

Dayanara Lebron-Aldea
email: daya.lebron@gmail.com or dlebron@ucdavis.edu

Education

M.S Statistics-University of California, Davis, California
GPA: 3.10

September 2016-Present

B.S., Bio-Mathematics- Universidad Metropolitana, San Juan, Puerto Rico

August 2010 – May 2015

Courses Completed: Analysis of Variance and Experimental Design (STA 106); Probability Theory (STA 200); Statistical Data Science (STA 141).

Courses in Progress: Regression Analysis (STA 108); Mathematical Statistics (STA 200B); Data Technologies (STA 141B); Multivariate Data Analysis (STA 135)

Published Papers

Lebrón-Aldea, Dayanara, Dhurandhar, Emily Jane, Pérez-Rodríguez, Paulino, Klimentidis, Yann C., Tiwari, Hemant K, V. A. I. (2015). *Integrated genomic and BMI analysis for type 2 diabetes risk assessment*. *Frontiers in Genetics*, 6, 1–8.
doi:10.3389/fgene.2015.00075

Research Experience

Post College Appointee- Information Systems

February 2016-Present (February 2017)

Research Supervisor: Jonathan Allen; Global Security, Bioinformatics Group, Lawrence Livermore National Lab

Unexpected finding of contaminants during careful screening of sequences for LMAT db update.

- Developed pipeline for quality control of genomes prior to be added to LMAT database.
- Scripts made in R, Python, Bash and Perl; HPC systems used: **Catalyst** and **Herd**.
- Quality control included computing comparison with already existent genomes in our database, finding and extracting contaminant fragments in candidate sequences. BLAST on Human Genomes.
- Performed QC on 100,000+ genomes from GENBANK and built new database.

- ❖ Collaborated with FDA and NASA projects.
- ❖ In charge of processing and launching LMAT requests from other collaborations and extracting/producing useful information from the taxonomical outputs of LMAT.
- ❖ Mentored summer bioinformatics students on project and poster presentation skills.

Computation Intern (CO-OP)

June 2016-February 2016

Research Supervisor: Jonathan Allen; Computation Directorate, Lawrence Livermore National Lab

Microbial Community Profiling of an Unexpected Source: The Human Genome

- Human Genome Project Analysis and Visualization.
 - Identification and compilation of contaminant sequences across sequencing centers
 - Unix: Bash Shell, R (Phyloseq & ggplot graphics); HPC systems: **Catalyst**. Data Mining: Perl and Bash Scripting.
 - Developed pipeline that produces “BIOM” tables that eases interpretation and analysis of taxonomical info of genomes.
- ❖ Analyzed TCGA RNA-Seq datasets with the purpose of finding relationship between bacterial/viral presences with two types of cancer.
 - ❖ Worked on external xenosurveillance project on malaria presence on mosquitoes in Africa.

Undergraduate Researcher – Biomathematics

August 2014-February 2015

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Research Mentor: Luis F. De La Torre; Universidad Metropolitana, Puerto Rico. (SRDC)

Population Dynamics of the Green Iguana in Puerto Rico: a Pest Control Method.

- Use of Discrete Models for Population Estimation; Software: Simulations using Vensim.

Research Assistant – Statistical Genetics

Summer 2014

Research Mentors: Ana I. Vazquez, Hermant Tiwari, Yogasudha Veturi; University of Alabama at Birmingham

Genetic Variance in BMI Associated with the FTO Gene in Young Adults.

- Worked under the TIGER STUDY proposal (University of Texas Austin);
- G-BLUP; Mixed Models; Quality Control Data.
- HPC Cluster use for analysis: **Cheaha**
- Performed analysis to estimate genetic variances of obesity related genes with the use of genetic and physical data from 5,000+ patients.

Intern – Statistical Genetics

Summer 2013

Research Mentors: Ana I. Vazquez, Emily Dhurandar, & Paulino Perez; University of Alabama at Birmingham

Genome Enabling Models for Type 2 Diabetes Risk Assessment

- Classification Models: Neural Network, Logistic Regression, SVM in R
- Genomic Analysis: SNPs related to Type 2 Diabetes (Framingham Heart Study).
- Built predictive models for Type 2 Diabetes using patients clinical and genetic information. Compared predictive ability of different models using multiple classification models.

Undergraduate Intern- Biostatistics

Summer 2012

Research Mentor: Jeffrey Dawson, and Guideon Zamba; University of Iowa (ISIB).

Using Actigraphy Watches to Measure Sleep Activity in Subjects with Obstructive Sleep Apnea

- Data formatting and cleansing, Longitudinal Data Visualization in R.
- Wilcoxon Rank Sum Test, ANOVA.

Teaching Experience & Leadership

- Mentor Assistant for Bio-informatics Interns Summer 2016
S Program, Global Security, Lawrence Livermore National Laboratory
- Judge for the 2012 Winter AGMUS Pre-College Symposium & 2013 Spring Pre-College Symposium
- Mentor Teacher in Biostatistics, Fall 2012-Fall 2014
Saturday Research Academy, Universidad Metropolitana, San Juan, Puerto Rico
- Calculus 1 Tutor for Pre-College Students. Fall 2013
- Mathematics Tutor, Fall 2013
Learning Zone Center, Universidad Metropolitana, San Juan, Puerto Rico
- Vice-President of the American Mathematical Society Chapter at UMET 2011-2012
Universidad Metropolitana, San Juan, Puerto Rico.

