

Curriculum Vitae

Troy N. Rowan

PhD Candidate

Animal Genomics
Division of Animal Science
University of Missouri
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Education

B.S. Biology, Creighton University (2016)
 Graduated with Honors

Research Interests

I am interested in the crossover and interplay between population genetics, genomics, and animal breeding. Also, in genotype imputation, genomic prediction, causal variant discovery, rare variation, identifying and predicting novel phenotypes, and local adaptation.

Research Experience

2016 - present Graduate Research Assistant, Animal Genomics, Division of Animal Sciences, University of Missouri (Dr. Jared E. Decker)

2015 - 2016 Undergraduate Researcher, Ecological Diseases, Department of Biology, Creighton University (Dr. Carol Fassbinder-Orth)

2014 Undergraduate Research Assistant, Biochemistry, Department of Biochemistry, University of Nebraska Lincoln (Dr. Karin van Dijk, Dr. Michael D. McConnell)

2013 - 2014 Undergraduate Research Assistant, Microbiology, Department of Biology, Creighton University (Dr. Karin van Dijk)

Honors & Awards

Outstanding Presentation and Collaborative Work in Ecological and Evolutionary Genetics/Genomics - Missouri Life Sciences Week, University of Missouri 04/2017

2nd Place in Biological Sciences category, Graduate Professional Council 34th Annual Research and Creative Arts Forum, University of Missouri 03/2017

Honorable Mention Poster in Ecological, Evolutionary, and Developmental Biology - Missouri Life Sciences Week, University of Missouri 04/2018

Neal A. Jorgensen Bioinformatics Travel Award, Plant and Animal Genome XXVII Conference 01/2019

Dorris D. and Christine M. Brown Fellowship, College of Agriculture Food & Natural Resources, University of Missouri 03/2019

John D. Bies International Travel Award, University of Missouri Graduate School 04/2019

2nd Place Poster, Ecological, Evolutionary, and Developmental Biology - Missouri Life Sciences Week, University of Missouri 04/2019

University of Missouri Life Sciences Fellowship 8/2017 - present

Computer Skills

Systems	Windows, Linux
Languages	Python, R, Perl
Databases	mySQL
Applications	PLINK, Snakemake, Git, tidyverse, GATK, SHAPEIT, Eagle, IMPUTE2, Minimac, GEMMA, hapFLK, VCFtools, EIGENSOFT, fastSTRUCTURE

Peer Reviewed Publications

2015

McConnell MD, Lowry D, **Rowan TN**, van Dijk K, Redding KE (2015). Purification and photobiochemical profile of photosystem 1 from a high-salt tolerant, oleaginous *Chlorella* (Trebouxiophyceae, Chlorophyta). *Biochemistry and Cell Biology* 93:199-209 (3) doi: 10.1139/bcb-2014-0144

2019

Rowan TN, Hoff JL, Crum TE, Taylor JF, Schnabel RD, Decker JE (2019). A Multi-Breed Reference Panel and Additional Rare Variation Maximizes Imputation Accuracy in Cattle. *bioRxiv*. <https://doi.org/10.1101/517144>

Invited Presentations

Rowan TN, Nilson SM, Durbin HJ, Seabury C, Schnabel RD, Decker JE (2017). Local genetic adaptation in United States *Bos taurus* cattle. Gordon Research Seminar on Quantitative Genetics and Genomics (*Oral Presentation*)

Rowan TN, Hoff JL, Crum TE, Schnabel RD, Decker JE (2019). A Large Multi-Breed Reference Panel Maximizes Genotype Imputation Accuracy in Cattle. International Plant & Animal Genome (*Oral Presentation*)

Rowan TN, Nilson SM, Durbin HJ, Seabury C, Schnabel RD, Decker JE (2019). Local genetic adaptation in United States *Bos taurus* cattle. International Plant & Animal Genome (*Oral Presentation*)

Rowan TN, Hoff JL, Crum TE, Schnabel RD, Decker JE (2019). A Large Multi-Breed Reference Panel and Additional Rare Variation Maximizes Genotype Imputation Accuracy in Cattle. American Society of Animal Science Midwest Section Meeting: Assay-based genotyping symposium (*Oral Presentation*)

Rowan TN, Schnabel RD, Decker JE (2019). Detecting signatures of polygenic selection and local adaptation in United States *Bos taurus* beef cattle. The Biology of Genomes at Cold Spring Harbor Laboratory (*Oral Presentation*)

Contributed Presentations

Rowan TN, Nilson SM, Durbin HJ, Seabury C, Schnabel RD, Decker JE (2017). Local genetic adaptation in United States *Bos taurus* cattle. Gordon Research Conference on Quantitative Genetics and Genomics (*Poster Presentation*)

Rowan TN, Nilson SM, Durbin HJ, Seabury C, Schnabel RD, Decker JE (2017). Local genetic adaptation in United States *Bos taurus* cattle. Missouri Life Sciences Week, University of Missouri (*Poster Presentation*)

