

Scientific Research Outputs & Scholarly Portfolio

Dr. Michelle M. Corley · Mirk Global Consulting LLC

Selected peer-reviewed publications, genomic sequence submissions, and conference abstracts in animal health, goat genomics, poultry immunology, ruminant nutrition, and molecular agriculture. This portfolio supports Mirk Global's technical capabilities in climate-smart agriculture, animal welfare, and biosecurity-focused consulting.

Research Archive Landing Page:

<https://www.mirkglobal.com/scientificresearchoutputs>



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Research Publications & Sequence Submissions

Selected peer-reviewed articles and gene sequence submissions highlighting work in animal health, goat genomics, poultry immunology, ruminant nutrition, and molecular agriculture.

Featured Research

GOAT MEAT & LIPIDS

Omega 3, 6, 9 Enhanced Goat Meat (Omega-Chevon) from Flaxseed and Canola Fed Meat Goats

Applied Science and Innovative Research, Vol. 1, pp. 17–21

Demonstrated the feasibility of developing omega-enhanced chevon as a healthier red-meat option.

[↗ View article](#)

GOAT IMMUNOGENETICS

Expression of the DRB1*1101 Allele in Meat Goats Pasture Exposed to *Haemonchus contortus*

Journal of Agricultural Science, 7(11), pp. 1–19

Links MHC class II variation to parasite resistance in pasture-raised meat goats.

[↗ View article \(CCSE\)](#)

MUSCLE BIOLOGY

Characterization of the TRPC3 Gene in Myotonic Goats: Further Insight into Myotonia Congenita and Muscular Dystrophy

Journal of Molecular Biology Research, 4(1), pp. 42–48

Identifies TRPC3 as a candidate biomarker linking calcium signaling and myotonic phenotypes.

[↗ View article \(CCSE\)](#)

GOAT PARASITE RESISTANCE

Expression of the Transient Receptor Potential Channel 4 (TRPC4) Gene in Goats Naturally Exposed to *Haemonchus contortus* Infection

Journal of Agricultural Science, 5(9), p. 212

Explores smooth-muscle ion channel signaling in gut motility and nematode expulsion.

[↗ View article \(CCSE\)](#)

CARDIOMETABOLIC HEALTH

Expression of Fat and Cholesterol Biomarkers in Meat Goats

Journal of Molecular Biology Research, 3(1), pp. 78–88

Profiles ACC1, ApoA1, and ApoB expression to characterize chevon lipid-health attributes.

[↗ View article \(CCSE\)](#)

POULTRY IMMUNOLOGY

Evaluation of the Immune Response and Detection of Infectious Bursal Disease Viruses by RT-PCR and ELISA after *In Ovo* Vaccination of Commercial Broilers

Avian Diseases, 46(4), pp. 803–809

Demonstrates molecular and serologic outcomes of *in ovo* IBD vaccination strategies.

[↗ View article](#)

Additional Peer-Reviewed Articles

GOAT IMMUNOLOGY

Interleukin 13 as a Biomarker for Parasite Resistance in Goats Naturally Exposed to *Haemonchus contortus*

Journal of Agricultural Science, 4(7), pp. 31–40

ANTHELMINTIC RESISTANCE

A Common Beta Tubulin Isotype-1 Gene Single Nucleotide Polymorphism as a Tool for Detection and Quantitation of Anthelmintic Resistant *Haemonchus contortus* in Grazing Goats

Establishes IL-13 as an immunological marker for helminth resistance in small ruminants.

[↗ View issue \(article p.31\)](#)

Journal of Agricultural Science, 4(6), pp. 1–11

Applies a well-characterized benzimidazole-resistance SNP as a field-ready diagnostic tool.

[↗ View article \(CCSE\)](#)

POULTRY VIROLOGY

Detection of Infectious Bursal Disease Vaccine Viruses in Lymphoid Tissues after *In Ovo* Vaccination of Specific-Pathogen-Free Embryos

Avian Diseases, 45(4), pp. 897–905

Uses tissue-level detection to track IBD vaccine virus persistence and distribution.

[↗ View on PubMed](#)

VACCINE SAFETY

Immunosuppression in Specific-Pathogen-Free Broilers Administered Infectious Bursal Disease Virus Vaccines by *In Ovo* Route

Avian Diseases, 46(4), pp. 810–815

Evaluates T-cell responses and immunosuppressive effects of different IBD vaccine formulations.

[↗ View article](#)

MOLECULAR AGRICULTURE

Integration of Molecular Agriculture and Human Health: An Overview

Conference / Invited Overview

Synthesizes links between animal genomics, food quality, and human health outcomes.

[↗ View citation \(Google Scholar\)](#)

POULTRY DIAGNOSTICS

Detection of Marek's Disease Virus from Frozen Chicken Blood Using a Modified Single-Tube PCR Technique

44th Southern Conference on Avian Diseases, 2003

Presents a practical PCR approach for MDV detection in field samples.

[↗ View citation \(Google Scholar\)](#)

RUMINANT NUTRITION

Effect of Ethanol Concentration and Application Period of Soybean Meal on the Kinetics of *In Situ* Ruminal Digestion

Animal Feed Science and Technology, 79, pp. 247–254

Evaluates ethanol treatment effects on rumen degradability of soybean meal protein.

