### HONORS SCHOLARS & UNDERGRADUATE RESEARCH

### Poster Presentation

2025

#### Wednesday, May 7

Poster Presentation (Poster Judging) 10:00am - 4:00pm Academic Complex Lobby

#### Thursday, May 8

Poster Presentation (Award Ceremony) 12:45pm - 2:15pm Amphitheater LG30







In Remembrance of Prof. Janet Liou-Mark



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GRANT-FUNDED PROJECTS



#### **GREETINGS**

Russell K. Hotzler President

Pamela Brown
Provost & Vice President
for Academic Affairs

Reginald A. Blake
Associate Provost and Dean of
Curriculum and Research

### RECOGNITION OF UNDERGRADUATE RESEARCHERS

#### **Honors Scholars**

Reneta D. Lansiquot-Panagiotakis Director of the Honors Scholars Program & Co-Director of the Interdisciplinary Design Game-Based Learning Lab

CUNY Research Scholars Program (CRSP), Louis Stokes Alliance for Minority Participation (LSAMP), & CUNY Immersive Research Experience (CIRE)

Susan Davide

Associate Director of Undergraduate Research

#### **Emerging Scholars**

Hamidreza Norouzi Director of Undergraduate Research

#### **Grant-Funded Projects**

Hamidreza Norouzi

Director of Undergraduate Research

#### **Best Poster Awards**

Tamrah D. Cunningham
Assistant Director of the Honors Scholars
Program & Co-Director of the Interdisciplinary Design

Game-Based Learning Lab



### HONORS IN REGULAR COURSES

#### A Fast Inverse Square Root Algorithm

Christopher Chow Prof. Johann Thiel

MAT 2630: Numerical Methods

### The Petal Chair- Modular Furniture Upgrade to Ursula C. Schwerin Library

Leah C. Jerome Prof. Eugene Park ARCH2312: Architectural Design III

### Computational Fluid Dynamics (CFD) Analysis of a Turbine Blade

Luis Luna

Prof. Masato R. Nakamura
MECH 4700: Fluid Mechanics

### Working drawings: Preliminary Design Development

Fareda Elsherif Prof. Ramsey Dabby ARCH 2381: Structure 1

### Re-purposed Whole Textile Reinforced Clay to Enhance Bearing Capacity of Pavement Soils

Roland Guevara Prof. Ivan Guzman

CMCE 2456: Soil Mechanics

### Empirical Study on the Correlation Between Social Media Usage and Self Esteem

Parbatti Boodhoo Prof. Roriann Smith

PSY 1101: Introduction to Psychology

#### **Pedestrian Truss Bridge**

Munyaradzi Nyabonde Prof. Maeve Manfredi CMCE 1115: Statics

#### **Bayesian Statistics: Origins and Applications**

**Evelyn Pulla** 

**Prof. Satyanand Singh** 

MAT 2572: Probability and Statistics I
Grant Number: MSFIP Grant # PI20A220033

### Al-Driven Best Practices for Soil Evaluation and Sustainable Small-Scale Agriculture

Jessica Gomez Parral Prof. David Smith

MTEC 3501: Culmination Project Development

### The Unclaimed Dead- Homelessness, Structural Inequality, and Social Responsibility in NYC

Kristine Rakowsky
Prof. Renate Reimann

SOC 1101: Elements of Sociology

#### The Bulletin Board

Noor Raj

**Prof. Jean Boulet** 

CST 2409: Computer Systems

### Cost analysis for implementing local 97 in building: Cheapest Fuel vs Lowest Cost Penalty

Rashiek Barber Prof. Robert Polchinski

FMGT 4902: Special Projects

#### Noto Earthquake Disaster: Impact and Recovery

Kingston Ditsch Prof. Yanna Chen

PHYS 1002ID: An Introduction to the Physics of Natural Disasters

#### **Project Panels**

### The Legal and Ethical Consideration in Managing Diversity in the Workplace

Nardia Anglin Taylor Prof. John Akana HMGT 3601: Hospitality Management Legal Environment