Rowan TN, Nilson SM, Durbin HJ, Seabury C, Schnabel RD, Decker JE (2017). Local genetic adaptation in United States *Bos taurus* cattle. Graduate Professional Council Research and Creative Arts Forum, University of Missouri (*Oral Presentation*)

Rowan TN, Nilson SM, Durbin HJ, Seabury C, Schnabel RD, Decker JE (2017). Local genetic adaptation in United States *Bos taurus* cattle. Animal Sciences Graduate Forum, University of Missouri (*Oral Presentation*)

Rowan TN, Nilson SM, Durbin HJ, Seabury C, Schnabel RD, Decker JE (2018). Local genetic adaptation in United States *Bos taurus* cattle. Missouri Life Sciences Week, University of Missouri (*Poster Presentation*)

Rowan TN, Schnabel RD, Decker JE (2018). Local genetic adaptation in United States *Bos taurus* cattle. Population, Evolutionary, and Quantitative Genetics Conference (*Poster Presentation*)

Extension and Outreach

- 2017 Article in American Simmental Association's Late Fall 2017 SimTalk magazine "Searching for Environmental Adaptation in Beef Cattle"
- 2018 Presentation on genomic technologies for Southwest Missouri Veterinary Medicine Conference (Springfield, MO. ~50 veterinarians)
- 2018 Extension presentation at the University of Missouri Southwest Center Field Day. (Mt. Vernon, MO. ~1,000 students and local producers)
- 2018 Extension presentation at University of Missouri Thompson Farm Field Day (Spickard, MO. ~50 local producers)
- 2018 Science-communication talk at Science on Tap CoMo (Columbia, MO. ~50 community members + online broadcast)
- 2018 Science-policy talk for MOST Policy Fellows local candidate forum (Columbia, MO. ~50 community members, political candidates, and online viewers)
- 2019 Extension presentation at University of Missouri Regional Livestock Extension Specialist In-Service (Columbia, MO. ~30 Regional livestock specialists)
- 2019 Extension presentation at Christian County Livestock and Forage Conference (Clever, MO. ~60 local producers)

Abstracts

Rowan TN, Decker JE, Taylor JF, Schnabel RD (2018). Impact of the New Reference Genome on Genotype Imputation Accuracy. International Plant & Animal Genome Conference XXVI.

Smith JL, Oldeschulte DL, Wilson ML, Nilson SM, **Rowan TN**, Schnabel RD, Decker JE, Seabury CM (2019). Genome-Wide Association and Genotype By Environment

Interactions for Growth Traits in U.S. Gelbvieh Cattle. International Plant & Animal Genome Conference XXVII.

Taylor JF, Hoff JL, **Rowan TN**, Neal JD, Decker JE, Schabel RD (2019). Identification of disease-causing pathogens and breeding for disease resistance in cattle. Grand Challenges of Science Workshop: “The potential for Biotechnology to vanish World hunger”

Taylor JF, **Rowan TN**, Crum TE, Hoff JL, Schnabel RD, Decker JE, Patterson D (2019). Developing DNA Tests for Improved Fertility and Reduced Embryonic Loss in US Cattle Breeds. Beef Improvement Federation Conference

Decker JE, **Rowan TN**, Nilson S, Durbin HJ, Braz CU, Schnabel RD, Seabury C (2019). Matching Cow’s Genetics to Environment Using Genomics. ASAS-CSAS Annual Meeting

Professional Organizations

Member, Phi Sigma Biological Sciences Honor Society (2016 -2017)

Member, Genetics Society of America (2017 - present)

Member, American Association for the Advancement of Science (2018 - present)

Conferences Attended

02/2017 Gordon Research Seminar on Quantitative Genetics & Genomics. (Galveston, TX)

02/2017 Gordon Research Conference on Quantitative Genetics & Genomics. (Galveston, TX)

05/2017 Beef Improvement Federation. (Athens, GA)

11/2017 Genome to Phenome: A USDA Blueprint for Animal Production. (Beltsville, MD)

05/2018 Population, Evolutionary and Quantitative Genetics Conference. (Madison, WI)

06/2018 Beef Improvement Federation. (Fort Collins, CO)

12/2018 11TH BIF Genetic Prediction Workshop. (Kansas City, MO)

01/2019 International Plant & Animal Genome. (San Diego, CA)

Dissertation Committee

Jared E. Decker (chair)

Division of Animal Sciences, University of Missouri

Jeremy F. Taylor

Curators’ Professor and Wurdack Chair of Animal Genomics,
Division of Animal Sciences, University of Missouri

Robert D. Schnabel
J. Chris Pires
Wesley Warren

Division of Animal Sciences, University of Missouri
Division of Biological Sciences, University of Missouri
Division of Animal Sciences, University of Missouri