

NCCA VS 2020

9th Annual Student Poster Session

Held in conjunction with the 41st Annual NCCA VS Equipment Exhibition and the Technical Symposium on "The Quantum World" hosted by: CMPUG, JTG, PAG, and TFUG

NCCA VS Student Poster Session Awards:

1st Place Poster: \$500

2nd Place Poster: \$300

3rd Place Poster: \$200

February 20, 2020 – 10AM-7PM

Fremont Marriott Silicon Valley

NCCAUS Poster Session Layout

Primary contact: Michael Oye

Student Co-Organizers:

Zeal Panchal, Renee Sully,
Kamran Hussain



Oye

Poster Session Judges:

Susan Felch, NCCAUS

Michael Current, NCCAUS

Wenonah Vercoutere, NASA

Saba Hussain, USRA



Felch



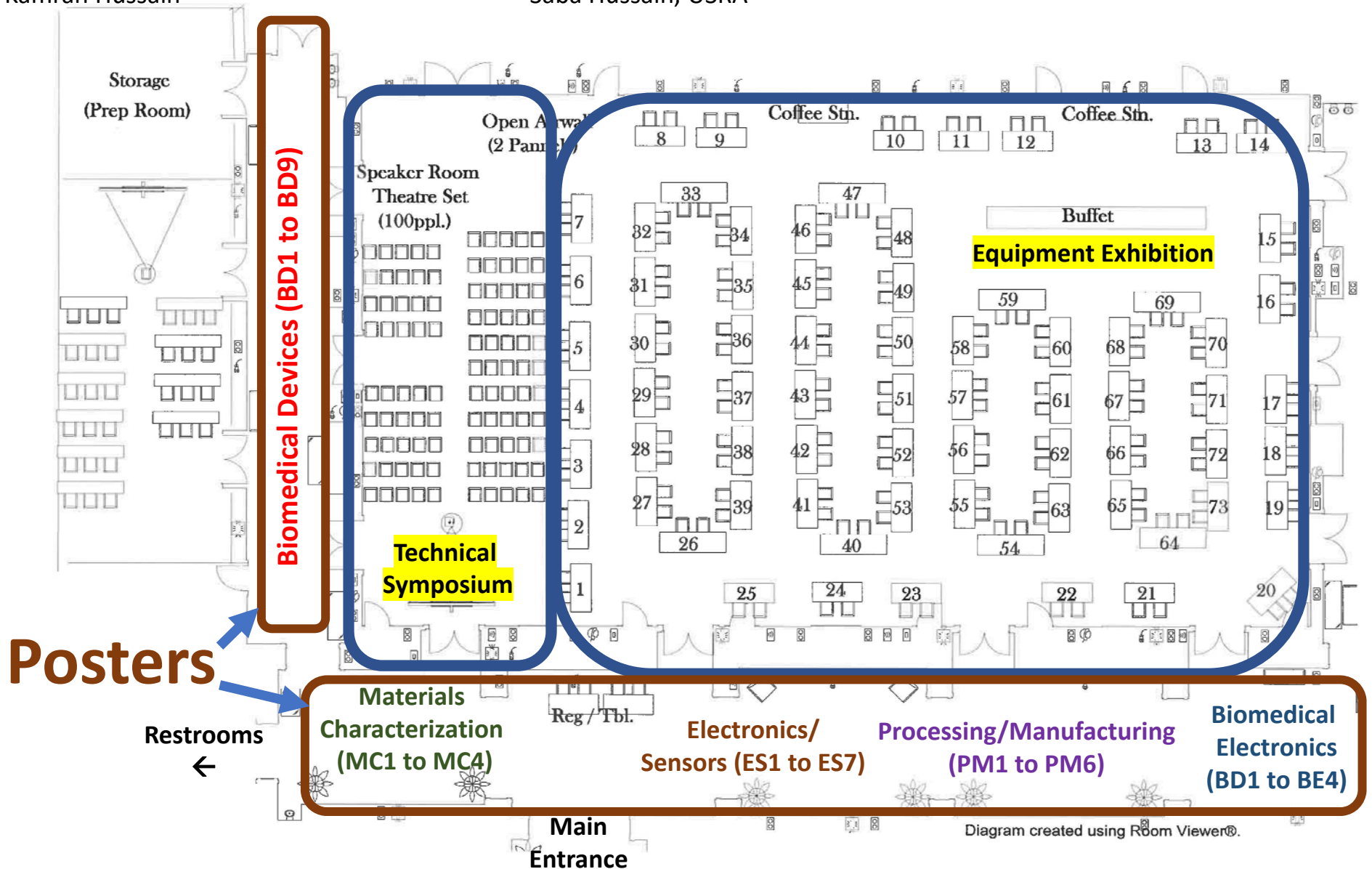
Current



Vercoutere



Hussain



NCCAVS 9th Annual Student Poster Session

Poster Session Chair: **Michael Oye**, University of California Santa Cruz, moye@ucsc.edu

Student Co-Organizers: **H. Renee Sully**, University of California Santa Cruz
Zeal Panchal, USRA
Kamran Hussain, Homestead High

Judges: **Michael Current**, Current Scientific
Saba Hussain, Universities Space Research Association
Susan Felch, Susan Felch Consulting
Wenonah Vercoutere, NASA Ames Research Center

Electronics/Sensors (ES)

ES1.* **Electro Plasmonic Nanoantenna Array: Label Free Neurophotonics for Ultrahigh Bandwidth Brain Machine Interface [HONORABLE MENTION]**
Ahsan Habib, Xiangchao Zhu, Uryan I. Can, Maverick L. McLanahan, Pinar Zorlutuna, and Ahmet A. Yanik, UCSC

