SJSU | COLLEGE OF SCIENCE

A Welcome Message from Dean Michael Kaufman

Welcome to the 20th SJSU College of Science Student Research Day. This event highlights the incredible original research that our students engage in with faculty mentors across a wide range of disciplines. At today's event, you'll find work on human and soil microbiomes, virus detection in wastewater, fire ecology, bilingual computing education, exploration of active California faults, the optical properties of nanomaterials, new discoveries on the structure of galaxies, effective methods for growing seaweeds, and a wide range of projects - from chemistry, to computer science, to applied math, physics, and geology - that are using applied computing techniques like AI and machine learning to approach research challenges. Engaging in research is one of the most transformative experiences that a student can have. Not only does it build disciplinary expertise – it also provides experience working in teams, strengthens communication skills, and forges the connections between theory and practice that students need to move on to the next steps in their careers. I hope you enjoy meeting the students and learning about their incredible work.

Michael Kaufman
Dean, College of Science
San José State University

Student Research Day 20 (SRD20) Program

Posters are listed by Department and a Number

Department of Biological Sciences

1. OPTIMIZATION OF VP1 PRIMERS FOR COXSACKIEVIRUS DETECTION IN RECYCLED WATER.
Student Authors: Giorgio Lam, Alyssa Shimizu, Leo Ngo
Faculty: Leila Khatib

2. RIBOSWITCH DEVELOPMENT FOR DETECTION OF *E. COLI* BACTERIOPHAGE MS2 IN RECYCLED WATER.
Student Author: Marelyn Negrete
Faculty: Leila Khatib

3. OPTIMIZING CRISPR TO ENRICH FOR RARE AND NOVEL BACTERIA IN THE HUMAN ORAL MICROBIOME.
Student Authors: Jimmy Cruz, Stephanie Rivas, Adrian Ordonez, Leif Greene, Kaori McDaniel, Marianna Velasco, Sara Zoroufy
Faculty: Cleber Ouverney

4. ENHANCING THE SOIL MICROBIOME TO PROMOTE COFFEE PLANT GROWTH UNDER ELEVATED TEMPERATURES.
Student Authors: Nharmadhaa Manickam, Jimmy Cruz, Stephanie Rivas
Faculty: Cleber Ouverney

5. NON-NATIVE ANNUAL PLANT TRAIT VARIATION ACROSS AN URBAN- TO RURAL- GRADIENT IN RESPONSE TO DROUGHT.
Student Authors: Berenice Barragan-Rocha, Cyrus Zomorrodi
Faculty: Susan Lambrecht

6. SIMULATING PLANT DROUGHT RESPONSE USING URBAN ENVIRONMENTS.
Student Authors: Cyrus Zomorrodi, Berenice Barragan-Rocha
Faculty: Susan Lambrecht

7. THE EFFECTS OF MATERNAL STRESS ON HATCHLING FENCE LIZARD.
Student Authors: Tanushri Rana, Sandra Khalaf, Tess Mcintyre, Ivan Ko, Emma Wen, Huda Kose, Tony Vo, Safura Zainab
Faculty: David Ensminger

8. THE EFFECT OF MATERNAL STRESS ON OFFSPRING CELLULAR FUNCTION IN WILD LIZARD OFFSPRING.
Student Authors: Taryn King, Nathan Tsai
Faculty: David Ensminger

9. MATERNAL STRESS INFLUENCES OFFSPRING WOUND HEALING IN WESTERN FENCE LIZARDS.
Student Authors: Tess McIntyre, Sandra Khalaf, Ivan Ko, Tanushri Rana, Monique Tran, Nathan Tsai, Emma Wen, Safura Zainab
Faculty: David Ensminger

10. EXPLORING THE EFFECT OF MATERNAL STRESS ON OFFSPRING CELLULAR FUNCTION IN WILD LIZARD OFFSPRING.
Student Authors: Taryn King, Nathan Tsai
Faculty: David Ensminger

11. THE EFFECTS OF SEAWATER pH ON THE GROWTH, SHELL THICKNESS, AND SHELL STRENGTH OF RED ABALONE IN AN INTEGRATED MULTITROPHIC AQUACULTURE (IMTA) SYSTEM.
Student Authors: Roberto Cotlear, Geoffrey Osgood, Chase Ebner, Noah Kolander
Faculty: Maya deVries (SJSU), Scott Hamilton, Luke Gardner, Michael Graham (MLML)

