

MARIELA ELIZABETH SREDNIK

University of Wyoming
Wyoming State Veterinary Laboratory, 1103
1174 Snow Range Road, Laramie, WY 82070
Phone (307) 766-9934, msrednik@uwyo.edu

SUMMARY

I joined the Department of Veterinary Sciences as an Assistant Professor – Veterinary Bacteriologist at the University of Wyoming. I lead the bacteriology section of the Wyoming State Veterinary Laboratory. My expertise and experience in bacteriology brings significant strength to the WSVL, also benefiting UW students through teaching and research opportunities. I obtained training in veterinary diagnostic and research bacteriology at the University of Montreal, National Veterinary Services Laboratory, and most recently at the Iowa State University (ISU) College of Veterinary Medicine. I had the opportunity to be trained at the ISU-Veterinary Diagnostic Laboratory, the most important and larger veterinary diagnostic lab in the U.S. As a Postdoc Research Associate in the Department of Veterinary Microbiology and Preventive Medicine at the Iowa State University in Ames, Iowa, during 2022-2024, I participated in different research projects focused on antimicrobial resistance, prevention, and control of infectious diseases. I submitted a patent for a new culture media for bacteria of the *Pasteurellaceae* family. During 2020-2022 I was trained at the National Veterinary Services Laboratories at the U.S. Department of Agriculture with an ORISE Postdoc scholarship. I earned my DVM and doctorate of veterinary science from the University of Buenos Aires, Argentina. In addition, I earned a MS in Biotechnology. During my research career I have developed skills in a number of areas from veterinary bacteriology to molecular biology, immunology, epidemiology, and public health. I have extensive laboratory experience and possess excellent scientific writing ability. I successfully collaborated with colleagues from different Universities and Institutions. I have led research projects as PI and Co-PI, and I have mentored graduate and undergraduate students. I have published 16 manuscripts in peer-reviewed journals, and authored a book chapter for a veterinary microbiology book.

EDUCATION

- | | |
|--|---------------------|
| • Center for the Integration of Research, Teaching and Learning Associate
Iowa State University, IA, USA | Jan 2023 - Dec 2023 |
| • Preparing Future Faculty Associate
Iowa State University, IA, USA | Jan 2023 - Dec 2023 |
| • Ph.D. in Veterinary Sciences, Bacteriology
University of Buenos Aires, Argentina
Dissertation: "Bovine Mastitis: Molecular and Phenotypic studies on Coagulase-negative Staphylococci." | Apr 2013 - Mar 2017 |
| • Master of Science, M.S., Biotechnology
University of Buenos Aires, Argentina
Dissertation: "Coagulase Negative Staphylococci from Bovine Mastitis. Molecular Studies". | Mar 2011 - Jul 2015 |
| • Specialist in University Teaching
University of Buenos Aires, Argentina | Aug 2014 - Sep 2015 |
| • Specialist in Quality and Food Safety
University of Buenos Aires, Argentina | Oct 2008 - Sep 2012 |
| • Doctor of Veterinary Medicine, DVM
University of Buenos Aires, Argentina | Mar 2001 - Jun 2008 |

RESEARCH AND PROFESSIONAL EXPERIENCES

- | | |
|---|----------------------|
| • Assistant Professor - Veterinary Bacteriologist
Wyoming State Veterinary Laboratory, University of Wyoming, WY, US | Aug 2024 – present |
| • Postdoc Research Associate
Veterinary Microbiology and Preventive Medicine, Iowa State University, IA, US
Supervisor: Dr Qijing Zhang | Jul 2022 – Aug 2024 |
| • Postdoc Scholar, Oak Ridge Institute for Science and Education (ORISE)
National Veterinary Services Laboratories, USDA-APHIS, IA, US
Supervisor: Dr Linda Schlater | Feb 2020 - July 2022 |
| • Head Teaching Assistant (Instructor of Microbiology)
Microbiology Department, Faculty of Veterinary Sciences, UBA, Argentina | Apr 2019 - Jan 2020 |
| • Postdoctoral Researcher
CRIPA, Faculty of Veterinary Medicine, University of Montreal, Canada
Supervisor: Dr Marie Archambault | Apr 2018 - Mar 2019 |
| • Head Teaching Assistant (Instructor of Microbiology)
Microbiology Department, Faculty of Veterinary Sciences, UBA, Argentina | Sep 2017- Mar 2018 |
| • PhD Fellow
Microbiology Department, Faculty of Veterinary Sciences, UBA, Argentina
Supervisor: Dr Elida R Gentilini | Mar 2014 - Mar 2017 |
| • Masters' Fellow
Microbiology Department, Faculty of Veterinary Sciences, UBA, Argentina
Supervisor: Dr Elida R Gentilini | Mar 2013 - Jul 2015 |
| • Graduate Teaching Assistant
Microbiology Department, Faculty of Veterinary Sciences, UBA, Argentina | Sep 2017- Sep 2009 |
| • Undergraduate Teaching Assistant
Microbiology Department, Faculty of Veterinary Sciences, UBA, Argentina | Sep 2009 - Mar 2006 |
| • Undergraduate Fellow
Microbiology Department, Faculty of Veterinary Sciences, UBA, Argentina | July 2007 - Mar 2006 |

