SARAH TURNER-HISSONG

NSF Postdoctoral Fellow

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EDUCATION

PhD Plant Breeding & Plant Genetics

University of Wisconsin-Madison

Aug 2012 – May 2017 | Madison, WI

Dissertation: Genetic influences on shoot architecture in carrot (*Daucus carota*, L.)
Advisor: Philipp W. Simon

MS Plant Breeding

Texas A&M University

Jan 2010 – May 2012 | College Station, TX

Thesis: Effects of bioactive compounds from different potato genotypes on prostate cancer in athymic nude mice
Advisor: J. Creighton Miller, Jr.

BS Horticulture

Texas A&M University

Aug 2007 – Dec 2009 | College Station, TX

EXPERIENCE

Postdoctoral Fellow

National Science Foundation (Plant Genome Initiative)

August 2017 – Present | University of California, Davis

- **Project:** Genome-wide influences of selection on the diversification of cole crops (*Brassica oleracea*)
- **Mentors:** Jeffrey Ross-Ibarra (UC Davis), Timothy Beissinger (U. Göttingen), J. Chris Pires (MU), Ruthie Angelovici (MU)

Research Intern

Seminis Vegetable Seeds, Supervisor: Terry Berke

May 2012 – August 2012 | Woodland, CA

- Fine mapping of powdery mildew resistance in hot pepper

Undergraduate Researcher

Texas A&M Potato and Vegetable Legume Program

Jan 2008 – December 2009 | College Station, TX

- Assisted with potato and cowpea breeding programs in the field, greenhouse, and lab

SKILLS

Data science

R (expert) | tidyverse | Python (basic) | conda | Unix (intermediate) | R/lme4

Genomics

GATK | Picard | samtools | PLINK | ANGSD | SMC++ | LDAK | GBLUP | GFBLUP | rrBLUP | R/qtl

High throughput computing

SLURM | HTCondor

Open Science Grid User School (2017)

Workflow management

Git (version control) | Snakemake

Image analysis

PlantCV | ImageJ/Fiji | R/Momocs

PUBLICATIONS

Preprints/Under Review

- **S.D. Turner-Hissong**, K. A. Bird, A. E. Lipka, E. G. King, T. M. Beissinger, and R. Angelovici (2019). "Genomic partitioning by biological pathway improves prediction accuracy for free amino acid traits in seeds of *Arabidopsis thaliana*". v1 available on *bioRxiv* at `https://doi.org/10.1101/272047`.
- Yobi, A., C. Bagaza, A. Batushansky, V. Shrestha, M. Emery, S. Holden, **S.D. Turner-Hissong**, N. D. Miller, and R. Angelovici (2019). "Uncovering the complex response of free and bound amino acids to water stress during seed setting". *In review*.

PUBLICATIONS

Journal Articles

- **S.D. Turner**, S. L. Ellison, D. A. Senalik, P. W. Simon, E. P. Spalding, and N. D. Miller (2018). "An automated image analysis pipeline enables genetic studies of shoot and root morphology in carrot (*Daucus carota* L.)". *Frontiers in Plant Science* 9, p. 1703. DOI: 10.3389/fpls.2018.01703.
- **S.D. Turner**, P. L. Maurizio, W. Valdar, B. S. Yandell, and P. W. Simon (2018). "Dissecting the genetic architecture of shoot growth in carrot using a diallel mating design". *G3: Genes | Genomes | Genetics* 8(2), pp. 411–426. DOI: 10.1534/g3.117.300235.

Book Chapter

- **S.D. Turner** (2016). "Potatoes and related crops: role in the diet." *The Encyclopedia of Food and Health.* Ed. by B. Caballero, P. Finglas, and F. Toldra. Vol. 4. Oxford: Oxford Academic Press, pp. 452–457.

PROFESSIONAL SERVICE

Plant Sciences Graduate Student Council

Vice President; Journal Club Chair

2013; 2016 — U. Wisconsin-Madison

- Co-organized the annual DuPont Plant Sciences Symposium
- Acquired funding for and hosted professional development events and social activities
- Organized and led weekly, interdepartmental journal club discussions on scientific papers and news articles

National Association of Plant Breeders

Graduate Student Working Group (Co-chair)

2016 — U. Wisconsin-Madison

- Organized and facilitated monthly meetings

OUTREACH

- CoMO Science on Tap Presenter
  Molecular Minecraft: Using genetics to improve amino acid content in plants
  October 2018 — University of Missouri
- MU South Farm Showcase
  Missouri Maize Center exhibit
  September 2017 — University of Missouri
- Saturday Science
  Secrets of Food: Why are carrots orange?
  November 2015 — U. Wisconsin-Madison
- Wisconsin Science Festival
  Where the Wild Things Are (USDA)
  2014; 2015 — U. Wisconsin-Madison

TEACHING/MENTORING

- Guest Lecture - General Genetics
  BIO_SC 2200; Topic: Population Genetics
  Sept 2018 — U. Missouri
- NSF-REU Small Group Leader
  Topic: Computer vision in biology
  Summer 2018 — U. Missouri
- CIRTL Teaching Certification
  Engaging students in statistics
  Mar 2018 — U. Missouri
- Undergraduate Research Program
  Mentee: Isaiah Garza
  Topic: digital measurement of seed size
  Fall 2015 — U. Wisconsin-Madison
- Horticulture 101
  Teaching Assistant
  2010 - 2012 — Texas A&M

GRANTS

- National Plant Genome Initiative
  NSF Postdoctoral Fellowship
  Aug 2017 - July 2020
- Celebrating Women in Science & Engineering Grant
  via Plant Sciences Graduate Council
  2016 — U. Wisconsin-Madison
- Graduate Student Grant
  Ceres Trust
  2015 — U. Wisconsin-Madison
- Plant Breeding Fellowship
  Monsanto Company
  2010-2012 — Texas A&M

AWARDS

- **2nd Place - Crop Science Society of America Poster Competition**
  Plant and Animal Genome XXIV, 2016
- **2nd Place - Frank L. Haynes Graduate Student Research Competition**
  Potato Association of America; 2011