

# THE 19TH COLLEGE OF SCIENCE STUDENT RESEARCH DAY

Friday April 19th, 11AM to 2PM

Duncan Hall Ground Floor Breezeway, facing the ISB



**Celebrate our 20th anniversary with us at our annual showcase!  
Students will be presenting the results of over 100 original  
research projects!**

SJSU | COLLEGE OF SCIENCE

## The 19th SJSU College of Science Student Research Day (SRD19)

**Twenty Years of SRD!  
(first held in May 2005)**

### Program

**SRD 19 includes over 100 posters which represent research projects conducted by students working in the laboratories of COS faculty. The posters are organized by Department and by a number. During the SRD (11am to 2pm) many student authors will be present to answer questions about their research. You can wander around the posters and talk to any of the student researchers, or read through the list and find any specific projects that may be of interest to you.**

# Department of Biological Sciences

- 1. FINE-SCALE FORAGING MOVEMENTS OF PIGEON GUILLEMOTS (*Cepphus columba*) ON SOUTHEAST FARALLON ISLAND.**  
Student Authors: Stella Solasz  
Faculty: Scott Shaffer  
Collaborators: Dr. Mike Johns, Pete Warzybok, Jaime Jahnce
- 2. HISTOLOGICAL ANALYSIS OF MAMMARY GLAND DEVELOPMENT IN MICE WITH A LOSS OF SIRTUIN 4**  
Student Authors: Allyzza A. Alonzo\*, Adrian Ordonez\*, Joanne Khau  
Faculty: Frank K. Huynh
- 3. NaV1.1 AND NaV1.6 PLAY UNIQUE AND ESSENTIAL ROLES IN MUSCLE SPINDLE AFFERENT FUNCTION IN ADULT MICE**  
Student Authors: Serena Ortiz  
Faculty: Katherine A. Wilkinson  
Collaborators: Cyrrus Espino; Theanne N. Griffith
- 5. RESOLVING AMBIGUITIES IN A DISJUNCT CLADE OF *HOMALOTHECIUM***  
Student authors: Larke Reeber  
Faculty: Ben Carter; Susan Lambrecht
- 6. IDENTIFYING PROTEINS THAT MEDIATE CELLULAR BEHAVIORS IN RESPONSE TO HIGHER INTRACELLULAR pH**  
Student authors: Laura Martins, Madelaine Surette, Ramy Wong, Daniel Orozco  
Faculty: Bree Grillo-Hill
- 7. EFFECTS OF INCREASED PHI ON THE ONCOGENE RASV12 DURING TUMOR FORMATION**  
Student Authors: Luz Arvizu, Katie Taloff, Melissa Rodriguez, Jeslin Jacob, Yadanar Khin, and Kruthi Kumar  
Faculty: Bree Grillo-Hill
- 8. INCREASED INTRACELLULAR PH PROMOTES AUTOPHAGIC CELL DEATH**  
Aaliyah Molina, Alan Wong, Kimberly Nguyen, Antonio Bibiano, Papa Sagna, James Tower, Carly Montan Stein, Hillary Gates, Liz Lopez  
Faculty: Bree Grillo-Hill
- 9. RIBOSWITCH DEVELOPMENT FOR DETECTION OF COXSACKIEVIRUS B3 IN WATER**  
Student Authors: Marellyn Negrete, Andrew Townsend, Jonathan Auyong  
Faculty: William Andreopoulos, Leila Khatib
- 10. WHAT IS FOAMING IN OUR WASTEWATER?**  
Student Authors: Armando C Gatica, Paola Mendez, Nharmadhaa Manickam, Nitya Iyer, Kaori McDa  
Faculty: Cleber Ouverney  
Collaborators: Payal Sarkar

