SJSU College of Science
The 16th Student Research Day (SRD16) – Virtual Poster Session

The Zoom link and instructions for SRD 16 is given at the bottom of this document. Note that the latest version of Zoom is required to view the Breakout Rooms.

Each poster is assigned a code (e.g. A-1, A-2, B-1, B-2, etc) which corresponds to Session A or B, followed by the poster number in the Breakout Rooms. Once you enter the SRD 16 Zoom meeting, locate the Breakout Rooms, and find poster numbers you are interested to view, and enter that room. The poster will be viewable by screen sharing, and one or more authors will be available to answer questions.

You can leave a room at any time and move to another room.

Session A will be from 10:00am to 11:30am (an alert will be broadcast about 10min before the session ends). The session will close at 11:30 to allow for reconfiguration for Session B: if you wish to continue your discussion, make private arrangements outside of the SRD16 Zoom. Session B will begin at 11:45am and will end at 1:15pm

SRD 16 Program

SESSION A. (10:00am top 11:30am)

Department of Biological Sciences

A-1   Development of an Optogenetic Method to Stimulate Gamma Motor Neurons In Vitro.
Remie Mandawe, Apoorva Karekal, Sai Kiran Byri, Danitza Cheline, Miguel Macias, Alondra Suarez, and Katherine A. Wilkinson.

A-2   Norepinephrine decreases muscle spindle afferent response to muscle stretching.
Teodomiro Gomez, Arthur Harnisch, Alexandra Salazar, Serena Ortiz, David Martinez Mejia, Priti Patel, Erika Snyder, Maya Vallinayagam, Steven Valdespino, and Katherine A. Wilkinson.

A-3   Vesicle-Released Glutamate Maintains Muscle Spindle Afferent Excitability in Adult Mice
Serena Ortiz, David Martinez Mejia, Kimberly Than, Enoch Kim, Cebrina Navarro, Sarah Chu, Nikola Klier, Alyssa Occiano, Alexandra Salazar, Steven Valdespino, Natanya Ville, and Katherine A. Wilkinson.

A-4   A New Paradigm for Regulation of Cell Death by Intracellular pH Dynamics.
Tania Mancilla, Carly Montan, Rachel Soriano, Jobelle Peralta, Blake DuPriest, Hillary Gates,and Bree K. Grillo-Hill.

A-5   Identifying Proteins that Mediate Increased Proliferation at Higher Intracellular pH.
       Harnoor Virk, Bianca Flores, Laura Martins, Daniel Orozco, Ismahan Chire, and Bree K.
       Grillo-Hill.

A-6   Engineering proteins to measure acid levels in living cells.
       Barbara Sandoval, Trisha Marie Fabillaran, and Bree Grillo-Hill

A-7   Pneumolysin-induced PMN transmigration and disruption of airway epithelium a
       dherens junctions.
       Fatima Rizvi, Marshall Cox, Walter Adams, Shuying Xu, Rod K Tweten, and John M
       Leong

A-8   Interactions between thyroid hormone and catecholamine signaling in establishing total
       cardiac muscle cell numbers in the mammalian heart.
       Denzel Deo Omengan, Karen Davila, Crimsun Kessler and Alexander Payumo.
       Xi Chen and Guo Huang (UCSF).

Department of Chemistry

A-9   The Kinetics of the C-Terminal Domain of Antibiotic-Resistant *Pseudomonas
       aeruginosa* ArnA.
       Lucero Sandoval, Kendra Cortez, Rodger de Miranda, Cheyenne Dean, and Laura Miller
       Conrad.

A-10   Dissecting the Mechanism of Allosteric Regulation of SIRT1.
       Emily Leong, Reena Dosanjh, Johnson Huynh, and Ningkun Wang.

A-11   Self Assembly of Gold-Diamond Conjugates for Plasmonic Enhancement of NVC
       Nanodiamond with Au Nanostructures.
       Nawal Sugal, Davida Simpson, Nedah Basrav, Karen Lopez, Camilla Hanson, Grace
       Jeanpierre, Virginia Altoe, Dennis Nordlund, and Abraham Wolcott.

A-12   The Synthesis of Precision Ketone Polymers and Their Random Analogues.
       Matthew Dahlberg, Haojun Song, and Chester Simocko.

A-13   New Functional Groups for Selective Acyclic Diene Metathesis (SADMET).
       Su Hu, Hasaan Rauf, Zhongqi Li, Yingyan Li, and Chester Simocko.

A-14   Nuclear Reactions and Targetry.
       Alex Chuyanov, Justin Diaz, Dorian Erceg, Zixin Guan, Johnson Huynh, Cynthia Mach,
       Ciara Rogers, and Nicholas Esker.

A-15   Santa Clara Valley Native Plants as Sources of Bioactive Natural Products.
       Daisy Arroyo, Sukhmani Batra, Jaimie Chau,Phuong Anh, Mai, Christian Pham and Roy
       Okuda.

Department of Computer Science

A-16   Sentiment Analysis on COVID Tweets Using COVID-Twitter-BERT with Auxiliary
        Sentence Approach.
        Alvin Lin and Teng Moh.

A-17   Efficient Metadata Lookup in Inline Deduplication Systems Leveraging Block Similarity.
        Rakesh Gururaj, Melody Moh, and Teng Moh.
        Dr. Phil Shilane and Dr. Bhimsen Bhanjois of Dell Technologies.

A-18   Balancing Highly Compressed Data in Cloud Data Centers.
        Zi Yan Zhang, Melody Moh, and Teng Moh.
        Dr. Phil Shilane and Dr. Bhimsen Bhanjois of Dell Technologies.

