Amy K Webster, PhD
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PROFESSIONAL APPOINTMENTS

Florida State University — August 2024 – present
Assistant Professor (tenure-track) — Tallahassee, FL
Department of Biological Science

University of Oregon — June 2021 – August 2024
NIH F32 Kirschstein NRSA Postdoctoral Fellow (2023 – 2024) — Eugene, OR
Postdoctoral Scholar (2021 – 2023)
Institute of Ecology and Evolution
Research Advisor: Patrick Phillips

EDUCATION

Duke University — August 2015 – May 2021
PhD, Genetics and Genomics — Durham, NC
Research Advisor: Ryan Baugh
NSF Graduate Research Fellow

University of Georgia — August 2011 – May 2015
BS, Genetics — Athens, GA
BS, Mathematics
Research Advisors: Kelly Dawe, Daniel Promislow
Cumulative GPA: 3.97/4.00, *summa cum laude* with highest honors
Goldwater Scholar

PUBLICATIONS (*equal contribution)

1. (*Preprint)* **Webster AK,** Willis JH, Johnson E, Sarkies P, Phillips PC. 2023. Epigenetic context predicts gene expression variation and reproductive traits across genetically identical individuals. 2023. *bioRxiv.* DOI: doi.org/10.1101/2023.10.13.562270. Under review.

2. **Webster AK,** Phillips PC. 2024. Heritable epigenetic variation facilitates long-term maintenance of epigenetic and genetic variation. *G3: Genes | Genomes | Genetics*. 14(2). jkad287.

3. Jordan JM, **Webster AK**, Chen J, Chitrakar R, Baugh LR. 2023. Early-life starvation alters lipid metabolism in adults to cause developmental pathology in *Caenorhabditis elegans. Genetics.* iyac172.

4. **Webster AK**, Chitrakar R, Taylor SM, Baugh LR. 2022. Alternative somatic and germline gene-regulatory strategies during starvation-induced developmental arrest. *Cell Reports.* 41: 111473.
    - Submission selected for cover art

5. **Webster AK**, Chitrakar R, Powell M, Chen J, Fisher K, Tanny R, Stevens L, Evans K, Wei A, Antoshechkin I, Andersen EC, Baugh LR. 2022. Using population selection and sequencing to characterize natural variation of starvation resistance in *C. elegans*. *eLife.* 11:e80204.

6. Fry AL, **Webster AK**, Burnett J, Chitrakar R, Baugh LR, Hubbard EJA. 2021. DAF-18/PTEN inhibits germline zygotic gene activation during primordial germ cell quiescence. *PLoS Genetics*. 17(7): e1009650.

7. Lee D, Zdraljevic S, Stevens L, Wang Y, Tanny RE, Crombie TA, Cook DE, **Webster AK**, Chitrakar R, Baugh LR, Sterken M, Braendle C, Félix MA, Rockman M, Andersen EC. 2021. Balancing selection maintains hyper-divergent haplotypes in *Caenorhabditis elegans*. *Nature Ecology & Evolution*. 1-14.

8. Hibshman JD*, **Webster AK***, Baugh LR. 2021. Liquid-culture protocols for synchronous starvation, growth, dauer formation, and dietary restriction of *Caenorhabditis elegans. STAR Protocols.* 2(1).

9. **Webster AK**, Hung A, Moore BT, Guzman R, Jordan JM, Kaplan REW, Hibshman JD, Tanny RE, Cook DE, Andersen EC, Baugh LR. 2019. Population selection and sequencing of *C. elegans* wild isolates identifies a region on chromosome III affecting starvation resistance. *G3: Genes | Genomes | Genetics*. 9(10). 3477-3488.
10. Jordan JM, Hibshman JD, **Webster AK**, Kaplan REW, Leinroth A, Guzman R, Maxwell CS, Chitrakar R, Bowman EA, Fry AL, Hubbard EJA, Baugh LR. 2019. Insulin/IGF Signaling and Vitellogenin Provisioning Mediate Intergenerational Adaptation to Nutrient Stress. *Current Biology*. 29. 2380-2388.
11. Kaplan REW, **Webster AK**, Chitrakar R, Dent JA, Baugh LR. 2018. Food perception without ingestion leads to metabolic changes and irreversible developmental arrest in *C. elegans*. *BMC Biology*. 16(112).
12. **Webster AK**, Jordan JM, Hibshman JD, Chitrakar R, Baugh LR. 2018. Transgenerational Effects of Extended Dauer Diapause on Starvation Survival and Gene Expression Plasticity in *Caenorhabditis elegans*. *Genetics*. 210(1), 263-274.
    - Chosen as a September 2018 Highlight in *Genetics*
    - Selected for the Marcy Speer Best Scientific Paper Award
13. Hibshman JD, Doan AE, Moore BT, Kaplan REW, Hung A, **Webster AK**, Bhatt DP, Chitrakar R, Hirschey MD, Baugh LR. 2017. *daf-16*/FoxO promotes gluconeogenesis and trehalose synthesis during starvation to support survival. *eLife*. 6.
14. Burton NO, Furuta T, **Webster AK**, Kaplan RE, Baugh LR, Arur S, Horvitz HR. 2017. Insulin-like signaling to the maternal germline controls progeny response to osmotic stress. *Nature Cell Biology*. 19(3), 252-257.
15. **Webster AK**, Cieszewski R, Promislow DEL. 2014. The Role of Age-Structure in the Optimal Germination Fraction of Seeds. *Mathematical And Computational Forestry & Natural-Resource Sciences (MCFNS)*, 6(1), 26-35 (10).