RESEARCH INTERESTS

Veterinary bacteriology, bacterial pathogenesis, antimicrobial resistance, control, and prevention of infectious diseases in animals.

SERVICE

- Graduate Committee Member, College of Agriculture, Life Sciences, and Natural Resources, University of Wyoming, Sep 11th, 2024.
- Judge of Grad Student presentations, GPSS, Memorial Union, Iowa State University (ISU), Feb 23rd, 2024.
- Judge of Grad Student oral presentations, 8th annual 3MT Competition, Pearson Hall, ISU, Oct 16th, 2023.
- Judge of Grad Student presentations, 2023 CVM Research Day, Scheman building, ISU, Aug 16th, 2023.
- Committee Member of Scientific and Technological Research Projects (PICT) funded by the Scientific and Technological Research Fund (FONCYT), Argentina (2020-present).
- Graduate Committee Member, Faculty of Veterinary Science, Universidad de Buenos Aires (2019-present).

SUPERVISION OF GRADUATE FELLOWS

- MSc student fellows and staff from the Dept. of Microbiology, Faculty of Veterinary Science, University of Buenos Aires, Argentina (2017-2020).
- Graduate trainee at the Faculty of Veterinary Medicine, University of Montreal (Aug 2018).

TECHNICAL SKILLS

- Laboratory: DNA extraction, PCR, RT-PCR, PFGE, whole genome sequencing, cell culture handling, ELISA test, SDS-PAGE, Western blot, cloning, expression and purification of recombinant proteins, bacterial inoculations using cell lines and animals (chickens), antimicrobial susceptibility testing using disk diffusion test, dilution test and Sensititre™ plates, develop/optimize protocols and laboratory techniques.
- Numerical and data analysis: statistical software (Statistix, Infostat, GraphPad Prism), bioinformatic tools/software for genome analyses (BV-BRC, CGE server, RGI CARD, MegAlignPro Lasergene, Geneious, IGV) and protein analyses (Protean 3D Lasergene 17, ProtScale Expasy, Phyre2, UniProt, PredicProtein), use of command lines (Anaconda), responsible for working with experimental platforms specific to the hiring program.
- Miscellaneous: strong organizational skills, ability to multitask and to quickly learn new techniques, responsible for leading projects, guiding colleagues/students and supervising staff, expertise in writing technical reports, articles for international journal and submission of grants, ability to work remotely with multidisciplinary teams.

