

JOANNA A. SANCHEZ

Major: Molecular & Cellular Biology | **Institution:** University of Illinois Urbana-Champaign

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Resilient and purpose-driven molecular and cellular biology student with a deep interest in immunology and computational biology

My academic journey has been defined by perseverance and a commitment to transforming challenges into opportunities for scientific growth and impact. I aim to advance research that bridges experimental immunology with computational science to uncover how the immune system responds to and is evaded by disease. I aspire to become a scientist who not only drives innovation at the interface of biology and technology but also broadens access and representation in biomedical research.

EDUCATION

present 8/2023	University of Illinois Urbana-Champaign , Illinois, USA <i>Undergraduate Student at the College of Liberal Arts & Sciences, School of Molecular & Cellular Biology</i> Expected graduation: May 2026
8/2022 8/2017	Waubonsee Community College , Illinois, USA <i>Associate in Applied Science</i>

RESEARCH EXPERIENCE

2/2024 9/2022	Computational Immunology (IEDB-based SARS-CoV-2 Epitope Analysis) <i>Student Researcher at Waubonsee Community College</i> <ul style="list-style-type: none">> Leading the study of the immunogenic regions on the spike glycoproteins of the SARS-CoV-2 variants using the web-based bioinformatics platform Immune Epitope Database (IEDB)> Optimizing the target antigens' position by developing Python scripts, utilizing immune epitope prediction and analysis codes, statistical interpretation of data, and creating educational materials> Mentoring students for their honors project which uses IEDB:<ul style="list-style-type: none">> Jatniel Gomez (Student at Waubonsee Community College)> Chris Salgado (Student at Waubonsee Community College)
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HONORS AND AWARDS

2026 2023	Helping Others' Personal Excellence Scholarship <i>University of Illinois Urbana-Champaign</i> <ul style="list-style-type: none">> Awarded for demonstrated financial need and academic excellence
2023	NIIMBL eXperience <i>The National Institute in Manufacturing Biopharmaceuticals</i> <ul style="list-style-type: none">> Selected as one of ten students nationwide from U.S. community colleges
2023	First place at the Illinois Water Environment Association Student Poster Competition <i>2023 Illinois Wastewater Professionals Conference</i> <ul style="list-style-type: none">> Poster title: Mapping Immunogenic Regions in SARS-CoV-2 Variants to Understand PCR Assay Design Using Bioinformatics Tools> Newsletter
2020	Waubonsee Students Recognized on Fall 2020 President's List <i>Waubonsee Community College</i> <ul style="list-style-type: none">> Recognized for achieving a perfect 4.0 GPA

- 2019 | **The John J. Swalec, Jr. President's Achievement Award**
Waubonsee Community College
 > Recognized for perseverance and excellence in achieving educational goals despite challenges
- 2017 | **Waubonsee Students Recognized on Fall 2017 President's List**
Waubonsee Community College
 > Recognized for achieving a perfect 4.0 GPA

CONFERENCES

- 06/27/2023 | **Mapped out immunogenic regions in SARS-CoV2 variants to understand vaccine design**
Poster presentation at the Envision the Next Bioscience Workforce Summit - Washington D.C
- 05/17/2023 | **Training the Future of the Bioeconomy: Creating Accessible Research Experiences in Protein Engineering Using the Immune Epitope Database**
Poster presentation at PEGS Boston Summit 2023 Conference - Boston, MA
- 04/28/2023 | **Mapping Immunogenic Regions in SARS-CoV-2 Variants to Understand Vaccine Design Using Bioinformatics Tools**
Podium Session at 2023 John Saragon Albazi Research and Creative Activities Student Symposium - Northeastern Illinois University, Chicago, IL
- 04/10/2023 | **Mapping Immunogenic Regions in SARS-CoV-2 Variants to Understand Vaccine Design Using Bioinformatics Tools, (1st place winner)**
Student poster session at 2023 Illinois Wastewater Professionals Conference - Springfield, IL

PUBLICATIONS

- [1] Koudjiwan, P. *et al.*, "Predicting Neoantigens for Cancer Using Next-generation IEDB & CEDAR Tools", *Journal of Advanced Technological Education (J ATE)*, vol. 3, no. 2, Zenodo, Oct. 2024, pp. 47-56, doi:10.5281/zenodo.13989043
- [2] Sanchez Rocha, J. A. *et al.*, "Mapping Immunogenic Regions in Sars-cov-2 to Understand Vaccine Design Using Bioinformatics", *Journal of Advanced Technological Education (J ATE)*, vol. 2, no. 2, Zenodo, Aug. 2023, doi:10.5281/zenodo.8260361

