



**Cinvestav**  
UGA-LANGEBIO

Academic Days

2018

Dec 5, 6 & 7



#DíasAcadémicos2018

**2:55 pm**  
Auditorium

**Welcome by Chair: Dr. Therese Markow**

**3:00 pm**

Opening Plenary Lecture  
Host: Teri Markow

**Prof. Mariana F. Wolfner**  
Cornell University

Egg activation in *Drosophila*: calcium waves and macromolecular changes to start development

**4:00 pm**  
Talk 1

**Dr. Fausto Rodríguez Zapata**  
Rellán lab

Genome scan signals of maize adaptation to soil phosphorus availability

**4:15 pm**  
Talk 2

**Ale Castañeda González**  
Markow lab

Phoretic mites associated with beetles on decomposed fruits

**4:30 pm**  
Talk 3

**Dr. Obed Ramírez Sánchez**  
Abreu lab

*De novo* assembly of small RNA sequencing reads improves species assignment in combined parasite-host samples

**4:45 pm**  
Talk 4

**Karina Atriztán Hernández**  
A. Herrera lab

*Trichoderma atroviride*: from Predator to Prey

**5:00 pm**  
Main lobby

**POSTERS DAY 1**  
(with snacks and beverages)

**6:00 pm**  
Auditorium

**CULTURAL EVENT**  
Ballet folklórico del Instituto Municipal de Cultura, Arte y Recreación de Irapuato



#DíasAcadémicos2018

9:55 pm  
Auditorium

Welcome by Chair: Dr. Luis Brieba

10:00 am  
Talk 5

**Dr. José Juan Ordaz Ortiz**  
Metabolomics and Mass Spectrometry Measuring the masses to understand metabolic programming

10:15 am  
Talk 6

**José Alberto Campillo Balderas**  
**Finalist Langebio-Award**  
Facultad de Ciencias, UNAM  
Origins and early evolution of viruses



10:30 am  
Talk 7

**Michelle Munguía Figueroa**  
de Luna and Abreu labs  
Genomewide mechanisms of lifespan extension by metformin in budding yeast

10:45 am  
Talk 8

**Juan Pablo Robles Álvarez**  
**Finalist Langebio-Award**  
Instituto de Neurobiología, UNAM  
Structural analysis of vasoinhibins and localization of their active domain



11:00 am



COFFEE BREAK (30 min)

11:30 am  
Auditorium

Welcome by Chair: Dr. Tania Hernández

11:30 am  
Talk 9

**Dr. Angélica Cibrián Jaramillo**  
Ecological and Evolutionary Genomics  
Ethnography and genetics of cycads: insights into the biocultural importance of an ancient Mexican plant group

11:45 am  
Talk 10

**Juan Carlos Baladrán Juárez**  
**Finalist Langebio-Award**  
Centro de Investigación Biomédica de Oriente, IMSS  
Bone marrow organoid-like 3D structures reveals functional hierarchy governed by the microenvironmental niche in B-cell leukemia-initiating cells



12:00 am  
Talk 11

**Beatriz Villarreal Terrazas**  
Gillmor lab  
Regulation of early embryogenesis in Arabidopsis by GRAND CENTRAL and miR156

12:15 pm  
Talk 12

**Sergio Romero Romero**  
**Finalist Langebio-Award**  
Facultad de Medicina, UNAM  
The conformational landscape of proteins: study of natural and de novo designed TIM barrels



12:30 pm



LUNCH (2 hrs)

2:30 pm  
Auditorium

Welcome by Chair: Dr. Selene Fernández

2:30 pm  
Talk 13

**Dr. Sean Rovito**  
Vertebrate Genomics and Biodiversity  
Thermal tolerance across latitudinal and elevational gradients in Neotropical plethodontid salamanders

2:45 pm  
Talk 14

**Silvana Bazúa Valenti**  
**Finalist Langebio-Award**  
Biomédicas, UNAM  
The calcium-sensing receptor increases activity of the renal NCC through the WNK4-SPAK pathway



3:00 pm  
Talk 15

**Juan David Camarena Alba**  
Barona lab  
The microbiome of the coralloid root of *Dioon edule* responds to nitrogen limitation via its specialized metabolism

3:15 pm  
Talk 16

**Jonás Andrés Aguirre Liguori**  
**Finalist Langebio-Award**  
Instituto de Ecología, UNAM  
Genomics of populations of wild maize: understanding ecological patterns of local adaptation allow predicting the vulnerability of populations to climate change



