

Christopher M. Horn

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Education

University of Nebraska Medical Center

PhD Immunology, Pathology, & Infectious Disease | 2019 – Present

Advisor: Tammy L. Kielian

University of Nebraska at Omaha

MS Biology | 2017 – 2019

Advisor: William E. Tappich

Thesis: “Detecting Novel Structural Interactions within the Cocksackievirus B3 Genomic RNA using Experimental and Computational Approaches”

University of Nebraska at Omaha

BS Biotechnology, Chemistry & Business minors | 2012 – 2017

Publications

1. Aldrich AL*, **Horn CM***, Heim CE, Korshoj LE, Kielian T. Transcriptional diversity and niche-specific distribution of leukocyte populations during *Staphylococcus aureus* craniotomy-associated biofilm infection. **J Immunol.** Jan 2021. DOI: 10.4049/jimmunol.2001042. **Joint Authors.*
2. **Horn CM** & Kielian T. Crosstalk between *Staphylococcus aureus* and innate immunity: focus on immunometabolism. **Front Immunol.** Dec 2020. DOI: 10.3389/fimmu.2020.621750.
3. Mahmud B*, **Horn CM***, Tappich WE. Structure of the 5' Untranslated Region of Enteroviral Genomic RNA. **J Virol.** Nov 2019; 93 (23) e01288-19. DOI: JVI.01288-19. **Joint Authors.*

Grants & Fellowships

1. **Graduate Research Fellowship**
Program of Excellence, University of Nebraska
2019, \$12,000
2. **UNO Biology Department Research Award**
Department of Biology, University of Nebraska at Omaha
2018, \$500
3. **Summer Research Fellowship**
Department of Biology, University of Nebraska at Omaha
2018, \$2,800
4. **Graduate Research and Creative Activity (GRACA) Grant**
Office of Research and Creative Activity, University of Nebraska at Omaha
2018, \$5,000
5. **UNO Biology Department Research Award**
Department of Biology, University of Nebraska at Omaha
2017, \$500

Research Experience

PhD Student

Department of Pathology & Microbiology, University of Nebraska Medical Center
2019 – Present | Advisor: Tammy L. Kielian

Research Experience (continued)

MS Student

Department of Biology, University of Nebraska at Omaha

2017 – 2019 | Advisor: William E. Tapprich

Development of modern computational and experimental strategies to elucidate viral RNA structure; binding interactions between host cell factor PCBP2 and the 5' untranslated region of Cocksackievirus B3 genomic RNA

Undergraduate Research Assistant

Department of Biology, University of Nebraska at Omaha

2015 – 2017 | Advisor: William E. Tapprich

Chemical probing of the 5' untranslated region of Cocksackievirus B3 genomic RNA

Presentations

1. **Horn CM**, Shinde DD, Ahn J, Bayles KW, Thomas VC, Kielian T. *Staphylococcus aureus* biofilms undergo metabolic remodeling in response to leukocytes. Midwest Student Biomedical Research Forum. Omaha, NE. February 2021.
2. **Horn CM**. Immunometabolism: Link between leukocyte metabolic status and immune phenotype during *S. aureus* prosthetic joint infection. Immunology, Pathology, & Infectious Disease Graduate Student Research Seminar Series. Omaha, NE. September 2020.
3. **Horn CM**, Heim CE, Kielian T. *Staphylococcus aureus* biofilms alter immune cell metabolism: potential implications for infection persistence. Midwest Student Biomedical Research Forum. Omaha, NE. February 2020.
4. **Horn CM**. Detecting Novel Structural Interactions within the Cocksackievirus B3 Genomic RNA using Experimental and Computational Approaches. Department of Biology Graduate Seminar Series. Omaha, NE. April 2019.
5. **Horn CM**, Tapprich WE. Elucidating the Secondary Structure of the Cocksackievirus B3 Genomic RNA through the use of Modern Approaches. 10th Annual Biology Research Symposium. Omaha, NE. April 2019.
6. Reznicek TE, **Horn CM**, Mahmud B, Tapprich WE. SHAPE-MaP Secondary Structure Analysis of HHV8 PAN RNA. 2019 Nebraska Center for Virology Annual Retreat. Nebraska City, NE. March 2019.
7. Reznicek TE, **Horn CM**, Tapprich WE. A Structural Analysis of Human Herpesvirus 8 Polyadenylated RNA through SHAPE-MaP Analysis. Joint Meeting of the Missouri and Missouri Valley Branches of the American Society of Microbiology. Omaha, NE. March 2019.
8. Mahmud B, **Horn CM**, Tapprich WE. Secondary Structure of the 5' Untranslated Region of Cocksackievirus B3 Genomic RNA. Joint Meeting of the Missouri and Missouri Valley Branches of the American Society of Microbiology. Omaha, NE. March 2019.
9. **Horn CM**, Tapprich WE. Detecting Structural Interactions within the Cocksackievirus B3 Genomic RNA using Modern Computational Approaches. University of Nebraska at Omaha 11th Annual Student Research and Creative Activity Fair. Omaha, NE. March 2019.
10. **Horn CM**, Nelson QM, Mahmud B, Averhoff AJ, Tapprich WE. Probing RNA Structure in the 5' Untranslated Region of Cocksackievirus B3 Genomic RNA. International Society for Computational Biology – Computational RNA Biology. Chicago, IL. July 2018.
11. Averhoff AJ, Mahmud B, Ibrahim N, **Horn CM**, Tapprich WE. Fluorescent Electromobility Shift Assay for the Detection of PCBP2 Interaction with Cocksackievirus B3 Genomic RNA. Nebraska Science Festival. Omaha, NE. April 2018.
12. **Horn CM**, Tapprich WE. Binding interactions between PCBP2 and the 5' UTR of virulent Cocksackievirus B3. 9th Annual Biology Research Symposium. Omaha, NE. April 2018.

Presentations (continued)

13. **Horn CM**, Mahmud B, Tapprich WE. Probing RNA Structure in the 5' Untranslated Region of Coxsackievirus B3 Genomic RNA. University of Nebraska at Omaha 10th Annual Student Research and Creative Activity Fair. Omaha, NE. March 2018.

Teaching Experience

High School Alliance Mentor

High School Alliance Health Sciences Enrichment Program, University of Nebraska Medical Center
2019 – 2021

Teaching Assistant

Biology I (BIOL 1450), University of Nebraska at Omaha
2018 – 2019

Lab Instructor

Principles of Biology (BIOL 1020), University of Nebraska at Omaha
2017 – 2018

Biology Mentor & Tutor

Goodrich Scholarship Program, University of Nebraska at Omaha
2015 – 2017

Middle School Mentor

NE STEM 4U, University of Nebraska at Omaha
2015 – 2016

Relevant Experience

Founding and Executive Board Member

Students Together Against Cancer (STAC), University of Nebraska at Omaha
2014 – 2017

Ambassador

Goodrich Scholarship Program, University of Nebraska at Omaha
2013 – 2017

Honors & Awards

Graduate Teaching Assistantship

Department of Biology, University of Nebraska at Omaha
2017 – 2018, \$36,000

Larry Bradley Textbook Fund

Goodrich Scholarship Program, University of Nebraska at Omaha
2013, \$250

Goodrich Scholarship

Goodrich Scholarship Program, University of Nebraska at Omaha
2012 – 2017, \$50,000

References

Tammy L. Kielian, PhD

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Department of Pathology & Microbiology
University of Nebraska Medical Center
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William E. Tapprich, PhD

Sophie & Feodora Kahn Professor of Biology
Department of Biology
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John A. Conrad, PhD

Associate Professor
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