GRANTS

- Project Title: “Infectious Coryza in layer chickens: pathogenesis and vaccine development”. (2024-2026). Sponsor: Egg Industry Center. Funding Awarded: US\$ 107,719. PI: Zhang, Q., **Co-investigators: Srednik ME**, El-Gazzar M., Sato, Y., Sahin O.
- Project Title: “Advancing Infectious Coryza Diagnosis and Control: Uncovering Attenuated Pathogenicity and Potential Immunogenicity of Non-Pathogenic *Avibacterium paragallinarum* (npAP) Isolates”. (2024-2026). Sponsor: U.S. Poultry & Egg Association. Funding Awarded: US\$ 125,000. PI: El-Gazzar M., **Co-investigators: Srednik ME**, Sato Y., Hashish A., Schmitz-Esser S., Resende De Macedo N., Shelkamy M., Zhang, Q.
- Project Title: “Development of Vaccines for the Control of Chicken Spotty Liver Disease”. (2022-2024). Sponsor: U.S. Poultry & Egg Association. Funding Awarded: US\$ 80,000. PI: Sahin O, Co-Investigator: Zhang Q, **Postdoc: Srednik ME**.
- Project Title: “Antimicrobial resistance in *Staphylococcus pseudointermedius* isolates from dogs in Argentina”. (2021-2022). Sponsor: National Veterinary Services Laboratories (NVSL), USDA-APHIS. Funding Awarded: US\$ 4,480. PI: Schlater LK, **Postdoc: Srednik ME**.
- Project Title: “Bovine and Ovine Mastitis: Antimicrobial Resistance Studies” Project UBACyT22320200100782BA (2019-2022). Sponsor: Universidad de Buenos Aires. Funding Awarded: ARS\$ 172,500. **PI: Srednik ME**.
- Project Title: “Antimicrobial resistance in staphylococci isolated from infections in dogs and cats” Project UBACyT20020170200068BA (2018-2020). Sponsor: Universidad de Buenos Aires. Funding Awarded: ARS\$ 42,000. **PI: Srednik ME**, Co-PI: Colombatti MA. (Two Master’s scholarships gained with this project).
- Project Title: “Adhesion, cytotoxicity and release of cytokines in chicken leghorn male hepatoma epithelial cells coinfecting with *Clostridium perfringens* and *Eimeria maxima*” (2018-2019). Sponsor: Centre de Recherche en Infectologie porcine et Avicole (CRIPA) Université de Montreal. Funding Awarded: CAD\$ 9,000. PI: Archambault M, Co-PI: Segura M, Co-PI: Fernandez Prada C, **Postdoc: Srednik ME**.

GRANTS TO BE SUBMITTED

- **Project Title:** "Identification of Wildlife and Domestic Animal Pathogens in Wyoming." Project PAR-23-202. Vet-LIRN Network Capacity-Building and Equipment Grant (2025-2027). Sponsor: FDA. Funding Award: US\$120,000. **PI: Srednik ME**, Co-PI: Becomo Dominguez, B.

HONORS & AWARDS

- **Poster Award.** Iowa Egg Industry Symposium. Ames, IA, USA. November 9, 2023.
- **Postdoctoral Scholar Research Excellence Award.** Iowa state University. Ames, IA, USA. June 30, 2023.
- **Excellent Poster Presentation Award.** International Union of Microbiological Societies (IUMS) 2020 Virtual. Daejeon Convention Complex, Korea, 2020.
- **Best Poster Award.** Conferences series LLC, 6th Clinical Microbiology Conference. Rome Italy, 2016.
- **Award for Scientific Research.** Category: Graduate student. Faculty of Veterinary Science, University of Buenos Aires, Argentina, 2013.

TRAVEL GRANTS

- **Travel Award.** 75th North Central Avian Diseases Conference. Minneapolis, MN, 2024.
- **Travel Mini Grant.** \$1,000 for travel to a tradeshow or industry conference. I-CORPS, ISU, 2024.
- **Travel Award.** International Union of Microbiological Societies (IUMS). Singapore, Singapore, 2017.
- **Travel Award.** American Society for Microbiology (ASM). Boston, MA, U.S., 2016.

SCHOLARSHIPS

- **CRIPA's short-term financial support.** Swine and Poultry Infectious Diseases Research Center (CRIPA), Faculty of Veterinary. 09/2018-11/2018.
- **Mitacs Accelerate Student.** Research Academic Institution: University of Montreal. Research partner company: Probiotech International, Canada. 2015.
- **Competitive scholarship PhD program.** Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET, Argentina). 2015-2017.
- **PhD competitive scholarship.** UBACyT (University of Buenos Aires, Science and Technology), Argentina. 2013-2015.
- **Emerging Leaders in the Americas Program (ELAP).** Foreign Affairs and International Trade Canada. Department of Pathology and Microbiology, Faculty of Veterinary Medicine Faculty of Veterinary Medicine, University of Montreal, Canada. 2012.
- **Masters' competitive scholarship.** UBACyT (University of Buenos Aires, Science and Technology), Argentina. 2010-2013.
- **Undergraduate competitive scholarship.** UBACyT (University of Buenos Aires, Science and Technology), Argentina. 2006-2007.

