

Jordan D. Prah, Ph.D.

Postdoctoral Research Associate

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Introduction:

Jordan is a graduate of the Van Andel Institute Graduate School, in Grand Rapids, MI. He pursued his PhD in Molecular & Cellular Biology in Dr. Coetzee's lab, developing a project focused on characterizing the risk-mechanism associated with the Parkinson's disease risk-SNP, rs356182. Excelling at both wet-lab techniques and bioinformatics, Jordan made consistent progress towards his degree, despite facing the challenges of doing research during a global pandemic. Jordan also showed an aptitude for presenting data, both on paper and in numerous oral presentations, even being selected by a committee of peers for a keynote presentation describing the applications of CRISPR-Cas9 in the lab. Jordan looks forward to pursuing his next adventure in Atlanta, where he will join the Hamm lab at Georgia State University.

Education

Van Andel Institute Graduate School, Grand Rapids MI 2017 - 2022

PhD- Molecular & Cellular Biology, Department of Neurodegenerative Science, Coetzee Lab

Our lab's primary focus was on functional characterization of GWAS-identified risk-SNPs. In pursuit of that, I investigated the Parkinson's disease risk SNP, rs356182. I used dopaminergic neuron cell models and created hemizygous clones using CRISPR/Cas9. We found a host of genes affected by this locus, and a pathological phenotype in the risk condition. The differentiation/proliferation processes seem to be impinged by this locus in manner not previously described. Contrary to assumptions, the risk associated with rs356182 seems to be largely independent of SNCA expression.

Michigan State University, Lansing, MI 2016

Master's level course work, Epidemiology

Grand Valley State University, Allendale, MI 2008 - 2013

BS- Dual Major, Biology & Biomedical Science

Career History

Van Andel Institute, Grand Rapids, MI 2015 - 2017

I started at VAI as a student intern in the Devos Cardiovascular Research Program led by Dr. Stefan Jovinge. As an intern, I oversaw the genotyping and management of our numerous mouse colonies (i.e., designing mating/culling strategies). I was quickly elevated to the position of Assistant research technician. In this role, I collaborated with our large, diverse team and helped on their various projects. During this time, I gained invaluable skills performing common biochemical assays. I was again promoted to the role of Research Technician where I led my own research project. I was charged with characterizing the sub-populations of cells present in the heart. This project trained me how to design experiments to be efficient and effective. During this time, I was also taking classes at GVSU and MSU.

Advanced Technical Skills

- CRISPR-Cas9 Genome Editing
- RNA sequencing and Analysis
- Flow Cytometry
- Bioinformatics / Data Management and Analysis- https://github.com/JordanPrah/Prah_et_al_20210629
- Primary / Stem Cell Culture
- Immunofluorescence & Microscopy
- Scientific Communications

Publications and grants

1. PUBLICATION- Pierce, SE, Tyson, T, Booms, A, **Prahl, JD**, & Coetzee, GA, (2018) Parkinson's disease genetic risk in a midbrain neuronal cell line. *Neurobiol Dis*, 114: p. 53-64. DOI: 10.1016/j.nbd.2018.02.007
2. PUBLICATION- Pierce, SE, Booms, A, **Prahl, JD**, van der Schans, EJC, Tyson, T, & Coetzee, GA, (2020) Post-GWAS knowledge gap: the how, where, and when. *NPJ Parkinsons Dis*, 6: p. 23. DOI: 10.1038/s41531-020-00125-y
3. GRANT APPLICATION- **Prahl, JD** (2020) Global effects of PD risk-SNP rs356182 at the SNCA locus. NINDS Review Panel: Neurodevelopment, Synaptic Plasticity and Neurodegeneration. Not funded
4. PUBLICATION- **Prahl, JD** & Coetzee, GA (2022) Genetic Elements at the alpha-synuclein locus. *Frontiers in Neuroscience*. DOI: 10.3389/fnins.2022.889802
5. PUBLICATION- **Prahl, JD**, Pierce, SE, Coetzee, GA, & Tyson, T, (2022) Alpha-synuclein negatively controls cell proliferation in dopaminergic neurons. *Mol & Cell Neurosci*. DOI: 10.1016/j.mcn.2022.103702
6. PUBLICATION- **Prahl, JD**, Pierce, SE, van der Schans, EJC, Coetzee, GA, & Tyson, T, (2022) The Parkinson's Disease Variant rs356182 Regulates Neuronal Differentiation Independently from Alpha-Synuclein. *Hum. Mol. Genetics*. DOI: 10.1093/hmg/ddac161