# Accessible Gaming for Visually Impaired: The Use of Deep Learning Model for Real-Time Card Detection

Parviz Subkhankulov Prof. Larry Ryan CST 3502: Data Mining

### Facilitating Comprehension of Complicated Formulas in Calculus II

Daniel Flores de Valgaz Prof. Toufik Ayoub MAT 1575: Calculus II

#### The History of the Brooklyn Bridge

Cindi Eve Sosa Prof. Patricia Hickey ENG 1101: English Composition I

#### **Articulating Empathy in Healthcare**

Sabahat Moughal
Prof. David Lee
COM 3404: Health Communication and Education

### Biotechnological Advancement and Posthumanism: a Study of Cloning and CRISPR

Feriyal Khan Prof. Daniel Wagnon PHIL 2203: Health Care Ethics

#### Reimagining Site Models in Architectural Education

Caetana Filipa Abreu de Castro Matos Megre Prof. Elisabeth Martin ARCH 2412: Architectural Design IV

Poetic Codes- Emphasizing the fusion between

### poetry and computational analysis

Norm Miller II
Prof. Robert Ostrom
ENG 2142: Writing Poetry

### Stress Under Surveillance: The Psychological and Social Impact of Shelter Security in NYC

Kristine Rakowsky
Prof. Annie Ngana-Mundeke
ANTH 1101: Introduction to Anthropology

# SPECIAL PROJECTS

#### **Grid-Lock: Escape from the singularity**

Mariame Aghailas Profs. Tamrah D. Cunningham & Reneta D. Lansiquot-Panagiotakis

### Mythic Math: Scrolls & Beasts of the Forgotten Academy

Evelyn Pulla Profs. Tamrah D. Cunningham & Reneta D. Lansiquot-Panagiotakis

#### **Community All Stars**

Street Homelessness Advocacy Project (SHAP), Ruth Marie Charles; American Red Cross, Sunita Cheddiel; New York Police Department (NYPD), Ejegul Bayramova; Council of Peoples Organization (COPO), Adham Alshaif; Gobind Sarvar, Aastha Momi; 8 Ball Community, Amir Kamal Gamble; Chinese-American Planning, Ruizheng Huang; Blerd City Convention: A Safe Space for Nerds, Ebony Cumbo Grant & Angelina Mateo

### PHYS 1002ID: Introduction to Physics of Natural Disasters

Prof. Yanna Chen

### Growing Threat of Hurricanes in Global Warming

Luis Cespedes, Kiran Maharjan, Diego Reyes, Rean Shahidullah, Yesna Sorwor, & Jun Tong (Adam) Zhang

#### Climate Change and the Human Health

TianBao Chen, Ousmane Diallo, Arkadiy Mardakhaev, Nearcisse Maynard, & Vishal Ramkhelawan

#### Global Aftershock

Shahd Abdalla, Jean-Pierre Damani, Robert Francis, Aida Nouri, Andreus Pollard, & Norman Zhen

#### Harnessing the Waters: Analyzing the Ecological and Societal Benefits of Flood Events

Brigette Alejandro, Seckin Arsoy, Kingston Ditsch, Dante Iannelli, Julian Ruiz & George Salazar





Prof. Clairesa Clay, Founder, Blerd City Con Game Jam: Storytelling in board games, February 27, 2025



Game Jam: Playtesting, April 24, 2025



Honors Scholars Program Brooklyn Landmark Elemenary School Textile Lab, March 21, 2025



Honors Scholars Program Graduate School Fair, April 10, 2025



Game Jam: Playtesting, April 24, 2025

# CUNY RESEARCH SCHOLARS PROGRAM (CRSP) & LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION (LSAMP)

A Geospatial Analysis of the Intersection of Livability and Sustainability in NYC

Arianna Dilillo Prof. Anne Leonhardt

Abnormal Molecular Involvement and Fluid Behavior Post-TBI: Chemical and Mathematical Biology of Brain Tissue

> Vanessa Robinson Prof. Subhendra Sarkar

Adaptive Reuse of Historic Buildings Amidst Gentrification

Natalie Simons Prof. Shelly Smith

**Building an R Library of Financial Functions** 

Manahill Arshad Prof. Ossama Elhadary

Can Graphic Design Help Improve Overall Communication?