PATENTS

Title: CULTURE MEDIA FOR BACTERIA OF THE PASTEURELLACEAE FAMILY (ISURF #5607)
Inventors: **Srednik ME**, Zhang Q, Sahin O, Resende-De-Macedo N, Sato Y, El-Gazzar M
Status: Submitted. Conversion date: 01/23/2025.

SELECTED CONFERENCE PRESENTATIONS

Over 50 presentations in scientific meetings, including several presentations as invited speaker.

- **Srednik, ME.** 1. *Brucella* Diagnostics. 2. Antimicrobial Susceptibility Testing and Reporting. **WVMA Winter Meeting** (Wyoming Veterinary Medical Association). Holliday Inn Casper East Hotel, Casper, WY, US. (oral presentations).
- **Srednik, ME and Vanderstichel R.** *Brucella* Diagnostics. **WLSB Informational Brucellosis Meeting** September 24 (Park County) and October 3 (Lincoln County) 2024. Wyoming Livestock Board, WY, US. (invited speaker, online presentations).
- **Srednik, ME,** B. Ruddell, M. Ilgu, A. Hashish, MMS Shelkamy, N. Resende-De-Macedo, O. Sahin, Y. Sato, M. El-Gazzar, Q. Zhang. Optimization of isolation methods and development of an enzyme-linked immunosorbent assay for detection and differentiation of *Avibacterium paragallinarum*. **75th North Central Avian Disease Conference.** 16-17 April 2024. Minneapolis, NM, USA (oral presentation).
- **Srednik, ME,** A. Hashish, Y. Sato, N. Resende-De-Macedo, M. El-Gazzar, O. Sahin, Q. Zhang. Optimization of *Avibacterium paragallinarum* isolation methods. **2023 AAAP Annual Meeting.** 11-14 June 2023. Jacksonville, FL, USA (oral presentation).
- **Srednik ME,** C. Perea, J. Hicks, G. Giacoboni, L. Schlater. Antimicrobial Resistance and SCCmec types in *Staphylococcus pseudintermedius* Isolated from canine pyoderma in Argentina. **IC2AR 2022.** 5th International Caparica Conference in Antibiotic Resistance. 5-8 September 2022. Caparica, Portugal (Poster presentation).
- **Srednik ME,** K. Lantz, J. Hicks, L. Cox, B. Morningstar-Shaw, T. Mackie, L. Schlater. Characterization of *Salmonella enterica* serotype Infantis from animals in the United States. **CRWAD 2021.** 3–7 December 2020, Chicago, IL, USA (oral presentation).
- **Srednik ME,** K. Lantz, J. Hicks, B. Morningstar-Shaw, T. Mackie, L. Cox, L. Schlater. Antimicrobial Resistance of different *Salmonella* serotypes isolated from animals in the United States. **2021 AAVDL-USAHA Annual Meeting.** 22-26 October. Denver, CO, USA (online).
- **Srednik ME.** New Challenges in Veterinary Diagnosis Symposium. Antimicrobial Sensitivity and Use of PCR, 2017. **Bioartis, Thermo Fisher.** Gram positive cocci susceptibility in all animal species. Salón de la UAPE (Unión Argentina de Proveedores del Estado), Buenos Aires, Argentina. (invited speaker).

EDITORIAL BOARDS

- Guest Editor of Antibiotics, MDPI, Switzerland. (2024-present)
https://www.mdpi.com/journal/antibiotics/special_issues/QK3P1F0B8I
- Editorial Board Member of Journal of Dairy Research, Cambridge, UK. (2022-present)
<https://www.journalofdairyresearch.or/editorial-office>
- Editorial Board Member of American Journal of Animal and Veterinary Science, USA. (2022-present)
<https://thescipub.com/ajavs/editors>
- Guest Editor of Animals MDPI, Switzerland. (2023-2024)
https://www.mdpi.com/journal/animals/special_issues/400M3CW0G6
- Guest Associate Editor of Frontiers in Evolutionary and Genomic Microbiology, Switzerland. (2022-2023)
<https://www.frontiersin.org/journals/genetics/articles/10.3389/fgene.2023.1277081/full>

