

THE 33<sup>RD</sup> SEMI ANNUAL



DR.  
**JANET  
LIOU-MARK**

HONORS AND UNDERGRADUATE  
RESEARCH SCHOLARS  
POSTER PRESENTATION

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**WEDNESDAY, DECEMBER 2, 2020**

*VIRTUAL POSTER PRESENTATION  
(POSTER JUDGING)*

**THURSDAY, DECEMBER 3, 2020**

*VIRTUAL POSTER PRESENTATION  
(AWARD CEREMONY)*

**1PM 2PM**

HONORS IN  
A REGULAR COURSE

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PROJECTS

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## Greetings

Russell K. Hotzler  
President

Pamela Brown  
Interim Provost and  
Vice President for Academic Affairs

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

## Recognition of Undergraduate Researchers

### Honors Scholars

Reneta D. Lansiquot  
Director of the Honors Scholars Program

### CUNY Research Scholars

Hamidreza Norouzi  
Director of Undergraduate Research

### Emerging Scholars

Hamidreza Norouzi

### Grant-Funded Projects

Hamidreza Norouzi

### Interdisciplinary Projects

Reneta D. Lansiquot  
Founding Chair of the Interdisciplinary Committee

## Best Poster Awards

Amanda L. Almond  
Interim Assistant Director of the Honors  
Scholars Program

## In Remembrance of Dr. Janet Liou-Mark



I would like to tell you a story. I hope you will indulge me.

Dr. Janet Liou-Mark was the Director of the Honors Scholars Program, my mentor, and friend. I met her in the early 2000s while I was a full-time student in the Computer Systems Technology Department while working full-time at a patent and trademark law firm. My mathematics professor advised me to enroll in the Honors Calculus course. When I found out the course did not fit in my schedule, I was told to see Dr. Liou-Mark because she would help me. Sensing my disappointment, she asked for my help; she wanted to create a City Tech chapter of the National Society of Collegiate Scholars (NSCS), but she needed a student to initiate it.

In the acknowledgement section of my first book, I wrote this about her.

*Subsequently, she wrote me a successful recommendation letter for graduate school, a master's of science program at Polytechnic University, which is across the street from City Tech in Downtown Brooklyn, and we kept in touch. When it came time for me to pursue my doctorate, she wrote me another successful recommendation letter. A few months before I graduated, she invited me to talk at a Women in STEM luncheon that she organized at the College. After my talk, Pamela Brown, [then] Dean of the School of Arts and Sciences, encouraged me to apply for a new Technical Writing tenure-track faculty position in the English Department. Janet guided me through the application process too, providing interview tips and speaking highly of me to her colleagues. Coming full circle, in my first semester as a faculty member at this College, she invited me to deliver the keynote address, "On the Need for Interdisciplinary Studies," to the largest group of inductees at the convocation of the City Tech National Society of Collegiate Scholars chapter.*

Janet provided me with opportunities outside my department as well as outside City Tech. She recommended me for the Project Kaleidoscope Facilitating Interdisciplinary Learning (FIDL) Initiative that offered constant fully funded travel across the country and participation in FIDL think tanks on interdisciplinary studies.

Whether promoting interdisciplinary studies or writing my first book, I was always inspired and encouraged by her to pursue my big ideas and bring them to fruition. As I think about the big idea for my seventh book, one that may be too ambitious, Janet is not here to cheer me on.

Almost three months ago, I lost my mentor. I know she will be remembered. Not because this student research poster presentation will now bear her name, but because she was an exceptional human being. I will end my story with an anecdote.

One typical evening while having what I called "dunch" (a meal between lunch and dinner), a student stopped by her office for help. She directed the student to see Dr. Earl Hill. I asked her to describe him to me because I had not met him. The first thing she said was "he has a kind face."

Dr. Janet Liou-Mark will be remembered because she was kind and she was a mentor. I continue to honor her by being kind and being a mentor. I hope you will join me.



**Dr. Reneta D. Lansiquot**

Director of the Honors Scholars Program  
Professor and Founding Program Director,  
Bachelor of Science in Professional and Technical Writing  
Founding Chair of the Interdisciplinary Committee  
New York City College of Technology  
The City University of New York

# HONORS IN A REGULAR COURSE

## What Entrepreneurial Start up Project would you Open in the Current COVID-19 Environment?

Yaneth Arevalo  
Prof. John Dello Russo  
MKT 2327: Entrepreneurshi

## The Impact of eDiscovery and Technology in the Practice of Law

Mercedes Aznar  
Prof. Marissa Moran  
LAW 4704: Legal Technology

## Effectiveness of Group Work Practice Skills/ Coursework in Student Internship Rotation-A Quantitative Study

Daphne Bernadotte  
Prof. Marshall Charisse  
HUS 3504: Group Work Practice

## Black Theatre: Looking Back to Moving Forward

Ashley Camacho  
Prof. Jeannine Foster-McKelvia  
AFR 1321: Black Theater

## Could Cognitive Technologies Solve Global Issues

Nakeita Clarke  
Prof. Jason Ellis  
ENG 2575: Technical Writing

## Care and Maintenance of Dental Restorations

Ibeth Erazo  
Prof. Anthony Sena  
RESD 2313: Removable Partial Dentures II

## Steven Holl Research Paper

Michelle Guzman  
Prof. Anne Elizabeth Leonhardt  
ARCH 2321: History of ARCH: 1900 - Present