Ze Huang and Michael Lester Prof. Maureen Neuringer

Classifying Galaxies by Color in the Legacy Survey of Space and Time (LSST)

> Samiya Shamsur Prof. Charlotte Olsen

CyberSecurity Products Comparison

India Barker Prof. Ossama Elhadary

Effects of Electric Field and Heat on X-ray Absorption by Biological Media

Jasper Cheung Prof. Subhendra Sarkar

#### Identify a specific area of Cyber Security

Carl-Handy Abraham Prof. Ossama Elhadary

MR Diffusion Databases to Identify Common, Vulnerable Regions in Various Neurological Diseases

Daler Djuraev and Xionghui Wu Prof. Subhendra Sarkar

#### **Optical Prediction of Personality Characteristics**

Tamara Tugulashvili Prof. Daniel Capruso

Pandemic to Present Ozone Analysis Comparison: LiDAR's Role in Urban Air Quality Monitoring

Julissa Mendez Prof. Viviana Vladutescu

Parameters for Entanglement Between Various Quibits Used for Quantum Computers

Elizabeth Frias Prof. Oleg Berman

Remixing and Adapting Virtual and Non-virtual Manipulatives in the Teaching and Learning of High School Mathematics: Incorporating Computational Thinking in Preservice Mathematics Teachers' Preparation

Alyssa Johnson and Yadira Vazquez Profs. Nadia Kennedy and Ariane Masuda

Study and Analysis of the Design of a Robot Manipulator

> Kimberly McLaurin Prof. Farrukh Zia

The Standard Model of Particle Physics

Christopher Osorio Prof. Andrea Ferroglia

### Transforming Computer Technology into Green Technology

Ruth Orlanne Gaboton Prof. Farrukh Zia

### Understanding the Impact of Climate Change and Building Energy Consumption

Rashiek Barber, Abdellah Gessra, Takoda Nestor, Christopher Sanchez, and Ferasuddin Siddiqui Prof. Daeho Kang

#### Use of Repurposed Whole Textile for Enhancement of Pavement Soils

Yoselin Sarita Prof. Ivan L. Guzman Pena

### Visualization and Analysis of Environmental Data OR Natural Capital Accounting

Hasib Mahmood Prof. Ossama Elhadary

### Al-Driven Web Development: Enhancing User Experience with Intelligent Automation

Kazi Islam Prof. Patrick Slattery

#### CyberSecurity Products Comparison

India Barker Prof. Ossama Elhadary

### Cybersecurity: The Future of User Access Controls

Gina Leon Serna Prof. Patrick Slattery

#### **Decrypting Data with Al**

Daniel Wang Prof. Patrick Slattery

#### Enhancing Dental Care Access for Veterans: Addressing Gaps in Insurance and Oral Health Services

Stefanie Rivera Prof. Susan Davide

### Fixtures for Automated Light Bulb Testing using a Robot Arm

Anthony Lai and Simon Lin Prof. Angran Xiao

#### Leveraging Blockchain for High-Integrity Carbon Trading: Feasibility, Scalability, and Impact in Latin America

Darien Mendez Prof. Heather Eliezer

#### Mathematical Modeling and Experimentation to Design Surface Filters for Magnetic and Optical Properties Useful in Medical Industries

Ali Al-Gemsh and Taro Suzuki Prof. Subhendra Sarkar

### Modern Full-Stack Web Development Technologies

Yassine Chahid Prof. Patrick Slattery

#### Monitoring Heat in NYC Subway System

Alexander Abreu Ramirez, Damilola Babs-Ogundeji, Lou Kale, Abdoul Mohaimine Nana, and Malique Paul Prof. Abdou Bah

#### MR Diffusion Databases to Identify Common, Vulnerable Regions in Various Neurological Diseases

Daler Djuraev and Xionghui Wu Prof. Subhendra Sarkar

### CUNY IMMERSIVE RESEARCH EXPERIENCE (CIRE)

### Scheduling Applications using Graph Theory and Graph Coloring

Mariame Aghailas Prof. Kayla D. Davie

### Study and Analysis of the Design of a Robot Manipulator

Kimberly McLaurin Prof. Farrukh Zia

#### The Evolution of Drug Discovery

Saba Alkobadi Prof. John Lonie

### Utilizing PEGDA for Sustainable Seed Growth: Microgreens in Space

Artur Abramyan, Gabriel Antigua, Luis Luna & Kelly Wu Prof. Ozlem Yasar

### X-ray and MRI of Transition Metals in 2D Porous Media: Quantum and Classical Optics

Achlyn Genao, Andre Ngono & Natalya Tomskikh Prof. Subhendra Sarkar Artificial Intelligence - Machine Learning, Mobility - Mobile (phones, iPads, watches, etc) apps, Web apps