- 11. RESPONSES OF JAW MORPHOLOGY TO ENVIRONMENTAL CONDITIONS IN RED URCHINS FROM AN URCHIN BARREN AND KELP FOREST**  
Student Authors: Nhi Ly; Ryan Hallisey  
Faculty: Maya deVries
- 12. EFFECTS OF SEAWATER FLOW RATE ON THE GROWTH, MORPHOLOGY, AND COMPOSITION OF RED ABALONE SHELLS IN AN INTEGRATED MULTITROPHIC AQUACULTURE (IMTA) SYSTEM**  
Student Authors: David Oliver Brown, Noah Kolander, Christina Lazaro  
Faculty: Maya deVries  
Collaborators: Scott Hamilton, Luke Gardner, Mike Graham
- 13. THE EFFECT OF SEAWATER FLOW RATE ON RED ABALONE GROWTH AND SHELL STRENGTH USING INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA)**  
Student Authors: Christina Lazaro, Noah Kolander, David Oliver Brown  
Faculty: Maya deVries  
Collaborators: Scott Hamilton, Luke Gardner, Mike Graham
- 14. ETHANOL INTERACTS WITH MUTATIONS IN PARKIN TO DAMAGE THE CENTRAL NERVOUS SYSTEM DURING DROSOPHILA DEVELOPMENT**  
Student Authors: Monica Flores Tapia; Navneet Sanghera; Reza Almassi  
Faculty: Rachael French
- 15. ETHANOL INTERACTS WITH ALZHEIMER'S DISEASE-CAUSING MUTATIONS TO EXACERBATE CENTRAL NERVOUS SYSTEM DEFECTS IN A FLY MODEL OF FETAL ALCOHOL SYNDROME**  
Student Authors: Aylia Abbas; Desiree Filardo  
Faculty: Rachael French
- 16. HOME IGNITION ZONE WILDFIRE MITIGATION INFLUENCE ON FUELS AND PLANTS AND VICE VERSA**  
Student Authors: David Benterou, Kanako Kato;  
Faculty: Will Russell, and Kate Wilkin  
Collaborators: Amanda Stasiewicz
- 17. THE ROLE OF PAR-3 IN POLARITY RECOVERY IN THE *C. elegans* INTESTINE**  
Student Authors: Rebecca Brodsky, LaRen Dees, Colton Duke, Eden Ephrem, Alyza Jane Escuardro, Nitika Fnu Ravneet Kaur, Mariam Mortada, Nick Phillips, Jaedyn Rollins, Zoe Upham, Mahati Varanasi, Lauren Cote, Jessica Feldman  
Faculty: Melissa Pickett
- 18. POSSIBLE REDUNDANT ROLE OF PAR-1 IN APICO-BASOLATERAL POLARITY ESTABLISHMENT OR MAINTENANCE IN THE *C. elegans* INTESTINE**  
Student Authors: Colton Duke, Zoe Upham, Nitika Fnu, Ravneet Kaur  
Faculty: Melissa Pickett

- 19. HISTOLOGICAL ANALYSIS OF TESTICULAR STRUCTURE IN MICE WITH A LOSS OF SIRTUIN 4**  
Student Authors: Echo Lee, Arshia Hamzehpour Savojbalaghi, Albert Nguyen  
Faculty: Frank K. Huynh
- 20. THE EFFECT OF MATERNAL AND INDIVIDUAL STRESS ON LATENCY TO EMERGE IN FENCE LIZARDS**  
Student Authors: Amber Singh; Tanushri Rana; Rochelle Sanidad; Emma Wen  
Faculty: David Ensminger
- 21. THE EFFECT OF MATERNAL AND INDIVIDUAL STRESS ON HABITAT SELECTION IN FENCE LIZARDS**  
Students: Amber Singh, Ivan Ko, Huda Kose, Tanushri Rana, Rochelle Sanidad, Suhai Velasquez Acosta, Tony Vo, Emma Wen  
Faculty: David Ensminger
- 22. THE EFFECT OF ACUTE AND CHRONIC STRESS ON ELEPHANT SEAL METABOLOME**  
Student Authors: Mohamed Ali Wone  
Faculty: David Ensminger  
Collaborators: Diana Daniela Moreno Santillan, Jose Pablo Vazquez-Medina; Collaborators affiliation, Integrative Physiology, UC Berkeley
- 23. DETERMINING THE ROLE OF THE COTRANSCRIPTIONAL REPRESSOR HIRRELESS (HR) IN HEART MUSCLE CELL PROLIFERATION**  
Student Authors: Ariana Leung, Herman Huang  
Faculty: Alexander Payumo
- 24. ADRENERGIC REGULATION OF CARDIOMYOCYTE SIZE, MOTILITY, AND MIGRATION**  
Student Authors: Wahida Akter, Herman Huang, Jacquelyn Simmons  
Faculty: Alexander Payumo
- 25. INTERFERON REGULATORY FACTOR-1: A CANDIDATE INHIBITOR OF MAMMALIAN CARDIOMYOCYTE PROLIFERATION**  
Student Authors: Tianna Young, Maia E. Quan, Herman Huang  
Faculty: Alexander Payumo
- 26. SURVIVAL OF PHI-6 GENOTYPES IN ACIDIC ENVIRONMENTS**  
Student Authors: Beth Wyatt, Kelly Thich, Aruna Gomathinayagam  
Faculty: Sonia Singhal
- 27. EXPERIMENTAL EVOLUTION OF PHI-6 CYSTOVIRUS UNDER HEAT SHOCK TREATMENTS**  
Student authors: Parnian Pour Bahrami, Sara Nayeem, Sujaya Jayathirtha Nilogal, Sanika Samel, Pranav Babu, Sarosh Sayed, Yangchen Li  
Faculty: Sonia Singhal

