

2022 MU VRSP mentor profile form

<p><b>Mentor</b></p>	<p><b>Rachel Olson</b></p>
<p><b>Departmental bio web page.</b></p>	
<p><b>Other relevant web pages, as applicable.</b> E.g., lab group/personal web page, Google Scholar/ORCID profiles, others</p>	<p><a href="https://orcid.org/0000-0002-6973-4331">https://orcid.org/0000-0002-6973-4331</a> <a href="https://www.ncbi.nlm.nih.gov/myncbi/rachel.olson.1/bibliography/public/">https://www.ncbi.nlm.nih.gov/myncbi/rachel.olson.1/bibliography/public/</a></p>
<p><b>Research interests.</b></p>	<p>Emerging and vector borne-infectious disease</p>
<p><b>Active projects.</b></p>	<p>1) Plague Pathogenesis</p> <ul style="list-style-type: none"> <li>• Contributions of type III secretion system proteins to cell death and disease</li> <li>• Immuno-modulatory functions of the iron-acquisition system Yersiniabactin</li> <li>• Contributions of host immune factors to disease; includes translation to other infectious diseases</li> </ul> <p>2) SARS-CoV-2 model refinement</p> <ul style="list-style-type: none"> <li>• Impact of aerosol delivery of SARS-CoV-2 on viral deposition and disease outcomes</li> <li>• Impact of native microbiome on disease outcomes</li> <li>• Impact of COVID on the microbiome</li> <li>• Development of a PASC (post-acute sequelae of COVID) model</li> </ul>
<p><b>Research team.</b> E.g., graduate students, post docs, technicians, other scholars</p>	<p>I have a long-term collaboration with Dr. Deborah Anderson on the plague pathogenesis work, and share laboratory space with her research group, including 2 graduate students and several undergraduate researchers.</p> <p>I am actively collaborating with the MMRRC and MRRRC on mouse and rat models of COVID. This collaboration includes the labs of Drs. Craig Franklin, Jim Amos-Landgraff, Elizabeth Bryda, and Aaron Ericsson.</p> <p>I am part of an actively growing research and technical team at the Laboratory for Infectious Disease Research (LIDR) that facilitates high-consequence BSL3 work.</p>
<p><b>About you...</b> Education/training Personal information, as interested—e.g., hobbies, etc.</p>	<p>BS, Cellular and Molecular Biology, Winona State University, 2009 PhD, Molecular Microbiology and Therapeutics, University of Missouri, 2017</p> <p>My partner and I take a lot of walks, tend to only start watching shows which have many seasons already available, and are currently obsessed with the game wingspan.</p> <p>I have two 12-year-old pit mixes (that continue to think they're puppies), and some very snuggly cats.</p> <p>My love of baking outpaces my capacity to eat all I</p>

bake, so I love to share when I can.

### Mentor Profile

I am available to mentor students in career and life decisions, even if they do not choose research.

Very Untrue 1 --- 2 --- 3 --- 4 ---  Very True

My students are/can be involved in the creation/development of their projects.

Very Untrue 1 --- 2 --- 3 ---  --- 5 Very True

I expect students to contribute to manuscripts/publications.

Very Untrue 1 --- 2 --- **3** -  - 4 --- 5 Very True

Students have the option to continue to work on this project.

Very Untrue 1 --- 2 --- 3 --- 4 ---  Very True

My students often work closely with a research team, e.g., lab tech or other students.

Very Untrue 1 --- 2 ---  --- 4 --- 5 Very True

I frequently touch base with my research team—e.g., students, technicians, etc.

Very Untrue 1 --- 2 --- 3 --- 4 ---  Very True

My mentoring style is very hands off.

Very Untrue  --- 2 --- 3 --- 4 --- 5 Very True

Current/active project profile & timeline, including clinical vs. basic science.

All work in my lab is basic science work.

There are currently projects available in either SARS-CoV-2 or Plague, depending on the student's interests. Some parts are ongoing, and some may be introduced during the course of the program.

Lab structure, if applicable.

There is an integrated structure with my lab and Dr. Deborah Anderson's lab, including shared laboratory meetings and co-mentorship opportunities. The VRSP student will work directly with me on most aspects of the project, but may also work with Dr. Anderson and her students.

What does a typical day of research look like for VRSP scholars?

Reading literature, designing experiments, following established protocols, conducting animal or benchtop research, analyzing and writing about experimental data.

What does engagement look like for your lab/project?

We will work together to establish the parameters of the project, but intellectual and scientific curiosity and some amount of ownership of the project are important. VRSP scholars are expected to participate in lab meeting and literature discussions as well as conducting guided lab work.