12. SIMULATING PLANT DROUGHT RESPONSE USING URBAN ENVIRONMENTS.
Student Authors: Cyrus Zomorrodi, Berenice Barragan-Rocha
Faculty: Susan Lambrecht

13. PI3K/Akt/Tor SIGNALING PROMOTES MUSCLE STEM CELL ACTIVATION AND PROLIFERATION IN *Drosophila.*
Student Authors: Jalen Nguyen, Ethan Bielawski, Lucia Lopez Ortega, Kiely Espiritu
Faculty: Kumar Vishal

14. TRIM32 REGULATES MYOGENESIS IN *Drosophila.*
Student Authors: Benjamin Marsh, Isabel Renteria, Maximus Riad
Faculty: Kumar Vishal

15. INVESTIGATION OF THE EFFECTS OF DEVELOPMENTAL ETHANOL EXPOSURE ON SLEEP AND CIRCADIAN RHYTHM IN *Drosophila melanogaster*
Student Authors: Reza Almassi; Monica Flores Tapia
Faculty: Rachael French

16. DEVELOPMENTAL ALCOHOL EXPOSURE MAY RESULT IN A LEAKY BLOOD-BRAIN BARRIER IN *Drosophila melanogaster.*

Student Authors: Monica Flores Tapia, Xavier Reed, Farbon Ranganian
Faculty: Rachael French

17. EFFECTS OF DEVELOPMENTAL ALCOHOL EXPOSURE ON DOPAMINERGIC NEURONS IN *Drosophila melanogaster.*
Student Authors: Alyza Jane Escuadro, Reza Almassi, Arjun Kodikannath
Faculty: Rachael French

18. IDENTIFYING CANDIDATE PH-SENSITIVE PROTEINS THAT REGULATE TISSUE GROWTH.
Student Authors: Laura Martins, Daniel Orozco, Madelaine Surette, Dominic Audibert, Ramy Wong
Faculty: Bree K. Grillo-Hill

19. PROBING AUTOPHAGY IN METASTATIC CELLS IN THE *Drosophila* WING DISC.
Student Authors: Luz Arvizu, Jeslin Jacob, Aaliyah Molina, Yadanar Khin, Danino Corsis, Kruthi Kumar
Faculty: Bree K. Grillo-Hill

20. REGULATION OF AUTOPHAGIC CELL DEATH BY INTRACELLULAR PH AND THE ONCOGENE MYC.
Student Authors: Alan Wong, Tiana Tameta-Arenas, Antonio Bibiano, Kimberly Nguyen, Joel Vinod, Israel Palomino, Juan Reyna Pacheco, Rachel Soriano, Joanne Mendez, Daniel Orozco, Blake DuPriest
Faculty: Bree K. Grillo-Hill

21. THE EFFECTS OF OCEAN ACIDIFICATION ON THE *Haliotis rufescens* MICROBIOME.
Student Authors: Azriel Montalvo, Noah Kolander, Chase Ebner, Geoffery Osgood
Faculty: Dr. Sonia Singhal, Dr. Maya deVries, Dr. Scott Hamilton, Dr. Mike Graham, Dr. Luke Gardner

22. SURVIVAL OF PHI-6 GENOTYPES IN ADVERSE ENVIRONMENTS.
Student Authors: Madeleine Taber-Iguain, Shahum Khalid, Beth Wyatt, Kelly Thich, Aruna Gomathinayagam
Faculty: Sonia Singhal

23. OPTIMIZING NANOPORE SEQUENCING FOR GENOMIC ANALYSIS IN DOUBLE-STRANDED RNA VIRUSES.
Student Authors: Parnian Pour Bahrami, Sara Nayeem, Sujaya Jayathirtha Nilogal
Faculty: Sonia Singhal.

