Biology <i>Magna Cum Laude</i> <i>Departmental Honors</i>	B.S. , May 2013
IN PREPARATION	1. Tyler, J. , Lu, Y., Forger, D. <i>Circadian clocks in divergent species evolved convergently.</i>	
PUBLICATIONS	1. Tyler, J. , Choi, S.W., Tewari, M. <i>Real-time, personalized medicine through wearable sensors and dynamic predictive modeling: a new paradigm for clinical medicine..</i> Accepted to Current Opinion in Systems Biology. 2. Tyler, J. . <i>Mathematical Modeling of Biological Clocks</i> , Ph.D. thesis, 2019. 3. Tyler, J. , Shiu, A., and Walton, J. <i>Revisiting a synthetic intracellular regulatory network that exhibits oscillations.</i> J MATH BIOL, 78:2341-2368, 2019. https://doi.org/10.1007/s00285-019-01346-3 .	
PROFESSIONAL EXPERIENCE	Systems Toxicology Intern Boehringer Ingelheim Supervisor: Seung Chung, Ph.D. I developed a comprehensive systems model of the gastrointestinal immune system. This included an extensive literature review of immunological mechanisms, translation to a mathematical model, running simulations, performing sensitivity analysis, and creating virtual population sets.	Summer 2018
AWARDS	Travel Awards Travel Award to present at Multiscale Modeling in Biology SIAM Travel Award – To present at SIAM LS18	Summer 2019 Summer 2018

Student Awards — Texas A&M University, Department of Mathematics

Outstanding Teaching Assistant Award May 2016
Teaching Assistantship Fall 2014

Student Awards — University of Kentucky

Sally Pence Award in Mathematics 2012–2013
Chellgren Center for Undergraduate Excellence Student Fellow Fall 2011–Spring 2013
Presidential Scholar Fall 2009–Spring 2013

PRESENTATIONS **Mathematics Meetings**

Discriminating the network structure of a biological system that exhibits oscillations,
SIAM Life Sciences 2020, Garden Grove, CA June 2020

Revisiting a synthetic intracellular regulatory network that is sufficient for oscillations,
Multiscale Modeling in Biology, Minneapolis, MN May 2019

Revisiting a synthetic intracellular regulatory network that is sufficient for oscillations,
SIAM Life Sciences 2018, Minneapolis, MN August 2018

Texas A&M University

Revisiting a synthetic intracellular regulatory network that is sufficient for oscillations,
Graduate Student Organization seminar, April 2019

Mathematical Modeling in the Pharmaceuticals, Industrial and Applied Math Seminar
October 2018

You're getting very sleepy... A Gig'em Conference (AMS Student Chapter) March 2018

Posters

A new "Black Widow" model of the Neurospora circadian clock reveals convergent evolution, Virtual SRBR Conference June 2020

A new approach to parameter estimation of biological oscillators, RTG Workshop on
Parameter Estimation for Biological Models, NC State July 2019

Revisiting a synthetic intracellular regulatory network that is sufficient for oscillations,
Frontiers in Mathematical Biology May 2018

Study of accelerated evolutionary rates yields insights into adaptive evolution and relaxed constraint, Duquesne University Symposium Summer 2012

TEACHING AT
MICHIGAN

Calculus I, (Math 115), University of Michigan Fall 2019

PRIOR TEACHING **Mathematical Concepts – Calculus** (Math 131), Texas A&M Spring 2018

Teaching Assistant

Calculus I (MATH 113), University of Kentucky Fall 2013

Calculus II for Engineers (MATH 152), Texas A&M Spring 2015

Calculus I for Engineers (MATH 151), Texas A&M Fall 2015, 2016

Calculus II for Biological Sciences (MATH 148), Texas A&M Fall 2017

Calculus I for Biological Sciences (MATH 147), Texas A&M Fall 2018

Grader

Foundations of Mathematics (MATH 220), Texas A&M Fall 2014

Introduction to Mathematical Biology (MATH 469), Texas A&M Spring
2016,2017,2019

SERVICE **SIAM Student Chapter Treasurer** Fall 2018–Spring 2019

SIAM Student Chapter President Fall 2017– Summer 2018

I help organize social activities for the department, the Graduate Student Seminar,
and the Industrial and Applied Math Seminar.

Mentor for Summer REU Students Summer 2017

I mentored students in a Mathematical Biology REU at Texas A&M University. I
met with the students weekly to discuss the project and any upcoming reports or
presentations.

Math Circle Fall 2015

Assist with the Department’s Math Circle – a fun, interactive day of mathematics
learning for children in the local community held every Saturday.

ORGANIZATIONS **SRBR** Fall 2020–Present

SIAM Fall 2015–Present

AMS Fall 2015–Present

HARDWARE AND SOFTWARE SKILLS **Computer Programming:**
C++, Perl, Python, R, MATLAB, Mathematica, Sage, UNIX shell scripting

REFERENCES **Anne Shiu**

Associate Professor Email: annejls@math.tamu.edu
Department of Mathematics
Texas A&M University

Jay Walton

Professor Emeritus
Department of Mathematics
Texas A&M University

Email: jwalton@math.tamu.edu

Daniel Forger

Professor of Mathematics
Professor of Computational Medicine and Bioinformatics
University of Michigan

Email: forger@umich.edu

Matthew Bogdanffy

Vice President
Nonclinical Drug Safety
Boehringer Ingelheim

Email: matthew.bogdanffy@boehringer-ingelheim.com