Michael T. Judge

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EDUCATION

2015 PhD Candidate (4th year). Department of Genetics, University of Georgia, Athens GA

Dissertation Project: Identification and characterization of a circadian clock synchronization signaling pathway in *Neurospora crassa*.

Major Professors: Drs. J. Arnold and A. Edison

2011-15 B.Sc. (Cell/Molecular Biology), *cum laude*, Departmental and University Honors. Appalachian State University, Boone, NC

AWARDS/HONORS

2016 NSF Graduate Research Fellowship Program (submitted)

2016 ARCS Foundation Fellowship. (not funded)

2016 NIH T32 Training Grant to University of Georgia Genetics Department. (not funded)

2015 ILS Scholar of Excellence (full stipend coverage by program through July 2016)

2014 NSF REU at University of Georgia ($5000)

2013 Chancellor's List. Appalachian State University

2013 NSF REU at NC State University ($5000)

2012 Prestigious Scholarships Program

2011 Chancellor's List. Appalachian State University

TRAVEL SUPPORT

2018 GGSA Travel Award. University of Georgia. ($500)

2017 GGSA Travel Award. University of Georgia. ($996.50)

2017 OVPR Foreign Travel Assistance Program Award. University of Georgia ($1912)

2017 Early Career Member Network Award. Metabolomics Society ($500)

2016 GGSA Travel Award. University of Georgia. ($650)

2016 OVPR Foreign Travel Assistance Program Award. University of Georgia ($1095)

2016 Student Travel Award. Agilent Technologies ($500)

2015 International Education Scholarship Appalachian State University ($350)

2013 OSR Undergraduate Travel Grant. Appalachian State University ($210)

RESEARCH SUPPORT

2015 Honors College Partnership Board Research Fund Award. Appalachian State University ($500)

2014 OSR Undergraduate Research Grant. Appalachian State University ($300)

PUBLICATIONS

*Peer-Reviewed*

Deng, Z., Hwei Cheong, J., Caranica, C., Wu, L., Judge, M., Hull, B., Rodriguez, C., Griffith, J., Al-Omari, A.,

Arsenault, S., Schüttler,H.B., Mao, L., and Arnold, J. 2019. *Single cells of* Neurospora crassa *show*

*circadian oscillations, light entrainment, temperature compensation, and phase synchronization*.

Submitted, **IEEE Access**.

Judge, M., Griffith, J., & Arnold, J. 2017. Aging and the Biological Clock. In “*Circadian Rhythms and Their Impact on Aging*”. Jazwinski, S M, Belancio, V P, & Hill, S M (ed.s). In “*Healthy Aging and Longevity*”. Rattan, S. (ed.). **Springer Science + Business Media B.V**., Dordrecht, Netherlands.

Al-Omari, A., Griffith, J., Judge, M., Taha, T., Arnold, J., & Schüttler, H.B. 2015. *Discovering a Regulatory Network Topology Using Ensemble Methods on GPGPUs with Special Reference to the Biological Clock of* Neurospora crassa. ***IEEE Access*** 3:27-42.

*Other*

Judge, M.T., Wu, Y., Tayyari, F., Hattori, A., Glushka, J., Ito, T., Arnold, J., & Edison, A.S. 2019.

Continuous in vivo metabolism by NMR. (in review at Frontiers in Molecular Biosciences; preprint available at <https://www.biorxiv.org/content/early/2018/12/19/501577>).

Judge, M. 2015. *Evidence for Subfunctionalization of the Flip4 Gene Family in Arabidopsis thaliana*. Undergraduate honors thesis. Appalachian State University, Boone, NC.

POSTERS / PRESENTATIONS

*Presentations*

10/2018 Real-time metabolomics of living organisms. Southeastern Magnetic Resonance Conference 2018. Clemson University, Clemson, SC.

10/2018 Real-time *in-vivo* metabolomics of *Neurospora crassa*. Neurospora 2018. Asilomar, CA.

06/2018 Real-time *in-vivo* metabolomics of a multicellular eukaryote by HR-MAS NMR. Metabolomics 2018. Seattle, WA.

03/2018 Real-time *in-vivo* metabolomics of a multicellular eukaryote by HR-MAS NMR. Southeastern Mycology Symposium. University of Georgia, Athens, GA. (Invited graduate student speaker).

08/2015 Evidence for Subfunctionalization of the *flip4* Gene Family in Arabidopsis thaliana. Undergraduate honors thesis defense. Appalachian State University, Boone, NC.

09/2014 Testing a topology for the genome-wide clock-controlled gene network in *Neurospora crassa* using RT-qPCR. Departmental Seminar. Appalachian State University, Boone, NC.

*Posters*

08/2018 Real-time *in-vivo* metabolomics of a multicellular eukaryote by HR-MAS NMR. Metabolomics 2018. Seattle, WA.

08/2017 Systems biology of circadian clock signaling in *Neurospora crassa*. Genetics Retreat. Athens, GA.

07/2016 Systems biology of circadian clock signaling in *Neurospora crassa*. 10th Georgia Glycoscience Symposium. Athens, GA.

06/2016 Systems biology of circadian clock signaling in *Neurospora crassa*. Metabolomics 2016. Dublin, Ireland.

05/2016 Exploring the mechanism of intercellular circadian clock synchronization in *Neurospora crassa* using genetic and metabolomic screens. Biochemistry and Molecular Biology Retreat. Helen, GA.

04/2015 Expression Profiling of the FLIP4 Gene Family in *Arabidopsis thaliana*. Association of Southeastern Biologists annual meeting. PI

07/2014 Regulation of ribosome biogenesis by clock-controlled transcription factors: Testing a topology for the genome-wide clock-controlled gene network in *Neurospora crassa*. UGA Summer Undergraduate Research Symposium. PI, Dr. Jonathan Arnold.

09/2013 (Chalk talk) Genetic dissection of the interaction between indole-glucosinolate biosynthesis and auxin homeostasis in *Arabidopsis thaliana*. NC Biotech Center Plant Molecular Biology Retreat.

07/2013 Genetic dissection of the interaction between indole-glucosinolate biosynthesis and auxin homeostasis in *Arabidopsis thaliana*. NC State Summer Undergraduate Research Symposium.

TEACHING / MENTORING

2018 Fall Guest presentation for BINF 4550 about CIVM-NMR and (Systems Biology, J. Arnold and A.S. Edison, instructors).

2016 Fall T.A. GENE3200 Lecture and discussion sessions with Mary Bedell. Assisted with grading, teaching in discussion sessions, held office hours.

2016 Mentoring NSF REU intern Marisa Cepeda (Edison Lab). Identification of exometabolites from complex mixtures in *Neurospora crassa* liquid media using NMR.

2014-present Mentoring CURO Honors Thesis scholar and NSF REU student Brooke Hull. Direct detection of synchronization of circadian clocks in *Neurospora crassa* using dual fluorescent reporters.

OUTREACH / SERVICE

2016-present Judge. LSAMP Undergraduate Research Symposium (one day per year).

2016-present Genetics Graduate Student Association Participation. Attend monthly meetings, vote in office elections, and took part in the Genetics Department recruitment events for ILS 2016 and 2017. Attend social events.

2016 Content expert, Hilsman Middle School 21st Century Science, Technology, Engineering, Arts, and Mathematics afterschool program on Thursdays during the school year. Assist in activity planning for integration of critical thinking and scientific concepts.

GRADUATE COURSEWORK

GENE 8140, Spring 2016, 3h

GENE 8960, Spring 2018, 3h

STAT 6510, Spring 2016, 3h

GENE 8100, Spring 2016, 3h