
Postdoctoral Researcher

Department of Animal Science, UC Davis

(Sept '23 – Pres.)

- Researching the use of genetic editing technology to develop male animals which produce single-sex offspring, in the Van Eenennaam lab
- Employing advanced molecular and bioinformatic approaches in the context of animal reproduction

Education

PhD. Biomedical Sciences, The University of Guelph

(Sept '18 – July '23)

- **Thesis:** "Sperm-borne small non-coding RNAs in Bovine Semen"
- Collaborated with academic and industry partners in practical research to improve fertility

BSc. Honour's Spec. Genetics, The University of Western Ontario (Sept '13 – May '18)

- Extensive theoretical + practical knowledge in molecular genetic processes and techniques
- Dean's Honour List for multiple years, Western Scholarship of Distinction

Additional Research Experience

Undergraduate Project – Moehring Lab, Western University

(Sept '17 – Aug '18)

- Designed, cloned, and extracted RNAi constructs to investigate gene function in *Drosophila*
- Microinjected constructs into *Drosophila* embryos, maintained populations and performed crosses to yield desired genotypes
- Continued undergraduate project as a summer student to further develop findings

Senior Research Intern – A&L Canada Laboratories, London, ON (May '16 – Sept '17)

- Planned and executed independent projects investigating plant and soil microbiomes
- Collaborated with scientists, trained new interns on a variety of large-scale projects

Publications

- Mahdi, A.K., Fitzpatrick, D.S., Hagen, D.E., McNabb, B.R., Urbano Beach, T., Muir, W.M., Werry, N., Van Eenennaam, A.L., Medrano, J.F., Ross, P.J. (2024) Efficient Generation of *SOCS2* Knock-out Sheep by Electroporation of CRISPR-Cas9 Ribonucleoprotein Complex with Dual-sgRNAs (Submitted to *The CRISPR Journal* June 2024)
- Russell, S.J., Ly, M., Peng, D., Kostiuk, N., Werry, N., LaMarre, J., Tan, S.L., Librach, C. (2024) CryoMesh Provides a Platform for Reproducible and Scalable Vitrification of Bovine Zygotes (Submitted to *Theriogenology* Apr. 2024)
- **Werry, N.**, Russell, S.J., Sivakumar, R., Miller, S., Hickey, K., Larmer, S., Lohuis, M., Librach, C., LaMarre, J. (2024). PiRNA expression patterns in high vs. low fertility bovine sperm. *Syst Biol Reprod Med.* 70(1)
- Tscherner, A., **Werry, N.**, Stalker, L., LaMarre, J. MicroRNAs in Gametes and Preimplantation Embryos: Clinical Implications. *Human Reproductive and Prenatal Genetics* (Elsevier, 2023).
 - Tscherner, A., and **Werry, N.** contributed equally to this textbook chapter
- Sabry, R., Williams, M., **Werry, N.**, LaMarre, J., Favetta, L.A. (2022). BPA decreases PDCD4 in bovine granulosa cells independently of miR-21 inhibition. *Int. J. Mol. Sci.* 23(15).
- Parmentier, T., James, F.M.K., Hewitson, E., Bailey, C., **Werry, N.**, Sheridan, S.D., Perlis, R.H., Perreault, M.L., Gaitero, L., Lalonde, J., LaMarre, J. (2022). Human cerebral spheroids undergo 4-aminopyridine-induced, activity associated changes in cellular composition and microRNA expression. *Sci. Rep.* 12(1).

- **Werry, N.,** Russell, S.J., Gillis, D.J., Miller, S., Hickey, K., Lohuis, M., Librach, C., LaMarre, J. (2022). Characteristics of miRNAs present in bovine sperm and associations with differences in fertility. *Front. Endocrinol.* 13:874371.
- **Werry, N.** (2018). Digest: Survey of field-based studies identifies trends in maintenance of sex. *Evolution* 72(6).
- **Werry, N.** (2018). Digest: The role of the anal plate in *Drosophila* copulation. *Evolution* 72(11).

Awards + Scholarships

Ontario Graduate Scholarship (Provincial) (Sept '22 – Aug '23)

- \$45,000 scholarship awarded over 1 year to support a PhD in Biomedical Sciences

Biomedical Sciences Graduate Scholarship (Departmental) (Mar '22)

- \$750 nomination-based award in recognition of excellence within the department

OMAFRA HQP Scholarship (Provincial) (Sept '19 – Aug '22)

- \$75,000 scholarship awarded over three years to support a PhD in Biomedical Sciences

Ontario Veterinary College Scholarship (PhD) (Departmental) (Sept '19 – Aug '22)

- \$60,000 scholarship awarded over three years to support a PhD in Biomedical Sciences

Ontario Veterinary College Scholarship (MSc) (Departmental) (Sept '18 – Aug '20)

- \$37,000 scholarship awarded over two years to support an MSc in Biomedical Sciences
- Declined 2nd year to transition to PhD

NSERC Experience Award (National) (Jun '17)

- \$4,500 grant for project “Quantitation of functional genes associated with microbial communities of high and low yielding sites in corn fields”

NSERC Experience Award (National) (Dec '16)

- \$4,500 grant for project “Distribution of bacterial genes related to antibiotic production associated with corn tissues collected from field sites with high and low yields”

Teaching Experience

Module Instructor – BIOM*6110 Research Methods (Apr '22 – Pres.)