3:30 pm



COFFEE BREAK (30 min)

4:00 pm  
Auditorium

Welcome by Chair: Dr. Cei Abreu

4:00 pm  
Talk 17

**Dr. Ruairidh Sawers**  
Maize Genetics and Genomics  
Hidden genes and biodiversity

4:15 pm  
Talk 18

**Itzel Amasende Morales**  
Vielle lab  
Comparing sexuality and apomixis in *Arabidopsis* cousins

4:30 pm  
Talk 19

**Dr. Humberto Herrera Ubaldo**  
de Folter lab  
Dynamic protein interaction networks for gynoeceum development

4:45 pm  
Talk 20

**Miguel Andrés Vallebuena Estrada**  
Montiel and Vielle labs  
Rapid domestication and complex dispersal of lowlands preceramic maize from Paredones, Peru

5:00 pm  
Main lobby

POSTERS DAY 2  
(with snacks and beverages)



#DíasAcadémicos2018

9:55 pm  
Auditorium

Welcome by Chair: Dr. Andrés Moreno

10:00 am  
Talk 21

Dr. Mashaal Sohail  
Moreno lab

The Mexican Biobank Project

10:15 am  
Talk 22

Pedro Jiménez Sandoval  
Brieva lab

Functional studies of triosephosphate isomerases:  
from parasites to plants

10:30 am  
Talk 23

Dr. Sergio Nigenda Morales  
Moreno and Abreu labs

Population genomics and sequencing projects of non-model  
mammals

10:45 am  
Talk 24

Elohim Bello Bello  
L. Herrera lab

Whole-genome association mapping of in vitro root penetration  
ability in *Arabidopsis thaliana*

11:00 am



COFFEE BREAK (30 min)

11:30 am

Prof. Robert K. Wayne  
University of California, Los Angeles

Demographic history, adaptation and deleterious variation  
in carnivores

Closing Plenary Lecture  
Host: Dr. Andrés Moreno

12:30 pm  
Auditorium



AWARD CEREMONY, Host: Dr. Alfredo Herrera

2018 Jury: Nelly Sélem Mojica, Alejandro Aragón Raygoza, Dr. Selene Fernández Valverde &  
Dr. Rafael Montiel Duarte (Langebio) & Dr. Harumi Shimada (ENES León, UNAM).

1:00 pm  
Main lobby



LUNCH



#DíasAcadémicos2018

**1 Erika V. Cruz Bonilla / de Luna lab**

The genetic landscape of long-lived phenotypes in *Saccharomyces cerevisiae*

**3 J. Abraham Avelar Rivas / de Luna lab**

Natural variation of mutational effects in TOR-mediated cell survivorship

**5 María Daniela Porras Troncoso / A. Herrera lab**

Role of cytokinins in the biology of *Trichoderma*

**7 Javier Blanco / Moreno lab**

The peopling of remote Oceania and the genomic origins of Rapanui

**9 María José Palma / Moreno lab**

The landscape of maternal and paternal lineages in Mexico

**11 Ileri Carbaja Valenzuela & Ariel Muñoz Sánchez / Cibrián lab**

Genomic analysis of endophytic microbiome in *Vanilla planifolia* and its relation with stem and root rot

**13 Fernando López Restrepo / Cibrián lab**

Functional role of endophytic fungi in the coralloid roots of cycads

**15 Roberto Bermúdez Barrientos / Abreu lab**

Disentangling small RNAs from parasitic interactions

**17 Mariana del Carmen Aguilera Puga / Plisson lab**

Study of the amphipathic moment of plant cysteine-rich peptides and their membranolytic activities

**19 Edder Daniel Bustos Díaz / Barona lab**

Evolution of nitrogen fixing facultative symbiotic cyanobacteria

**21 Nelly Selem Mójica / Barona lab**

Occurrence and variation of specialized metabolism revealed by evolutionary genome mining bioinformatic tools

**23 Judith Lúa / Vielle lab**

Genetic interactions among members of the RNA-directed DNA methylation pathway during reproductive development in *Arabidopsis*

**25 Javier Mendiola / Vielle lab**

Parthenogenesis: insights from its molecular mechanisms in plants

**27 Josué Esau Macías López / Ordaz lab**

Non-targeted metabolomic comparisons of three vanilla species from Totonacapan region

