

Rodolfo Padilla

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Biology B.S. and minor in Chemistry with hands-on research experience in microbiology and molecular biology, including PCR/qPCR, aseptic technique, and microscopy. Skilled in data analysis and assay design, with experience developing bioinformatics tools. I am passionate about advancing cancer and infectious disease therapeutics.

Research & Laboratory Experience

Marker Finder App - [Remote]

- Developing “Marker Finder”, a web-app (Python, Primer3) to automate biomarker discovery and primer design for gene expression datasets.

Laboratory Assistant - [University of Oregon, Roy Lab]

- Supported a large-scale fungal biodiversity project (CLIMUSH) examining macrofungi response to fire, climate, and plant community structure across EON/LTER sites.
- Performed sample preparation, microscopy, and aseptic handling of biological material.
- Curated ecological datasets and prepared publication-ready figures in R.

Independent Research Proposal - [University of Oregon]

- Designed experimental protocols to investigate Sca4/Sca2-mediated disruption of vinculin and actin remodeling in endothelial cells.
- Integrated literature on host-pathogen interactions with proposed assays (PCR, immunofluorescence, cytoskeletal analysis).
- Developed a structured research plan demonstrating skills in protocol development, assay design, and critical analysis.

Vector-Borne Disease Modeling - [University of Oregon]

- Developed a stage-structured ODE models in R/deSolve to explore *Ixodes scapularis* dynamics under seasonal temperature and host density.
- Identified host density thresholds driving tick infection amplification, with implications for public health surveillance and vector management.

Internet Marketing Manager - [Potomac Holistics, Rockville, MD]

- Led marketing initiatives and managed personalized communications.
- Oversaw website maintenance and integration with POS (Point of Sale) system.

Software Developer - [New Frontier Data, Washington, DC]

- Collaborated with a team of developers on software solutions.
- Enhanced problem-solving skills and technical proficiency.

Data Collector - [Retail Data, LLC, Germantown, MD]

- Conducted in-store audits to gather accurate pricing data.

Education

University of Oregon - Eugene, OR

Bachelor of Science in Biology, Minor in Chemistry (2022-2025)

- **Relevant Coursework:** Biochemistry, Molecular Genetics, Organic Chemistry, Cell Biology, Bacterial-Host Interactions, Microbiology, Evolutionary Ecology, Ecology Field Methods

Montgomery College - Rockville, MD | (2020-2021)

Associate's Degree in Biology

Skills

- **Laboratory Techniques**
 - Aseptic techniques (BSL-2), Bacterial culture (liquid and solid media), Media/reagent preparation Microscopy, sample purification
 - PCR/qPCR, ddPCR, ELISA, Gel electrophoresis
 - HPLC, FPLC
 - Flow Cytometry
 - Autoclave operation
 - Equipment calibration
 - LIMS
- **Data Analysis**
 - GLP-style record keeping
 - Lab safety & waste disposal (biological and chemical)
 - Glassware cleaning and inventory management
 - R, Python
 - Github
 - Reproducible analysis pipelines
 - Data visualization and statistical interpretation
- **Professional Strengths**
 - Capacity to identify and address challenges encountered during experiments
 - Fluent in English and Spanish
 - Highly collaborative, detail-oriented
 - Clear and effective communication of experimental procedures and results

- Strong written communication and experience in hypothesis-driven project design