- 28. SOMETHING'S FISHY: DNA BARCODING REVEALS MISLABELED SUSHI IN A LOCAL RESTAURANT**  
Student Authors:  
Faculty: Jessica Castillo-Vardaro
- 29. IDENTIFICATION OF A POTENTIAL THERAPEUTIC TARGET TO PREVENT CHEMOTHERAPY INDUCED PERIPHERAL NEUROPATHY**  
Student Authors: Hoang-Vi Vu; Jaspinder Grewal; Husna Ibrahimkhail; Giselle Martinez; Martina Reyes; Giancarlo Sponzilli; Sherry Yu Tsai  
Faculty: Katherine A. Wilkinson  
Collaborator: Miriam B. Goodman
- 30. DIGITIZING THE ANT COLLECTION OF THE J. GORDON EDWARDS ENTOMOLOGY MUSEUM: MEASURING ANT BIODIVERSITY IN SPACE AND TIME**  
Student Authors: Julian Cortez  
Faculty: Fredrick J. Larabee  
Collaborators: Kaela Federico; Mekhala Sdoeung
- 31. THE MORPHOLOGY OF MUTUALISMS: THREE-DIMENSIONAL SHAPE ANALYSIS OF THE JAWS OF THE MEALYBUG ANT, *Acropyga***  
Student Authors: Kaycee Aviles; Dimitry Vartan; Duy Bui; Kayla Hong  
Faculty: Fredrick J. Larabee
- 32. DETERMINING CHARACTERISTICS OF A NOVEL BACTERIOPHAGE**  
Student authors: Vashaki Lohadas; Akiko Kaitlin Balitactac; Ervin Bose; Edward Rimon Hayek; Karen Cao  
Faculty: Wendy Lee; Robert Fowler; Steven White; Sonia Singhal
- 33. GABA MEDIATES A RAPID ESCAPE RESPONSE IN A *Caenorhabditis elegans* CHEMOSENSORY CIRCUIT**  
Student Authors: Joy Li, Eric Chang, Christopher Vargas, Benjamin Barsi-Rhyne, Jacqueline Pyle, Khristina Magallanes, Zanett Kieu, Sukhdeep Kaur, Sophia Akitt, Emily Soohoo, Vanessa Garcia, Maleiyah Harris, Hazel Guillen  
Faculty: Miri VanHoven
- 34. OLFACTORY SYNAPSES ARE MODULATED BY ODOR TRAINING AND SLEEP IN *Caenorhabditis elegans***  
Student Authors: Fatima Farah, Anirudh Bokka, Kelli Benedetti, Joy Li, Eric Chang, Aruna Varshney, Vanessa Jimenez, Anjana Baradwaj, Cibelle Nassif, Sara Alladin, Kristine Anderson, Veronica Bi, Vanessa Garcia, Kateryna Tokalenko, Emily Soohoo, Fabiola Briseno, Sukhdeep Kaur, Maleiyah Harris, Hazel Guillen, Decklin Byrd, Brandon Fung, Andrew Bykov, Emma Odisho  
Faculty: Miri VanHoven