MANUSCRIPTS IN PROGRESS

16. **Webster AK,** Phillips PC. 2024. Epigenetics and individual variation. (Review commissioned by *Nature Reviews Genetics*)

SELECTED AWARDS, FELLOWSHIPS, AND GRANTS

2023 – 2024	National Institutes of Health Ruth L. Kirschstein NRSA F32 Fellowship
2023	Professional Development Grant, University of Oregon Postdoctoral Association
2021	Jo Rae Wright Fellowship for Outstanding Women in Science, Duke University (declined due to graduation)
2020	Chancellor's Award for Research Excellence (CARE), Duke University
2020	Grant-In-Aid, Duke Biology Department
2015 – 2020	NSF Graduate Research Fellowship Program
2019	DeLill Nasser Award for Professional Development in Genetics, Genetics Society of America
2019	Summer Institute in Statistical Genetics Scholarship, University of Washington
2018	Marcy Speer Best Scientific Paper Award, Duke University
2017, 2019	Graduate School Conference Travel Award, Duke University
2015 – 2017	National Institutes of Health T32 Fellowship, Duke Program in Genetics and Genomics
2015	Outstanding Undergraduate Thesis Award, University of Georgia Genetics Department
2015	Cynthia Kenyon Outstanding Undergraduate Award, University of Georgia Genetics Department
2015	Joy P. Williams Science Award, University of Georgia Honors Program

2014 DAAD RISE Program, Max Planck Institute for Molecular Cell Biology and Genetics

2014 Goldwater Scholarship

2013 Hollingsworth Award, University of Georgia Math Department

2012 SURE Program, Emory University

2011 – 2015 Zell Miller Scholarship

2011 – 2015 Charter Scholarship, University of Georgia

PROFESSIONAL DEVELOPMENT AND ADDITIONAL TRAINING

2023 Visiting Scholar, University of Oxford
- Visit the lab of Dr. Peter Sarkies to present research and collaborate in the area of epigenetics and evolution

2022 – 2023 Women's Innovation Network, University of Oregon
- Selective program to receive individual mentorship in entrepreneurship and business strategy; participate in monthly seminars and social events

2019 Summer Institute in Statistical Genetics, University of Washington
- Completed modules: 1) Statistical Genetics and 2) Association Mapping: GWAS and Sequencing Data
- Awarded competitive DeLill Nasser Award to attend

2018 – 2019 *GENETICS* Peer Review Training Program
- Selective program for early career scientists
- Completed formal peer review training curriculum and review manuscripts submitted to *GENETICS*

2018 – 2019 Preparing Future Faculty Program, Duke University
- Selective program for graduate students pursuing academic positions, including site visits and individual mentorship from faculty member at a partner university (NC State)

TEACHING EXPERIENCE

Fall 2022 *Instructor of Record,* BI410/510: Data Management and Visualization, University of Oregon
- Course for upper-level undergraduate and graduate students to develop proficiency in using R for data visualization

Spring 2019 *Guest lecture,* GN703: Quantitative and Population Genetics, NC State University
- Class taught as part of Preparing Future Faculty program

PRESENTATIONS

Invited External Seminars

2024 University of Kansas, Department of Molecular Biosciences: "Epigenetic regulation underlies phenotypic variation and drives evolutionary trajectories"