**29 Oscar Fernández Fernández / Ordaz lab**

A non-targeted fingerprinting method for the study of soils irrigated with sewage water

**31 David Gómez Zepeda / Ordaz lab**

Mass spectrometry methods for the spatial localization and quantification of carboxylic acids from the TCA-cycle – application to plant roots exudates

**2 Noé Baruch / Briebe lab**

Plant mitochondrial DNA replication

**4 Francisco Pérez Zavala / L. Herrera lab**

"Unravelling the genetic mechanisms through which titanium acts as a beneficial element in plants"

**6 Gerardo Alejo Jacuinde / L. Herrera lab**

Viability markers of desiccation tolerant *Selaginella* species

**8 Moisés Frausto Romo / L. Herrera lab**

Evaluación de la sobreexpresión de ALMT1 y STOP1 en *Arabidopsis* en la toma de fósforo insoluble

**10 Jorge Noé García Chávez / Moreno lab**

Mitochondrial omics data integration in induced hepatocellular carcinoma

**12 Juan Antonio Castillo González / Montiel lab**

Implementing CRISPR-Cas9 to test ancient human alleles in *C. elegans*

**14 Karla Azucena Juárez Núñez / Rellán lab**

Phospholipid balance as a possible driver of maize adaptation to highlands

**16 Zeltzin Corina Rodríguez Ortiz / Rovito lab**

Inferencia de los modos de especiación geográfica a partir de los patrones de beta diversidad de salamandras neotropicales

**18 Mizraim Olivares Miranda / Rovito lab**

The role of a pathogenic fungus in the decline of an obligate cave-dwelling Neotropical salamander

**20 Irving Jair García López / Fernández lab**

Novel lncRNAs are induced as part of the neighbor proximity response in *A. thaliana*

**22 Luis Jordan Pérez Medina / Fernández lab**

Identification of co-expressed long non-coding RNA structural domains in similar human tissues

**24 Ángela Guadalupe Juárez Corona / de Folter lab**

Factors that regulate SPATULA (SPT) expression in *Arabidopsis thaliana*

**26 Beatriz Flores Reyna / Gillmor lab**

Regulation of pattern formation in *Arabidopsis* embryogenesis by H3K9 methylation

**28 Axel Orozco Nieto / Gillmor lab**

Functional assay of paternal allele activation in isogenic and hybrid crosses of *Arabidopsis*

**30 Daniel Lepe Soltero / Gillmor lab**

QTL mapping of modifiers of paternal allele activation in hybrid embryos of *Arabidopsis*

**32 Betsabeth Miravel Gabriel / Hernández lab**

How did cacti lose their leaves?

**33 Nestor Octavio Nazario Yepiz / Markow lab**

Developmental and transcriptional responses to seasonal dietary shifts in *Drosophila mojavensis*



#DíasAcadémicos2018

## Silvana Bazúa Valentí

PhD student at Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán and Instituto de Investigaciones Biomédicas, UNAM. Her research has focused in the regulation of renal salt transport in different physiological and pathological conditions.



## José Alberto Campillo Balderas

PhD in Biological Sciences, currently at Origin of Life Laboratory, Facultad de Ciencias, UNAM. His research has focused on the origin and early evolution of viruses and the relationship with the phylogeny of their hosts.



## Juan Carlos Balandrán Juárez

PhD in Molecular Biomedicine. His work has been focusing on the role of the bone marrow microenvironment in the origin, maintenance and immunosurveillance of leukemia-initiating cell and competition with normal hematopoietic stem cells for the niche by using a novel 3D organoid-like stromal cell co-culture system and patient-derived xenografts.



## Juan Pablo Robles Álvarez

Ph.D. in Biomedical Sciences at Instituto de Neurobiología, UNAM. His research is focused on understanding the structure-function relationship of vasoinhibin, an antiangiogenic protein. His integrative approach involves from molecular dynamic simulations to recombinant production of different isoforms and their analysis in various in vitro and in vivo vascular models.



## Jonás Andrés Aguirre Liguori

PhD in Sciences, at Instituto de Ecología, UNAM. He has studied the ecological and geographic patterns of local adaptation. Currently he is studying the impact that climate change will have on populations of wild and cultivated maize.



## Sergio Romero Romero

PhD in Biochemical Sciences at UNAM. His research is focused on studying the conformational landscape of natural proteins and how this knowledge about structure, folding and stability can be applied to de novo protein design.

