JORDAN MONTENEGRO-CALLA

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An interdisciplinary scientist with deep expertise in medical microbiology and clinical medicine, complemented by advanced laboratory techniques (CRISPR-Cas9, NGS, flow cytometry, cell culture, so on) and clinical exposure in primary care settings. Proven research leadership with conference presentations, now leveraging computational tools (Python, SQL, TensorFlow, PyTorch, Azure, AWS) to translate medical insights into AI-driven innovations. Currently developing interpretable machine learning solutions for infectious disease diagnostics, bridging biomedical science and emerging technologies to address critical healthcare challenges.

EDUCATION

Weber State University | B.S. Medical Microbiology (Pre-Med)

- Honors: Wildcat Advantage Highest Level (Presidential Letter Recipient), Excellence in Community Engagement Award, NSLS inducted member, WSUSA Leadership Team.
- Advanced Lab Techniques: CRISPR-Cas9 gene editing, DNA sequencing, Gene knocking, Western blotting, Chromatography, PCR, Mass spectrometry, aseptic and pure culture techniques, microscopy, ELISA, Western blot, Flow cytometry, SDS-PAGE, Cell culture, microbial susceptibility testing.

Ensign College | B.S. IT- System Administrator

- Honors: The Highest Honors.
- Technical Focus: Cloud server administration (AWS, Azure), Windows/Linux systems, Networking Fundamentals, Business Intelligence Systems, IT architecture, Cybersecurity operations.

Ensign College | B.S. Software Engineering **2026**

- Core Courses: Object-oriented programming, data structures, full stack & mobile development, Agile project management, operating systems, software architecture
- Technical Skills: Python, SQL, Docker, software design patterns, version control (Git), discrete mathematics, Frontend (HTML/CSS/JavaScript), frontend/backend integration

U of People | B.S. Computer Science **2026**

- Advanced Coursework: Artificial Intelligence, Data Mining and Machine Learning, Software Engineering II, Comparative Programming Languages, Advanced Networking and Data Security, Databases II, Analysis of Algorithms, Systems & Applications Security

Universidad de San Martín de Porres, Faculty of Human Medicine - M.D. Program (non-degree) 2016 - 2017

- Completed two years of clinical medical education before transferring to the U.S.
- Core Coursework: Cell & Molecular Biology, Applied Chemistry for Health Sciences, Human Anatomy I-II, Physiology I, Biochemistry, Medical Procedures, Psychology.
- Technical Focus: Human anatomy dissection, physiological systems analysis, biochemical pathways, cellular processes, medical terminology

CERTIFICATIONS

Stanford University – AI in Healthcare Specialization (2025)

- Introduction to Healthcare – 12.0 CME credits
- Introduction to Clinical Data – 11.0 CME credits
- Fundamentals of AI and Machine Learning in Healthcare – 11.0 CME credits
- Evaluations of AI Applications in Healthcare – 9.5 CME credits
- AI in Healthcare Capstone Project – 11.0 CME credits

Andrew Ng - Machine Learning Specialization (2025)

- Supervised Machine Learning: Regression and Classification
- Advanced Learning Algorithms
- Unsupervised Learning, Recommenders, Reinforcement Learning
- Covered supervised learning (linear regression, logistic regression, neural networks, decision trees), unsupervised learning (clustering, anomaly detection), recommender systems, and reinforcement learning

AI/ML:

- Introduction to Prompt Engineering for Generative AI (LinkedIn, 2025)
- How to Research and Write Using Generative AI Tools (LinkedIn, 2025)

Cybersecurity:

- Advanced Linux: The Linux Kernel (LinkedIn, 2025)
- Microsoft Cybersecurity Architect Expert (SC-100) Cert Prep: 1 Design a Zero Trust Strategy and Architecture (LinkedIn, 2025)
- AWS Certified Cloud Practitioner (CLF-C01) Cert Prep: 3 Core Services (LinkedIn, 2025)

Data Analytics:

- SQL: Data Reporting and Analysis (LinkedIn, 2025)
- Learning Data Analytics: 1 Foundations (LinkedIn, 2025)

Technical Writing:

- Technical Writing: Quick Start Guides (LinkedIn, 2025)
- A Beginner's Guide to Writing User Stories (LinkedIn, 2025)

TestOut

- TestOut Hybrid Server Pro: Core
- TestOut Linux Pro

Leadership & Community Engagement

- Community Leader Internship Certification (Weber State University, 2023 - 2024)

RESEARCH EXPERIENCE

Weber State University | Targeting ER Stress & Mitochondrial Pathways in Naegleria fowleri

Role: Lead Researcher | Grant: $10,500 | 2024-2025

- Targeting ER stress pathways in Naegleria fowleri to identify novel therapeutic targets for this universally fatal infection.
- Investigate tunicamycin/thapsigargin-induced ER stress and metformin-driven mitochondrial dysfunction. Designed experiments using Western blot (BiP/GRP78) and JC-1 mitochondrial staining to quantify stress responses.
- Methods: Confocal microscopy, SDS-PAGE, fluorometric assays.
- Targeting publication in Frontiers in Microbiology (2025).