- 35. PNEUMOLYSIN-INDUCES PMN TRANSMIGRATION AND DISRUPTION OF AIRWAY EPITHELIUM INTERCELLULAR JUNCTIONS**  
Student Authors: Janessa Carozza, Lizzy Davis, Nicole Homez, Crystal Luong, Gurbir Kaur, Suhanee Zaroo, Wint Mon Mon Kyaw, Ryan Yee, Michelle Quach, Theodore Nguyen, Sophia Malla, James Figueroa, Sienna Fowler, Emily Du, Devons Mo,  
Faculty: Walter Adams
- 36. COMBINING MECHANICAL PRE-TREATMENT AND PRESCRIBED FIRE TO RESTORE COASTAL PRAIRIE**  
Student Authors: Killian Cook, Jannike Allen, David Benterou  
Faculty: Kate Wilkin  
Collaborators: Jared Childress, Devii Rao
- 37. PYRODIVERSITY: PRESCRIBED FIRE INTENSITY AND FUELS CONSUMED IN CALIFORNIA'S MARITIME CHAPARRAL.**  
Student authors: Jannike Allen, Xiangyu Ren, Henri Brillon, David Benterou, Killian Cook, Andrew Klofas  
Faculty: Bo Yang, Craig Clements, Kate Wilkin
- 38. BUILDING PCVS: ELUCIDATING THE ROLE OF COUP-TFII AND ETS IN SEGMENTAL SPECIFICATION**  
Student Investigators: Naman Ghaman, Lucas Greven, Kaitlyn Lynch, Kaori McDaniel, Cecelia Nguyen and Talisa Pham  
Faculty: Thanh Theresa Dinh  
Collaborators: Yuhan Bi, Junliang Pan, Eugene C. Butcher

## Department of Chemistry

- 39. EXPLORING CHIRAL RECOGNITION THROUGH CIRCULARLY POLARIZED LUMINESCENCE SPECTROSCOPY**  
Student Authors: Lisette A. Vasquez Perez; Lorena Mont (both presenters)  
Faculty: Gilles Muller
- 40. DESIGN AND SYNTHESIS OF MACROMOLECULAR RUTHENIUM-BASED CATALYSTS FOR ENHANCED OLEFIN METATHESIS**  
Student Authors: Dakota Balcer; Aracely Acosta; Stephanie Velasquez; Mejgon Omar; Tyeshia Sapp  
Faculty: Madalyn R. Radlauer
- 41. IRIIDIUM COMPLEXES + MACROMOLECULAR SUPPORTS: DESIGNED FOR ENHANCED CATALYSIS**  
Student Authors: Brenda Mai; Victoria Nguyen; Juan Carlos Rojas; Tyeshia Sapp  
Faculty: Madalyn R. Radlauer