Joel Mejia Prof. Marcos Pinto

#### Exploring the Idiosyncratic Volatility Puzzle

ZiHan Cao Prof. Ossama Elhadarv

Incorporating AI in the Teaching and Learning of School Mathematics: Design and Assessing Activities with AI for the Mathematics Classroom

Rachel Dawidowicz Prof. Nadia Kennedy

#### MR Diffusion Databases to Identify Common, Vulnerable Regions in Various Neurological Diseases

Daler Djuraev and Xionghui Wu Prof. Subhendra Sarkar

### NMR Investigations of Ion Transport in Novel Electrolytes

Elizabeth Brandwein Prof. Steve Greenbaum

Remixing and Adapting Virtual and Non-virtual Manipulatives in the Teaching and Learning of High School Mathematics: Incorporating Computational Thinking in Preservice Mathematics Teachers' Preparation

Alyssa Johnson and Yadira Vazquez Profs. Nadia Kennedy and Ariane Masuda

# The Solar Shed: From Schematic Design to Design Development to Construction Documents

Andrew Aucanzhala, Javier Espinal Paniagua, and Kevin Hernandez Prof. Kenneth Conzelmann

### EMERGING SCHOLARS PROGRAM

#### Al in Daily Life by 2025

Sumiya Jahan Prof. Anne Chen

### Understanding the Impact of Climate Change and Building Energy Consumption

Rashiek Barber, Abdellah Gessra, Takoda Nestor, Christopher Sanchez, and Ferasuddin Siddiqui Prof. Daeho Kang

### X-ray and MRI of Transition Metals in 2D Porous Media: Quantum and Classical Optics

Achlyn Genao, Andre Ngono & Natalya Tomskikh Prof. Subhendra Sarkar

#### A Model to Classify Face Emotion

Angie Navarro Prof. Marcos Pinto

#### Advanced Assistive Technology Facilitates Hands-on Service Learning

Majida Naz Prof. Farrukh Zia

#### AI/ML Accelerator Science and Technology

Parviz Subkhankulov Prof. Li Geng

#### An Exploration of Combining a Traditional Chinese Musical Genre with the Contemporary "Wave" Style

Demitri Cameron Prof. David Smith

### Apply Machine Learning to Detect and Predict Fraud in Credit Card Transactions

Bartlomiej Gralak Prof. Marcos Pinto

#### **ARCscholars**

Bryant Ariza, Nouman Arshad, Danielle Gibson, Diana Luna-Garcia & Elijah Walker Prof. Naomi Langer-Voss

#### Arduino-Based Obstacle Avoidance Electric Vehicle

Ndibmouwem Umanah Prof. Ahmed Hassebo

#### Are New Yorkers prepared for Coastal and Riverine Flooding? An analysis of 2023 National Household Survey on Disaster Preparedness

Suzana Edmond, Karen Fung & Kashfia Raisa Profs. Sanjoy Chakraborty & Smita Ekka Dewan

#### **Augmented Reality Research and Design**

Sally Chen and Alan Jaquez Prof. Jenna Spevack

#### Automated Control System for Javanese Shadow Puppets and Dynamic Set Manipulation

Kristian Rice and Yinson Tso Prof. David Smith

#### **Blended Shadow Puppet**

Samuel Cheung Prof. David Smith

### Bridging the Financial Literacy: Impact on Children's Future

Ruizheng Huang Prof. Shakira Henry

### CAD to Illustrate Deficits in 3D Constructional Ability

lvy Li Prof. Daniel Capruso

#### Comparative Gene Expression Analysis in Disease and Normal States Using Public RNA-Seg Data

Noor Ahamed, Guadalupe Gonzalez & Bansari Patel Prof. Evgenia Giannopoulou

### Control of Electro-Mechanical Systems with Assistive Technology Devices

Shiou Ching Chen Prof. Farrukh Zia

#### Design and Fabrication of 3D Printed Computer Based Assisted Technology Device

Amber Ocasio Prof. Farrukh Zia

### Dried blood sampling (DBS) for at-home testing of viral load among youth living with HIV

Cynthia Wen Prof. Sitaji Gurung

#### **Early Childhood Caries**

Shahd Abdalla Prof. Dora-ann Oddo

#### **Eco-Effective Housing**

Fareda Elsherif, Mohamed Hassan, Fatima Ikhmais& Mariam Selim Prof. Alexander Aptekar