ES2.* **Origins of Life: Applications of Nanopore Devices to Detect Biomarkers in Extreme Environments**
Zeal Panchal, David Deamer, Michael Oye and Wenonah Vercoutere, UCSC, NASA, USRA
[HONORABLE MENTION]

ES3. **Stretchable Electrically Conductive Adhesives in Wearable Device Applications**
Nicole Dermenjian and Andrew Nguyen, SJSU

ES4.* **3D Nanocarbon Interconnects [HONORABLE MENTION]**
Yu Zheng, Parth Shah, Dongmeng Li, and Cary Y. Yang, SCU

ES5. ~~**Investigating Limitations of Inkjet and Screen Printed Electronic**~~
~~Vy Huynh, SJSU [WITHDRAWN]~~

ES6.* **Diffusion Rate of Silica Coated Nanodiamonds for Cancer Cell Tracking [FIRST PLACE]**
Nedah Basravi, Karen Lopez, Folarin Erogbogbo, and Abraham Wolcott, SJSU

ES7.* **3D-printed Electrodes for Supercapacitors [Late Submission, not included in original program]**
Bin Yao, UCSC **[THIRD PLACE]**

Materials Characterization (MC)

MC1. ~~**Doped Colloidal Germanium Quantum Dots: Structural Disorder and Electronic Properties**~~
~~Heather Renee Sully, Katayoon Tabatabaei, Kathryn A. Newton, Logan Knudson, Shayan Zargar, Susan M. Kauzlarich, Frank Bridges, and Sue A. Carter, UCSC [WITHDRAWN]~~

MC2. Characterizing Surface Chemistry and Bulk Material Properties of Cardiovascular Biomaterials After Sterilization

Danny Do, Vanessa Aldaz, Brianna Felix, and Patrick Journey, SJSU

~~MC3. Effects of E beam Sterilization on Implantable Electronic Devices [WITHDRAWN]~~

~~Eugenia Mora, Anish Sharma, and Rohan Aurora, SJSU~~

~~MC4. Mathematical Correlation Between Pressure and Centrifugal Forces In a Microfluidic Lab-On-a-Chip [WITHDRAWN]~~

~~Nicholas Sosa, SJSU~~

Processing/Manufacturing (PM)

PM1.* Optimization of Electrolyte Printing and Passivation Method in an All-Printed Supercapacitor
Ellie Sadatian, UCSD [SECOND PLACE]

PM2. Manufacturing Cylindrical PVA Grafts for Arterial Bypass Surgeries

Harsimran Hothi, Colby Loop, and Sneha Srinivasan, SJSU

~~PM3. Improving the Hemocompatibility of BMHVs with the Application of a Superhydrophobic Coating [WITHDRAWN]~~

~~Esther Lopez, Leeya Mengistab, Pourya Bayzaie, and Alessandro Bellofiore, SJSU~~

PM4. Characterization of Thin-Film, Flexible Piezoelectric Material in Prosthetic Applications

Julie Lo and Rabia Shaheen , SJSU

PM5. Fibrin Droplet Production Using Step Emulsification

Priyanka Sreeram, Tomas Jimenez , and Melinda Simon, SJSU

PM6. In-House Pyrolytic Carbon Coating Procedure for Prototyping of Bileaflet Mechanical Heart Valves

Dhanya Duraivelu, Rafic Roy Hasbini, and Thant Mon Thiri, SJSU

Biomedical Devices (BD)

BD1.* Silicone Infant Hand Prosthesis via 3D Printed Mold [HONORABLE MENTION]
Andrew Johnson, Navpreet Singh, and Angelina Villa, SJSU

BD2.* Infant Hand Prosthesis with TPE Shell [SECOND PLACE]
Nicole Brown, Bradley Filgas, Stephanie Phan, and Jared Lumauig, SJSU

BD3.* Smart Manufacturing [HONORABLE MENTION]
Duong Tran, SJSU

BD4.* **Novel Load-Bearing Transradial Prosthesis [HONORABLE MENTION]**
Garrett Wiggs, Raychell Ramirez, Antonie Vo, and Matthew Leineweber, SJSU

BD5. **Acoustic Hyperlens**
Julia Son-Bell and Steffi Anaya, SJSU

BD6.* **A Novel Improvement in Cardiac Anchor Design for Dilated Cardiomyopathic Patients**
Jasper Mak, Raja H. Khan, and Maritza Fuerte, SJSU [THIRD PLACE]

BD7. **Premature Infant Positioning Tool**
Jane Bercilla, Kezia Joy Ugay, and Stanley Wang, SJSU

BD8.* **Intelligent Robotics in Medicine [FIRST PLACE]**
Ryan Oquendo, Tung Chi Chan, and Nicolai Steifel, SJSU

BD9. **Analyzing the Effect of Test Duration on Energy Expenditure Accuracy of Wearable Devices**
Jonathan Delos Reyes, Quynh Nguyen, and Tanisha Shah, SJSU

Biomedical Electronics (BE)

BE1. **Knee Flexion Sensor and Biofeedback Unit**
John Nguyen, Angelica Polo, and Nam Tran, SJSU

BE2. **Health Intervention for Minority Males (HIMM) App**
Health Intervention for Minority Males (HIMM) App, SJSU

BE3. **Toe Clearance Biofeedback Device**
Karla Markotic, Azita Patel, and Manal Ahmed, SJSU

BE4. ~~IoT & Data Sciences in Additive Manufacturing~~
~~Rory Coles, SJSU [WITHDRAWN]~~