- 42. STRUCTURED POLYMERS AS FRAMEWORKS FOR ENZYME-INSPIRED CATALYSIS**  
Student Authors: Sanjana Sathyanarayanan; Jacob Bryant; José Ramirez; David Santiago; Christopher Swaiss; Melissa Griffin; Kathleen Huynh; Tony Mo  
Faculty: Madalyn R. Radlauer
- 43. DISCOVERING CHEMICAL DETERMINANTS OF P53 AMYLOID FORMATION**  
Student Authors: Chester Alhambra Jr, Anushree Bhattacharya, Ellena Korisheli  
Faculty: Emma Carroll
- 44. INVESTIGATING THE ROLE OF UBIQUITIN IN AMYLOID FORMATION**  
Student Authors: Aaron Acevedo, Katherine Martinez, Ann Nguyen, Tiffany Nguyen, Regina Leyva Roman  
Faculty: Emma Carroll
- 45. INVESTIGATING CHEMICAL INDUCERS OF PTEN AMYLOID FORMATION**  
Student Authors: Tess Kempner, Jennifer Nguyen, Belle Okere, Jay Thompson  
Faculty: Emma Carroll
- 46. QUANTIFYING THE EFFECTS OF PHOSPHORYLATION OF MOTIF A ON ITS BINDING AND ACTIVATION TOWARDS SIRT 1**  
Student Authors: Ayan Mohamed, Adorina Shahbaze, Patricia Claire Dosayla  
Faculty: Ningkun Wang
- 47. INVESTIGATING THE EFFECT OF THE REMOVAL OF EXON E2 ON SIRT1 ACTIVITY**  
Student Authors: Natalie Ramirez, Emily Quach, Malvika Kapadia  
Faculty: Ningkun Wang
- 48. OPTIMIZING CHARACTERIZATION OF SWITCH-LIKE REGIONS IN SIRTUINS**  
Student Authors: Britney Nguyen; Brooke Bellinghausen; Richard Pearson; Benjamin Strauss  
Faculty: Brooke Lustig  
Collaborators: Jonathan Oribello
- 49. EXPLORATION OF H-BOND NETWORKS IN HIV TAR RNA BINDING WT AND MUTANT PEPTIDES**  
Student Authors: Ethan Suwandi, Brooke Bellinghausen  
Faculty: Brooke Lustig
- 50. LANTHANIDE COORDINATION COMPOUNDS OF THE CHELATING VERDAZYL 1,3-DIPYRIDYL-5-ISOPROPYL-6-OXOVERDAZYL**  
Student Authors: Guillaume Perrin-Toinin, Anna Buryachenko, Makayla Teppang, Jonathan Lu, Shoug Almutairi, Diego Tavares, Nhu Lai.  
Faculty: David J. R. Brook  
Collaborators: Ghenadie Novitchi, Cyrille Train
- 51. CARBORANE SUBSTITUTED STABLE FREE RADICALS**  
Student Authors: Nick Adams, Nadia Palomeres, Taylor Jackson  
Faculty: David R. Brook

- 52. BLOCKING QUORUM SENSING IN *C. subtsugae***  
Student Authors: Natalie Hendrix; Mia Guraydin  
Faculty: Laura Miller Conrad
- 53. KINETIC CHARACTERIZATION OF *P. aeruginosa* ArnA**  
Student Authors: Keely White  
Faculty: Laura Miller Conrad
- 54. SYNTHESIS OF COLISTIN ANTIBIOTIC ADJUVANTS**  
Student Authors: Kseniya Maiseyeva  
Faculty: Laura Miller Conrad
- 55. SPECIATION OF POLYMERS OF GLYOXAL AND METHYLGLYOXAL DURING CLOUD FORMATION: CLIMATE IMPACTS**  
Student Authors: Mateo Johnson; Alejandro Municio; Esmeralda Mendoza Corrales; Kimberly Houghton  
Faculty: Annalise Van Wyngarden
- 56. CHEMICAL COMPOSITION OF FILMS FORMED FROM CARBONYL SPECIES UNDER HIGHLY ACIDIC SULFATE AEROSOL CONDITIONS**  
Student Authors: Anureet K. Chahal; Ethan Guidicotti; Rianna Farahani; Sean Colina; Aishwarya Deepak; Kaitlyn Nguyen; Kathy Tong; Thuy Tran; Thomas Nelson  
Faculty: Annalise Van Wyngarden
- 57. EXPLORING CHEMICAL ASTROBIOLOGY AT SJSU**  
Student Authors: Janna Gem Aniciete, Carime Martinez, Nourdean Shraim, Jamie Guzman, Lazarus Cobb, Victoria Gladstone, Tara Vaddiraj, Juan Pablo Chavez, Modasser Sheer, Victor Spiessens, Jacob Preston, Ethan Cox, Lorena Mont, Stephen Ball  
Faculty: Andro Rios
- 58. DEVELOPING MOLECULAR PLATING CAPABILITIES AT SJSU**  
Student Authors: Laylah Chacon, Brandon Barrios  
Faculty: Nicholas E. Esker  
Collaborators: Matthew Geary
- 59. NUCLEAR TARGETRY AT SJSU**  
Student Authors: Allan Ard, Brandon Barrios, Willem Botha, Laylah Chacon, Jo Drapal, Melanie Guerrero, Aiman Hamid, Jacob Huizar, Luca Le, Emily Lin, Simar Randhawa, Phu Vo  
Faculty: Nicholas E. Esker
- 60. SYNTHESIS OF WELL-DEFINED POLY(IODOSTYRENE) AND POST-POLYMER MODIFICATION BY SUZUKI CROSS-COUPLING**  
Student Authors: Minh Hoang Huynh  
Faculty: Philip T. Dirlam
- 61. METAL-ORGANIC FRAMEWORKS (MOFS) FOR LITHIUM-SULFUR BATTERIES**  
Student Authors: Lamija Kovacevic; Michelle Cao  
Faculty: Philip T. Dirlam  
Collaborators: Monica So; Kathleen Meehan