24. ASSESSING THE ROLE OF COUP AND ETS IN PCV IDENTITY.
Student Authors: Luis Alvarez, Rachel Feldman, Israel Moreno, Devashree Agarwal, and Lwin Zaw
Faculty: Thanh Theresa Dinh

25. EXPLORING THE MOLECULAR INTERACTIONS BETWEEN COUP-TFII AND ETS PROTEINS.
Student Author: Devashree Hemant Agarwal
Faculty: Theresa Thanh Dinh

26. THE ROLE OF COUP-TFII AND ETS IN MODULATING PCV IDENTITY.

Student Authors: Thaneesha Singh & Rhea Shaik
Faculty: Theresa Thanh Dinh

27. DEVELOPMENT AND IMPLEMENTATION OF CRISPR-CAS9 GENE EDITING FOR METHYLOTROPHIC BACTERIA.
Student Authors: Nadiya Vysotska; Vihari Kotipalli; Mike Echeverria; Aisha Elmeligi
Faculty: Elizabeth Skovran

28. PHOSPHATE STARVATION STUDIES UNCOVER NOVEL METHANOL OXIDATION ACTIVITIES AND HOMEOSTATIC REGULATION IN A METHYLOTROPHIC BACTERIUM.
Student Authors: Tiffany Nguyen; Elene Ebralidze; Sajede Rasouli; Peter Roumeliotis,
Faculty: Elizabeth Skovran

29. CARDIAC WNT SIGNALING DYNAMICS DURING POSTNATAL DEVELOPMENT.
Student Authors: Jacquelyn Simmons; Cailin Karotkin; Herman Huang; Allyzza Athene Alonso
Faculty: Alexander Y Payumo

30. QUANTIFYING IMPACTS OF HUMANS ON TERRESTRIAL URBAN MAMMAL ACTIVITY: A COVID-19 LOCKDOWN NATURAL EXPERIMENT.
Student Authors: Malia Mosser, Caitlin Salvador, Brigitte Scott, Yvonne Luong, Giovanni Quezada, Vanessa Guido, Maddison Erpelding, Sierra Sowa, Raymond Reyes
Faculty: Jessica Castillo Vardaro

31. CHARACTERIZATION OF AN AMERICAN PIKA HYBRID ZONE IN ROCKY MOUNTAIN NATIONAL PARK.
Student Authors: Sarah Borja Gomez, Alyne Duong, Kaitlyn Lynch
Faculty: Jessica Castillo Vardaro
Collaborators: Chris Ray, Rachel Billings (CU Boulder)

32. *C. elegans* EXHIBIT POSTEMBRYONIC ACTIVITY-DEPENDENT SYNAPSE FORMATION.
Student Authors: Vanessa Garcia, Hazel Guillen, Maleiyah Harris, Emma Odisho, Annabel Nguyen, Garbiel Hertel
Faculty: Miri VanHoven

33. OLFACTORY SYNAPSES ARE MODULATED BY ODOR TRAINING AND SLEEP IN *C. elegans.*
Student Authors: Kateryna Tokalenko, Hazel Guillen, Vanessa Garcia, Emma Odisho, Maleiyah Harris, Andrew Bykov, Price Pettit
Faculty: Miri VanHoven

34. *C. elegans* GUT DEVELOPMENT AND PATTERNING.
Student Authors: Colton Duke, Mahati Varanasi, Mariam Mortada, Melissa Pickett.
Faculty: Miri VanHoven

35. QUANTIFICATION OF THE GROUND BEETLES (COLEOPTERA: CARABIDAE) LOCATED IN THE J. GORDON EDWARDS ENTOMOLOGY MUSEUM.
Student Authors: Audrey Nguyen; Sandra Gong
Faculty: Fredrick J. Larabee

36. *S. pneumoniae*INFECTION DAMAGES AIRWAY EPITHELIAL INTERCELLULAR JUNCTIONS.
Student Authors: Suhanee Zaroo, Wint Mon Mon Kyaw, Dounya Moukhlis, Janessa Caroza, Emily Du, Eden Ephrem, Kenneth Darla, Lizzy Davis, Sienna Fowler, Ryan Yee, Sophia Malla, Theodore Nguyen, Trung Le Dinh, Nicole Homez, Gurbir Kaur, Fatima Rizvi, Devons Mo
Faculty: Walter Adams
Collaborators: Rod K Tweten (University of Oklahoma), Shuying Xu and John M Leong (Tufts University)

