**2018 Minority Science Programs (MSP) Research Symposium**

**School of Biological Sciences, University of California, Irvine**

**September 24-25, 2018**

**Monday September 24, 2018**

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| **9:40** |  | **Welcoming: Dr. Luis Mota-Bravo**  |
|  |  | **ORAL PRESENTATIONS (I) 4201 Natural Sciences II** |
|  |  |  |
| **9:50** | Title | Distribution of antibiotic resistant genes among bacteria species |
|  | Presenter | **Luis Cantu-Morin** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **10:00** | Title | Integrating the role of genetic and physical interactions in multi-subunit prion conformers |
|  | Presenter | **Alexis Villani** |
|  | Principal Investigator | Dr. Daniel Jarosz, Stanford University |
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| **10:10** | Title | N-acylethanolamine-hydrolyzing acid amidase and its association with hyperalgesia recuperation |
|  | Presenter | **Mario Rodriguez** |
|  | Principal Investigator | Dr. Daniele Piomelli, University of California, Irvine |
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| **10:20** | Title | The role of autophagy in axon branching of chick retinal ganglion cells |
|  | Presenter | **Alexis Guerra** |
|  | Principal Investigator | Dr. Uwe Drescher, Kings College, London |
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| **10:30** | Title | Monitoring ATP kinetics after DNA damage using FRET biosensor |
|  | Presenter | **Emmanuel Moncada** |
|  | Principal Investigator | Dr. Michael Berns, University of California, Irvine |
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| **10:40** | Title | Novel β-lactamase antibiotic resistance gene found in a multidrug resistant environmental *Escherichia coli*  |
|  | Presenter | **Paul Hernandez** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **10:50-11:00** |  | **BREAK** |
| **11:00** | Title | Structural investigation into a natural DNA polymerase with unnatural reverse transcriptase activity |
|  | Presenter | **Mauricio Jacobo Jacobo** |
|  | Principal Investigator | Dr. John Chaput, University of California, Irvine |
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| **11:10** | Title | Creation of DNA constructs to label synaptic proteins in live zebrafish |
|  | Presenter | **Melissa Emami** |
|  | Principal Investigator | Dr. Robert Hindges, Kings College, London |
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| **11:20** | Title | Co-occurrence of *blaCMY-2* Beta-lactam resistance gene and a unique mobile element carrying four antibiotic resistance genes on a plasmid in an environmental *Escherichia coli* |
|  | Presenter | **Alyza Roman** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **11:30** | Title | Efficient induction of resistance genes is important for bacterial survival under transient drug conditions |
|  | Presenter | **Oluwaseun Adegbite** |
|  | Principal Investigator | Dr. Daniel Schultz, Dartmouth College |
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| **11:40** | Title | Purification and substrate binding studies of Uridine-Cytidine Kinase 1 |
|  | Presenter | **Robert Quechol** |
|  | Principal Investigator | Dr. Celia Goulding, University of California, Irvine |
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| **11:50** | Title | Effects of a vacuolar H+ -ATPase mutation in midney intercalated cells linked to distal renal tubular acidosis |
|  | Presenter | **Ambrocio Sanchez Pineda** |
|  | Principal Investigator | Dr. Nuria Pastor-Soler, University of Southern California |
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| **12:00-1:00** |  | **LUNCH 1114 Natural Sciences I** |
| **1:00 - 3:00** |  | **POSTER PRESENTATIONS (I) 1114 Natural Sciences I** |
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| **Poster 1** | Title | Enterohemorrhagic virulence genes *ehx* and *espP* associated with the enteroaggregative AstA toxin in a multidrug resistant *Escherichia coli* from the environment |
|  | Presenter | **Kevin Aguirre** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 2** | Title | Investigating the mechanisms of chaperone activity of a peptide derived from Alpha A-Crystallin |
|  | Presenter | **Christian Baca** |
|  | Principal Investigator | Dr. Rachel Martin, University of California, Irvine |
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| **Poster 3** | Title | Mobile class 1 integron containing antibiotic resistant genes is newly described in environmental *Enterobacter kobei* |
|  | Presenter | **Christian Checkcinco** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 4** | Title | Structural characterization of a replicative DNA polymerase with unexpected reverse transcriptase activity |
|  | Presenter | **Roman Meza** |
|  | Principal Investigator | Dr. John Chaput, University of California, Irvine |
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| **Poster 5** | Title | Exploring the role of UHRF1 and its effects on proliferation in osteosarcoma |
|  | Presenter | **Kelsey Salcido** |
|  | Principal Investigator | Dr. Claudia Benavente, University of California, Irvine |
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| **Poster 6** | Title | First record of trimethoprim resistance *drfA21* in *Kluyvera g*enus |
|  | Presenter | **Jonathan Galicia** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 7** | Title | Folding the repulsive guidance molecule N-terminal fragment using red-ox reagents |
|  | Presenter | **Dalia Villamil Perez** |
|  | Principal Investigator | Dr. Melanie Cocco, University of California, Irvine |
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| **Poster 8** | Title | *Escherichia coli* ST1193 from natural environment carries novel multidrug-resistant region formed by transposition |
|  | Presenter | **JoAnne Villagrana** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 9** | Title | Comparative transcriptomics of heads and tails between *Steinernema carpocapsae* and *Caenorhabditis elegans* |
|  | Presenter | **Isaryhia Rodriguez** |
|  | Principal Investigator | Dr. Ali Mortazavi, University of California, Irvine |
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| **Poster 10** | Title | A novel combination of plasmid mediated antibiotic resistant and heavy metal resistant genes in environmental *Klebsiella pneumoniae* |
|  | Presenter | **Jack Shanahan** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 11** | Title | Endocannabinoid Receptor Type 1’s Role in the Arborization of Developing *Xenopus laevis* Optic Tectal Neuron Dendrites |
|  | Presenter | **Rodrigo Del Rio Jr.** |
|  | Principal Investigator | Dr. Susan Cohen-Cory, University of California, Irvine |
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| **Poster 12** | Title | Assessment of griping strength as a measure of regeneration-related recovery of forelimb motor function after spinal cord injury in mice |
|  | Presenter | **Daniela Gonzalez** |
|  | Principal Investigator | Dr. Oswald Steward, University of California, Irvine |
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| **Poster 13** | Title | Statistical evaluation of phage libraries for directed evolution |
|  | Presenter | **Alyssa Fowlds** |
|  | Principal Investigator | Dr. Gregory Weiss, University of California, Irvine |
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| **Poster 14** | Title | Mobilization of antibiotic resistance gene *aac(3)-*IIa into *Escherichia coli* by a single IS26 transposon |
|  | Presenter | **Micah Lawerence** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 15** | Title | Activation of mTOR via PTEN knockdown as a potential strategy to reduce neuropathology in a mouse model of Alzheimer's disease |
|  | Presenter | **Christy George** |
|  | Principal Investigator | Dr. Oswald Steward, University of California, Irvine |