2024 Florida State University, Department of Biological Science: "Epigenetic regulation underlies phenotypic variation and drives evolutionary trajectories"

2024 Louisiana State University, Department of Biological Sciences: "Epigenetic regulation underlies phenotypic variation and drives evolutionary trajectories"

2024 Syracuse University, Department of Biology: "Epigenetic regulation underlies phenotypic variation and drives evolutionary trajectories"

2024 University of North Texas, Department of Biological Sciences: "Epigenetic regulation underlies phenotypic variation and drives evolutionary trajectories"

2023 Dartmouth College, Department of Biological Sciences: “Epigenetic regulation underlies phenotypic variation and drives evolutionary trajectories”

2023 University of Mississippi, Department of Biology: “Epigenetic regulation underlies phenotypic variation and drives evolutionary trajectories”

2023 University of Oxford, Department of Biochemistry: “Epigenetic regulation underlying phenotypic variation and driving evolutionary trajectories”

2023 College of Idaho, Bioinformatics Seminar in the Department of Biology: “Inter-individual variation in gene expression underlies reproductive traits in isogenic *C. elegans*”

2022 Clemson University Center for Human Genetics, Virtual Symposium: “Integrating multiple sources of variation into the genotype-phenotype map”

Conference Talks

2024 The Allied Genetics Conference, Washington, DC: “Epigenetic context predicts gene expression variation and reproductive traits across genetically identical individuals”

2023 24th International *C. elegans* Conference, Glasgow Event Campus, Glasgow, Scotland: “Inter-individual variation in gene expression underlies reproductive traits in isogenic worms”

2022 Population, Evolutionary, and Quantitative Genetics Conference (PEQG), Asilomar Conference Grounds, Pacific Grove, CA: “Heritable epigenetic variation facilitates maintenance of genetic variation”

2021 23rd International *C. elegans* Conference: “Natural genetic variation in *irld* genes modifies insulin signaling to influence starvation resistance”

2020 Ecology, Evolution and Genomics of *C. elegans* and Other Nematodes Conference: “Uncovering natural genetic variation affecting starvation resistance using locus-specific population sequencing in *C. elegans”*

2019 Mechanisms and Evolution of Intergenerational Change Conference, Wellcome Genome Campus, Hinxton, UK: “Transgenerational effects of extended dauer diapause on starvation survival and gene expression plasticity in *C. elegans”*

2019 22nd International *C. elegans* Conference, University of California, Los Angeles: “Population selection and sequencing of *C. elegans* wild isolates identifies a region on chromosome III affecting starvation resistance”

Local Invited Seminars and Talks

2021 Duke Genetics Recruitment: “Uncovering natural genetic variation in starvation resistance using population sequencing in *C. elegans*”

2020 Duke Genetics Student Seminar: “Uncovering natural genetic variation affecting starvation resistance using locus-specific population sequencing in *C. elegans”*

2020 Duke Genetics Recruitment: “Uncovering natural genetic variation in starvation resistance using population sequencing in *C. elegans”*

2019 Duke Genetics Student Retreat: “Population selection and sequencing of *C. elegans* wild isolates identifies genomic regions affecting starvation resistance”

2019 Duke Genetics Recruitment: “Transgenerational effects of early-life starvation on fitness and gene expression in *C. elegans”*

2018 Duke Population Biology Seminar: “Uncovering natural genetic variation in starvation resistance using population sequencing in *C. elegans*”

2018 Duke Development, Cell, and Molecular Biology Seminar: “Uncovering natural genetic variation in starvation resistance using population sequencing in *C. elegans*”

2018 Duke Genetics Student Retreat: “Transgenerational effects of extended dauer diapause on starvation survival and gene expression plasticity in *C. elegans*”

2018 Duke Genetics Recruitment: “Extended dauer diapause in *C. elegans* confers transgenerational starvation resistance”

2017 Duke Epigenetics and Epigenomics Seminar: “Proximal and transgenerational effects of long-term dauer diapause in *C. elegans*”

2017 Duke Development, Cell and Molecular Biology Department Seminar: “Transgenerational effects of long-term dauer arrest in *C. elegans*”

2017 Duke Genetics Student Retreat: “Regulation of gene expression during starvation in *C. elegans*”

2017 Duke Genetics Student Seminar: “Transgenerational effects of dauer arrest in *C. elegans*”

2015 CURO Symposium, University of Georgia: “Molecular and Genetic Analysis of the Ab10 Meiotic Drive Haplotype in Maize and Teosinte”