37. MEASURING INTERCELLULAR JUNCTION ORGANIZATION USING A NEW PYTHON ALGORITHM.
Student Authors: Suhanee Zaroo, Janessa Caroza, Nicole Homez, Emily Du, Kenneth Darla, Ryan Yee, Sophia Malla, Tarek Jakoush, Gurbir Kaur, Fatima Rizvi, Devons Mo
Faculty: Walter Adams
Collaborators: Shakir Hasan (: Institute of Microbiology of the CAS), Juan P. Rosa-Cortes and Shuying Xu (Tufts University)

38. MECHANICAL PRE-TREATMENTS AND PRESCRIBED FIRE TO REDUCE COYOTE BRUSH ENCROACHMENT IN COASTAL PRAIRIES.
Student Authors: Jannike Allen, Killian Cook, David Benterou
Faculty: Kate Wilkin
Collaborators: Jared Childress, Devii Rao,

(Posters #68A & 68B are joint contributions from the Department of Biological Sciences and the Department of Computer Science)

Department of Chemistry

39. IRON CATALYSTS TO REPURPOSE WASTEWATER AS FERTILIZER: MAKING AMMONIA FROM NITRATE AND NITRITE.
Student Authors: Rachel Chiang
Faculty: Madalyn R. Radlauer
Collaborators: Nick A. Snyder, Dean M. Miller, William A. Tarpeh (Stanford University, Chemical Engineering)

40. SYNTHESIZING STAR POLYMERS AS COPPER CATALYST SUPPORTS.
Student Authors: Hannah Pell, Naomi Oluseyi-Oke, Sadaf Omar
Faculty: Madalyn R. Radlauer

41. POLYMERS AS FRAMEWORKS FOR METAL COMPLEXES: SYNTHESIZING SINGLE CHAIN NANOPARTICLES FOR CATALYZED REACTIONS.
Student Authors: Sebastian Garcia, Felix Ma, Jose Ramirez
Faculty: Madalyn R. Radlauer

42. ENSEMBLE MODELING OF SWITCH-LIKE AND RELATED REGIONS IN SIRTUINS.
Student Authors: Brooke Bellinghausen; Britney Nguyen; Richard Pearson; Shwethal Sayeeram Trikannad
Faculty: Brooke Lustig

43. H-BOND NETWORKS DESCRIBED BY EXHAUSTIVE MODEL SET OF BIV TAR RNA BINDING TAT PEPTIDE.
Student Authors: Brooke Bellinghausen; Ethan Suwandi
Faculty: Brooke Lustig

44. CHARACTERIZING THE SEQUENCE DETERMINANTS OF A NOVEL INTERACTION BETWEEN THE *E. coli* MOLECULAR CHAPERONES DNAK AND CBPA.
Student Authors: Donna Quach; Quynh Nguyen; Stephanie Virgen; Andrea Mateo; Samantha Chin; Hanh Nguyen; Ryan Dana; Vinh Chau; Samantha Ramirez
Faculty: Taylor Arhar

45. CRISPRI KNOCKDOWN OF J-DOMAIN PROTEINS IN *Pseudomonas putida.*
Student Authors: Gwen Libozada; Melanie Martinez; Kanika Kolpe; Jason Do; Aryan Shah; Harsita Kumar; Jared Raab; Sanjana Ramesh; Misty Ramos; Megan Badrak
Faculty: Taylor Arhar

46. INVESTIGATING THE EFFECT OF UBIQUITIN ON PROTEIN AMYLOID FORMATION.
Student Authors: Angelika Paige Caraballo, Natalie Dinh, Jeslyn Hopham, Regina Levya Roman, Emiliano Lopez Ruiz, Hannah Nicole Suazo, Johan Villalpando Farrach
Faculty: Emma Carroll

47. DEVELOPING METHODS TO INVESTIGATE THE ROLE OF UBIQUITIN IN DESTABILIZATION AND MISFOLDING OF THE CANCER-ASSOCIATED PROTEINS P53 AND PTEN.
Student Authors: Jasmin Ho, Katherine Martinez, Tiffany Nguyen, Nivita Susendran, Amie Trinh, Nate Bazan
Faculty: Emma Carroll

