

**EDUCATION**

**University of Rhode Island**, Kingston, RI (GPA: 3.99/4.00) Sep 2022 - May 2025

- Bachelor of Science, Cell and Molecular Biology, specialization in Biochemistry
  - Bachelor of Science, Biotechnology
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**RESEARCH EXPERIENCE**

**Undergraduate Research Assistant**, University of Rhode Island Aug 2023 - Present

Principal Investigator: Dr. Xinyuan Chen, Associate Professor of Pharmaceutical Sciences

- Project 1: *Flagellin-Displayed HBc VLP for HA Stem-Based Universal Influenza Vaccine Development (2023)*
- Development of a novel virus-like particle (VLP) platform for universal influenza vaccine research, incorporating Hepatitis B core (HBc) proteins fused to flagellin and SpyCatcher for enhanced functionality. This platform binds to SpyTag-linked Hemagglutinin (HA) to express the conserved influenza protein on the surface of this immunogenic VLP platform.
- Project 2: *Potential of mRNA vaccine-induced granzyme B production and anti-tumor immunity by CpG 1018 (2024)*.
- Synthesis of a lipid nanoparticle (LNP) mRNA vaccine incorporating CpG 1018 as an adjuvant for enhanced immune response in melanoma models. Conduction of in vivo tumor induction in mice, measuring tumor progression to evaluate vaccine efficacy across experimental groups.

**Stanford Summer Research Program (SSRP)**, Stanford University June - Aug 2024

Principal Investigator(s): Dr. Benjamin Good, Assistant Professor of Biophysics; Dr. Dmitri Petrov, Michelle and Kevin Douglas Professor in the School of Humanities and Sciences

- Project: *Monitoring changes in the African rhinoceros (*Diceros bicornis*) microbiome in relation to translocation (2024)*.
- Computational analysis of rhinoceros gut microbiome pre- and post-translocation to assess microbiome stability and potential microbial transmissibility. Analysis completed by meta-assembled genomes from DNA sequencing, analyzing strain-level single-nucleotide polymorphisms (SNPs) and species presence over time.
- Developed a bioinformatics pipeline for SNP-based strain tracking, which will reveal insights into microbiome adaptation and microbial sharing among rhino populations.

**Science and Engineering Fellow**, University of Rhode Island May - December 2023

Principal Investigator: Dr. Rachel Schwartz

- *Synthesizing Reference Genomes for *Centropogon cornutus* and *Centropogon mandonis* (2023)*.
- Managed Nanopore MinION sequencing to construct hybrid-assembled reference genomes for two *Centropogon* species and assess assembly software to analyze genome accuracy and completeness for further improvement.

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## TEACHING, MENTORING, AND PROFESSIONAL EXPERIENCE

**URI COP Undergraduate Research Mentor**, URI, Kingston, RI Feb 2024-Present

- Worked to instruct rotating undergraduate students in the College of Pharmacy (COP) on basic protocols such as BCAs, DNA gel electrophoresis, SDS-PAGE, and general laboratory maintenance. Assisted these students with constructing and presenting a research poster.

**URI College of the Environmental and Life Sciences Ambassador** April 2024-Present

- Attended events for the College of Environmental and Life Sciences at the University of Rhode Island to promote opportunities and resources for incoming students in my major(s) and advise students on available services at the university to promote their academic success and sense of community.

**Dietary Technician**, Kent Hospital, Warwick, RI Mar 2022-May 2023

- Worked closely with registered dietitians to ensure patients' diets were optimal for their medical conditions and dietary restrictions. Consulted with patients regarding their appetite, eating habits, and satisfaction with their meals in the hospital.

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## FELLOWSHIPS

**NIH Maximizing Access to Research Careers Undergraduate Student Training in Academic Research (MARC U\*STAR) Trainee (Kingston, RI)**

*June 2023 – Present*

The program is designed to support underrepresented students in pursuing research careers in biomedical sciences. The program aims to increase diversity in scientific research by offering students the resources and opportunities needed to succeed in research environments.

**Stanford Summer Research Program Amgen Scholars Program (Palo Alto, California)**

*June 2024 - August 2024*

This nationally competitive summer research opportunity provides undergraduate students with an intensive 8-week summer research experience under the mentorship of a Stanford University faculty member.

