

Curriculum Vitae

Anthony Justin McMechan

Ph.D. and DPH Candidate

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Education

Doctor of Plant Health , University of Nebraska-Lincoln	2012 - Present
Ph.D. Entomology, University of Nebraska-Lincoln	2012 - Present
M.S. Entomology, University of Nebraska-Lincoln	2009 - 2012
B.S. Agronomy with High Distinction, University of Minnesota, Crookston, MN	2006 - 2009
Diploma. Agribusiness with Distinction, Assiniboine Community College, Brandon, MB, Canada	2004 - 2006

Research Experience

Doctor of Plant Health Internship	May 2015 - Present
University of Nebraska-Lincoln, Agronomy and Horticulture Department. Supervisor: Roger Elmore	
<ul style="list-style-type: none">Applied research and extension in cover crops, green snap and early season hail in corn.	
Graduate Research Assistant (Dissertation research)	May 2012 - Present
University of Nebraska-Lincoln, Entomology Department. Advisor: Gary L. Hein	
<ul style="list-style-type: none">Over-summering ecology of the wheat curl mite.	
Doctor of Plant Health Internship	May 2013 - May 2015
University of Nebraska-Lincoln, Entomology Department. Supervisor: Jeff Bradshaw	
<ul style="list-style-type: none">Applied research, face-to-face programming, electronic media, and wheat production workshop development.	
Graduate Research Assistant (Master Thesis)	August 2009 - May 2012
University of Nebraska-Lincoln, Entomology Department. Advisor: Gary L. Hein	
<ul style="list-style-type: none">Transmission of <i>Triticum mosaic virus</i> and its Impact on the Biology of the Wheat Curl Mite <i>Aceria tosichella</i> Keifer (Eriophyidae).Evaluation of Management Tactics for the Wheat Curl Mite and the Wheat-Mite-Virus Complex.	
Research Technician	May - August 2009
Northwest Research and Outreach Center (NWROC), Crookston, MN. Supervisor: Ian McRae.	
<ul style="list-style-type: none">Facilitated with field study on aphid transmission of virus in seed potato production, soybean aphid monitoring and field study designs.Educated growers and agronomists on sampling and defoliation leaf ratings.	

Research Experience

Undergraduate Research Internship

May - August 2008

Northwest Research and Outreach Center (NWROC), Crookston, MN. Supervisor: Charla Hollingsworth.

- Isolation of *Fusarium* spp.
- Assisted with day-to-day research needs of a plant pathology program on wheat, barley, soybeans, alfalfa and sunflowers.
- Produced an extension press release to advise producers and a poster to inform the general public about plant disease.

Extension Experience

DuPont Pioneer

2015

- Background information and current research on the risk potential of wheat curl mites on alternative hosts
- Presented research on the potential to improve early season hail evaluations in corn and the potential for additional yield losses from bacterial pathogens

Nebraska Association of Teachers of Science Conference

2015

- Educated teachers on the biology, ecology and management of the wheat-mite-virus complex
- Provided and developed hands on activities to encourage the adoption of system in classroom
- Assisted in the development of lesson plans for grades 7-12

Late Season Crop Management Diagnostics Clinic

2015

- Educated growers, consultants and company representatives on late season corn growth and development
- Discussed the impact of early season hail on corn yield components and current research on early season hail in corn
- Field exercises to evaluate additional losses from hail as a result of insect and disease pressure and management decision for late season hail

National Crop Insurance Services Crop Hail, Multiple Peril Crop Insurance, and Soybean School

2015

- Educated hail adjusters on corn growth and development
- Discussed proper evaluation techniques and yield losses from early and late season hail in corn

Early Season Crop Management Diagnostics Clinic

2015

- Educated growers, consultants and company representatives on corn growth and development and evaluating corn fields for early season hail
- Discussed the importance of proper timing for evaluation and disease and environmental interactions that may affect replant decisions
- Demonstrated impact of early season hail using simulated hail machine

Wheat Production Workshop

2014

- Organized and planned workshop for producers, consultants and extension educators to address current issues in wheat production

- Recruited speakers to focus on weed, disease, insect and water issues within the western Great Plains