48. DISCOVERING CHEMICAL DETERMINANTS OF P53 and PTEN MISFOLDING AND AMYLOID FORMATION.
Student Authors: Kashish Airen, Chester Alhambra Jr., Anushree Bhattacharya, Katherine Hoang, Tess Kempner, Jennifer Nguyen, Isabel Okere, Trang Pham, Lazarus Cobb, Sophia Crudo, Vicky Ta, Tara Vaddiraj

Faculty: Emma Carroll
Collaborators: Andro Rios (SJSU Chemistry)

49. MINIMUM VIABLE POPULATION IN BACTERIA?
Student Authors: Cesar Mesa
Faculty Authors: Andro Rios
Collaborators: Alfonso Davila (NASA Ames), Richard Everroad (NASA)

50. INVESTIGATING THE PREBIOTIC CHEMISTRY OF METABOLITES THROUGH CHEMICAL SYNTHESIS.
Student Authors: Vicky Ta, Sophia Crudo, Tanya Santos Landa, Victoria Gladstone, Tara Vaddiraj
Faculty: Andro Rios

51. DILUTION-DRIVEN SPECIATION CHANGES IN GLYOXAL POLYMERS DURING CLOUD FORMATION ON AEROSOL PARTICLES.
Student Authors: Mateo Johnson; Alejandro Municio; Esmeralda Mendoza Corrales; Brian Ta; Kimberly Houghton; Rasha Alnajjar; Weston Schweitzer
Faculty: Annalise Van Wyngarden

52. KINETICS OF METHYLGLYOXAL OLIGOMER REACTIONS DRIVEN BY DILUTION DURING CLOUD DROPLET FORMATION ON AEROSOL PARTICLES.
Student Authors: Alejandro Municio; Mateo Johnson; Esmeralda Mendoza Corrales; Brian Ta; Kimberly Houghton; Rasha Alnajjar; Weston Schweitzer
Faculty: Annalise Van Wyngarden

53. SURFACE FILM FORMATION VIA ACID-CATALYZED POLYMERIZATION OF CARBONYL SPECIES IN SULFATE-RICH AEROSOLS.
Student Authors: Sean Colina; Aishwarya Deepak; Kaitlyn Nguyen; Madhan Elango; Owen Lozano; Sneha Wadhwa; Anureet K. Chahal; Ethan Guidicotti; Rianna Farahani; Thomas Nelson
Faculty: Annalise Van Wyngarden

54. SYNTHESIS OF A PHOTOAFFINITY PROBE TO IDENTIFY TARGET PROTEINS IN *Pseudomonas aeruginosa*.
Student Authors: Kseniya Maiseyeva
Faculty: Laura Miller Conrad

55. INHIBITION OF THE LUXI HOMOLOG IN *Chromobacterim subtsugae.*
Student Authors: Mia Guraydin, Natalie Hendrix
Faculty: Laura Miller Conrad

56. SYNTHESIS OF ARNA ADJUVANTS TO POTENTIATE COLISTIN IN *Pseudomonas aeruginosa*.
Student Authors: Brandon Rodriguez, Kemi Kaka, Seetha Madhuri Vinjamuri
Faculty: Laura Miller Conrad

57. DEVELOPMENT OF A NEW CLASS OF PARAMAGNETIC 6-OXOVERDAZYL CARBOHYDRATES FOR USE AS MAGNETIC RESONANCE IMAGING CONTRAST AGENTS.
Student Authors: Sam Minor, Tanner Whitson, Christine O'Brien, David Soulsby
Faculty: David Brook

58. COMPARING THE EFFECTS OF DIFFERENT SMALL MOLECULES ON SIRT1 ACTIVITY.
Student Authors: Jenny Trieu Dang, Isabella Perez, Crystal Garcia, Kalia Castro, Tejaswini Jagannathan
Faculty: Ningkun Wang

59. PRODUCTION OF THIN FILM POLYMER TARGETS FOR LIGHT-ION NUCLEAR REACTIONS.
Student Authors: Phu G. Vo, Sofia V. Malmhall
Faculty: Nicholas E. Esker

