

# John Kaiser (He/Him)

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Adaptable biologist with several years of research experience across academia and industry. Additional experience in clinical settings as an EMT and Molecular Diagnostics Technologist. A quick study who excels at communicating and presenting information across fields; seeking a position in an interdisciplinary setting with opportunities to expand knowledge base and skills in research science and biomedicine.

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## Skills

### Lab Techniques

Nucleic Acid Amplification Tests (NAATs)

- Cycling: PCR, qPCR, RT-qPCR
- Isothermal: LAMP, GEAR, UDAR

Nucleic Acid Purification and Isolation (RNA & DNA)

Flow Cytometry/Cell Sorting

Fluorescent Microscopy

Enzyme Linked Immunosorbent Assay (ELISA)

Secreted Alkaline Phosphatase Assay (SEAP)

Meso Scale Discovery (MSD)

Gel Electrophoresis

Cell Culture and Viability

Microinjection

Viral Propagation

- TCID<sub>50</sub> / Plaque Assays

### Animal Handling

Mice (bablb/c and C57BL/6)

- Immunization, Lavage, Cheek Bleeds, Organ Harvest

*Drosophila & Rhagoletis* fruit flies

- Viral microinjection, Husbandry

### Software

R

Python

Prism GraphPad

FlowJo

Adobe Creative Suite (Acrobat Pro, Illustrator, PS)

Microsoft Office (Word, PowerPoint, Excel)

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## Education

### University of Idaho

M.Sc. Biology

Thesis: Estimating the Population Level Effects of Viral Coinfection in a Model *Drosophila* System

Moscow, ID

Spring 2017

### University of Iowa

B.Sc. Biology, Evolution Track

Iowa City, IA

Spring 2014

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## Research Experience

### Center for Translational Medicine, University of Montana

#### Research Associate

Pre-clinical adjuvant development, formulation, and testing *in vivo/in vitro*. Emphasis on immunogenicity of TLR4 & TLR7/8 agonists delivered via lipid and silica nanoparticles for vaccines against intracellular pathogens.

Additional focus on structure-activity relationships of synthetic IL-1 pathway agonists.

Missoula, MT

2021 - Present

### FYR Diagnostics, Missoula MT

#### Laboratory Technician / Molecular Diagnostics Technologist

**Clinical:** SARS-CoV-2 RT-PCR diagnostic testing and multiplexed screening for variants of interest / concern (public & private contracts).

**R&D:** Development and primer design of novel and established isothermal amplification technologies focused on ncRNAs for use in healthcare, industry, and agriculture.

Missoula, MT

2019 - 2021

**Parent Lab, University of Idaho**  
**Graduate Research Assistant**

Exploring the dynamics of viral co-infection in *Drosophila* populations for use in generating tractable models for co-infection. (Small population mortality & viral transmission)

**Moscow, ID**  
**2015 - 2017**

**Weigel Lab, University of Iowa**  
**Volunteer Research Assistant**

Identification of response pathways involved in breast cancer phenotypes.

**Iowa City, IA**  
**2014 - 2015**

**Andrew Forbes Lab, University of Iowa**  
**Undergraduate Research Assistant**

Studying effects of urbanization on population and community dynamics through a multi-trophic level investigation of spatial distributions of specialist insects across urban and agricultural landscapes in Southeast Iowa.

**Iowa City, IA**  
**2012 - 2014**

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## **Publications & Thesis**

### **Hidden variable models reveal the effects of infection from changes in host survival**

Jake M. Ferguson, Andrea González-González, **Johnathan A. Kaiser**, Sara M. Winzer, Justin M. Anast, Ben Ridenhour, Tanya A. Miura, Christine E. Parent. 2023. *PLOS Computational Biology* 19(2): e1010910.  
<https://doi.org/10.1371/journal.pcbi.1010910>

### **Using Dual Toll-like Receptor Agonism to Drive Th1-Biased Response in a Squalene- and $\alpha$ -Tocopherol-Containing Emulsion for a More Effective SARS-CoV-2 Vaccine**

Short, Kristopher K., Stephanie K. Lathrop, Clara J. Davison, Haley A. Partlow, **Johnathan A. Kaiser**, Rebekah D. Tee, Elizabeth B. Lorentz, Jay T. Evans, and David J. Burkhardt. 2022. *Pharmaceutics* 14, no. 7: 1455.  
<https://doi.org/10.3390/pharmaceutics14071455>

### **MSc Thesis: Estimating the Population Level Effects of Viral Coinfection in a Model *Drosophila* System**

Kaiser, Johnathan Andrew, 2017. *Theses and Dissertations Collection, Digital Initiatives, University of Idaho Library*.  
[https://www.lib.uidaho.edu/digital/etd/items/kaiser\\_idaho\\_0089n\\_11222.html](https://www.lib.uidaho.edu/digital/etd/items/kaiser_idaho_0089n_11222.html)

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## **Mentoring & Outreach Experience**

### **Aerie Backcountry Medicine Pop-up Clinic, San José Province - Costa Rica**

Medical aide geared toward underserved rural communities  
Collection and monitoring of patient history, vitals, and pharmaceutical interventions

### **Teaching Assistantships**

Genetics & Evolution, University of Montana  
Principles of Living Systems, University of Montana  
Principles of Form and Function across the Tree of Life, University of Idaho  
Invertebrate Zoology, University of Idaho

### **Association of Science and Technology Centers Communities for Immunity public series**

Representative of local research at the University of Montana during community engagement efforts at local science museum and food bank to educate and engage community on vaccination and research efforts surrounding COVID-19 through educational games for children and informational Q&A panels for all ages

### **Montana American Indians in Math and Science (MT AIMS) Summer Camp**

Role model for Chemistry/Biology and oversight of activities for rotational student groups. The MT AIMS program is a partnership between the North American Native Research and Education Foundation (NANREF) and the University of Montana

geared towards improving and expanding STEM learning and engagement of Indigenous American youth of Western Montana

**REACH (Research and Explore Awesome Careers in Healthcare), University of Montana**

Oversight and assistance in the Biomedical and Pharmaceutical Science portion of a day-long high school camp geared towards hands-on exposure to careers in the medical sciences

**McCall Outdoor Science School, McCall Idaho**

Teaching Assistant / Co-organizer for field collection practice used to sample invertebrate biodiversity and calculation of Shannon Index

**Science Communication and Social Media**

SARS-CoV-2 informational resource development – [website \(formerly fyrcovidresource.info\)](http://www.fyrcovidresource.info)

Science communication Instagram account ([@the.disgruntled.biologist](https://www.instagram.com/the_disgruntled_biologist))

**Aerie Backcountry Medicine Pop-up Clinic, San José Province - Costa Rica**

Medical aide geared toward underserved rural communities

Collection and monitoring of patient history, vitals, and pharmaceutical interventions

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## Certifications

**Molecular Diagnostics Technologist (AMT)**

MT License (CLS-CSP-LIC-12657)

**2020**

**Nationally Certified Emergency Medical Technician**

Registry Number: E3449323

MT License (MED-EMT-LIC-77075)

**Current**

**CPR/AED BLS – American Heart Association**

Member

**Current**

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