**2018 Minority Science Programs (MSP) Research Symposium**

**School of Biological Sciences, University of California, Irvine**

**September 24-26, 2018**

**Tuesday September 25, 2018**

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|  |  | **ORAL PRESENTATIONS (II) 4201 Natural Sciences II** |
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| **9:40** | Title | Fitness cost of multidrug resistance plasmid carriage in a novel *Escherichia coli* host |
|  | Presenter | **Betsy Juarez** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **9:50** | Title | Live functional imaging of forelimb proprioceptive signals in mouse cervical spinal cord |
|  | Presenter | **Jacob Martin-Thompson** |
|  | Principal Investigator | Dr. Sunil Gandhi, University of California, Irvine |
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| **10:00** | Title | The role of UHRF1 in osteosarcoma and lung carcinoma |
|  | Presenter | **Priscila Rodriguez** |
|  | Principal Investigator | Dr. Claduia Benavente, University of California, Irvine |
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| **10:10** | Title | Elucidating the potential interacting partners of ORF61 in Simian varicella virus  |
|  | Presenter | **Rebecca Vargas** |
|  | Principal Investigator | Dr. Ilhelm Messaudi, University of California, Irvine |
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| **10:20** | Title | The role of inflammation and NGF dysfunction in the evolution of Alzheimer’s disease pathology in down syndrome |
|  | Presenter | **Isabel Rivera** |
|  | Principal Investigator | Dr. Jorge Busciglio, University of California, Irvine |
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| **10:30** | Title | Molecular mechanism generating diversity of cortical neuronal subtypes |
|  | Presenter | **Ieeshiah Otarola** |
|  | Principal Investigator | Dr. Setsuko Sahara, Kings College, London |
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| **10:40** | Title | Macrolide resistance operon *mph(A), mrx*, and *mphR(A)* found on a multidrug resistance region in an environmental *Escherichia coli* |
|  | Presenter | **Caitlin West** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **10:50** | Title | Chronic alcohol exposure effects on the repair mechanism and function of human lung alveolar epithelial cells |
|  | Presenter | **Jaclene Torres** |
|  | Principal Investigator | Dr. Sudhanshu Agrawal, University of California, Irvine |
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| **11:00-11:10** |  | **BREAK** |
| **11:10** | Title | Does substrate density affect the metabolism of cancer cells? |
|  | Presenter | **Freddie Adame** |
|  | Principal Investigator | Dr. Michelle Digman, University of California, Irvine |
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| **11:20** | Title | Purification and crystallization of IrtA-NTD: A protein domain involved in Mtb uptake |
|  | Presenter | **Jessica Mendoza** |
|  | Principal Investigator | Dr. Celia Goulding, University of California, Irvine |
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| **11:30** | Title | Investigating the Lewis-acid assisted electrochemical reduction of carbon dioxide by crown-containing complexes |
|  | Presenter | **Nehal Idris** |
|  | Principal Investigator | Dr. Jenny Yang, University of California, Irvine |
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| **11:40** | Title | Endocannabinoid 2-AG signaling is required for spatial memory in mice |
|  | Presenter | **Esau Medina** |
|  | Principal Investigator | Dr. Daniele Piomelli, University of California, Irvine |
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| **11:50** | Title | Discordant relationship between copy number and gene dosage in a species-specific multigene family of *Drosophila melanogaster* |
|  | Presenter | **Jamie Jimenez** |
|  | Principal Investigator | Dr. Jose Ranz, University of California, Irvine |
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| **12:00-1:00** |  | **LUNCH 4201 Natural Sciences II** |
