CURRICULUM VITAE

January 15, 2024

Philip John Freda, Jr., PhD, MS

CURRENT POSITION

01/24- Project Scientist, Department of Computational Biomedicine, Cedars-Sinai Medical Center

PROFESSIONAL CONTACT INFORMATION

Business Address: Cedars-Sinai Medical Center
700 N. San Vicente Blvd.
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West Hollywood, CA 90069

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EDUCATION

12/05 B.S., Administration of Justice, minor: Sociology, Pennsylvania State University
05/14 M.S., Biology, Saint Joseph's University
12/18 Ph.D., Entomology, focus: Ecological Genomics, Kansas State University
01/22 T32 Postdoctoral Training, Machine Learning/Artificial Intelligence and Computational Biomedicine, University of Pennsylvania

PREVIOUS POSITIONS

08/12-05/14 Graduate Research Assistant and GK-12 Teaching Fellow, Department of Biology, Saint Joseph's University
08/14-12/18 Graduate Research Assistant, Department of Entomology, Kansas State University
05/19-05/21 T32 Postdoctoral Fellow, Department of Biostatistics, Epidemiology and Informatics, Perleman School of Medicine, University of Pennsylvania
05/21-01/22 Postdoctoral Researcher, Department of Biostatistics, Epidemiology and Informatics, Perleman School of Medicine, University of Pennsylvania
01/22-12/23 Postdoctoral Scientist, Department of Computational Biomedicine, Cedars-Sinai Medical Center

PROFESSIONAL ACTIVITIES

Committee Services:

2013 Recruitment Representative, Saint Joseph's University's Graduate Arts and Sciences Program, Loyola University, Maryland - Biology Career Workshop
2013 Member, Northeast Spotted Wing Drosophila Working Group

2014 Member, Commencement Speaker Committee, Saint Joseph's University
2016 Committee member, Lethal Weapons Event Sub-Committee, Kansas State University
2016-2017 Member-at-Large, Committee on Governmental Issues, Kansas State University
2017-2018 Committee Member, Public Relations, Popenoe Entomology Club, Kansas State University

Community Service:
2014-2017 Team Manager, Intramural Softball, Kansas State University
2012-2022 Journal Review Services: *Biological Control, Drug and Alcohol Dependence, Entomologia Experimentalis et Applicata, Frontiers in Public Health, Genetica, Genetics, Heredity, Journal of Pest Science, Journal of Medical Internet Research, Journal of Neuroscience Research, Scientific Reports*

Professional Associations/Society Memberships:
2014- Lifetime Member, Alpha Epsilon Lambda: Graduate Honors Society
2016- Lifetime Member, Golden Key Honour Society

Mentoring:
2014-2015 Colin Bailey, Kansas State University, research mentor
2014-2015 Saadia Cleve, Kansas State University, research mentor
2015-2016 Ashley Helget-Wedin, Kansas State University, research mentor
2015-2016 Oshadhi Athukorala Arachchige, Kansas State University, research mentor
2015-2016 Mariah Brown, Kansas State University, research mentor
2015-2017 Nicholas Heter, Kansas State University, research mentor
2015-2017 Jackson Alex, Kansas State University, research mentor
2015-2017 Adam Schieferecke, Kansas State University, research mentor
2016-2018 Zainab Ali, Kansas State University, research mentor
2022 Elizabeth Zhang, Cedars-Sinai Medical Center, research mentor
2022 Tianhao Luo, Cedars-Sinai Medical Center, research mentor

HONORS AND SPECIAL AWARDS

2014 Biology Graduate Student Award, Saint Joseph's University
2019-2021 Ruth L. Kirschstein Institutional National Research Service Award (NIH T32)
2022-2024 Clinical Scholars, Cedars-Sinai Medical Center

RESEARCH AWARDS AND GRANTS

2012-2014 GK-12 Fellowship, HHMI & NSF
2012-2014 Graduate Assistant Scholarship, HHMI & NSF
2014 Travel Award, American Genetics Association
2015 Reginald H. Painter Memorial Scholarship, Kansas State University, Department of Entomology
2015 Award Recipient, Grants in Aid of Research (GIAR), Sigma Xi: Kansas State University Chapter
2016 Travel Award, Kansas State University, Department of Entomology
2014-2017 Timothy R. Donahue Graduate Scholarship, Kansas State University
2016-2017 Don C. Warren Genetics Scholarship, Kansas State University, Department of Entomology
2017 Travel Award, Kansas State University, Department of Entomology

