

## Curriculum Vitae

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

### Education

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

### Licensure

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| 1992-present | State of Minnesota<br>Licensed to practice veterinary medicine |
| 1992-present | State of Wisconsin<br>Licensed to practice veterinary medicine |

### Duties

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 a lab instructor for 2 sections of Anatomy and Physiology II lab. In addition, I serve as an advisor for the pre-veterinary club and chair of the CHAS senate and university's IACUC committee. Finally, I have mentored several students who have worked in my lab doing research under the undergraduate research in biology course and I am currently on a committee for a graduate students working on his MS degree.

### Courses Taught

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| Dates:            | 2008 to 2020 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. |

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| Dates:            | 2009 to 2021 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, 2018-2021 Spring   |
| Class:            | Anatomy and Physiology I and II lab   |
| 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. |
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| 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

### 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

### 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).

### **Invited talks, seminars, and 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)