

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

RESEARCH EXPERIENCE

2/2024	Computational Immunology (IEDB-based SARS-CoV-2 Epitope Analysis)
9/2022	<i>Student Researcher at Waubonsee Community College</i>
	› 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: › Jatniel Gomez (Student at Waubonsee Community College) › Chris Salgado (Student at Waubonsee Community College)

HONORS AND AWARDS

2026	Helping Others' Personal Excellence Scholarship
2023	<i>University of Illinois Urbana-Champaign</i>
	› Awarded for demonstrated financial need and academic excellence
2023	NIIMBL eXperience
	<i>The National Institute in Manufacturing Biopharmaceuticals</i>
	› 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>
	› 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>
	› Recognized for achieving a perfect 4.0 GPA

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

🗣 CONFERENCES

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

📄 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	<i>NSF-Funded Undergraduate Research Experience (URE), InnovATEBIO Network</i> > 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

2020	Good Morning Aurora
	› Served as a special guest to speak about my advocacy work and share my story
2018	Supporting DACA and Undocumented Students Panelist
	› 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)