2017 Roger C. Smith Scholarship in Entomology, Kansas State University, Department of Entomology

INVITED LECTURES AND PRESENTATIONS

International Presentations

1. Identifying mechanisms of cold hardiness across metamorphosis in *Drosophila melanogaster*. Tartu, Estonia, 2017.

National Presentations

1. Genomic regions responsible for altered reproductive characteristics of *Arabidopsis thaliana* grown at elevated [CO2]. Austin, Texas, 2012.
2. Temporal variation at microsatellite loci in wild-caught *Drosophila simulans*. Kansas City, Missouri, 2014.
3. Decoupling of physiology across metamorphosis. Portland, Oregon, 2016.
4. Phenotypic and genetic decoupling of thermal hardiness across metamorphosis. Philadelphia, Pennsylvania, 2018.
5. Cluster Analysis reveals Socioeconomic Disparities among Elective Spine Surgery Patients. Big Island of Hawaii, Hawaii, 2024.

TEACHING ACTIVITIES

2010 Teaching Assistant, Cellular Biology, Saint Joseph's University
2010 Intern, Noyce Scholarship Program, The School District of Philadelphia
2012-2014 Teaching Fellow, GeoKids LINKS GK-12 Program, Saint Joseph's University and the Wagner Free Institute of Science
2016-2017 Teaching Assistant/Lecturer, Insects and People, Kansas State University

BIBLIOGRAPHY/PUBLICATIONS

Research Papers – Peer-Reviewed (Published):

1. **Freda, P.J.**, Braverman, J.M. (2013). *Drosophila suzukii*, or Spotted Wing Drosophila, recorded in Southeastern Pennsylvania, USA. Entomological News, 123(1), 71-75.
2. Leung, W., Shaffer, C.D., Reed, L.K., Smith, S.T., Barshop, W., Dirkes, W., […], **Freda, P.J.**, […], Eglin, S.C.R. (2015). *Drosophila* Muller F Elements maintain a distinct set of genomic properties over 40 million years of evolution. G3: Genes, Genomes, Genetics, 5(5), 719-740.
3. **Freda, P.J.**, Alex, J.T., Morgan, T.J., Ragland, G.J. (2017). Genetic decoupling of thermal hardiness across metamorphosis in *Drosophila melanogaster*. Integrative and Comparative Biology, 57(5), 999-1009.
4. Everman, E.R., **Freda, P.J.**, Brown, M., Schieferecke, A.J., Ragland, G.J., Morgan, T.J. (2018). Ovary Development and Cold Tolerance of the Invasive Pest *Drosophila suzukii* (Matsumura) in the Central Plains of Kansas, United States. Environmental Entomology, 47(4), 1013-1023.
5. **Freda, P.J.**, Ali, Z.M., Heter, N., Ragland, G.J., Morgan, T.J. (2019). Stage-specific genotype-by-environment interactions for cold and heat hardiness *in Drosophila melanogaster*. Heredity, 123(4), 479-491.
6. Poulsen, M.N. †, **Freda, P.J.**†, Troiani, V., Davoudi, A., Mowery, D.L. (2022). Classifying characteristics of opioid use disorder from hospital discharge summaries using natural language processing. Frontiers in Public Health, 10(850619). 1-14. †Equal Authorship
7. **Freda. P.J.**, Toxopeus, J., Dowle, E.J., Ali, Z.M., Heter, N., Collier, R.L., Sower, I., Tucker, J.C., Morgan, T.J., Ragland, G.J. (2022). Transcriptomic and functional genetic evidence for distinct

