

**Guillermo de Anda-Jáuregui**  
*Systems Pharmacology, Network Biology*  
**Curriculum Vitae**

**Current position** Cátedra CONACYT associate researcher

**Institution** Consejo Nacional de Ciencia y Tecnología (CONACYT)  
commissioned to:  
Computational Genomics Division  
Instituto Nacional de Medicina Genómica  
(INMEGEN)  
Periférico Sur 4109  
Colonia Arenal Tepepan, Alcaldía Tlalpan,  
Ciudad de México, 14610

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**Github** [www.github.com/guillermodeandajauregui](http://www.github.com/guillermodeandajauregui)

**Education**

Ph.D. Biomedical Sciences  
(Doctorado en Ciencias Biomédicas)  
Project: *Search for therapeutic targets associated to breast cancer molecular subtypes*  
Universidad Nacional Autónoma de México  
2011-2016

B.Sc. Pharmaceutical and Biological Chemistry  
(Química Farmacéutica Biológica)  
Facultad de Química  
Universidad Nacional Autónoma de México  
2005-2011

**Work Experience**

May 2019 - Today Cátedra CONACYT associate researcher,  
Assigned to:  
Computational Genomics Division  
Instituto Nacional de Medicina Genómica

Nov. 2018 – Apr. 2019 Research associate  
Computational Genomics Division  
Instituto Nacional de Medicina Genómica

Jan. 2018 - Nov. 2018 Post-doctoral researcher  
Project: *Cloud bioinformatics platform for the identification of genetic variants, an application for molecular diagnostics and genomic research.*  
Instituto Nacional de Medicina Genómica

Nov. 2016 – Dec. 2017 Post-doctoral Research Fellow



- A Boolean network approach to estrogen transcriptional regulation**  
Complexity
- 2019 Guillermo de Anda-Jáuregui#  
**Guideline for comparing functional enrichment of biological network modular structures**  
Applied Network Science
- 2019 Guillermo de Anda-Jáuregui, Brett A. McGregor, Kai Guo, Junguk Hur  
**A Network Pharmacology Approach for the Identification of Common Mechanisms of Drug-Induced Peripheral Neuropathy**  
CPT: Pharmacometrics and Systems Pharmacology
- 2019 Guillermo de Anda-Jáuregui, Jesús Espinal-Enriquez, Enrique Hernández-Lemus  
**Spatial Organization of the Gene Regulatory Program: An Information Theoretical Approach to Breast Cancer Transcriptomics**  
Entropy
- 2019 Guillermo de Anda-Jáuregui, Kai Guo, Junguk Hur  
**Network-Based Assessment of Adverse Drug Reaction Risk in Polypharmacy Using High-Throughput Screening Data**  
International Journal of Molecular Sciences
- 2019 Guillermo de Anda-Jáuregui, Kai Guo, Brett A McGregor, Eva L Feldman, Junguk Hur  
**Pathway crosstalk perturbation network modeling for identification of connectivity changes induced by diabetic neuropathy and pioglitazone**  
BMC Systems Biology
- 2019 Guillermo de Anda-Jáuregui#, Jesus Espinal-Enriquez, Junguk Hur, Sergio Antonio Alcalá-Corona, Lena Ruiz-Azuara, Enrique Hernández-Lemus#  
**Identification of Casiopeina II-gly secondary targets through a systems pharmacology approach**  
Computational biology and chemistry
- 2018 Brett A McGregor\*, Stephanie Eid\*, Amy E Rumora, Benjamin Murdock, Kai Guo, Guillermo de Anda-Jáuregui, James E Porter, Eva L Feldman, Junguk Hur  
**Conserved Transcriptional Signatures in Human and Murine Diabetic Peripheral Neuropathy**  
Scientific reports
- 2018 Sergio Antonio Alcalá-Corona\*, Guillermo de Anda-Jáuregui\*, Jesús Espinal-Enriquez\*, Hugo Tovar, Enrique Hernández-Lemus