**62. PRELIMINARY INVESTIGATION OF CALIFORNIA NATIVE PLANTS FROM THE ISB GARDEN**

Student Authors: Owen Huang, Natalie Kapfenstein, Andrew Lelina, Asia Pham, Nathalie Alfaro, Serena Choo, Cynthia Sibrian, Karen Tam, Tamia Turner,  
Faculty: Roy K. Okuda

## Department of Computer Sciences

**63. HAVING FUN IN LEARNING FOR THE VISUALLY IMPAIRED: ON BLIND ACCESSIBILITY IN EDUCATIONAL VIDEO GAMES**

Student Authors: Kengo Kobayashi and Yan Chen  
Faculty: Melody Moh and Teng Moh

**64. DECODING MALWARE: AN IMAGE VISUALIZATION AND DETECTION STRATEGY.**

**Student Author:** Atharva Khadilkar  
Faculty: Mark Stamp

**65. DISTINGUISHING CHATBOT FROM HUMAN**

Student: Gauri Anil Godghase  
Faculty: Mark Stamp

**66. ADVERSARIAL ATTACKS ON FEDERATED LEARNING MODELS**

Student: Rohit Mapakshi  
Faculty: Mark Stamp

**67. FAKE REVIEWS DETECTION USING ASPECT BASED SENTIMENT ANALYSIS (ABSA)**

Student Author: Prathana Phukon  
Faculty: Katerina Potika

**68. NEURAL NETWORK-BASED BLOCKING PREDICTION FOR ELASTIC NETWORK SLICING**

Student Authors: Manmohanbabu Rupanagudi, Nitin Datta Movva,  
Faculty: Genya Ishigaki

**69. LEARNING-BASED CACHE MANAGEMENT STRATEGIES IN NAMED DATA NETWORKING**

Student Authors: Rachel Liao, Deep Shah, Sai Sameer Yanamandra, Sai Praveen Tatiparthi,  
Faculty: Genya Ishigaki