University of Nebraska Winter Wheat Variety Trials 2012, 2013, and 2014

- Educated producers on the risk and management of wheat curl mite
- Discuss issues regarding the risk and potential of wheat stem sawfly

University of Nebraska High Plains Agricultural Lab Field Day 2013 and 2014

- Informed growers of the window of risk for pre-harvest volunteer wheat and the impact of wheat variety of volunteer potential
- Discussed the risk of alternative over-summering hosts as a source for wheat curl mite and viruses on fall planted winter wheat

Teaching Experience

Undergraduate Insect Identification (ENTO 116) Fall 2010

Teaching Assistant, University of Nebraska-Lincoln. Professor: Tiffany Heng-Moss

- Lectured on different insect orders and taught students proper insect collection techniques and preservation. Proctored and graded quizzes, exam and insect collections
- Developed an internet study tool for students to learn insect orders

Online Crop and Weed Identification Project Spring 2009

Teaching Assistant. University of Crookston, MN. Professor: Chuck Habstritt

- Created PowerPoint's to provide information on basic plant and seedling morphology of weeds, small grains, forages, legumes, and specialty crops
- Designed online testing system for evaluation
- Maintained greenhouse for crop and weed identification, and assisted in setting up tests

Study Aid Program for Principles of Plant Genetics and Breeding Class Fall 2009

Teaching Assistant. University of Crookston, MN. Professor: Jochum Wiersma

- Incorporated definitions from multiple textbooks to online program (iFlipr) to be used as a study aid

Fellowships, Awards and Grants

President's Prize Student Competition at Entomological Society of America Meeting

- 2015 - 2nd place in Oral Presentation ESA NCB, Manhattan, KS
- 2014 - 1st place in Oral Presentation ESA National, Portland, OR
- 2014 - 1st place in Oral Presentation NCB ESA, Des Moines, IO
- 2013 - 1st place in Oral Presentation ESA National, Austin, TX
- 2012 - 1st place in Oral Presentation ESA National, Knoxville, TN
- 2011 - 1st place in Oral Presentation ESA National, Reno, NV
- 2011 - 2nd place in Oral Presentation NCB ESA, Minneapolis, MN
- 2010 - 1st place in Poster NCB ESA, Louisville, KY

Student Competition at American Phytopathological Meeting

- 2011 - 1st place in Poster NCB APS, Omaha, NE

2011 - Milton E. Mohr Teaching Fellowship, University of Nebraska, Lincoln, Nebraska

2009 - Collegiate Crops Contest
 Kansas City Board of Trade – 3rd High Individual Overall, Kansas City, KS
 Chicago Board of Trade – 2nd High Individual Overall, Chicago, IL
 All American Award – Seed Analysis, Plant Identification, Chicago, IL

2008 - American Colleges and Teachers of Agriculture Judging Conference, Stephenville, TX
 1st Place Overall Crops Team
 2nd Place in Agronomic Quiz (4 Year Division)
 2nd Place in Plant/Seed Identification (4 Year Division)

2006 - John Polley Soil and Water Conservation Award, Brandon, MB, Canada
 2006 - Farm Credit Canada, Business Planning Award, Brandon, MB, Canada
 2006 - Simplot Academic Excellence Award, Brandon, MB, Canada
 2006 - Cargill Academic Excellence Award, Brandon, MB, Canada
 2006 - Keith Gillman Foundation, Academic Excellence, Brandon, MB, Canada
 2006 - Percy Lanham Foundation, Agriculture Academic Based Award, Brandon, MB, Canada
 2005 - Canadian Association of Diploma in Agriculture, Public Speaking Award, Brandon, MB
 2004 - Pierson Collegiate High School Class Valedictorian, Pierson, MB, Canada