#### **Edge Modes Created by a Domain Wall**

Tonatiuh Fitzgerald Prof. Roman Kezerashvili

#### **BFSP32** Weather Monitor

Sherlyn Cruz Prof. Ahmed Hassebo

### Exploring Current Data Wrangling Techniques and Tools

Shazrim Farin Prof. Patrick Slattery

### Exploring Properties Of Resolved Regions In Galaxies Through Cosmic Time

Ena Chia Prof. Charlotte Olsen

#### **Food Inspection Prediction**

Kevin Olivares Prof. Marcos Pinto

#### Foveal Fixations on Face, Fashion, and Jewelry

Maggie Morales Prof. Daniel Capruso

### From Kitchen to Medicine Cabinet: Ancient Remedies in Modern Nutraceuticals

Ali Algemsh

Prof. Sanjoy Chakraborty

### Healthcare Policies That Work For Caribbean Immigrant Populations in NYC

Kimora Toussaint Prof. Debarati Biswas

# How Do South Asians Communicate in Healthcare Settings with Respect to their Cultural/Ethnic Backgrounds?

Sabahat Moughul Prof. Sarah Price

#### Human Resource Policies Inclusive of Dress Amongst Genders within the Fashion Industry

Najae Ricketts Prof. Alyssa Dana Adomaitisswecdxa

#### Innovative gearbox for greener e-bike

Harmony Divine and Mahmoud Elfalah Prof. Andrea Ferroglia

# Integrating Ecological Design Principles into Urban Public Spaces for Community Well-Being

Rayen Osorio Prof. Anne Chen

#### Micro:Bit Communication

Doussouba Diakite and Nadia Khan Prof. Farrukh Zia

#### Monitoring Heat in NYC Subway System

Alexander Abreu Ramirez, Damilola Babs-Ogundeji, Lou Kale, Abdoul Mohaimine Nana, & Malique Paul Prof. Abdou Bah

#### Optical Properties of Hybrid Quantum Dot / Transition-Metal Dichalcogenide Nanostructures

Keven Cruz and Tomas Gonzalez Prof. Vitaliy Dorogan

#### **Oral and Fecal Canid Microbiome Analysis**

Mariana Lucero Prof. Jeremy Seto

### Photocataloging and DNA Barcoding of Yellowjackets

Imarcy Marmol Prof. Jeremy Seto

#### PM2.5 and Its Impact on Our Lungs

Hailah Nagi Prof. Farrukh Zia

#### Predicting Post Translational Modifications Using Protein Sequence

Christopher Chow Prof. Shang-Huan Chiu

#### **Probabilistic Simulations**

Rona Zhang Prof. Satyanand Singh

#### **Quantum Diffusion for Option Pricing**

Sean Sinclair Prof. German Kolmakov

#### Re-Imagining an East Harlem Corner

Terri Wright Prof. Elizabeth Parks

### Repurposed Whole Textile Reinforced Clay to Enhance Bearing Capacity of Pavement Soils

Jonathan Huerta Dolores and Ritika Talwar Prof. Ivan Guzman

### Redesigning the light testing center of the robotic system

Mohamed Ka Prof. Muhammad Ali Ummy

### Redistribution and Localization of Biometals in Apples Using X-Ray and MRI

Somdat Kissoon Prof. Subhendra Sarkar

#### Roebling's Bridges

Emmanuel Tejada Prof. Paul King

### Smart Lock Biometric & RF-Based MFA using Arduino

Ibraheem Esa, Kevin Balbuena Montes, and Francisco Zamora Profs. Suela Aalsberg and Mohammed Islam

#### Teaching Multiethnic Stories in American Literature: Representation, Methods, and the Impact of School

Most Akter Prof. Caroline Hellman

#### **TECHNE 2023-2024**

Alyssa Duran, Diego Lopez, Vladislav Molchanov & Elisabet Tolentino Prof. Jieun Yang