**URI Science and Engineering Program (Kingston, Rhode Island)**

*May 2023- July 2023*

This summer research opportunity is open to students within the science and engineering fields. It prepares students for the job market and offers them the professional skills and training needed to succeed. Students help advance the research of their faculty and staff mentors while gaining hands-on research experience.

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## ORAL AND POSTER PRESENTATIONS

1. **VanLuinen, E.**, Waite, N., Schwartz, R. *Centropogon cornutus* genome assembly and analysis. Oral presentation delivered at the URI Undergraduate Research Fellows Symposium. Given July 2023.
2. **VanLuinen, E.**, Waite, N., Schwartz, R. Synthesizing a reference genome for *Centropogon cornutus*. Poster presentation delivered at the Annual Biomedical Research Conference for Minoritized Students (ABRCMS). Given November 2023.
3. **VanLuinen, E.**, Waite, N., Schwartz, R. Synthesizing a reference genome for *Centropogon cornutus*. Poster presentation delivered at the URI CELS Undergraduate Research Symposium. Given December 2023.

4. **VanLuinen, E.,** Akter, L., Li, Y., Chen, X. Flagellin-displayed HBc VLP for HA Stem-Based Universal Influenza Vaccine Development. Poster delivered at the URI College of Pharmacy Undergraduate Research symposium. Given April 2024.
5. **VanLuinen, E.** A summation of my research as a MARC U\*STAR trainee. Oral Presentation delivered at URI MARC U\*STAR Annual Symposium. Given April 2024.
6. **VanLuinen, E.,** Walton, S., Vila, J., Petrov, D., Good, B. Monitoring changes in the African rhinoceros (*Diceros bicornis*) microbiome in relation to translocation. Oral presentation delivered at Stanford summer research symposium. Given August 2024.
7. **VanLuinen, E.,** Walton, S., Vila, J., Petrov, D., Good, B. Monitoring single-nucleotide polymorphism sharing in the rhinoceros rumen microbiome following translocation. Poster presentation delivered at Stanford Summer Research Symposium. August 2024.
8. **VanLuinen, E.,** Walton, S., Vila, J., Petrov, D., Good, B. Monitoring single-nucleotide polymorphism sharing in the rhinoceros rumen microbiome following translocation. Poster presentation delivered at the University of Rhode Island CELS Cell and Molecular Biology Research Showcase. Given October 2024.
9. **VanLuinen, E.,** Akter, L., Li, Y., Chen, X. Flagellin-displayed HBc VLP for HA Stem-Based Universal Influenza Vaccine Development. Poster delivered at 2nd Annual Electronic Conference on Vaccines. Given November 2024.
10. **VanLuinen, E.,** Walton, S., Vila, J., Petrov, D., Good, B. Monitoring single-nucleotide polymorphism sharing in the rhinoceros rumen microbiome following translocation. Poster presentation delivered at the University of Rhode Island Annual Undergraduate Research Fellows symposium. Given December 2024.

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## PUBLICATIONS

1. **VanLuinen, E.,** Chen, X. *An updated review on particulate vaccine platforms to support universal influenza vaccine development.* In preparation.
2. Li, Y., **VanLuinen, E.,** Chen, X. *Potentiation of mRNA vaccine-induced granzyme B production and anti-tumor immunity by CpG 1018.* Under review, November 2024.

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## AWARDS AND GRANTS

<b>URI Presidential Scholarship</b> University of Rhode Island, Kingston, RI	<b>Fall 2022-Present</b>
<b>RI Promise Scholarship</b> University of Rhode Island, Kingston, RI	<b>Fall 2022-Present</b>
<b>Janice M Paton Scholarship</b> University of Rhode Island, Kingston, RI	<b>Fall 2023-Spring 2024</b>
<b>Outstanding Presentation of Scientific Research</b> University of Rhode Island, Kingston, RI	<b>December 2023</b>
<b>URI Research Grant Recipient</b> University of Rhode Island, Kingston, RI	<b>Spring 2024</b>
<b>NSF-GRFP Applicant</b> Application under review	<b>Fall 2024</b>
<b>URI Dean's List</b> University of Rhode Island, Kingston, RI	<b>Fall 2022-Present</b>