

## **Curriculum Vitae**

David J. McClenahan, DVM, Ph.D.  
Associate professor

### **Education**

1996-2001	Ph.D. (received June 2001) Department of Veterinary PathoBiology College of Veterinary Medicine University of Minnesota
1988-1992	Doctor of Veterinary Medicine College of Veterinary Medicine University of Minnesota
1986-1988	Bachelor of Science in Agriculture University of Wisconsin River Falls
1984-1986	Associate of Science University of Wisconsin Center Richland

### **Licensure (current)**

1992-present	State of Minnesota Licensed to practice veterinary medicine
1992-present	State of Wisconsin Licensed to practice veterinary medicine

### **Duties (current)**

I am currently an instructor and researcher in the Biology Department at the University of Northern Iowa. I am presently the instructor for the Immunology lecture and lab and Cancer and Emerging Infectious Diseases courses in our department. I am also involved with 3 sections of Anatomy and Physiology II lab. In addition, I serve as an advisor for the pre-veterinary club, serve as a member of our department's undergraduate student outcomes assessment committee, and university's IACUC committee (animal care). In addition, I just finished up a 1-year term as president of the North Central Branch of the American Society for Microbiology. Finally, I have mentored several students who have worked in my lab doing research under the undergraduate research in biology.

### **Courses Taught**

Dates:	2008 to 2025 Fall semester; 2012 to 2017 Spring semester
Class:	Immunology class and lab
Responsibilities:	I lecture 3 times a week on topics regarding the development and functioning of the immune system. In addition, I organize and instruct a weekly 3 hour lab with the class that examines immunologic tests and procedures.

Dates:	2009 to 2026 Spring semester
Class:	Cancer and Emerging Infectious Diseases
Responsibilities:	I initially co-taught half of this course with another instructor. I am responsible for the emerging infectious diseases portion of this course. Since 2013, I have taught both parts of the course.
Dates:	2008 to 2012 Fall and Spring semester, 2018-2026 Spring
Class:	Anatomy and Physiology I and II labs
Responsibilities:	I have taught multiple section of both the A&P I and II labs. My responsibilities include giving introductory talks at the beginning of the lab periods, writing and administering the quizzes in the lab, and answering student questions during the lab period.
Dates:	2022 Spring semester
Class:	Graduate Colloquium
Responsibilities:	This is a 1-hour, weekly seminar series for graduate students to get exposed to research performed by others both here on campus and around the world. My responsibilities included inviting the speakers, setting up the ZOOM meeting space, and evaluating the students understanding of the research presentations.
Dates:	2015 and 2016 Spring semester
Class:	MCAT preparation course, Continuing Education
Responsibilities:	I teach 3, 3-hour sessions reviewing various topics in biology that are likely covered by the MCAT. Some of the topics covered included neurology, respiratory biology, reproductive biology, etc.

### **Research Support—funded (since 2011)**

Iowa Academy of Science 7/1/2010-5/30/2011

ATP as a mediator of lung inflammation

Major goals: determine the inflammatory stimuli that result in extracellular ATP release by bovine alveolar macrophages, lung endothelial and epithelial cells.

UNI OSP-Seed Grant Competition 3/2011-5/2012

Blocking ATP interaction with P2X<sub>7</sub> receptors on bovine lung cells

Major goals: compare several older and newer P2X<sub>7</sub> receptor antagonist on their ability to specifically block the P2X<sub>7</sub> receptor on bovine lung endothelial and epithelial cells.

NSF EPSCoR Grant 6/2012-8/2012

Use of the large biomarker YoPro to measure activation of the P2X<sub>7</sub> purinergic receptor

Major goals: monitor the movement of YoPro across the cell membrane to determine the activation status of ATP stimulated P2X<sub>7</sub> receptors on bovine epithelial cells.

Iowa Academy of Science Grant 6/1/2013-5/31/2014

Does the herbicide metolachlor affect lung health?

Major goals: determine the effects of metolachlor on human alveolar macrophage immune function.