ecophysiological responses across complex life cycle stages. Journal of Experimental Biology, 255(11), jeb244063.
8. Kennedy, E.E., Davoudi, A., Hwang, S., **Freda, P.J.**, Urbanowicz, R., Bowles, K.H., Mowery, D.L. (2022). Identifying barriers to post-acute referral and characterizing negative patient preferences among hospitalized older adults using natural language processing. AMIA Annual Symposium Proceedings. 606-615.
9. **Freda, P.J.** †, Ghosh, A. †, Zhang, E., Luo, T., Chitre, A., Polesskaya, O., St. Pierre, C.L., Gao, J., Martin, C.D., Chen, H., Garcia-Martinez, A.G., Wang, T., Han, W., Ishiwari, K., Mayer, P. Lamparelli, A., King, C.P., Palmer A.A., Li, R., Moore, J.H. (2023). Automated quantitative trait locus analysis (AutoQTL). BioData Mining, 16(14), 1-24. †Equal Authorship
10. Orlenko, A. †, **Freda, P.J.** †, Ghosh, A., Choi, H., Matsumoto, N., Bright, T.J., Walker, C.T., Obafemi-Ajayi, T., Moore, J.H. (2023). Cluster Analysis Reveals Socioeconomic Disparities among Elective Spine Surgery Patients. Biocomputing 2024. 359-373. †Equal Authorship
11. Poulsen, M.N. †, **Freda, P.J.**†, Troiani, V., Davoudi, A., Mowery, D.L. (2024). Developing a Framework to Infer Opioid Use Disorder Severity from Clinical Notes to Inform Natural Language Processing Methods: A Characterization Study, JMIR Mental Health. 11:e53366. †Equal Authorship

Papers – Peer-Reviewed (Submitted):
1. Batista, S. †, Madar, V.S. †, **Freda, P.J.** †, Bhandary, P., Ghosh, A., Chitre, A.S., Palmer, A.A., Moore, J.H. (2023). Computational framework for statistical epistasis supports XOR penetrance function in a living system. BioData Mining. Manuscript submitted. †Equal Authorship

Reviews – Peer-Reviewed (Published):
1. **Freda, P.J.**, Moore, J.H., Kranzler, H.K. (2021). The phenomics and genetics of addictive and affective comorbidity in opioid use disorder. Drug and Alcohol Dependence, 221(108602).
2. **Freda, P.J.**, Kranzler, H.K., Moore, J.H. (2022). Novel digital approaches to the assessment of problematic opioid use. BioData Mining, 15(1), 1-16.

Other Publications:
1. Columnist, Patch.com, Upper Moreland-Willow Grove, "Practical Science with Phil Freda," articles available from: philipfreda.com/science_education

Abstracts:
1. Computational study of flowering time genetics in *Arabidopsis thaliana* with QTL Cartographer. Philadelphia, Pennsylvania, 2011.
2. Drosophila biodiversity on the campus of Saint Joseph's University. Philadelphia, Pennsylvania, 2012.
3. Drosophila biodiversity on the campus of Saint Joseph's University. Philadelphia, Pennsylvania, 2013.
4. Estimating phage genome sizes by pulsed-field gel electrophoresis for preliminary cluster identification. Ashburn, Virginia, 2013.
5. Temporal variation at microsatellite loci in wild-caught *Drosophila simulans*. Philadelphia, Pennsylvania, 2014.
6. Temporal variation at microsatellite loci in wild-caught *Drosophila simulans*. Manhattan, Kansas, 2015.
7. Evolution of complex life cycles: Is performance constrained across metamorphosis? Manhattan, Kansas, 2015.
8. Decoupling of physiology across metamorphosis. Manhattan, Kansas, 2015.
9. Ontogenetic constraint in the thermal physiology of *Drosophila melanogaster*: A genomic assessment of the adaptive decoupling hypothesis. Manhattan, Kansas, 2015.

10. Phenotypic plasticity promotes persistence of an invasive pest following environmental stress. Manhattan, Kansas, 2016.
11. Decoupling of physiology across metamorphosis. Manhattan, Kansas, 2016.
12. Phenotypic and genetic decoupling of thermal hardiness across metamorphosis. Philadelphia, Pennsylvania, 2018.
13. Automated quantitative trait locus analysis (AutoQTL). West Hollywood, California, 2022.
14. Predicting spine surgery outcomes and post-operative opioid dosage from electronic health records. West Hollywood, California, 2022.
15. Cluster Analysis reveals Socioeconomic Disparities among Elective Spine Surgery Patients. Big Island of Hawaii, Hawaii, 2024.