60. APPLICATION OF 3D PRINTING IN NUCLEAR TARGETRY TO AID NEW ELEMENT DISCOVERY.
Student Authors: Allan Ard, Nicholas Esker , Jacklyn Gates and Rodney Orford
Faculty: Nicholas E. Esker

61. ACCOMMODATING NEW GEOMETRIES IN PVD FOR NUCLEAR TARGETS.
Student Authors: Melanie Segura Guerrero, Justice Wilkes
Faculty: Nicholas E. Esker

62. DEVELOPMENT OF POLYMERIC-SULFUR/MOF BASED COMPOSITE CATHODES FOR NEXT GENERATION LITHIUM-SULFUR BATTERIES.
Student Author: Daryl Miranda
Faculty: Dr. Philip T. Dirlam
Collaborators: Dr. Monica So and Dr. Kathleen Meehan (CSU Chico); Dr. Sabrina Wan and Dr. Kwangnam Kim (Lawrence Livermore National Lab)

63. OPTIMIZING LITHIUM-SULFUR BATTERIES WITH METAL-ORGANIC FRAMEWORKS.
Student Authors: Lisette Garcia Martinez, Daryl Miranda, Jack Lee, Lamija Kovacevic, Tosif Aliyev, Sofia Marquez Faculty: Philip T. Dirlam

64. EXPLORING AMYLOID FIBRIL FORMATION AND FRAGMENTATION PATHWAYS VIA NETWORK-BASED HAMILTONIAN MODELS AND MOLECULAR DYNAMICS SIMULATIONS.
Student Authors: Joshua Gadingan; Huy Dang; Bailee Rusconi; David Andreasyan; Jason Kim; Hrishikesh Joshi; Dianoosh Sabetnejad; Dhairya Vyas; Alan Wong; Barry Wong; Andrew Ly; Srinitha Sridharan
Faculty: Gianmarc Grazioli

65. USING AI TO PROBE THE PHASE SPACE OF CHAOTIC DYNAMICS: FROM DOUBLE PENDULUMS TO AB INITIO MOLECULAR DYNAMICS SIMULATIONS OF PHOTOLYSIS.
Student Authors: Joshua Gadingan; Huy Dang; Bailee Rusconi; David Andreasyan; Jason Kim; Hrishikesh Joshi; Dianoosh Sabetnejad; Dhairya Vyas; Alan Wong; Barry Wong; Andrew Ly; Srinitha Sridharan
Faculty: Gianmarc Grazioli

66. NATURAL PRODUCTS FROM CALIFORNIA NATIVE PLANTS: *Grindelia stricta* and *Emmenanthe penduliflora.*
Student Authors: Natalie Kapfenstein, Owen Huans, Serana Choo, Nathalie Alfaro, William Pham, Ayden Latta, Kristy Chow, Skyler Burgess, Seiji Takeshita
Faculty: Roy K. Okuda

Department of Computer Science

67. FORECASTING SUPPLY CHAIN COST PASS-THROUGH AND INFLATION: A COMPARISON OF SARIMAX, RANDOM FOREST, AND LSTM.
Student Author: Manh Tuong Nguyen
Faculty: Genya Ishigaki

68A OPTIMIZATION OF RIBOSWITCH DESIGN USING PREDICTIVE PLATFORM FOR RNA SECONDARY STRUCTURE AND FREE ENERGY.
Student Authors: Jonathan Auyong, Hainian Long, Marelyn Negrete, Bhoomika Gupta, Curtis Zhang, Joel Jacob, Kristy Chan, Syed Rizwan
Faculty: William Andreopoulos, Leila Khatib (Department of Biological Sciences)

68B RIBOSWITCH DEVELOPMENT FOR DETECTION OF COXSACKIEVIRUS B3 IN WATER.
Student Authors: Marelyn Negrete, Jonathan Auyong, Hainian Long, Bhoomika Gupta, Curtis Zhang, Joel Jacob, Kristy Chan, Syed Rizwan
Faculty: William Andreopoulos, Leila Khatib (Department of Biological Sciences)
(This poster is crosslsted in the Biological Sciences posters)

[remove this one?]
USING AI FOR DETECTION OF VIRUSES IN WATER.
Student Authors: Jonathan Auyong, Marelyn Negrete, Curtis Zhang, Joel Jacob, Syed Rizwan Uddin, Kristy Chan, and Bhoomika Gupta
Faculty: Leila Khatib, William Andrianopoulos
(This poster is crosslsted in the Biological Sciences posters)