PUBLICATIONS

- Gottapu C, Sahin O, Edison LK, Srednik M, Kariyawasam S. Complete Genome Sequences of *Campylobacter hepaticus* Strains USA1 and USA5, Isolated from a Commercial Layer Flock in the United States. (Submitted to Microbiology Resource Announcements. Jan, 2025.
- Gadu E, Hashish A, Shelkamy MMS, Chaves M, Osemeke O, **Srednik ME**, Sato Y, El-Gazzar M. Development and Validation of TaqMan Real-Time PCR Assays: A new Approach to Limit Erroneous Diagnosis of Spotty Liver Disease. Avian Diseases. Avian Diseases. Jan, 2025.
- Shelkamy M, Hashish A, Chaves M, **Srednik ME**, Macedo N, Sato Y, Schmitz-Esser S, Zhang Q, El-Gazzar M. Development and Validation of PCR Assays for Improved Diagnosis of Infectious Coryza by Differentiating Pathogenic and Non-Pathogenic *Avibacterium paragallinarum*. Avian diseases. Nov, 2024.
- **Srednik ME**, Abatcha MG, Chiapparrone ML. Editorial: Antimicrobial resistance genomics in bacterial zoonotic pathogens. Frontiers in Genetics. 2023;14:1277081. doi: 10.3389/fgene.2023.1277081. PMID: 37674480; PMCID: PMC10478081.
- Vázquez L, **Srednik ME**, Rodríguez J, Flórez AB, Mayo B. Antibiotic Resistance/Susceptibility Profiles of *Staphylococcus equorum* Strains from Cheese, and Genome Analysis for Antibiotic Resistance Genes. International Journal of Molecular Sciences. 2023;24(14):11657. doi: 10.3390/ijms241411657. PMID: 37511416; PMCID: PMC10380560.
- **Srednik ME**, Perea CA, Giacoboni GI, Hicks JA, Foxx CL, Harris B, Schlater LK. Genomic Features of Antimicrobial Resistance in *Staphylococcus pseudintermedius* Isolated from Dogs with Pyoderma in Argentina and the United States: A Comparative Study. International Journal of Molecular Sciences. 2023; 24(14):11361. doi: 10.3390/ijms241411361.
- **Srednik ME**, Morningstar-Shaw BR, Hicks JA, Tong C, Mackie TA, Schlater LK. Whole-genome sequencing and phylogenetic analysis capture the emergence of a multi-drug resistant *Salmonella enterica* serovar Infantis clone from diagnostic animal samples in the United States. Frontiers in Microbiology. 2023; 14:1166908. doi:10.3389/fmicb.2023.1166908.
- **Srednik ME**, Perea CA, Giacoboni GI, Hicks JA, Schlater LK. First report of *Staphylococcus pseudintermedius* ST71-SCCmec III and ST45-ΨSCCmec57395 from canine pyoderma in Argentina. BCM Research Notes. 2023, doi: 10.1186/s13104-023-06285-3.
- **Srednik ME**, Morningstar-Shaw BH, Hicks, JA, Mackie AT, Schlater LK. Antimicrobial Resistance and Genomic Characterization of *Salmonella enterica* Serovar Senftenberg Isolates in Production Animals from the United States. Frontiers in Microbiology. 2022, doi: 10.3389/fmicb.2022.979790.
- **Srednik ME**, Lantz K, Hicks JA, Morningstar BH, Mackie T, Schlater LK. Antimicrobial resistance and genomic characterization of *Salmonella* Dublin isolates in cattle from the United States. PLoS One. 2021, doi: 10.1371/journal.pone.0249617.
- Crespi E, Pereyra AM, Puigdevall T, Rumi MV, Testorelli MF, Caggiano N, Gulone L, Mollerach M, Gentilini ER, **Srednik ME**. Antimicrobial resistance studies in staphylococci and streptococci isolated from cows with mastitis in Argentina. Journal of Veterinary Science. 2021, doi: 10.4142/jvs.21062.
- **Srednik ME**, Crespi E, Testorelli MF, Puigdevall T, Pereyra AM, Rumi MV, Caggiano N, Gulone L, Mollerach M, Gentilini ER. First isolation of a methicillin-resistant *Staphylococcus aureus* from bovine mastitis in Argentina. Veterinary and Animal Science. 2018, doi: 10.1016/j.vas.2018.11.004.
- **Srednik ME**, Usongo V, Archambault M, Gentilini E. Characterisation of *Staphylococcus aureus* strains isolated from mastitis bovine milk in Argentina. Journal of Dairy Research. 2018, doi: 10.1017/S0022029917000851.