#### The Effects of COVID-19 on the US Economy

Angelica Tellez Prof. Huseyin Yuce

### The Integration of Liveability and Sustainability in NYC Neighborhoods

Sonya Weinstock Prof. Anne Leonhardt

### The role of MRI in diagnosis of patients with conditions that affect the organs and tissues

Sebastien Louis Prof. Lillian Amann

#### The Societal and Ethical Issues Related to Al

Jaquan Lasalle Prof. Elizabeth Milonas

# The Solar Shed: From Schematic Design to Design Development to Construction Documents

Andrew Aucanzhala, Javier Espinal Paniagua & Kevin Hernandez Prof. Kenneth Conzelmann

#### **Topics in Computational Number Theory**

Evelyn Pulla Prof. Satyanand Singh

### Understanding the Impact of Climate Change and Building Energy Consumption

Rashiek Barber, Abdellah Gessra, Takoda Nestor, Christopher Sanchez, & Ferasuddin Siddiqui Prof. Daeho Kang

#### Using AI to Control a Set of Drones

Shafique Khan Prof. David Smith

# GRANT-FUNDED PROJECTS

### Utilizing PEGDA for Sustainable Seed Growth: Microgreens in Space

Artur Abramyan, Gabriel Antigua, Luis Luna, & Kelly Wu Prof. Ozlem Yasar

#### **Virtual Meeting Space**

Maurice Alexander Prof. Marcos Pinto

### X-ray and MRI of Transition Metals in 2D Porous Media: Quantum and Classical Optics

Achlyn Genao, Andre Ngono & Natalya Tomskikh Prof. Subhendra Sarkar

#### **Snack Quests and Circuses**

Rona Zhang Profs. Satyanand Singh, Jonas Reitz, Kate Poirier, Ariane Masuda, & Darya Krym Grant Number: MSEIP Grant # P120A220033

#### NSF REU Grant # 2150432

Drs. Reginald Blake, Hamidreza Norouzi, & Ms. Julia Rivera

Characterizing the Urban Land Temperature via an Innovative, Multi-Platformed Suite of Satellite and Ground-based Remote Sensing Technologies

Raisa Atiq and Toluwa Jayeola Drs. Hamidreza Norouzi & Reginald Blake

#### **NSF IUSE Grant # 2327431**

Drs. Reginald Blake, Hamidreza Norouzi, & Ms. Julia Rivera

#### Transforming NYC's Waste into Energy: Researching Global Models for Sustainable Urban Systems

Rean Shahidullah Dr. Masato Nakamura

#### Transforming Landfills from Environmental Liabilities into Energy Assets through Geological Engineering and WTE Innovation.

Rizwan Chowdhury, Harmony Divine, Babacar Sarr, & Rean Shahidullah Dr. Masato Nakamura

#### Comparison of AERONET and MESONET Aerosol Optical Depth (AOD) Retrievals Using Sun Photometer Data in New York City

Shervan McLean Dr. Yanna Chen

### Heat Monitoring In Brooklyn Subway System CUNY – MTA

RKingston Ditsch, Maria Hashmi, & Shaquan Larose Drs. Abdou Bah, Hamidreza Norouzi, & Reginald Blake

### **NOTES**

#### COOLING THE CONCRETE JUNGLE: POSITIVE IMPACT OF GREEN ROOFS AND GREEN MATERIALS ON THE UHI

Brigette Alejandro and Zohaib Khan Dr. Marzi Azarderakhsh

The Heat We Breathe: Spatial Correlations Between Surface Temperature and Asthma in East New York

Hailah Nagi Dr. Marzi Azarderakhsh

#### The 42<sup>nd</sup> semi-annual

### Dr. Janet Liou-Mark Honors Scholars & Undergraduate Research Poster Presentation

To all the dedicated professors for mentoring students. A heartfelt thank you for making this event a successful one.

#### **SPECIAL THANKS TO**

Ms. Chioma Okoye Mr. Michael Peterkin Ms. Julia Rivera Ms. Monisha Sooklall Ms. Mary Zaradich Ms. Rona Zhang

### A SPECIAL THANK YOU TO THE DEDICATED POSTER JUDGES:

Ralph Alcendor Jeffrey Kroll Alexander Aptekar Lyubava Kroll Navid Allahverdi David Lee Kavla Davie Tommy Li Vitaliy Dorogan Elizabeth Milonas Andrea Ferroglia Laureen Park Ivan Guzman Jody Rosen Ashrarul Hag Satyanand Singh Ahmed Hassebo Meagan Sylvester Ivana Jovanovic Tracy Zimmermann Ellen Kim Zheng Zhu