Weber State University | Montenegro-Calla's Medium: An Optimized, Low-Cost Culture Formulation for Axenic Growth of Naegleria fowleri

Role: Lead Researcher | 2025

- Developed Montenegro-Calla's Medium, an optimized, low-cost culture formulation for axenic growth of Naegleria fowleri, reducing costs by >70% compared to commercial alternatives
- Conducted growth kinetics analysis, achieving ≈3× higher cell yield (1.03×10^7 cells/mL at 96h) than standard media formulations
- Performed cell culture maintenance, viability testing, and morphological analysis using phase-contrast microscopy
- Contributed to protocol optimization for filter sterilization and stock solution preparation to enhance reproducibility

Independent Research | The Brain-Eating Amoeba AI

Designed a physician-ready AI tool for early PAM triage in resource-limited settings. A Streamlit-based system integrates CSF values, symptom progression, and exposure history to overcome diagnostic delays in this 97% fatal infection

- Built an interactive web application using Python/Streamlit to assess PAM risk through clinical data inputs (CSF values, symptoms, exposure history)
- Implemented an automated risk scoring system with PDF/TXT report generation and CSV export for ML dataset development
- Created a global dashboard with data visualization (pie charts, symptom histograms) and batch simulation capabilities
- Designed roadmap for AI integration, including ML classifier development and SHAP-based interpretability features
- Validated with 5 simulated cases showing 60% high-risk detection accuracy; potential to reduce PAM diagnosis time from days to hours in clinical settings

Twing Lab | Concentration of Polychlorinated Biphenyls (PCBs) from a Historically Contaminated Site

Role: Participant | Weber State University | 2023

- Extracted and analyzed PCB isomers from Woods Pond sediments using GC-MS. Detected persistent contamination decades after industrial release.
- Methods: QuEChERS extraction, GC-MS analysis, Field sampling and data interpretation.

Twing Lab | PCB Contamination in Weber County Water Systems

Co-Author | Weber State University | 2023

- Surveyed local soil samples for PCB presence using EPA Method 8082A. Identified sites with low-level contamination despite no industrial source nearby.
- Methods: Soil sampling, hexane/acetone extraction, gas chromatography with electron capture detection (GC-ECD).

Clark Lab | Naegleria fowleri Drug Synergy & ER Stress Pathways

Research Assistant | Weber State University | 2023-2024

- ProRescue-of-infection model testing Amphotericin B + Miltefosine combinations.
- Achieved 80% HeLa cell survival; co-authored abstract published in UCUR Symposium 2024.
- Methods: LDH cytotoxicity assays, fluorometric caspase-3 analysis.

Clark Lab | Cancer Cell Hallmark Identification

Contributing Researcher | Weber State University | 2023-2024

- Project: Identifying oncogenic markers.

CLINICAL EXPERIENCE

Medical Student | Community Health Clinics | Chiclayo, Peru 2016 - 2017

- Performed venous blood collection (phlebotomy) and basic vital signs assessment under physician supervision
- Acquired basic life support skills including abdominal thrusts (Heimlich maneuver) and first aid
- Practiced airway management techniques including positioning and bag-mask ventilation on manikins
- Observed and assisted with equipment setup for intubations under physician supervision
- Shadowed for 250 hours family medicine physicians in hospital outpatient and community settings
- Supported patient intake, documentation, and health education initiatives

PRESENTATIONS & PUBLICATIONS:

Brain-Eating Amoeba Rescue-of-Infection Model Using Drug Combinations

- UCUR Symposium 2024 | Co-Author | Demonstrated combinatorial drug efficacy to 100+ researchers.

Naegleria fowleri: Drug Inhibition in a Human Cell Infection Model

- Weber State Symposium 2023 | Presenter | Highlighted Rifampin's dose-dependent efficacy.