A-19   Dynamic Resource Management of Fog-Cloud Computing for IoT Support.
        Mariia Surmenok and Melody Moh.

A-20   Detection of Antibiotic Resistance Genes in the Wastewater Microbial Metagenome.
        Alan Caparaz Le, Cleber Ouverney, and Wendy Lee.

A-21   Two-Server Problem in ZooKeeper.
        Sriram Priyatham Siram, Ching-Chan Lee, and Ben Reed.

A-22   Mitigating Write-ahead Log Contention on Shared Storage Devices.
        Lalitha Donga, Kayla Walton, Ben Reed, and Fangmin Lyu.

A-23   Deeplasmid: Identifying plasmids with deep learning
        Bill Andreopoulos (SJSU), Jan Balewski (DOE Joint Genome Institute), Natalia Ivanova
        (National Energy Research Scientific Computing Center), Asaf Levy (The Hebrew University
        of Jerusalem)

Department of Meteorology and Climate Science

A-24   A New Database For Fuel Moisture Assessment And Analysis.
        Jack Drucker.

Department of Physics and Astronomy

A-25   Spacetime Path Integrals for Entangled States.
        Narayani Tyagi and Ken Wharton.

SESSION B. (11:45am to 1:15pm)

Department of Biological Sciences

B-1   Sleep alters the physical structure of AWC-AIY synapses in *C. elegans*.
       Vanessa Jimenez, Sara Alladin, Anirudh Bokka,Veronica Bi, Fatima Farah, Anjana
       Baradwaj, and Miri VanHoven

B-2   Molecular pathway of the synaptic partner recognition in *C. elegans.*
       Josiah Graves, Fabiola Briseno, Maryam Idris, Courtney Knitter, Chase Ebner, Aruna
       Varshney, Idan Siman-Tov, Nghi Le, Erik Clippard, Doris Coto Villa, Luz Elizarraraz,
       Katie Watters, Raakhee, and Miri VanHoven.

B-3   Sensory activity is necessary for post-embryonic synapse formation in *C. elegans*.
       Veronica Bi, Jordan Mitchell, Nebat Ali, Angelina Tang, Cibelle Nassif, Jiamei Lu,
       Sukhdeep Kaur, Tanya Ly, Aruna Varshney, Alan Tran, Bryan Tsujimoto, Alex Duong,
       Martina Bremer, and Miri VanHoven.

B-4   The link between rare Earth element and phosphate homeostasis in *Methylorubrum
       extorquens* AM1.
       Sajede Rasouli, Eric Shao, Elena Ayala, and Elizabeth Skovran.

B-5   Development of CRISPR Cas9 for *Methylorubrum extorquens* AM1 to facilitate the
       bioengineering of a rare earth metal recycling platform.
       Nadiya Vysotska, Jennifer Lepe, Alice Huang, Tanzeena Hussain, and Elizabeth
       Skovran.

Department of Chemistry

B-6   Designing Structured Polymers as Supports for Molecular Catalysts.
       Jenalyn Halog-Calimquim, Dillion Chen, and Madalyn Radlauer.

B-7   Polymer Supported Hypervalent Iodine Reagents for Energy Storage and Materials
       Synthesis.
       Kym V. Ngo, Jorge Silva, and Philip T. Dirlam.

B-8   Recombinant Expression of N-terminally His6-tagged Serine Protease IV-EK from the
       Aedes aegypti Mosquito.
       Stephanie Nuñez, Elizabeth Moreno-Galvez, and Alberto A. Rascón, Jr

B-9   Mutagenesis Studies of JHA15, A Midgut Protease From The *Aedes aegypti* Mosquito.
       Kenia Mejia-Escobar, Stephanie Nuñez, Elizabeth Moreno-Galvez, and Alberto A.
       Rascón, Jr.

B-10   Oxidation of water by a cobalt verdazyl coordination compound.
       David Brook, Mario Escudero, and Tanvir Mann.

B-11   A Computational Study of NH Bond Energies in Verdazyls.
        Zhengzheng Li and David Brook.

B-12   Verdazyl substituted oligothiophenes as components of new electronic materials.
        Amir Mansouri and David Brook.

Department of Computer Science

B-13   Twinomaly: A Twin Anomaly Detection System.
        Paaras Chand and Teng Moh.

B-14   Zookeeper Performance Benchmarking.
        Prajwal Pyakurel, Sushant Mane, and Benjamin Reed.

B-15   Wildfire Risk Prediction and Integration with Smart City.
        Rekha Rani and Katerina Potika.

B-16   Power of BTS ARMY for Social Change Envisaged by Twitter Network Analysis.
        Vrinda Malhotra, Anirudh Dinesh Mallya, Inhee Park, and Katerina Potika.

B-17   Conservation and Prevalence of Sequence Paired Sites (SPSs) in Humans.
        Punithavathi Sundaramurthy, Brandon White (Dept. of Biological Sciences), and Wendy
        Lee.

Department of Meteorology and Climate Science

B-18   Can smoke from fires enhance cloud development and precipitation?
        Jacob Hall, Sophie Sedano, Krypton Chow, and Eugene Cordero.

B-19   Dissolving Coral Skeleton in Acidifying Ocean.
        Danny Viera, Andrew Paz, Emanuel Henriquez, and Eugene Cordero.

Department of Physics and Astronomy

B-20   Numerical Linked-Cluster Expansion Implemented Using igraph.
        Jyoti Rani and Ehsan Khatami.

B-21   Morphologies, Star-Forming Regions, and Star Cluster Populations of Gas-Rich Ultra-
        Diffuse Galaxies.
        Andrea Cajucom, Enrique Cabrera, Aaron Romanowsky, and The ALFALFA HUDS
        team.