ACTIVITIES

- 2024 | **Journal of Advanced Technological Education (J ATE)**
 2023 | *NSF-Funded Undergraduate Research Experience (URE), InnovATEBIO Network*
 > Participated in hands-on biotechnology research projects aligned with industry needs, contributing to project design, data collection, and data analysis
 > Collaborated with faculty and peers to disseminate research outcomes through the *J ATE*

LAB COURSEWORK

Spring 2025	Experimental Techniques in Cellular Biology	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN
Spring 2025	Organic Chemistry Lab	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN
Spring 2025	Physics E&M & Modern Lab	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN
Fall 2024	Physics Mechanism & Heat Lab	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN
Fall 2024	Molecular Genetic Lab	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN
Fall 2024	General Chemistry Lab II	UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN
Summer 2022	Anatomy and Physiology II Lab	WAUBONSEE COMMUNITY COLLEGE
Spring 2022	General Chemistry Lab	WAUBONSEE COMMUNITY COLLEGE

PROFESSIONAL APPOINTMENT

08/2024	Waubonsee Community College, Illinois, USA
03/2023	<i>Academic Support Paraprofessional Tutor (biology, anatomy) (part-time, 15 hrs/wk)</i> <ul style="list-style-type: none"> › Providing subject matter expertise and serving as models for students in the techniques, strategies, attitudes, and beliefs of successful learners › Reviewing class material, discussing problems, reviewing tests, or working on solutions to problems › Facilitating individual and small group tutoring sessions, and classroom visits
10/2022	Tredwell Coffee Shop, Illinois, USA
08/2021	<i>Barista (part-time, 20 hrs/wk)</i> <ul style="list-style-type: none"> › Guided customers on coffee beans, brewing methods, and equipment selection › Demonstrated brewing tools and supported informed purchasing decisions › Maintained an organized coffee bar and improved daily workflow efficiency › Contributed to store quality through process evaluation and small operational enhancements
07/2021	Crate & Barrel – Customer Service, Illinois, USA
11/2017	<i>Sales & Customer Service Associate (full-time, 40 hrs/wk)</i> <ul style="list-style-type: none"> › Resolved customer inquiries and supported both in-store and online services › Handled administrative tasks and confidential information with professionalism › Provided technical assistance for online accounts and internal systems › Trained and supported new employees on procedures and service standards
01/2019	Famous Footwear, Illinois, USA
07/2016	<i>Customer Service & Sales Associate (part-time, 15 - 25 hrs/wk)</i> <ul style="list-style-type: none"> › Assisted customers in person and by phone to ensure a positive shopping experience › Processed orders across in-person and online platforms with accuracy › Managed cash and credit transactions and balanced cash drawers

LEADERSHIP

2021	Student organization MEChA	WAUBONSEE COMMUNITY COLLEGE
2019	<i>President, Vice-president, Secretary</i> <ul style="list-style-type: none"> › Opened a chapter at Waubonsee that advocates for Latino students on campus › Provided resources and support for students' academic success 	
2021	The Sideline Project	
2019	<i>Co-founder</i> <ul style="list-style-type: none"> › Conducted community events on mental health, academic success, and overall well-being › Collected data on available scholarships and opportunities for students 	
2020	Student Diversity Committee	WAUBONSEE COMMUNITY COLLEGE
2019	<i>Student Leader</i> <ul style="list-style-type: none"> › Curating ideas to improve students' experience › Assisted in organizing student events for Latinx Heritage month 	
2018	Education Awareness Subteam	
2017	<i>Student Leader</i> <ul style="list-style-type: none"> › Working in ensuring Waubonsee Community College took proactive action to protect DACA/Undocumented students › Provided interactive ally training for employees at the college, and students 	

OUTREACH

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| 2020 | Good Morning Aurora <ul style="list-style-type: none">➤ Served as a special guest to speak about my advocacy work and share my story |
| 2018 | Supporting DACA and Undocumented Students Panelist <ul style="list-style-type: none">➤ Served as a panelist for high school educators to provide guidance in supporting DACA/Undocumented students |

SKILLS

Programming	Python, C++, HTML, Git, MATLAB, Visual Studio
Software & Tools	Microsoft Word, Microsoft Excel, Photoshop, Google Suit
Languages	English (Native / Bilingual), Spanish (Native / Bilingual)