Publications

Refereed Journal Articles

1. **McMechan, A. J.** and G. Hein. Window of risk for pre-harvest germination during the heading stages of hard red winter wheat and potential for wheat curl mite infestation. ***In preparation.***
2. **McMechan, A. J.**, W. Stroup, and G. Hein. Impact of *Triticum mosaic virus* on the reproductive rate of the wheat curl mite (*Aceria tosichella* K.). ***In preparation.***
3. Nguy-Robertson T., A. Zygielbaum, **McMechan, A.**, G. Hein, S. Wegulo, A. Stilwell, and T. Smith. Developing a framework for a risk map for mite vectored viruses in wheat resulting from pre-harvest hail damage in western Nebraska, U.S.A. Crop Protection. ***Submitted.***
4. **McMechan, A. J.** and G. L. Hein. 2015. Planting date and variety selection for management of viruses transmitted by the wheat curl mite (*Aceria tosichella* Keifer). Journal of Economic Entomology. DOI: <http://dx.doi.org/10.1093/jee/tov311>
5. Byamukama E., S. Tatineni, G. Hein, **J. McMechan**, and S. N. Wegulo. 2015. Incidence of *Wheat streak mosaic virus*, *Triticum mosaic virus*, and *Wheat mosaic virus* in wheat curl mites recovered from maturing winter wheat spikes. Plant Dis. DOI: <http://dx.doi.org/10.1094/PDIS-06-15-0692-RE>.
6. Tatineni, S., **A. McMechan**, M. Bartels, G. L. Hein and R. A. Graybosch. 2015. In vitro transcripts of wild-type and fluorescent protein-tagged *Triticum mosaic virus* (Family Potyviridae) are biologically active in wheat. Phytopathology. DOI:10.1094/PHYTO-06-15-0138-R
7. Wosula, E., **A. McMechan**, G. L. Hein. 2015. The effects of temperature, humidity, virus infection status on off host survival of *Aceria tosichella* (Trombidiformes: Eriophyidae). J. Econ. Ent. 108(4): 1545-1552.

8. Wosula, E., **A. McMechan**, C. Oliveira-Hofman, S. N. Wegulo, and G. L. Hein. 2015. Differential transmission of two isolates of *Wheat streak mosaic virus* by five wheat curl mite populations. *Plant Dis.* <http://dx.doi.org/10.1094/PDIS-03-15-0342-RE>.
9. Tatineni S. **A. McMechan**, E. Wosula, S. Wegulo, R. Graybosh, R. French and G. Hein. 2015. Reply to “New Zealand stresses that it is High Plains virus free, and the virus struggles with an identity crisis.” *Virology*. 89(14): 7441.
10. Tatineni S., **A. McMechan**, E. Wosula, S. Wegulo, R. Graybosh, R. French, and G. Hein. 2014. An eriophyoid mite-transmitted plant virus contains eight genomic RNA segments with unusual heterogeneity in nucleocapsid protein. *Journal of Virology* 88(20): 11834-11845.
11. **McMechan A.**, S. Tatineni, R. French and G. Hein. 2014. Differential transmission of Triticum mosaic virus by wheat curl mite populations collected in the Great Plains. *Plant Disease*. *Plant Disease*. 98(6): 806-810.
12. **McMechan, A.** Transmission of Triticum mosaic virus and its impact of the biology of the wheat curl mite *Aceria tosichella* Keifer (Eriophyidae), and an evaluation of field management tactics for the wheat curl mite and the wheat-mite-virus complex. M.S. Thesis, University of Nebraska – Lincoln.
13. Tatineni S., **A. McMechan**, G. Hein and R. French. 2011. Efficient and stable expression of GFP through Wheat streak mosaic virus-based vectors in cereal hosts using a range of cleavage sites: Formation of dense fluorescent aggregates for sensitive virus tracking. *Virology* 410: 268-281.

Extension Report

1. **McMechan, A.** and C. Hollingsworth. 2008. Residue of fungicide causes concern in south-central Kansas. *Minnesota Crop News*.

Participation in Scientific Conferences

Invited Oral presentations

1. Challenges, Opportunities and Career Outlook: A student’s perspective. Annual Meeting of the Entomological Society of America. November 2014.

Submitted Oral Presentations

1. Effect of wheat curl mite infestation and wheat streak mosaic virus inoculation timing on disease severity in winter wheat. Annual Meeting of the Entomological Society of America. November 2015.
2. Risk for alternate over-summering hosts for the wheat-mite-virus complex in winter wheat. Annual Meeting of the Entomological Society of America. November 2015.
3. Reproductive capacity of the wheat curl mite (*Aceria tosichella* Keifer) on alternative hosts. North Central Branch Meeting of the Entomological Society of America. Manhattan, Kansas. June 2015.
4. Window of risk for pre-harvest volunteer during the heading stages of wheat. Annual Meeting of the Entomological Society of America. November 2014.