Awards

- 2016 Travel Fellowship for BPDM Workshops and KDD Conference (awarded to only 10% of applicants)
- 2016 -2017 GEM Fellowship - Full Fellow (LLNL-UCDAVIS)
- 2016-2017 NSF Research Training Group Grant
- Acceptance to University of California at Davis Statistics Graduate Program

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- 2015 LLNL Poster Symposium - Most Outstanding Poster Presentation in Computation.
- 2013 UAB Research Expo (Third Place) Best Poster Presentation in Public Health
- 2013 MGE@MSA/WAESO Research Conference - Honorable Mention for Poster Presentation
- 2012 AGMUS Research Symposium Best Poster Presentation in Biostatistics
- 2012-2014 Mathematics Alliance Scholar
- 2011-2014 NSF Bio-Mathematics Scholarship
- Spring 2011: AGMUS Bio-Mathematics Excellence List
- 2011 SACNAS National Conference Best Poster Presentation in Applied Mathematics.
- 2011 Model Institute of Excellence (MIE) Award
- **Travel Awards:** SACNAS 2011 National Conference; BKX 69th Annual Conference; MGE@MSA/WAESO Conference; SACNAS 2012 National Conference; 2013 Richard Tapia Conference; 71th Joint Annual NIS and BKC Conference; Joint Mathematical Meeting 2015 and 2014 Field of Dreams.

Other

Raspberry Pi booth Attendant - BET Experience @ LA Live	June 2016
Speaker at 2016 EmpowHer Institute Maker Awards	April 2016
Volunteer at KDD 2016 Conference	
Volunteer at my Brothers Keepers Day at LLNL; mentoring high school students	

Graduate Presentations

Unexpected finding of contaminants during careful screening of sequences for LMAT database update.

- Poster Presentation at the 2016 Poster Symposium at Lawrence Livermore National Laboratory, Livermore CA, August 2016.

Microbial Community Profiling of an Unexpected Source: The Human Genome

- Poster Presentation at the 2015 Poster Symposium at Lawrence Livermore National Laboratory, Livermore CA, August 2015.

Undergraduate Presentations

Population Dynamics of the Green Iguana in Puerto Rico: a Pest Control Method

- Poster Presentation at the 2015 Joint Mathematics Meeting, San Antonio, TX, January 2015.

Gene Variance Associated to Anthropometric Measurements in Obesity Associated Genes

- Oral Presentation at the 2015 UMARCH, University of Puerto Rico Mayaguez, March 2015.
- Oral Presentation at the 2014 Undergraduate Research Symposium, San Juan, P.R, September, 2014
- Poster Presentation at the 2014 UAB Research Expo, University of Alabama at Birmingham, July, 2014

Genome Enabling Models for Type 2 Diabetes Risk Assessment

- Poster Presentation at the 71st Joint Annual NIS and BKC Meeting, Houston TX, March, 2014
- Poster Presentation at “*Posters y Postres*”, Universidad Metropolitana, February, 2014
- Poster Presentation at the 2013 Undergraduate Research Symposium, San Juan, P.R, September, 2013
- Poster Presentation at the 2013 UAB Research Expo, University of Alabama at Birmingham, July, 2013

Using Actigraphy Watches to Measure Sleep Activity in Subjects with Obstructive Sleep Apnea

- Poster Presentation at the 2013 Eleventh Annual MGE@MSA/WAESO Student Research

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Conference, Arizona State University, March, 2013

- Poster Presentation at the 2013 Richard Tapia Computer Science and Diversity National Conference, Washington, D.C., February, 2013
- Poster Presentation at SACNAS National Conference, Seattle Convention Center, Washington, October, 2012
- Presentation to Bio-mathematics Undergraduates at the Universidad Metropolitana, Cupey, Puerto Rico, October, 2012
- Poster Presentation at the 2012 AGMUS Research Symposium, San Juan, Puerto Rico, September, 2012
- Presentation at ISIB Symposium: Iowa Summer Institute, College of Public Health, University of Iowa, July, 2012.

Community Productivity with Sand Exposure in Urban and Forested Streams and the Effect of Fine Sediments in Grazers and Scrapers

- Poster Presentation at the 69th Joint Annual NIS and BKC Meeting, Nashville TN, March, 2012.
- Presentation to Bio-Mathematics Undergraduates at the Universidad Metropolitana, Cupey, Puerto Rico, November, 2011
- Poster Presentation at SACNAS National Conference, San Jose Convention Center, San Jose, California. October, 2011
- Poster Presentation at 2011 AGMUS Research Symposium, Hotel Conrad, San Juan, Puerto Rico, September, 2011
- Poster Presentation at Math Weekend, Universidad Metropolitana, Cupey, Puerto Rico, September, 2011

Skills

Languages: Bilingual in English and Spanish

Computer Programming: MatLab, R, Vensim,

Bash, Perl, Python.

Other: Microsoft Office: Excel, Word, Publisher.

Certifications

- IRB -01: Human Research - Biomedical (RCR Certification)
- RCR REFRESHER COURSE (RCR Certification)

References

Dr. Ana Ines Vazquez

Assistant Professor, Department of

Epidemiology and Biostatistics;

Michigan State University

avazquez@epi.msu.edu

Dr. Declan McCabe

Biology Department Chair, Associate

Professor of Biology, Saint Michael's

College.

dmccabe@smcvt.edu

Tony Baylis

Director of Diversity and Inclusion

Livermore National Laboratory

baylis3@llnl.gov

Dr. Jonathan Allen

Computer Scientist

Global Security, Bioinformatics Group

LLNL, Livermore, CA

allen99@llnl.gov