**Isela J. Hernandez**

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**SUMMARY**

* Lead of molecular biology operations team for data analysis pertaining to current and past build cycles, as well as project collaborations
* Extensive experience in data mining, data visualizations, statistics, and some machine learning
* Proficiency in MySQL, Python and R

**EDUCATION**

Bachelor of Arts, Biology, Occidental College, Los Angeles, CA (May 2018)

**PROFESSIONAL EXPERIENCE**

*Data Analyst I, Molecular Biology Projects team*

**MBP Titan, LLC.** (Subsidiary of Intrexon) Feb. 2019 – Present

* Collaborate with strain engineering groups on tool development projects and conduct process optimization work for the Molecular Biology Operations team
* Conduct statistical analysis and create data visualizations with R to track and characterize progress in building a genome-wide gene overexpression library. Identify troubleshooting routes which enabled a 96% build success rate
* Parse bacterial transformation data using MySQL and use bioinformatics tools to identify sequence motifs that negatively impact strain engineering efforts
* Perform experiments to establish new lab automation workflows and analyze raw data in Python to assess reproducibility and robustness. Present workflow and data analyses to team members prior to roll outs
* Modify the in-house DNA Construction software tools (a set of intricate Python scripts) to improve primer design for plasmid build cycles

*Research Associate I, Molecular Biology Operations*

**MBP Titan, LLC.** (Subsidiary of Intrexon) Jul. 2018 – Jan. 2019

* Assembled plasmids used for methanotroph and yeast strain engineering in a high-throughput environment
* Collaborated on creating an Excel template for high-throughput data analysis of PCR success rates to refine and guide troubleshooting stages
* Bug tested and improved two software programs used by the Molecular Biology Operations team. Used JIRA task tracking software to coordinate and collaborate with the software development team

*Student Research Assistant****,*** *Professor Renee Baran lab*  Mar. 2016 – May 2018

**Occidental College, Biology Department**

* Collaborate on a CRISPR-cas9 project to knock out neural-specific regulatory subunits of the protein katanin in *C. elegans* to investigate microtubule regulation
* Train new lab members in *C. elegans* handling, in reagent making, and in molecular biology techniques

*Summer Research Intern* May - Aug. 2017

**City of Hope, Department of Molecular Immunology**

* Investigated the formation of reactive oxygen species on peptides as a result of hypertension
* Developed a complex protocol for the identification of gamma-ketoaldehydes on peptides by mass spectrometry

*Summer Research Intern*  May - Aug. 2016

**City of Hope, Department of Cancer Genetics and Epigenetics**

* Analyzed compounds on their inhibitory effects of the TOP1 protein in human cells to improve the efficacy of existing chemotherapeutic treatment
* Validated two compounds that succeeded in blocking TOP1 SUMOylation in preclinical experiments
* Developed a cell fractionation protocol to visualize SUMOylated TOP1 in active chromatin

**SKILLS**

Programming languages: **Python** (pandas, numpy, matplotlib), **R** (dplyr, tidyr, readxl, stringr, CARET, dbplyr, ggplot2, rpart, tree)

Bioinformatics: Sequence alignment, Bioconductor (Biostrings, seqinr), Geneious, BLAST

Statistics: Descriptive statistics, ANOVA, general linear models, correlation

Machine Learning: Supervised learning (decision trees, K-nearest neighbors, linear and logistic regression) and unsupervised learning (clustering, random forests)

Office software: Microsoft Excel, Microsoft Powerpoint, Microsoft Word, Outlook

Wet lab: PCR, DNA purification, various DNA assembly approaches, bacterial and yeast transformation, NGS workflows

Other: MySQL, Github, Jupyter Notebook, Unix, Atlassian (JIRA, Confluence, Bibucket), exploratory data analysis, data cleaning, data parsing, data structures

**HONORS AND AWARDS**

* Academic Student Project Award, October 2017
* Dean’s List, Fall 2015 - Spring 2016

**CERTIFICATIONS**

*Python for Everybody Specialization* (Coursera),November 2019

*Pierian Data Complete Python 3 Bootcamp* (Udemy),June 2019

*Using Python for Research* (EdX), In progress

**CONFERENCE PRESENTATIONS**

Southern California Conferences for Undergraduate Research (SCCUR) November 18, 2017

California State Polytechnic University, Pomona, Pomona, CA

Derivatization of Peptide Carboxyl Groups for the Detection of Uncharged Peptides by Mass Spectrometry

Southern California Conferences for Undergraduate Research (SCCUR) November 12, 2016

University of California, Riverside, Riverside, CA

Targeting Topoisomerase I SUMOylation for Cancer Therapy

Occidental Summer Research Conference August 3rd, 2016

Occidental College, Los Angeles, CA

Targeting Topoisomerase I SUMOylation for Cancer Therapy