5. Risk of alternative hosts as source for wheat-mite-virus complex in winter wheat under field conditions. North Central Branch Meeting of the Entomological Society of America. Des Moines, Iowa. March 2014.
6. Window of risk for volunteer wheat establishment during the heading stages of wheat and the potential for wheat curl mite infestation. Annual Meeting of the Entomological Society of America. Austin, Texas. November 2013.
7. Impact of *Triticum mosaic virus* on the biology of the wheat curl mite (*Aceria tosichella* Keifer). North Central Branch Meeting of the Entomological Society of America. Rapid City, South Dakota. June 2013.
8. Establishing a window of risk for volunteer wheat and wheat curl mite establishment. Annual Meeting of the Entomological Society of America. Knoxville, Tennessee. November 2012.
9. An evaluation of management tactics for the wheat curl mite (*Aceria tosichella* Keifer) and the wheat-mite-virus complex. North Central Branch Meeting of the Entomological Society of America. Lincoln, Nebraska. 2012
10. Differential transmission of *Triticum mosaic virus* and its impact on the biology of the wheat curl mite (*Aceria tosichella* Keifer). Annual Meeting of the Entomological Society of America. November 2011.
11. Differential transmission of *Triticum mosaic virus* across wheat curl mite (*Aceria tosichella* K.) colonies collected in the Great Plains. North Central Branch Meeting of the Entomological Society of America. Minneapolis, Minnesota. March 2011.

Submitted Posters

1. Evaluating corn performance based on injury following a major hail event. Agronomy Society of America Meeting. November 2015.
2. Developing a framework for a risk map for mite vectored viruses in wheat resulting from pre-harvest hail damage. American Geophysical Union. 2014
3. Planting dates and variety selection for management of viruses transmitted by the wheat curl mite (*Aceria tosichella* K.) North Central Branch Meeting of the Entomological Society of America. Louisville, Kentucky. March 2010.
4. Differential transmission of *Triticum mosaic virus* across wheat curl mite (*Aceria tosichella* K.) colonies collected in the Great Plains. North Central Branch Meeting of the American Phytopathological Society of America. Omaha, Nebraska. June 2011.

Professional Activities

University

UNL, Doctor in Plant Health Club 2012 – Present

- Graduate Student Association Representative (Spring 2013 – Spring 2014)

UNL, Entomology Department Bruner Club 2009 – Present

- Faculty Representative (Spring 2015 – Present)
- President (Spring 2014 – Spring 2015)
- Graduate Student Association Representative (Spring 2013 – Spring 2014)
- Vice President (Fall 2010 – Fall 2011)
- Co-Chair Computer Committee (Spring 2010 – Present)

- Volunteering Committee (Spring 2013 – Fall 2014)

University of Minnesota, Program Improvement Advisory Committee (2008)

- Responsible for student input on direction and evaluation of agronomy program
- Evaluation of new and current courses for agronomy department

University of Minnesota, Agronomy Lecture Position Committee (2008)

- Evaluation of applicants for general agronomy instructor

Outreach

Department of Entomology University of Nebraska, BugFest, October 2012, 2013, 2014, 2015

- Educate public on the size, function, and importance of wheat curl mites in agriculture

UNL Entomology Bruner Club AppleJack Festival, September 2014

- Engaged the public to regarding the importance of honey bees in the landscape

UNL Entomology Bruner Club Haymarket Booth, September 2013, 2015

- Engaged the public to interact with insects and addressed current issues regarding pest management and identification

Urban Entomology Pest Management Conference (2010, 2012, and 2015)

- Assisted pest management applicators with yearly license on insect identification in 2010
- Moderator for symposia in 2012 and 2015

Twilight on the Tallgrass Prairie (2009 and 2012)

- Assisted in educating the general public on the identification and importance of insects

Nebraska State Fair – Bee Exhibit (2009)

- Educated the general public on the biology of bees and their importance to humans

Current Professional Affiliations

Entomological Society of America, 2009 – present

American Phytopathological Society, 2008 – present

American Society of Agronomy, 2013 – present

Crop Science Society of America, 2013 – present

Social Science Society of America, 2013 - present

Gamma Sigma Delta, 2016 – present

References

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