Presentations

- Van Andel Institute Scientific Retreat; Thompsonville, MI 2022
Best Graduate Student Publication Award Winner Presentation
Oral Presentation Title: Alpha-synuclein negatively controls cell proliferation in dopaminergic neurons
Additional Presentations: The Coetzee Lab Flash-talk & Thesis project poster
- Research in Progress, Van Andel Institute; Grand Rapids, MI 2021
Oral Presentation Title: An SNCA PD risk enhancer controls more genes than only SNCA
- Grand Challenges in Parkinson's Disease; Grand Rapids, MI 2021
Session: GBA1 and LRRK2 – From genetic risk to the clinic
Poster Presentation Title: Global effects of a Parkinson's disease risk-variant at the alpha-synuclein locus
- Origins of Cancer; Grand Rapids, MI 2021
Session: Where cancer and neuroscience meet
Poster Presentation Title: Global effects of a Parkinson's disease risk-variant at the alpha-synuclein locus
- West Michigan Regional Undergraduate Science Research Conference; Grand Rapids, MI 2020
Invited Graduate student research talk
Oral Presentation Title: Global Effects of the PD risk-SNP rs356182 at the SNCA locus
- Grand Challenges in Parkinson's Disease; Grand Rapids, MI 2020
Session: Where and how does Parkinson's start?
Poster Presentation Title: Global Effects of Parkinson's Disease Risk-SNP rs356182 at the Alpha Synuclein Locus
- Grand Challenges in Parkinson's Disease; Grand Rapids, MI 2019
Session: Understanding Genetic Risk: Session 6- Role of epigenetics in PD
Oral Presentation Title: Global effects of Parkinson's disease risk-snp rs356182 at the SNCA locus
- Grads Downhill, Joint Event between MSU & VAI; Grand Rapids, MI 2019
Invited Keynote Speaker
Oral Presentation Title: CRISPR-Cas9 Applications and techniques
- Society for Neuroscience; Chicago, IL 2019
Poster Presentation Title: Global Effects of Parkinson's Disease risk-SNP rs356182 at the SNCA Locus
- Grand Challenges in Parkinson's Disease; Grand Rapids, MI 2018
Session: Non-motor Symptoms
Poster Presentation Title: Global Effects of Parkinson's Disease risk-SNP rs356182 at the SNCA Locus

Society for Neuroscience; San Diego, CA <i>Poster Presentation Title: Global Effects of Parkinson's Disease risk-SNP rs356182 at the SNCA Locus</i>	2018
American Heart Association; Portland, OR <i>Session: Pathways to Cardiovascular Therapeutics</i> <i>Poster Presentation Title: Cell-type Specific Surface Markers Effectively Isolate Cardiac Cell Sub-populations</i>	2017

Awards & Invitations

• Best Graduate Student Publication, Van Andel Institute Scientific Retreat	2022
• Invited Speaker, West Michigan Regional Undergraduate Symposium	2020
• Keynote Speaker, Grads Downhill Joint Event between MSU & VAI, Lecture on CRISPR-Cas9 techniques	2019
• Selected Abstract Talk, Grand Challenges in Parkinson's Disease	2019
• Poster Competition Judge, Grand Challenges in Parkinson's Disease	2019
• Poster Competition Winner, Van Andel Institute Graduate School Retreat	2017

Memberships & Affiliations

• Leadership Council, VAI Graduate School Association	2019 – 2021
• Member, Society for Neuroscience	2018 – 2019
• Member, American Heart Association	2017
• KHS Health & Wellness Curriculum Committee	2008
• Student Ambassador, Europe and Australia	2005 – 2006

Volunteer Work

• Mentor, VAIGS Peer Mentoring Program, Grand Rapids, MI	2018 – 2021
• Volunteer, Scientific Engager, VAI, Grand Rapids, MI	2017 – 2021
• National History Day Project Mentor, A discussion on the past, present, and future of CRISPR	2019
• FFA Research Project Mentor, Montague, MI	2019
• Science Outreach, Montague High School, Montague, MI	2017 – 2018
• Hopkins Career Fair, VAI representative, Hopkins, MI	2018
• Volunteer, Main Street Charity Golf Outing, Allendale MI	2014
• Volunteer, Boys & Girls Club, Kingsley, MI	2007 – 2008
• Volunteer, Grand Traverse Special Olympics, Traverse City, MI	2005 – 2008

Professional References

Dr. Gerhard (Gerry) Coetzee, PhD
 Van Andel Institute, Grand Rapids, MI
 Professor- Coetzee Lab
 (616) 234-5305
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Dr. Scott Rothbart, PhD
 Van Andel Institute, Grand Rapids, MI
 Associate Professor- Rothbart Lab
 (616) 234-5367
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Dr. Michael R. Stallcup, PhD
 University of Southern California
 Professor Emeritus
 stallcup@usc.edu

Anecdotes

- Myers-Briggs Personality- **ESTJ-A**
- Gallup Strengths Finder Results
 1. Harmony
 2. Input
 3. Arrange
 4. Analytical
 5. Responsibility
- Husband and Father of Twin boys
- Dog Person
- Detroit Lions Fan
- Fantasy Football League Champion (2021-2022 season)