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Erick I. Navarro-Delgado

Profile

I am interested in integrating multi-omics data to get a deeper understanding of the epigenetic landscape and its role in complex human phenotypes.

Education

2021 - 2023 **THE UNIVERSITY OF BRITISH COLUMBIA** - FACULTY OF SCIENCE
M.Sc. in Bioinformatics Grade Average: TBD

2016 - 2020 **UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO** - FACULTY OF SCIENCE
B.Sc. in Biology Grade Average: 9.85/10 (3rd Highest Class grade average)

2019 **KING'S COLLEGE LONDON** - FACULTY OF LIFE SCIENCES & MEDICINE
Study Abroad Grade Average: 73.5 (First-Class Honors)

Research Experience

SEP 2021 - TO DATE **BC CHILDREN'S HOSPITAL RESEARCH INSTITUTE** (VANCOUVER, CANADA)
Supervisors: Dr. Michael Kobor & Dr. Keegan Korthauer
- Evaluation of the independent, interactive and additive contribution of genetics and environmental exposures to early life DNA methylation variation.

NOV 2018 - JUN 2021 **NATIONAL CANCER INSTITUTE (INCAN) -** (MEXICO CITY)
Supervisor: Dr. Rodrigo Gonzalez Barrios
- Identification of epigenetic central players in SARS-CoV-2 infection with therapeutic potential through a weighted gene co-expression network approach
- Identification of differentially expressed coding genes and repetitive elements modulated by DAXX through RNA-seq

JUNE - SEP 2019 **THE UNIVERSITY OF BRITISH COLUMBIA** - (VANCOUVER, CANADA)
Supervisor: Dr. Denise Daley
- Adaptation of the GWAS permutation-based Gene Set Analysis tool ALLIGATOR to RNA-seq & Age prediction using EPIC targeted methylation sequencing data

JUNE - AUG 2018 **WEIZMANN INSTITUTE OF SCIENCE** - (REHOVOT, ISRAEL)
Supervisor: Dr. Valery Krizhanovsky
- Use of senolytics as a therapeutic approach to prevent Pancreatic Ductal Adenocarcinoma development in a Kras-driven transgenic mouse model and cultured human cell lines

JUNE - AUG 2017 **NATIONAL LABORATORY OF GENOMICS FOR BIODIVERSITY (LANGEBIO), CINVESTAV -** (IRAPUATO, MEXICO)
Supervisor: Dr. Alexander de Luna Fors
- Analysis of epistasis among genes in the nutrient sensing regulatory pathway affecting *Saccharomyces cerevisiae*'s chronological lifespan using a high-throughput parallelizable approach

Teaching Experience

JAN - JUNE 2020 **NATIONAL AUTONOMOUS UNIVERSITY OF MEXICO -** MEXICO CITY
Teaching assistant in Epigenetics

Presentations

2020 **MEXICAN INTERDISCIPLINARY NETWORK OF EPIGENOMICS** (MEXICO CITY)

Presentation *"Identifying targetable epigenetic central players in SARS-CoV-2 infection with a systems approach"*

2019 **SUMMER STUDENT RESEARCH DAY** (VANCOUVER, CANADA)

Presentation *"Identifying the main biological mechanisms in asthma and food allergy: adapting ALLIGATOR to RNA-seq data"* at the University of British Columbi.

2018 **KUPCINET-GETZ INTERNATIONAL SUMMER SCHOOL COLLOQUIUM** (REHOVOT, ISRAEL)

Presentation *"Use of senolytics as a therapeutic approach to prevent cancer development "* at the Weizmann Institute of Science

Selected Honours and Awards

2021 **GLOBALINK GRADUATE FELLOWSHIP** - MITACS

2019 **INTERNATIONAL STUDENT MOBILITY FELLOWSHIP** - NATIONAL AUTONOMOUS UNIVERSITY OF MEXICO

2019 **GLOBALINK RESEARCH INTERNSHIP FELLOWSHIP** - MITACS

2017-19 **EXCELLENCE FELLOWSHIP FOR UNDERGRADUATE STUDENTS**- MEXICAN ACADEMY OF SCIENCES / SEP

2018 **KUPCINET-GETZ INTERNATIONAL SUMMER SCHOOL FELLOWSHIP** - WEIZMANN INSTITUTE OF SCIENCE

2017 **SUMMER SCIENTIFIC RESEARCH (VIC) FELLOWSHIP** - MEXICAN ACADEMY OF SCIENCES

2017 **II UNAM UNDERGRADUATE BIOCHEMISTRY COLLOQUIUM - FIRST PLACE** (MEXICO CITY, MEXICO)