UNI Pre-Tenure Summer Fellowship Award 6/2013

Effects of metolachlor on alveolar macrophages

Major goal: determine the effects of metolachlor on the rate of phagocytosis by monocytes

UNI 2014-2015 Capacity Building Grant Competition 1/2015-5/2016 (co-PI)

Evaluating RNA and protein expression in human cells exposed to metolachlor

Major goal: evaluate a large spectrum of possible RNA and protein expression patterns that change in a cell as a result of metolachlor exposure

Iowa Academy of Science: Iowa Science Foundation Grant 6/2015-7/2016

The bovine P2X7 receptors response to extracellular ATP

Major goal: determine the cytoskeletal effects of P2X7 activation within a cell

Roy J Carver Charitable Trust Consideration. Nalin Goonesekere, David McClenahan, Justin Peters, Nilda Rodriguez, & Maureen Clayton. Improving Protein Analysis Capability at UNI. Submitted October 2023.

Requested \$370,000 (my flow cytometer request \$70,711); awarded the full amount for the flow cytometer in October.

### Articles in Refereed Journals (since 2011)

Craddick M, Patel R, Lower A, Highlander S, Ackermann M, McClenahan D. Adenosine-5'-triphosphate release by *Mannheimia haemolytica*, lipopolysaccharide, and interleukin-1 stimulated bovine pulmonary epithelial cells. *Veterinary Immunology and Immunopathology* 149: (1-2) 58-65 Sep 2012

Dubbert J, Bowers A, Su M, McClenahan D. Effect of TRIF on permeability and apoptosis in bovine microvascular endothelial cells exposed to lipopolysaccharide. *The Veterinary Journal* 198: (2) 419-23 Nov 2013

McClenahan DJ. Bovine neutrophil migration, CD11a/CD18 expression, and cytokine response to co-culture with mammary gland endothelial cells and epithelial cells. *J Anim Sci.* 103: skaf274 Jan 2025. doi: 10.1093/jas/skaf274.

### Articles in Development (current)

Brar N, McClenahan DJ, Dhanwada K. RNA expression in HepG2 cells exposed to the herbicide metolachlor [note: manuscript is currently under review by co-author Dhanwada]

Enabnit A, Hines K, Osier A, Heims J, Sanderman C, Hurl N, McClenahan DJ. Effects of fluoride exposure on THP-1 cell function [note: additional text for the manuscript is being written by co-authors Enabnit and Hines]

### Research Presentations and Posters (since 2011) (\*presenter)

Hayne C\* and McClenahan D. The effects of MyD88 inhibition on bovine lung endothelial and epithelial cell cytokine expression. *UNI Honors Research Conference*. April 2011 (talk).

Wohlers B\* and McClenahan D. Bovine epithelial cell cytokine response to lipopolysaccharide. *UNI Summer Undergraduate Research Symposium*. July 2011 (poster)

McClenahan D\*. Bovine respiratory disease complex: the bug, the business, and the disease. Departmental Seminar, National Chengchi University, Taipei, Taiwan. July 2011. (talk)

Patel R\*, Orr M, McClenahan D. Decreased permeability changes in bovine epithelial cells treated with P2X7 receptor antagonists prior to exposure to adenosine triphosphate. *Council of Research Workers in Animal Diseases*. Chicago, IL, 2011 (poster)

Orr M\*, Patel R, Su M, McClenahan D. Comparison of P2X7 receptor antagonists with bovine cells. *Council of Research Workers in Animal Diseases*. Chicago, IL, 2012 (poster)

McClenahan D\* and Parmater J. Effects of metolachlor on human alveolar macrophage phagocytosis. *Pre-tenure Fellowship Symposium*. UNI, Cedar Falls, IA 2013 (poster)

Bowers A\*, Yutao S, McClenahan D. Effects of TRIF and MyD88 inhibition on bovine lung endothelial cell permeability and apoptosis after lipopolysaccharide exposure. *Council of Research Workers in Animal Diseases*. Chicago, IL, 2013 (poster)

Salzbrenner H\*, Orr M, Su Y, McClenahan D. Adenosine triphosphate interactions with bovine purinoceptor 7. *Council of Research Workers in Animal Diseases*. Chicago, IL, 2014 (poster)