| **1:00 - 3:00** |  | **POSTER PRESENTATIONS (II) 4201 Natural Sciences II** |
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| **Poster 16** | Title | Mobilization of antibiotic resistance genes on a plasmid of environmental bacterium *Citrobacter freundii* |
|  | Presenter | **Karina Barragan** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 17** | Title | Structural features of the repulsive guidance, molecule N-terminal fragment |
|  | Presenter | **Angelique Cortez** |
|  | Principal Investigator | Dr. Melanie Cocco, University of California, Irvine |
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| **Poster 18** | Title | The mobilization of *qnrS1* and *sul3* antimicrobial resistance genes on a rare incompatibility type IncR *Escherichia coli* plasmid |
|  | Presenter | **Nancy Haro-Ramirez** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 19** | Title | New multidrug resistant region in *Klebsiella oxytoca* from the natural environment |
|  | Presenter | **Evelyn Zarate-Sanchez** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 20** | Title | Optimization of a selective Sulfhydryldimethylmaleimide click reaction |
|  | Presenter | **Joseph Garcia** |
|  | Principal Investigator | Dr. Gregory Weiss, University of California, Irvine |
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| **Poster 21** | Title | Various mobilization events leading to the acquisition of multidrug resistance in an environmental *Escherichia coli* plasmid |
|  | Presenter | **Moises Favela** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 22** | Title | Integration of pneumatic oscillator circuits for autonomous pumping in lab-on-a-chip devices |
|  | Presenter | **Cesar Gomez** |
|  | Principal Investigator | Dr. Elliot Hui, University of California, Irvine |
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| **Poster 23** | Title | First report of an ESBL-encoding *blaCTX-M-27* antibiotic resistance gene coupled with European antibiotic resistance gene cassette |
|  | Presenter | **Sarah Najera** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 24** | Title | Complete sequence of an *Escherichia coli* IncF plasmid showing mobilization of blaCMY-2 gene by IS1294 transposase |
|  | Presenter | **Sarah Singh** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 25** | Title | Large multi-drug resistance region from clinical settings found in environmental *Escherichia coli* collected in Manassas, Virginia |
|  | Presenter | **Stephanie Salazar** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 26** | Title | *Escherichia coli* isolated near a popular surf spot in Southern California harbors a plasmid conferring resistance to five classes of antibiotics |
|  | Presenter | **Amber Jimenez** |
|  | Principal Investigator | Dr. Luis Mota-Bravo, University of California, Irvine |
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| **Poster 27** | Title | Determining the optimal conditions for synthesis of acid-transforming Chitosan for use as a nanoantibiotic |
|  | Presenter | **Nathalie Iribe** |
|  | Principal Investigator | Dr. Young Jik Kown, University of California, Irvine |
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| **Poster 28** | Title | Adaptive immune cells permeate the brain affecting Alzheimer's pathogenesis in mice |
|  | Presenter | **Adriana Saire** |
|  | Principal Investigator | Dr. Mathew Blurton Jones, University of California, Irvine |
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| **Poster 29** | Title | Structural characterization of an RNA-cleaving FANA enzyme |
|  | Presenter | **Edward Oropeza** |
|  | Principal Investigator | Dr. John Chaput, University of California, Irvine |
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| **Poster 30** | Title | Role of Ser288 phosphorylation in endophillinA2 function |
|  | Presenter | **Cuauhtemoc Ramirez** |
|  | Principal Investigator | Dr. Aimee Edinger, University of California, Irvine |