- Network Modularity and Hierarchical Structure in Breast Cancer Molecular Subtypes**  
International Conference on Complex Systems (Proceedings)
- 2018 Guillermo de Anda-Jáuregui, Kai Guo, Brett A McGregor, Junguk Hur  
**Exploration of the anti-inflammatory drug space through network pharmacology: applications for drug repurposing**  
Frontiers in physiology
- 2018 Sergio Antonio Alcalá-Corona\*, Jesús Espinal-Enríquez\*, Guillermo De Anda Jáuregui, Enrique Hernández-Lemus  
The Hierarchical Modular Structure of HER2+ Breast Cancer Network  
Frontiers in physiology
- 2018 Guillermo de Anda-Jáuregui\*, Jesús Espinal-Enríquez\*, Diana Drago-García, Enrique Hernández-Lemus  
**Nonredundant, Highly Connected MicroRNAs Control Functionality in Breast Cancer Networks**  
International Journal of Genomics
- 2017 Sergio Antonio Alcalá-Corona\*, Guillermo de Anda-Jáuregui\*, Jesús Espinal-Enríquez, Enrique Hernández-Lemus  
**Network Modularity in Breast Cancer Molecular Subtypes**  
Frontiers in physiology
- 2017 Jesus Espinal-Enriquez, Cristóbal Fresno, Guillermo Anda-Jáuregui, Enrique Hernandez-Lemus  
**RNA-Seq based genome-wide analysis reveals loss of inter-chromosomal regulation in breast cancer**  
Scientific Reports
- 2016 Guillermo de Anda-Jáuregui, Tadeo E Velázquez-Caldelas, Jesús Espinal-Enríquez, Enrique Hernández-Lemus.  
**Transcriptional network architecture of breast cancer molecular subtypes**  
Frontiers in physiology
- 2015 Guillermo de Anda-Jáuregui, Raúl A Mejía-Pedroza, Jesús Espinal-Enríquez, Enrique Hernández-Lemus  
**Crosstalk events in the estrogen signaling pathway may affect tamoxifen efficacy in breast cancer molecular subtypes**  
Computational biology and chemistry
- 2012 Helgi Jung Cook, Guillermo de Anda-Jáuregui, Kenneth Rubio Carrasco, Lourdes Mayet Cruz  
**Comparación de perfiles de disolución: Impacto de los**

**critérios de diferentes agencias regulatorias en el cálculo de  $f_2$**

Revista mexicana de ciencias farmacéuticas

**Preprints**

2018

Enrique Hernández-Lemus\*, Jesús Espinal-Enríquez\*,  
Guillermo de Anda-Jáuregui.\*

**Probabilistic Multilayer Networks.**

arXiv

2018

Diana García-Cortés, Guillermo de Anda-Jáuregui,  
Cristobal Fresno, Enrique Hernandez-Lemus, Jesús Espinal-  
Enriquez

**Loss of trans regulation in breast cancer molecular subtypes.**

bioRxiv

**Conference presentations  
and Invited Talks**

2018

**Big Data: Networks and Genomics**

Guillermo de Anda-Jáuregui & Jesús Espinal-Enríquez

Invited talk/workshop

Feria de Ciencias y Humanidades, UNAM

Ciudad de México, México

2018

**Emergence of highly connected, non-redundant micro-RNAs in breast cancer transcriptional networks and their role in the control of biological functions**

Guillermo de Anda-Jauregui, Jesus Espinal-Enriquez, Diana Drago-Garcia and Enrique Hernandez-Lemus

Short talk

Conference n Complex Systems 2018

Thessaloniki, Greece

2018

**Loss of trans-regulation in breast cancer**

Jesús Espinal-Enriquez, Cristobal Fresno, Guillermo de Anda-Jáuregui and Enrique Hernandez-Lemus

Short talk

Conference n Complex Systems 2018

Thessaloniki, Greece

2018

**Mexican corruption network: Using journalistic big data to discover major political crimes**

Jesús Espinal-Enriquez, Guillermo de Anda-Jáuregui,  
Rodrigo Garcia Herrera, Sergio Antonio Alcalá-Corona,  
Sofia Ramirez and Issa Luna Pla