2014 CURO Symposium, University of Georgia: "Breaking Mendel's Laws: The Role of Abnormal Chromosome 10 in Meiotic Drive”

Posters

2023 2nd Annual Oregon Postdoc Research Symposium, Oregon Health & Science University, Portland, OR: “Epigenetic context predicts gene expression variation and reproductive traits across genetically identical individuals”

2022 Aging, Metabolism, Stress, Pathogenesis, and Small RNAs in *C. elegans* Conference, University of Wisconsin-Madison: “Alternative somatic and germline gene-regulatory strategies during starvation-induced developmental arrest”

2020 The Allied Genetics Conference (TAGC): “Gene expression analysis and temporal ablation of AMA-1/PolII show that transcriptional regulation supports survival deep into starvation”

2019 Mechanisms and Evolution of Intergenerational Change Conference, Wellcome Genome Campus, Hinxton, UK : “Transgenerational effects of extended dauer diapause on starvation survival and gene expression plasticity in *C. elegans”*

2019 22nd International *C. elegans* Conference, University of California, Los Angeles: “Transgenerational effects of extended dauer diapause on starvation survival and gene expression plasticity in *C. elegans*”

2018 Population, Evolutionary, and Quantitative Genetics Conference, University of Wisconsin-Madison: “Ancestral life history and natural genetic variation shape starvation survival in *C. elegans*”

2017 21st International *C. elegans* Conference, University of California, Los Angeles: “Transgenerational effects of long-term dauer arrest”

2016 Aging, Metabolism, Stress, Pathogenesis, and Small RNAs in *C. elegans* Conference, University of Wisconsin-Madison: “Understanding persistent effects of L1 arrest, dauer arrest, and dietary restriction in the context of a fluctuating environment”

2014 Plant Center Retreat, University of Georgia: "Abnormal Chromosome 10 Exhibits Meiotic Drive in *Zea mays parviglumis*”

2014 CURO Symposium, University of Georgia: "Breaking Mendel's Laws: The Role of Abnormal Chromosome 10 in Meiotic Drive"

2012 Summer Undergraduate Research Experience Symposium, Emory University: "Characterization of *sig-1*-mediated Transgene Desilencing in *C. elegans*"

ACADEMIC SERVICE, OUTREACH, AND MENTORING

2019 – present — Peer review manuscripts for *Genetics, G3, STAR Protocols, Ecology and Evolution*

2021 – present — University of Oregon Postdoctoral Association (UOPA) Committee, Secretary (2021 – 2022), Webmaster (2022 – present)
- Plan social and professional development events
- Manage UOPA website
- Facilitate application process for DEI and travel awards

2021 – present — Goldwater Scholar Community Mentor
- Individual mentoring of two undergraduate students who are interested in careers in science

2023 — Poster judge for the 24th International *C. elegans* conference

2023 — Poster judge for Graduate Research Forum at the University of Oregon

2022 — Poster judge for quantitative genetics posters at the 2022 Population, Evolutionary, and Quantitative Genetics conference

2017, 2019 – 2020 — Research mentor to four undergraduate students
- Train students in *C. elegans* husbandry, phenotyping, molecular biology, and experimental design

2015 – 2019 — Volunteer with Duke Outreach in Genetics and Genomics
- SciTech Expo NC Museum of Natural Science (2018)
- Duke Alumni Weekend (2016, 2018)
- Creekside Elementary Science Night (2018)
- NC Elementary Science Olympiad (2017)
- "Lean In" Women in Science NC School of Science and Math (2017)
- DNA Day 5K (2016, 2017)
- Little River Elementary Science Night (2016)
- Campout Carnival at Duke (2015, 2016)
- Museum of Life and Science (2016)

2018 – 2020 — Duke Genetics Distinguished Lecture Series Committee Member

2017, 2019 — Duke Genetics Retreat Committee Member

2015 – 2016 — Duke Genetics Recruitment Committee Member

2015 — Georgia Governor's Honors Program, Resident Assistant
- Employed as a resident assistant for talented high school students (rising juniors and seniors) full-time for a month-long program
- Designed educational seminars about gaining research experience as an undergraduate

2011 – 2015 — MathCOUNTS Outreach, Member (2011-2012), Head Coach (2012-2014), Executive Board (2014-2015)

2012 – 2015 — Journal of Young Investigators, Associate Editor (2012-2013), Biology Research Editor (2013-2015)