69. PROGRAMMING ACROSS LANGUAGES: INVESTIGATING THE IMPACT OF BILINGUAL PROGRAMMING ON COMPUTING ATTITUDES AND BEHAVIOR.
Student Authors: Neel Shah, Thien Kieu, Leqaa Deeb, Harshitha Venkateswaran, Aarav Ghai, Yusuf Gadelrab, Nishanth Nagesh, Purujit Hada
Faculty: Ethel Tshukudu

70. FROM PACKETS TO PREDICTIONS: AI SUPERPOWERS IN WIRELESS NETWORKS.
Student Authors: Prabhat Edupuganti, Ojas Ankush Naik, Sai Sashank Peddibhotla
Faculty: Navrati Saxena

71. SENSE. SIGNAL. SENTIMENT: AI FOR LANDSLIDES, TRAFFIC, AND EMOTIONS.
Student Authors: Farhan Ansari, Mohith Ankem, Rashmi Vishwanath Bhat
Faculty: Navrati Saxena

72. TERRAIN, TRACES, AND TALKING MACHINES: AI KNOWS THE WAY
Student Authors: Kalindi Parekh, Mihir Satra, Rashmi Sonth
Faculty: Navrati Saxena

73. CoboSense: ACTION CLASSIFICATION FROM WEARABLES FOR HUMAN-ROBOT COLLABORATION.
Student Author: Riddhik Tilawat
Faculty: Sayma Akther

74. COMPLEXITY-AWARE HUMAN ACTIVITY DETECTION USING AI.
Student Author: Anusha Kukreja
Faculty: Sayma Akther

75. ENHANCING HUMAN ACTIVITY RECOGNITION THROUGH NOVEL GAN-PCA IMPUTATION AND STRATEGIC DATA AUGMENTATION.
Student Author: Suryakangeyan Kandasamy Gowdaman
Faculty: Sayma Akther

76. DETECTING AI-GENERATED NEWS ARTICLES USING UNSUPERVISED MACHINE LEARNING ALGORITHMS.
Student Author: Lilou Sicard-Noel
Faculty: Mike Wu

77. THE POWER OF PATTERNS IN DETECTING NEWS ARTICLES WRITTEN BY AI.
Student Authors: Lilou Sicard-Noel; Eric Wu
Faculty: Mike Wu

78. NODE CLASSIFICATION FOR TEXT ATTRIBUTED GRAPHS USING GRAPH NEURAL NETWORKS AND LANGUAGE MODELS.
Student author: Mayur Choudhary
Faculty: Katerina Potika

79. JAVATUTOR - A LARGE LANGUAGE MODEL TOOL FOR STUDENTS TO LEARN PROGRAMMING AND PROBLEM-SOLVING IN JAVA.
Student Author: Amey Makarand Dhongade
Faculty: Mike Wu

80. ON DESIGN AND ANALYSIS OF SOCIAL NETWORK PLATFORMS: A PROTOTYPE FOR SINGLE-PARENTS.
Student Author: Anish Roy
Faculty: Melody Moh

81. IMPLEMENTATION OF CONVOLUTIONAL NEURAL NETWORKS FOR GEL ANALYSIS.
Student Author: Allen Kalampukattussery
Faculty: Wendy Lee

82. DETECTING AI-GENERATED ARTWORK.
Student Author: Grace Li
Faculty: Mark Stamp

83. DRIFT HAPPENS: A PRACTICAL APPROACH TO ADAPTIVE MALWARE DETECTION.
Student Author: Christofer Washington Berruz Chungata
Faculty: Mark Stamp

84. ENERGY CONSIDERATIONS FOR LARGE PRE-TRAINED NEURAL NETWORKS.
Student Author: Leo Mei
Faculty: Mark Stamp

Department of Geological Sciences

85. Using GIS to calculate the volume of the largest lava flow on the Alarcon Rise, Gulf of California.
Student Authors: Alex R. Witney, Clarissa I.V. Smith
Faculty: Ryan A. Portner, Morgane Le Saout