Short talk

Conference n Complex Systems 2018

Thessaloniki, Greece

- (presented by Jesús Espinal-Enríquez)
- 2018 **Large-Scale DNA Methylation Profiling of Human Diabetic Peripheral Neuropathy in Subjects with Type 2 Diabetes Mellitus.**  
Kai Guo, Sarah Elzinga, Stephanie Eid, Claudia Figueroa-Romero, Brett A Mcgregor, Guillermo De Anda-Jáuregui, Crystal Pacut, Eva L Feldman, Junguk Hur.  
*Poster*  
American Diabetes Association 78 Scientific Sessions  
Orlando, Florida, USA  
(presented by Kai Guo)
- 2018 **Biomedical network analysis: drugs and cancer**  
Short talk  
useR! MEX 2018  
Ciudad de México, México
- 2018 **Network Pharmacology: from Big Data to Precision Medicine**  
Invited talk  
Institutional Seminar, Instituto Nacional de Medicina Genómica  
Ciudad de México, México
- 2017 **The use of a drug-gene perturbation network for the study of drug side effects: The case of drug-induced peripheral neuropathy**  
Guillermo de Anda-Jáuregui, Kai Guo, Brett McGregor, Junguk Hur  
Short talk  
1<sup>st</sup> Latin American Conference on Complex Networks  
Puebla, Puebla, México
- 2017 **Changes in pathway connectivity induced by disease and therapeutic treatment: the case of diabetic neuropathy and pioglitazone**  
Guillermo de Anda-Jáuregui, Kai Guo, Brett McGregor, Junguk Hur  
Short talk  
Conference on Complex Systems 2017  
Cancún, Quintana Roo, México
- 2017 **Network pharmacology exploration of the anti-inflammatory drug space**  
Guillermo de Anda-Jáuregui, Kai Guo, Brett McGregor, Junguk Hur  
*Poster*  
25<sup>th</sup> Conference on Intelligent Systems for Molecular Biology and 16<sup>th</sup> European Conference on Computational Biology  
Prague, Czech Republic

- 2017 **Pathway-level effects of pioglitazone on neuropathy in the BKS-db/db Mouse Model of Type 2 diabetes**  
Guillermo de Anda-Jáuregui, Kai Guo, Brett McGregor, Junguk Hur  
Poster  
American Diabetes Association 77 Scientific Sessions  
San Diego, California, USA
- 2017 **Using systems pharmacology to identify common mechanisms of drug-induced peripheral neuropathy**  
Guillermo de Anda-Jáuregui, Kai Guo, Brett McGregor, Junguk Hur  
Short talk  
109<sup>th</sup> Annual Meeting, North Dakota Academy of Sciences  
Grand Forks, North Dakota, USA
- 2015 **Effects of pathway crosstalk in the therapeutic efficacy of antiestrogenic treatment for breast cancer**  
Invited talk  
Symposium: Advances and perspectives in medical chemistry  
Taxco, Guerrero, México
- 2015 **Crosstalk events in the estrogen signaling pathway that affect tamoxifen efficacy in different subtypes of breast cancer**  
Invited talk  
Institutional Seminar, Instituto Nacional de Medicina Genómica  
Ciudad de México, México

## **Programming languages & Computational Skills**

R

General scripting

Network Analysis:  
Igraph

Data Analysis:  
Tidyverse  
data.table

General Bioinformatics:  
BioMart annotation  
Microarray preprocessing pipeline  
RNAseq preprocessing pipeline  
limma

Pathway analysis:  
GSEA

GAGE  
Over-representation analysis  
Pathifier

Python

General scripting

Data Analysis:  
Pandas

Network Analysis:  
NetworkX

Linux

Bash scripting

Command line environment

Desktop environment

HTCondor distributed computing

Windows

Desktop environment

General tools

LaTeX typesetting

Microsoft Office Suite  
LibreOffice Suite

GIMP (image processing)  
Inkscape (image processing)  
ImageMagick (image processing)

Git version control

**Languages**

Spanish, native

English, fluent

*Cambridge Certificate in Advanced English (CEFR Level 1)*

French, basic