**70. SCALING CONTAINER CACHING TO LARGER NETWORKS WITH MULTI-AGENT REINFORCEMENT LEARNING**

Student Authors: Austin Chen  
Faculty: Genya Ishigaki

- 71. MODELING DNA SEQUENCING ARTIFACTS USING DEEP LEARNING**  
Student Authors: David Zhou  
Faculty: Wendy Lee  
Collaborator: Felix Mbuga
- 72. DO FRUIT FLIES NEED BPA-FREE WATER BOTTLES, TOO?**  
Student Authors: Hannah Debaets, Aarohi Chopra, Radha Dhaval  
Faculty: Wendy Lee
- 73. TFMAS: MULTI-ASPECT SELF-ATTENTION TRANSFORMER WITH LEARNABLE POSITIONAL ENCODING FOR HARD DRIVE FAILURE PREDICTION**  
Student Authors: Rohan Mohapatra  
Faculty: Saptarshi Sengupta  
Collaborators: Austin Coursey
- 74. De-SaTE: DENOISING SELF-ATTENTION TRANSFORMER ENCODERS FOR LITHIUM BATTERY HEALTH PROGNOSTICS**  
Student Authors: Gaurav Shinde, Rohan Mohapatra, Pooja Krishan  
Faculty: Saptarshi Sengupta
- 75. THE PERFORMANCE OF MACHINE AND DEEP LEARNING ALGORITHMS IN DETECTING FAKE REVIEWS**  
Student Author: Bharkavi Sachithanandam  
Faculty: Faranak Abri, Akbar Siami Namin
- 76. ADVERSARIAL ATTACKS AND DEFENSE MECHANISMS IN MULTIVARIATE TIME-SERIES FORECASTING FOR APPLICATIONS IN SMART AND CONNECTED INFRASTRUCTURES**  
Student Authors: Pooja Krishan  
Faculty: Saptarshi Sengupta  
Collaborator: Rohan Mohapatra
- 77. OPTIMIZATION OF RIBOSWITCH DESIGN USING PREDICTIVE PLATFORM FOR RNA SECONDARY STRUCTURE AND FREE ENERGY**  
Student Authors: Andrew Townsend, Jonathan Auyong, Kaveesh Passari, Marelyn Negrete  
Faculty: Leila Khatib, William Andreopoulos

## **Department of Geology**

- 78. MODELING SEISMIC HAZARD I: EARTHQUAKES & ENERGY**  
Student Authors: Lindsay Gross; Nathan Johnson  
Faculty: Betsy Madden
- 79. MODELING SEISMIC HAZARD II: LONG TERM TECTONICS IN THE BAY AREA**  
Student Authors: Bao Tran; Simon Truong  
Faculty: Betsy Madden

- 80. PHYSICS-BASED, COMPUTER MODELING OF EARTHQUAKES**  
Student Authors: Ritwik Patil, Shikha Singh  
Faculty: Betsy Madden
- 81. GETTING TO THE ROOT OF HYDRAULIC REDISTRIBUTION: MECHANISMS AND MAGNITUDES OF SOIL WATER TRANSFER BY PLANTS**  
Student Authors: Arya Parekh, Ali Zahori, Mai Arata  
Faculty: Nathaniel Bogie
- 82. RELATIVE RATIO OF FORAMINIFERA IN SEDIMENT PUSH CORES FROM THE AXIAL SEAMOUNT UNDERWATER VOLCANO**  
Student: Melissa Schott-Atkins  
Faculty: Ryan Portner, Carlie Piestch
- 83. PREDICTING SEDIMENT AGGRADATION FOLLOWING A SMALL DAM REMOVAL: MILL CREEK, CALIFORNIA, USA**  
Student Author: Madeline C. Doyle  
Faculty: Emmanuel Gabet

## Department of Mathematics & Statistics

- 84. DISCOVER HOMOGENEITY IN THE DATA WITH MISSING VALUES**  
Student Author: Brenda Lopez Rodas  
Faculty: Cristina Tortora  
Collaborators: Antonio Punzo
- 85. CLASSIFY DATA WITH MISSING VALUES**  
Student Author: Rajiv Iyengar  
Faculty: Cristina Tortora  
Collaborators: Antonio Punzo
- 86. A CORRELATION-BASED VARIABLE SELECTION METHOD FOR MIXED-TYPE ATA**  
Student Author: Shaam Madhvani  
Faculty: Cristina Tortora  
Collaborators: Antonio Punzo
- 87. THE CHROMATIC NUMBER OF THE SPHERE GRAPH**  
Student Authors: Bennett Haffner, Estephanie Ortiz, Olivia Sanchez  
Faculty: Edgar A. Bering IV

## Moss Landing Marine Laboratories

- 88. CHARACTERIZING THE RESPONSE OF MARINE PRIMARY PRODUCTIVITY TO GREENLAND ICE SHEET MELT**  
Student Author: Tara Parker,  
Faculty: Mike Wood, Sarah Smith