PCB Contamination in Weber County: GC-MS Analysis

- Weber State Symposium 2023 | Lead Presenter | Interpreted GC-MS results from local soil samples to assess spatial trends in PCB contamination

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AWARDS & LEADERSHIP

- Highest Honors - Summa Cum Laude
- Wildcat Advantage Level 3 | WSU Presidential Letter | 2025
- NSLS Leadership Excellence Award | Top 10% Nationwide | 2024
- Excellence in Community Engagement | Weber State | 2023
- Community Leader Project | Take Your Time on Taylor - OgdenCAN | 2022-2023
- Leadership Team - WSUSA | 2023-2024
- Emerging Leader Program - WSU | 2023-2024

PROFESSIONAL EXPERIENCE

Researcher – Brain-Eating Amoeba Lab

Weber State University | 2025 - Present

- Conducted microbiological experiments analyzing drug efficacy against Naegleria fowleri.
- Maintained and analyzed chemical solutions using standardized concentration calculations.

Canvas Accessibility Specialist

WSU Online, Ogden, UT 84408 | Jul 2023 - August 2025

- Reformatted scientific documents and lab manuals for accessibility compliance.
- Collaborated with faculty to improve course materials, ensuring clarity for students in STEM fields.

Community Leader Intern

Ogden Civic Action Network, Ogden, UT | Oct 2022 - Jun 2023

- Established strategic connections to facilitate group and personal projects.
- Led neighborhood committee, organizing events and selecting community projects.

Propel Teacher Intern

WSU Propel Project, Ogden, UT | Sep 2022 - Mar 2023

- Assisted in teaching chemistry and microbiology, helping students grasp complex scientific concepts.
- Accumulated 90+ hours of classroom and laboratory observation.

INTERNATIONAL WORK EXPERIENCE

Logistic Import Manager

METROCAL S.A.C, Lima, Peru | 2021 - 2022

- Managed $50K+ in machinery imports; cut delivery times by 25%.
- Coordinated with suppliers, customs, and freight teams n the hydrocarbon industry.

Business Owner

LLAMASTE CARS S.A.C., Peru | 2020 - 2021

- Operated an import business specializing in body kits for various car brands.
- Managed all aspects of the business including sourcing, sales, and customer service.

LLAMASTE EIRL., Peru | 2015 - 2018

- Entrepreneurship business specializing in the import and national sale of cell phones and technology.

VOLUNTEER (MORE THAN 600 VERIFIED HOURS IN GIVEPULSE)

Weber Cares Food Pantry | 2023 - 2024

- Organized weekly food drives serving 250+ students, improving campus food security by 30%.

Full-Time Missionary - Chile Osorno Mission | 2018 - 2020

- Taught community classes and led service projects, supporting 600+ families in rural Chilean communities.

Math Tutor | 2015 - 2016

- Tutored 10+ middle school students in algebra and geometry, achieving an average grade improvement of 1.5 letter grades in Peruvian Grading Scale.

LANGUAGES

Trilingual: English and Spanish (Fluent), Chinese (Basic)

SKILLS

Technical Skills

- Machine Learning: Supervised/Unsupervised Learning, Neural Networks, Decision Trees, Recommender Systems, Reinforcement Learning
- Programming: Python, R, Streamlit
- Healthcare AI: Clinical Data Analysis, AI Applications in Healthcare, Medical Data Interpretation, Clinical Decision Support Systems
- Certifications: Stanford AI in Healthcare Specialization, Coursera Machine Learning Specialization

Medical & Clinical Skills

- Clinical Medical Education: Anatomy, Physiology, Biochemistry, Cell/Molecular Biology, Public Health Concepts
- Clinical Exposure: Phlebotomy (supervised), Vital Signs Assessment, Basic Life Support, Airway Management
- Patient Care: Health Education, Documentation, Clinical Shadowing
- Pathophysiology: Infectious disease mechanisms, host-pathogen interactions
- Clinical Reasoning: Symptom pattern recognition, diagnostic differential development

Research & Analytical Skills

- Laboratory: Cell Culture, Microbiological Techniques, Growth Kinetics Analysis, Protocol Development
- Data Analysis: Statistical Analysis, Research Documentation, Microscopy, Dashboard Visualization (Matplotlib/Plotly)
- Methodology: Experimental Design, Data Interpretation, Technical Writing, Independent Project Development

Core Competencies

- Critical Thinking & Complex Problem-Solving
- Strategic Decision-Making & Systems Thinking
- Cross-Disciplinary Collaboration
- Continuous Learning & Adaptability