

ONE MEDICINE

Reducing the Impacts of Inflammatory and Infectious Diseases on Animal and Human Health

Principal Investigators:

- Jovanka Voyich · Microbiology & Immunology, WWAMI · MSU
- Mark Jutila · Microbiology & Immunology, WWAMI, WIMU · MSU
- Mark Quinn · Microbiology & Immunology, WIMU · MSU

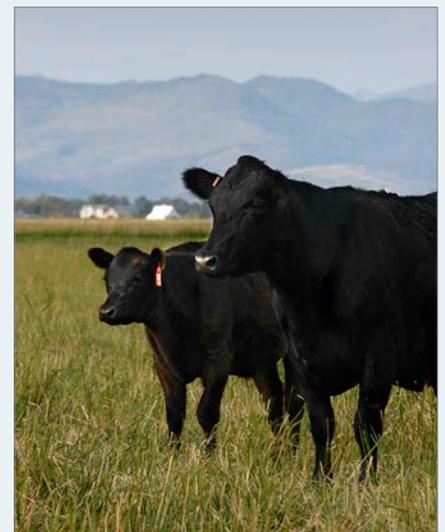
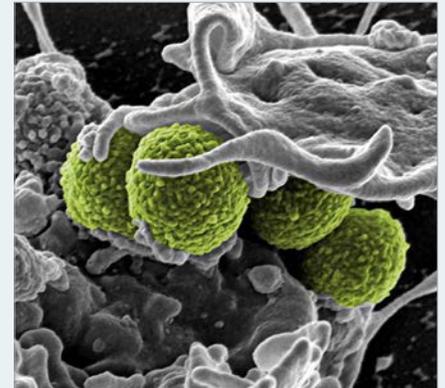
Funding Amount: \$1,500,000

Brief:

Inflammatory disorders, including those caused by infectious diseases, negatively impact both humans and animals and contribute significantly to their morbidity and mortality. The goal of One Medicine is to decrease and prevent disease in humans and animals. Funding supports studies to understand regulation of immune responses during inflammation and to discover and improve existing therapies to reduce antibiotic use. Projects are investigating drug resistant bacteria (including MRSA), zoonotic pathogens, scours and inflammatory diseases (rheumatoid arthritis).

Objectives and Progress:

1. Develop therapeutics that induce a favorable immune response toward infectious diseases and chronic inflammation or autoimmunity:
 - A. Basic science results are directing translational research opportunities. Host and pathogen targets have been identified and will be pursued for potential as therapeutics and vaccines.
2. Transfer basic science to the private sector in Montana:
 - A. Collaboration with SAJE Pharma to develop and test new anti-inflammatory treatments for rheumatoid arthritis.
 - B. Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) submissions in progress with Totem BioSciences, Victor.
3. Create sustainable employment and training opportunities for students and research professionals:
 - A. Data collected from experiments made possible by state funding is supporting grant applications that will continue employment.
 - B. Laboratories accepted additional graduate students for basic and translational research opportunities.
 - C. Undergraduate internships were created to stimulate interest in basic and translational research to encourage students to pursue biomedical research.



Jovanka Voyich
Microbiology & Immunology
223 Cooley
Montana State University
406-994-7184
jovanka@montana.edu

Return on Investment:

- **Jobs**
 - Research scientists & technicians: 8 FTE
 - Research associate & assistants: 3 (hourly)
 - Undergrad & Graduate Assistants: 11 students
 - Postdoctoral scholars: 2.5 FTE
- **Connections—private sector partnerships:**
 - SAJE Pharma—Kalispell
 - Totem BioSciences—Victor
- **Leverage—additional grant funds received:**
 - Federal and industry grants awarded to date: \$3,137,257
- **Output**
 - Multiple publications in press or published citing MT State Initiative
 - Multiple additional grants pending