[↗ View citation \(Google Scholar\)](#)

DAIRY SCIENCE

Effect of Ethanol Concentration and Application Period on the Kinetics of Dry Matter and Nitrogen Disappearance of Soybean Meal in the Rumen

Journal of Dairy Science, 77 (Suppl. 1), p. 912

Abstract quantifying changes in ruminal DM and N kinetics under ethanol treatment.

[↗ View citation \(Google Scholar\)](#)

FEED EVALUATION

Effect of Amino Acid Supplementation on *In Vitro* Digestibility of Different

Feedstuffs

Journal of Animal Science, 70 (Suppl. 1), p. 3304

Abstract examining amino acid supplementation effects on feed digestibility profiles.

[↗ View citation \(Google Scholar\)](#)

Gene Sequence Submissions (NCBI GenBank)

MICROBIAL GENOMICS

***Bacillus* sp. 16S Ribosomal RNA Gene, Complete Sequence**

GenBank Accession: U62623

Deposited bacterial 16S rRNA sequence supporting rumen and environmental microbiology studies.

[↗ View record \(NCBI\)](#)

GOAT IMMUNOGENETICS

Molecular Analysis of Goat DRB1 (Exon 2) – MHC II Complex Implicated in Resistance to *Haemonchus contortus*

GenBank Accession: KM196595

Provides a reference sequence for DRB1 alleles associated with nematode resistance.

[↗ View record \(NCBI\)](#)

ION CHANNEL GENETICS

Isolation and Analysis of Transient Receptor Potential Channel (TRPC) Genes in Goats

GenBank Accession: JX962344

Sequence resource for TRPC channels involved in gastrointestinal nematode resistance.

[↗ View record \(NCBI\)](#)

NEUROMUSCULAR MODELS

Analysis of a Transient Receptor Potential Channel 3 (TRPC3) Gene in Myotonic Goats

GenBank Accession: HQ847409

Supports comparative studies of myotonia congenita and muscular dystrophy mechanisms.

[↗ View record \(NCBI\)](#)

CARDIAC GENETICS

Characterization of the Cardiac Ryanodine Receptor 2 (RYR2) Gene in an Avian Model of Dilated Cardiomyopathy

GenBank Accession: EU106580

Provides a structural basis for studying Ca^{2+} -handling defects in cardiomyopathic turkeys.

[↗ View record \(NCBI\)](#)

INFLAMMATION MARKER

Identification and Analysis of the C-Reactive Protein (CRP) Gene in Dilated Cardiomyopathic Turkeys

GenBank Accession: EU106581

Adds an acute-phase biomarker sequence for avian cardiomyopathy models.

[↗ View record \(NCBI\)](#)

LIPID METABOLISM

Identification and Analysis of the Apolipoprotein B (ApoB) Gene in Cardiomyopathic Turkeys

LIPOPROTEINS

Identification and Analysis of an Apolipoprotein A-I (ApoA-I) Gene in Cardiomyopathic Turkeys

GenBank Accession: EF437216

Supports work on lipoprotein metabolism in avian cardiomyopathy.

[↗ View record \(NCBI\)](#)

GenBank Accession: EF434158

Provides HDL-associated apolipoprotein sequence data for avian heart-health studies.

[↗ View record \(NCBI\)](#)

CALCIUM HANDLING

Characterization of a Cardiac Calcium ATPase (SERCA) Gene in an Avian Model of Dilated Cardiomyopathy

GenBank Accession: EF434157

Completes a gene panel focused on sarcoplasmic Ca^{2+} cycling in cardiomyopathic turkeys.

[↗ View record \(NCBI\)](#)

Conference Abstracts & Presentations

INVITED OVERVIEW

Integration of Molecular Agriculture and Human Health: An Overview

Scientific conference presentation · 2008

Synthesizes links between animal genomics, functional foods, and human health outcomes.

[↗ View citation \(Google Scholar\)](#)

AVIAN VIROLOGY

Detection of Marek's Disease Virus from Frozen Chicken Blood Using a Modified Single-Tube PCR Technique

44th Southern Conference on Avian Diseases · Abstract #228

Describes a practical PCR workflow for MDV detection from field-derived frozen blood samples.

[↗ View citation \(Google Scholar\)](#)

RUMINANT NUTRITION

Effect of Amino Acid Supplementation on *In Vitro* Digestibility of Different Feedstuffs

Journal of Animal Science, 70 (Suppl. 1), p. 3304 · Conference abstract

Abstract examining how targeted amino acid additions alter digestibility of common feeds.

[↗ View citation \(Google Scholar\)](#)

FEED EFFICIENCY

Effect of Ethanol Concentration and Application Period on Rumen Dry Matter & Nitrogen Disappearance

Journal of Dairy Science, 77 (Suppl. 1), p. 912 · Conference abstract

Early abstract complementing full rumen digestion kinetics work in soybean meal-based diets.

[↗ View citation \(Google Scholar\)](#)

CONFERENCE CONTRIBUTION

Additional Conference Abstracts & Poster Presentations

Various conferences · 1990s–2010s

Includes abstracts and poster presentations on small ruminant health, poultry disease models, and molecular agriculture.

[↗ View more on Google Scholar](#)