

# Amy K. Webster

amy.k.webster@duke.edu

amykwebster.github.io

## EDUCATION

---

### *Duke University*

PhD candidate, Genetics and Genomics

Research Advisor: Ryan Baugh

NSF Graduate Research Fellow

August 2015 - present

Durham, NC

### *University of Georgia*

Bachelor of Science, Genetics

Bachelor of Science, Mathematics

Cumulative GPA: 3.97/4.00, *summa cum laude* with highest honors

Research Advisors: Kelly Dawe, Daniel Promislow

Goldwater Scholar

August 2011 - May 2015

Athens, GA

## PUBLICATIONS

---

1. **Webster AK**, Hung A, Moore BT, Guzman R, Jordan JM, Kaplan REW, Hibshman JD, Tanny RE, Cook DE, Andersen EC, Baugh LR. Population selection and sequencing of *C. elegans* wild isolates identifies a region on chromosome III affecting starvation resistance. Preprint on bioRxiv: doi.org/10.1101/635417
2. Jordan JM, Hibshman JD, **Webster AK**, Kaplan REW, Leinroth A, Guzman R, Maxwell CS, Bowman EA, Hubbard EJA, Baugh LR. Insulin/IGF Signaling and Vitellogenin Provisioning Mediate Intergenerational Adaptation to Nutrient Stress. *Current Biology*. 29. 2380-2388.
3. 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).
4. **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
5. 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.
6. 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.
7. **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).

## SELECTED AWARDS, FELLOWSHIPS, AND GRANTS

---

- NSF Graduate Research Program Fellowship (2015-2020)
- Genetics Society of America DeLill Nasser Travel Award (2019)
- Summer Institute in Statistical Genetics Scholarship (2019)
- Duke Graduate School Conference Travel Award (2017, 2019)
- Marcy Speer Best Scientific Paper Award (2018)
- Outstanding Undergraduate Thesis Award - One genetics major chosen (2015)

- Cynthia Kenyon Outstanding Undergraduate Award – One genetics major chosen (2015)
- Joy P. Williams Science Award – One of two honors students (2015)
- DAAD RISE Program, Max Planck Institute for Molecular Cell Biology and Genetics (2014)
- Goldwater Scholarship (2014)
- Hollingsworth Award, University of Georgia Math Department (2013)
- SURE Program, Emory University (2012)

## PROFESSIONAL DEVELOPMENT AND ADDITIONAL TRAINING

---

- *GENETICS* Peer Review Training Program (2018 – present)
  - Selective program for early career scientists
  - Completed formal peer review training curriculum and review manuscripts submitted to *GENETICS*
- Summer Institute in Statistical Genetics, University of Washington (2019)
  - Received scholarship to complete modules: 1) Statistical Genetics and 2) Association Mapping: GWAS and Sequencing Data
  - Awarded competitive DeLill Nasser Travel Award to attend
- Preparing Future Faculty Program (2018 – 2019)
  - Selective program for graduate students pursuing academic positions
  - Mentor: Dahlia Nielsen, NC State University
  - Guest lecturer for GN703: Quantitative and Population Genetics

## PRESENTATIONS

---

### Talks

- 22<sup>nd</sup> International *C. elegans* Conference (2019): “Population selection and sequencing of *C. elegans* wild isolates identifies a region on chromosome III affecting starvation resistance”
- Duke Population Biology Seminar (2018): “Uncovering natural genetic variation in starvation resistance using population sequencing in *C. elegans*”
- Duke Development, Cell, and Molecular Biology Seminar (2018): “Uncovering natural genetic variation in starvation resistance using population sequencing in *C. elegans*”
- Duke Genetics Student Retreat (2018): “Transgenerational effects of extended dauer diapause on starvation survival and gene expression plasticity in *C. elegans*”
- Duke Epigenetics and Epigenomics Program Seminar (2017): “Proximal and transgenerational effects of long-term dauer diapause in *C. elegans*”
- Duke Development, Cell and Molecular Biology Department Seminar (2017): “Transgenerational effects of long-term dauer arrest in *C. elegans*”
- Duke Genetics Student Retreat (2017): “Regulation of gene expression during starvation in *C. elegans*”
- Duke Genetics Student Seminar (2017): “Transgenerational effects of dauer arrest in *C. elegans*”
- CURO Symposium at University of Georgia (2015): “Molecular and Genetic Analysis of the Ab10 Meiotic Drive Haplotype in Maize and Teosinte”
- CURO Symposium at the University of Georgia (2014): “Breaking Mendel's Laws: The Role of Abnormal Chromosome 10 in Meiotic Drive”

### Posters

- 22<sup>nd</sup> International *C. elegans* Conference (2019): “Transgenerational effects of extended dauer diapause on starvation survival and gene expression plasticity in *C. elegans*”
- Population, Evolutionary, and Quantitative Genetics Conference, Madison, Wisconsin (2018): “Ancestral life history and natural genetic variation shape starvation survival in *C. elegans*”
- International *C. elegans* Conference (2017): “Transgenerational effects of long-term dauer arrest”
- Aging, Metabolism, Stress, Pathogenesis, and Small RNAs in *C. elegans* Conference at the University of Wisconsin-Madison (2016): “Understanding persistent effects of L1 arrest, dauer arrest, and dietary restriction in the context of a fluctuating environment”
- Plant Center Retreat (2014): “Abnormal Chromosome 10 Exhibits Meiotic Drive in *Zea mays parviglumis*”

- CURO Symposium at the University of Georgia (2014): "Breaking Mendel's Laws: The Role of Abnormal Chromosome 10 in Meiotic Drive"
- Summer Undergraduate Research Experience Symposium at Emory University (2012): "Characterization of *sig-1*-mediated Transgene Desilencing in *C. elegans*"

## **ACADEMIC SERVICE, OUTREACH, AND MENTORING**

---

- Mentor four undergraduates on research projects in lab (2017, 2019 - present)
- Volunteer with Duke Outreach in Genetics and Genomics (2015 - present)
  - 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)
- Duke Genetics Distinguished Lecture Series Committee Member (2018 – present)
- Duke Genetics Retreat Committee, Member (2017)
- Duke Genetics Recruitment Committee, Member (2015-2016)
- MathCOUNTS Outreach, Member (2011-2012), Head Coach (2012-2014), Executive Board (2014-2015)
- Journal of Young Investigators, Associate Editor (2012-2013), Biology Research Editor (2013-2015)