- **Srednik ME**, Archambault M, Jacques M, Gentilini E. Detection of *mecC*-positive in a *Staphylococcus saprophyticus* from bovine mastitis in Argentina. Journal of Global Antimicrobial Research. 2017, doi: 10.1016/j.jgar.2017.05.016.
- **Srednik ME**, Tremblay Y, Labrie J, Archambault M, Jacques M, Fernandez Cirelli A, Gentilini E. Biofilm formation and antimicrobial resistance genes of coagulase-negative staphylococci isolated from cows with mastitis in Argentina. FEMS Microbiology Letters. 2017, doi: 10.1093/femsle/fnx001.
- **Srednik ME**, Abate S, Gentilini E. Antibiotic susceptibility of staphylococci isolated from bovine mastitis milk samples. Investigación Veterinaria. 2016, 18(1):39-44 (in Spanish, with English summary).
- **Srednik ME**, Grieben M, Bentancor A, Gentilini E. Molecular identification of coagulase-negative staphylococci isolated from bovine mastitis and detection of β -lactam resistance. Journal of Infection in Developing Countries. 2015, 9(9):1022-1027, doi:10.3855/jidc.5871.
- Wang Y, Gagnon CA, Savard C, Music N, **Srednik ME**, Segura M, Lachance C, Bellehumeur C, Gottschalk M. Capsular sialic acid of *Streptococcus suis* serotype 2 binds to swine influenza virus and enhances bacterial interactions with virus-infected tracheal epithelial cells. Infection and Immunity. 2013, doi: 10.1128/IAI.00818-13.
- **Srednik ME**, Rumi V, Bentancor A. Safety ground beef under the regulatory framework of The Argentine Food Code and the presence of *Escherichia coli* strains causing attaching and effacing lesions. Investigación Veterinaria. 2013 15(2), 123-130 (in Spanish, with English summary).

SUBMITTED PUBLICATIONS

- **Srednik ME**, Shelkamy MMS, Hashish A, Macedo NR, Sato Y, El-Gazzar M, Sahin O, Zhang Q. Development of selective culture media for efficient isolation of *Avibacterium paragallinarum* from chickens. (Submitted to the Journal of Clinical Microbiology on Feb, 2025).
- Shelkamy MMS, Hashish A, **Srednik ME**, Gadu E, Chaves M, Macedo N, Zhang Q, Sato Y, Schmitz-Esser S, El-Gazzar, M. Genome Sequences of Novel non-pathogenic *Avibacterium paragallinarum* strains isolated from healthy layer chickens in the USA. (Submitted to Microbiology Resource Announcements on Dec, 2024).
- Gadu E, Hashish A, Shelkamy MMS, Chaves M, **Srednik ME**, Sato Y, El-Gazzar M. Complete Genome Sequences of two *Campylobacter bilis* Isolates from Layer Chickens with Spotty Liver Disease. (Submitted to Microbiology Resource Announcements on Dec, 2024).
- Shelkamy MMS, Hashish A, **Srednik ME**, Chaves M, Macedo NR, Gadu E, Schmitz-Esser S, Zhang Q, Wang C, Sato Y, El-Gazzar M. Detection of Non-Pathogenic *Avibacterium paragallinarum* in Healthy Commercial Layer Flocks across Multiple States in the US. (Submitted to Avian Diseases on Aug, 2024).

BOOKS/ BOOK CHAPTERS

- **Srednik ME**. Biofilm. Microbiología Veterinaria. Editor Jefe Néstor Oscar Stanchi. Editorial Inter-Médica, Argentina. 3rd Edition 2018, page 272-277 (Book chapter in Spanish).

WEBSITES

ORCID (Open Researcher and Contributor ID)

<https://orcid.org/0000-0002-7387-1793>

LinkedIn

<https://www.linkedin.com/in/mariela-srednik-b4834732/>

Google Scholar (Cited by 339)

https://scholar.google.com/scholar?hl=en&as_sdt=0%2C51&q=Mariela+E.+srednik&oq=