Parmater J\* and McClenahan D. Effects of metolachlor on the immune function of alveolar macrophages. Departmental thesis proposal, October 2014; and the Eighth Annual Graduate Student Symposium, April 2015 (talks)

Noguera G\*, McClenahan D, Thurman C. Effects of LPS and ATP on cultured bovine mammary gland transepithelial resistance. Summer Undergraduate Research Program Symposium. UNI, 2015 (poster)

Huisman D\*, Shatek M\*, Salzbrenner H, McClenahan D. Modulation of bovine mammary gland epithelial cell permeability and actin distribution by extracellular adenosine triphosphate. *Council of Research Workers in Animal Diseases*. Chicago, IL, 2017 (poster)

Huisman D\* and McClenahan D. Extracellular ATP effect on intracellular actin fibrils' location and characteristics. 19<sup>th</sup> Annual University of Maryland Conference for McNair Scholars, College Park, MD, 2018 (talk).

Shatek, M\*, Salzbrenner H, McClenahan D. Modulation of bovine mammary gland epithelial cell permeability by extra-cellular adenosine triphosphate. Iowa Academy of Science 131<sup>st</sup> Annual meeting. April 2019 (poster)

Huisman D\*, Warrick S, Nelson H, McClenahan D. Effect of extracellular ATP and the inhibition of the P2X7 receptor on bovine mammary gland epithelial cell actin distribution and fiber size. Iowa Academy of Science 132<sup>nd</sup> Annual meeting. April 2020 (poster)(note: this meeting was cancelled in response to the COVID-19 pan-epidemic).

Osier A\*, Hirl N, Reutzel A, Solberg K, McClenahan D. The effects of fluoride on monocyte THP-1 cellular functions. Iowa Academy of Science 132<sup>nd</sup> Annual meeting. April 2020 (poster)[note: this meeting was cancelled in response to the COVID-19 pan-epidemic].

Sanderman C\* and McClenahan D. The effect of fluoride exposure on CD11b expression in THP-1 human monocytes. Iowa Academy of Science 133<sup>rd</sup> Annual meeting. April 2023 (poster).

Hamlett K\* and McClenahan D. The effects of fluoride on Interleukin-1 cellular functions. Iowa Academy of Science 133<sup>rd</sup> Annual meeting. April 2023 (poster).

Sanderman C and McClenahan D\*. The effect of fluoride exposure on CD11b expression in THP-1 human monocytes. 83<sup>rd</sup> Annual North Central Branch ASM Meeting, UW-LaCrosse, LaCrosse, WI. Nov 2023. (poster) [note: this was a modified version (more data sets) of the poster C Sanderman presented in April 2023]

Peng J\* and McClenahan D. Extracellular ATP effects on Mac-T cell actin distribution. 84th Annual North Central Branch ASM Meeting, Mankato State University, Mankato, MN, Oct 2024. (poster)

Peng J\* and McClenahan D. The involvement of the P2X7 receptor on actin distribution in Mac-T cells after exposure to extracellular ATP. 85th Annual North Central Branch ASM Meeting, University of Northern Iowa, Cedar Falls, IA. Nov 2025. (poster)

### **Invited talks, seminars, and other publications (since 2011)**

What's new with SARS CoV-2 mRNA vaccines. A 1-hour presentation about the new COVID-19 vaccines delivered to the Americorps VISTA program for Wisconsin's Free and Charitable Clinics. Feb. 15, 2021 (Zoom presentation)

5 questions on the COVID-19 vaccine. Interview with the UNI Public Relations staff regarding the importance of getting the COVID-19 vaccine. InsideUNI. May 12, 2021. (article)

UNI Pre-dental club suture clinic. Presented a talk and then helped with a hands-on demonstration of various suturing techniques. March 3, 2025

### **Other Professional related activities (since 2011)**

November, 2025:

Organizing the 85<sup>th</sup> annual branch meeting of the North Central Branch of the American Society for Microbiology here on the UNI campus. This was the first time this meeting has been held on this campus, and brought together faculty, students, and other individuals working in microbiology related fields from a 5-state area including Iowa, North and South Dakota, Minnesota, and Wisconsin.