- Collaborating with professor to reformat graduate training course to improve institutional knowledge transfer within the department, based on ideas proposed outside of course context
- Designed and instructed a module covering qPCR theory, analysis, and wet lab components

Sessional Lecturer – ANSC*3040 Animal Reproduction (Jan '22 – Apr '22)

- Taught male reproductive development, anatomy, and function to third year undergraduates
- Prepared engaging lectures while adapting to a hybrid online/in-person format
- Designed assessments, assisted with labs, and communicated about student concerns

Teaching Assistant – Various Courses (Jan '19 – Apr '22)

- Assisted in Biomedical Sciences, Animal Biology, Molecular & Cell Biology departments
- Tasks included labs, help sessions, grading, scheduling, and consulting with students
 - ANSC*3040 Animal Reproduction (3x)
 - MBG*2400 Plant and Animal Genetics (3x)
 - BIOM*4300 Biomedical Communications
 - BIOM*4050 Biomedical Aspects of Aging

Guest Lecturer – Various Courses (Feb '20 – Feb '22)

- Invited lecturer at undergraduate and veterinary student level
 - BIO3467A Evolution and Reproduction (University of Western Ontario)

- VETM*3390 Veterinary Developmental Biology (3x)
- ANSC*3040 Animal Reproduction

Presentations and Conferences

- Roy A. Wallace Memorial Symposium (Oral)** (Oct '23)
• “Seminal Biomarkers? Small non-coding RNAs in bovine sperm”
- Society for the Study of Reproduction Meeting (Poster)** (Jul '23)
• “PiRNA expression patterns in high vs low fertility bovine sperm”
- Society for the Study of Reproduction Meeting (Poster)** (Jul '22)
• “Characteristics of miRNAs present in bovine sperm and associations with differences in fertility”
- Graduate Student Research Symposium (Oral)** (Jun '22)
• “Small non-coding RNA expression patterns in bovine sperm”
- ADSA Discover #43** (May '22)
• Discussed recent findings and future directions in dairy cattle reproduction
- Illumina RNA-Seq Workshop (Oral)** (Jan '22)
• Invited talk on research findings and technical aspects of Next Generation Sequencing
- Graduate Student Workshop (Oral)** (Mar '21)
• Organized, designed, and presented detailed walkthrough on primer design for grad students
- Canadian Fertility and Andrology Society Annual Meeting** (Sept '19)
• Invited guest of CREATe Fertility, received scholarship to attend meeting
- Southern Ontario Reproductive Biology Conference (Poster)** (Jun '19)
• Discussed project to identify biomarkers of bovine fertility - in collaboration with Semex
- College Royal, The University of Guelph (Invited Speaker)** (Mar '19)
• Invited to present research to the community in Guelph at an exhibition day on campus
• Adapted presentation to be easily communicated to audience with little scientific background
- Ontario Ecology, Ethology, and Evolution Colloquium (Oral)** (May '18)
• Discussed undergraduate thesis research with a conference of graduate students
- Biology Thesis Day (Oral)** (Apr '18)
• Presented findings from undergraduate thesis project to peers and colleagues
• Awarded “Best Presentation in Genetics” for communication skills and research shown
- Ontario Biology Day (Oral)** (Mar '18)
• Communicated undergraduate thesis research in a conference of undergraduate peers
- Scinapse Undergraduate Science Case Competition (Oral)** (Mar '17)
• Invited to compete in the national level poster presentation competition, after success in written proposal competition
• Collaborated and designed a solution to the ZIKV epidemic “Silencing ZIKV expression and replication through cyclodextrin delivered siRNA”
- Soil Health Research Forum** (Nov '17)
• Participated in an OMAFRA-University of Guelph Partnership presented conference focused on discussing recent findings in soil health including cover crops, the role of the microbiome and methods for assessing soil quality
- Canadian Phytopathological Society Annual Meeting** (Nov '17)
• Participated in a conference focused on the discussion of pathology, weeds, and entomology

Relevant Graduate Coursework

Bioinformatics

- ANSC*6240 Animal Genetics & Genomics (98%)
- BINF*6210 Software Tools (89%)
- BINF*6410 Bioinformatics Programming (97%)
- BINF*6890 Topics in Bioinformatics (94%)
- BINF*6970 Statistical Bioinformatics (Audited)

Genetics + Development

- BIOM*6130 Vertebrate Developmental Biology (92%)

Leadership/Project Management

- GRPM*2023 Graduate Research and Project Management (Ungraded)
- UNIV*6050 Agri-Food Innovation (91%)

Extra-Curricular

Biomedical Sciences Journal Club – Founder & President (Jun '20 – Aug '23)

- Founded a departmental journal club to discuss recent publications by peers
- Foster an inclusive environment nurturing scientific discourse and productive discussions

Studies By Undergraduate Researchers at Guelph – Reviewer (Jan '21 – Aug '23)

- Conduct peer review for undergraduate publications, providing feedback and constructive comments

Let's Talk Science – Outreach Volunteer (Sept '18 - Aug '23)

- Communicate science to elementary school children through interactive presentations