2016 **X IBERO-AMERICAN BIOLOGY OLYMPIAD (OIAB)- GOLD MEDAL** (BRASILIA, BRAZIL)

2016 **XXI INTERNATIONAL SCIENCE CONTEST (CIC) - THIRD PLACE** (MONTERREY, MEXICO)

2016 **XXV NATIONAL BIOLOGY OLYMPIAD - GOLD MEDAL** (VERACRUZ, MEXICO)

2016 **UNAM UNIVERSITY HIGH SCHOOL TALENT AWARD IN SCIENTIFIC RESEARCH** (MEXICO CITY, MEXICO)

Courses

2020 - 2021 **BEDU / SANTANDER**

Data Science program - Length: 5 months

2020 **EMTECH INSTITUTE / SANTANDER**

"Introduction to Data Analysis with Python" course - Length: 60 hours

Skills

Experience in sequencing data pre-processing, RNA-seq data analysis addressing coding genes and repetitive elements, differential expression analysis, gene set analyses, weighted gene co-expression network analysis and data visualization with R. Skilled in programming with R, python and bash shell scripting. Familiarity with Microsoft Office, SQL and MongoDB.

Experience in wet lab techniques such as PCR, qPCR, transformation, electrophoresis, western blot, cloning, cellular culture and immunhistochemistry staining.

Languages

I speak Spanish as my native language, and I am fluent writing and speaking English (TOEFL iBT score: 109/120).

Hobbies

I enjoy a lot practicing archery; I have won 4 medals in national contests. Also, I love science outreach. I established a science communication society in Mexico City (Sociedad Científica Juvenil - CDMX), which has attended to several state science events.

Publications

† denotes equal contribution

Journal Articles

Salgado-Albarrán M.†, **Navarro-Delgado E.I.†**, Del Moral-Morales A.†, Alcaraz N., Baumbach J., González-Barrios R., Soto-Reyes E. (2021) Comparative transcriptome analysis reveals key epigenetic targets in SARS-CoV-2 infection. *npj Systems Biology and Applications;* doi: 10.1038/s41540-021-00181-x.

Cáceres-Gutiérrez R.E., Andonegui M.A., Oliva D.A., González-Barrios R., Luna F., Arriaga-Canon C., López A., Prada D., Castro C., Parmentier L., Díaz-Chávez J., Alfaro-Mora Y.,**Navarro-Delgado E.I.**, Fabian-Morales E., Tran B., Shetty J., Zhao Y., Alcaraz N., De la Rosa C., Reyes J.L., Hédouin S., Hubé F., Francastel C., & Herrera L.A. (2021). Proteasome inhibition alters mitotic progression through the upregulation of a-satellite RNAs. *The FEBS Journal*; doi:10.1111/febs.16261.

Duncan E.M., Nowotarski S.H., Guerrero-Hernández C., Ross E.J., D'Orazio J.A., **Clubes de Ciencia México Workshop for Developmental Biology***, McKinney S., Guo L., Alvarado A.S. (2020). A new species of planarian flatworm from mexico: Girardia guanajuatiensis. *bioRxiv;* doi:10.1101/2020.07.01.183442.
* I was part of the Clubes de Ciencia Mexico WfDB consortium.

Book chapters

Navarro-Delgado E.I.†, Salgado-Albarrán M.†, Torres-Arciga K., Alcaraz N., Soto-Reyes E., Herrera L.A. & Gonzalez-Barrios R. (2021). Bioinformatics of Transcription Factor Binding Prediction. In Diego A. Forero, *Bioinformatics and Human Genomics Research*. USA. CRC Press USA (Taylor & Francis Group); doi: 10.1201/9781003005926-10

References

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