86. NUMERICAL MODELING OF EARTHQUAKES.
Student Authors: Shikha Singh, Lindsay Gross
Faculty: Elizabeth (Betsy) Madden

87. PLATE BOUNDARY GEOMECHANICAL MODAL OF NORTHERN CALIFORNIA BAY AREA.
Student Authors: Nathan Johnson; Adelyn Tam; Anh Bao Tran; Simon Truong; Nina Wang
Faculty: Elizabeth (Betsy) Madden

88. REFINING 3D FAULT GEOMETRY FOR THE HAYWARD-CALAVERAS FAULT CONNECTION IN THE BAY AREA OF NORTHERN CALIFORNIA.
Student Authors: Karen Castaneda; Alex Witney; Gibson Sacramento
Faculty: Elizabeth (Betsy) Madden

Department of Mathematics and Statistics

89. SENSITIVITY ANALYSIS OF COUNTY-LEVEL ESTIMATES OF EXCESS DEATHS ASSOCIATED WITH COVID-19 IN CALIFORNIA.
Student Author: Amelia Le
Faculty: Peter Gao

90. INTEGRATING PROBABILITY AND NON-PROBABILITY SAMPLES TO ADDRESS SELECTION BIAS IN THE ALL OF US DATASET.
Student Author: Forough Hammond
Faculty: Peter A. Gao

91.

92. POWER PROBABILISTIC-DISTANCE CLUSTERING WITH COVARIATES.
Student Author: Scott Nguyen
Faculty: Cristina Tortora
Collaborators: Antonio Punzo

93. k-GENERALIZED MEANS.
Student Author: Hrishi Joshi
Faculty: Cristina Tortora
Collaborators: Antonio Punzo

94. FUZZY CLUSTERING OF THREE WAY-DATA.
Student Author: Qui Nguyen Le
Faculty: Cristina Tortora
Collaborators: Antonio Punzo

Department of Physics and Astronomy

95. TEMPERATURE-DEPENDENT OPTICAL PROPERTIES OF NANOSCALE STRUCTURED MATERIALS.
Student Authors: Ayane Gomi, Luke Randhawa, Brianna Zheng, Andre Li
Faculty: Christopher L. Smallwood

96. TIPS AND TRICKS FOR FABRICATING AND CHARACTERIZING ATOMICALLY THIN VAN DER WAALS MATERIALS.
Student Authors: Charity Wei, Logan Miller, Korede Isaiah Solagbade, Ayane Gomi
Faculty: Christopher L. Smallwood

97. COMPUTATIONAL TOOLKIT FOR ANALYZING OPTICAL MULTIDIMENSIONAL COHERENT SPECTROSCOPY MEASUREMENTS.
Student Authors: John Ellis Manning-Villar
Faculty: Christopher L. Smallwood

98. TRANSPORT PHYSICS IN FUSION ENERGY SIMULATIONS.
Student Author: Kyle L. Nguyen
Faculty: Liam G. Stanton
Collaborator: C. Leland Ellison (Pacific Fusion)

99. PHYSICISTS' ROLES IN RECENT NUCLEAR WEAPONS POLICIES.
Student Authors: Emily Foreman
Faculty: Curtis Asplund

100. NEW SEARCH FOR DARK MATTER FREE DWARF GALAXIES USING LEGACY IMAGING.
Student Authors: Yashraj Bains
Faculty: Aaron Romanowsky

101. SPECTROSCOPY AND IMAGING OF STAR CLUSTERS AROUND A LOCAL DWARF GALAXY.
Student Authors: Zachary Coustier
Faculty: Aaron Romanowsky

Science Education

102. THE EXPERIENCES OF UNDERGRADUATE STUDENTS IN SCIENCE PARTICIPATING IN A COURSE-EMBEDDED NUCLEAR SCIENCE TRAINEESHIP PROGRAM.
Student Author: Kiera Wright
Faculty: Resa Kelly; Nicholas Esker

Acknowledgements

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

Preparation for SRD20 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 Phil Dirlam, Mike Stephens and many faculty and student volunteers. Kimberly Boudreaux of the COS Dean's office coordinated the T-shirts, name tags 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 SRD20!

THANK YOU FOR COMING!