# Department of Physics & Astronomy

- 89. TEMPERATURE-DEPENDENT LASER SCANNING PHOTOLUMINESCENCE MICROSCOPY OF NOVEL MATERIALS**  
Student Authors: Takuto Ueda, Ayane Gomi, Luke D. S. Randhawa, Hediye Aktas,  
Faculty: Christopher L. Smallwood
- 90. SCANNING INTERFEROMETER AIMED AT CHARACTERIZING LASER COHERENCE LENGTHS**  
Student Authors: Mariana Rojas-Montoya, Ayane Gomi, Zachary Watkins, Henry B. Wahhab  
Faculty: Christopher L. Smallwood
- 91. ATOMICALLY THIN SEMICONDUCTORS: EXFOLIATION AND IMAGING**  
Student Authors: Ian Nepomuceno, Logan S. Miller, Brian T. Nguyen, Isaiah K. Solagbade, Brianna Zheng  
Faculty: Christopher L. Smallwood,  
Collaborators: Luis Jauregui
- 92. QUANTUM STATE ENGINEERING VIA WEAK MEASUREMENT IN THE FERMI-HUBBARD MODEL**  
Student Authors: Daniel Pilipovic, Aidan Caamaño  
Faculty: Ehsan Khatami, Hilary M. Hurst
- 93. RESEARCH ON EXPERIENCES OF LGBTQ+ PHYSICS-STUDENTS IN CALIFORNIA**  
Student Authors: Jacob T. Garner  
Faculty: Brianne Gutmann, Gina M. Quan
- 94. TOWARDS REALISTIC INTERPRETATIONS OF QUANTUM GATES**  
Student Author: Titus Amza  
Faculty: Ken Wharton
- 95. OPTIMIZING TUNABLE QUBIT ARRAYS FOR QUANTUM SIMULATION**  
Student Authors: Zak Espley  
Faculty: Hilary M. Hurst
- 96. MAPPING OUT GLOBULAR CLUSTERS IN PERSEUS CLUSTER ULTRA-DIFFUSE GALAXIES USING THE SUBARU TELESCOPE**  
Student Author: Alexi Musick  
Faculty: Aaron J. Romanowsky  
Collaborators: Steven R. Janssens; Nobuhiro Okabe; William H. Harris
- 97. DESI SPECTRA OF ULTRA-DIFFUSE GALAXIES IN THE COMA CLUSTER**  
Student Authors: Lailani Kenoly  
Faculty: Aaron Romanowsky

- 98. RADIO AND HUBBLE SPACE TELESCOPE OBSERVATIONS OF A CANDIDATE ISOLATED GAS-POOR DWARF GALAXY**  
Student Author: Xavier Mendoza-Melendez  
Faculty: Aaron J. Romanowsky  
Collaborators: Betsey Adams; Seppo Laine
- 99. SEARCHING FOR GLOBULAR CLUSTERS IN DWARF GALAXIES WITH LEGACY AND HUBBLE IMAGING**  
Student Authors: Yashraj Bains, Anna Vartan  
Faculty: Aaron Romanowsky
- 100. ANALYZING A MODEL OF A PULSAR–BLACK HOLE BINARY SYSTEM**  
Student Authors: Victoria Gladstone  
Faculty: Curtis T. Asplund
- 101. PHYSICS INFLUENCE ON NUCLEAR WEAPONS POLICY: 2021 BUDGET PROCESS**  
Student Authors: Emily Foreman  
Faculty: Curtis T. Asplund

## **Acknowledgements**

Thanks to all of the student researchers and their faculty mentors and collaborators for displaying the results of their hard work! This is truly an impressive showcase of the broad range of research activity that takes place within our College.

Preparation for SRD19 involved many colleagues from the College. Rob Pascual, Justin Croly and the COS Computer & Network Services printed most of the posters that were displayed today. Setup, teardown, and related aspects involved Lee Veliz, Mike Stephens, Randy Kirchner and Matt Geary, as well as a number of faculty and student volunteers. Kimberly Boudreaux coordinated the T-shirts and refreshments. Robine van Veen prepared the flyer, website, and name tags.

I would like to thank College of Science Dean Michael Kaufman for his support of SRD!

Thanks to Dr. Melody Esfandiari and students of the SJSU Chapter of the Student Affiliates of the American Chemical Society (SAACS) / Chemistry Club for providing refreshments and liquid nitrogen ice cream!

Thanks to everyone who participated and assisted with SRD19!

# ***THANK YOU FOR COMING!***