## An Investigation into the Response of the US and EU5 to the COVID-19 Disease

Omar Hassan  
Prof. Mohammed Feknous  
MECH 1240: Computer Applications in  
Mechanical Engineering

## Open Educational Resources: What do Students Want?

Aneeza Hussain  
Prof. Tatiana Voza  
BIO 1201ID: Biology II

## Implementation of Pseudo-Random Number Generator Using LFSR

Fahmeda Khanom and Touheda Khanom  
Prof. Yu Wang  
EMT 1250: Fundamental of Digital Systems

## High Performing House Research

Karen Lucero Arita  
Prof. Alexander Aptekar  
ARCH 2331: Building Technology II

## Measuring Influence on Twitter

Daniela Martinez  
Prof. Stathis Verras  
MAT 1372: Statistics with Probability

**Burnout in Hospitality Worker; Stress,  
Lifestyle and Health**

Mishka Morris  
Prof. Evelyn Kolidas  
PSY 1101: Introduction to Psychology

**Magnus Vertical Axis (Magnus VAWT)  
“Typhoon-Proof” Wind Turbine Innovation  
for Japan’s Electricity Power Generation**

Sherene Moore  
Prof. Lukasz Sztaberek  
ENVC 2420: Principles of HVAC Controls

**Instructional Design for Virtual  
Training Presentations**

Michael Meyer  
Prof. Julian Costa  
COM 1330: Public Speaking

**The Legal Challenges and Solutions of  
Adolescents with ADHD**

Susannah Oliveira  
Prof. Pamela Scheininger  
LAW 4900: Senior Legal Seminar

**Adobe RoboHelp User Guide for Importing  
Data in Matlab**

Olga Privman  
Prof. Paula Korhonen  
CST 3559: Technical Documentation

**Recent Advances in the Foundations of  
Quantum Mechanics**

Olga Privman  
Prof. Boris Gelman  
PHYS 2607: Introduction to  
Quantum Mechanics

**Signal and Noise Comparison between Ultra-Low  
Electromagnetic Digital Energy Response as  
in MRI and High Energy Electromagnetic Beams  
as in Mammography**

Luz Solano  
Prof. Subhendra Sarkar  
RAD 4829: Advanced MR Theory  
and Applications

**Impacts of Responsive Web Design**

Ashley Varon  
Prof. David Karlins  
COMD 2451: Web Design I

# CUNY RESEARCH SCHOLARS

## Creating an Augmented Reality (AR)

### Web Application

Syed Ahmed  
Prof. Marcos Pinto

## Radiographic Mapping of Nanoparticle Transport in Animal Tissues: Ionic Exchange and Restricted Diffusion Models

Carlos Aguayza  
Prof. Boris Gelman

## Understanding of Aerosol Transmission of COVID-19 in Indoor Environment

Adama Barro and Jacob Lopez  
Prof. Daeho Kang

## COVID-19 Impact on Radiology Students' Distance Learning

Jason Chan, Cherylann Jackson-Holmes  
Mary Lee and Renzo Marmolejo  
Prof. Zoya Vinokur

## Face Detection with Machine Learning

Kadiatou Diallo  
Prof. Marcos Pinto

## Mobile Robot Inspector in A Wireless Sensor Network Framework

Kadiatou Diallo  
Prof. Marcos Pinto

## PEDGA Degradation Rate Studies

Marvin Espinoza  
Prof. Ozlem Yasar

## Two and Three-Dimensional Radiographic Imaging of Contrast Agents in Heterogeneous Live Cell Media to Understand Contrast-induced Toxicity

Aldona Gjoni and Fahameda Hassan  
Prof. Subhendra Sarkar

## Deep Lens Based American Sign Language Translation

Jakob Horowitz  
Prof. Xiaohai Li

## Predicting COVID-19 Virus Spread with the use of Machine Learning

Brian Jerez  
Prof. Marcos Pinto

## Visual Communication Design for Assistive Technology

Gui Jing Jiang  
Prof. Farrukh Zia

## Polyethylene Glycol Diacrylate Degradation Rate Studies

Almami Kanazoe  
Prof. Ozlem Yasar

#### A Low-cost SLAM RC Car with RPLIDAR

Najwan Kased  
Prof. Zhou Zhang

#### Smart IoT Car Seat Alarm System for Preventing Hot Car Death

Fahmeda Khanom and Touheda Khanom  
Prof. Xiaohai Li

#### Machine Learning and Physical Computing

Joan Beatrice Ladaban  
Prof. Farrukh Zia

#### Developing Ionic Nanomaterials for Biomedical Applications: Surface Chemistry and Morphologic Imaging

Lin Mousa and Hayley Sanchez  
Profs. Subhendra Sarkar and Zoya Vinokur

#### Electric Vehicle (EV) Charging Stations Proximity

Abdullah Nabil  
Prof. Marcos Pinto

#### Graphene Coated Laminated Composite for Light Striking Prevention

Aaryan Nair  
Prof. Akm S Rahman

#### Low-Cost 3D Printed Rapid Deployment Arm (RDA)

Erik Peregrina  
Prof. Andy Zhang

#### Forecasting Football (Soccer) Games Results Using Deep Learning

Hugos Rivas  
Prof. Marcos Pinto

#### Recovered Energy Solutions for Controlled Environment Agriculture (CEA)

Itay Rubin  
Prof. Masato Nakamura

#### Imaging Nanomaterials During Active Biochemical Transport in Model Plants and Chicken Eggs: Diffusion and Near Infra-Red Measurements

Amina Shahbaz and Tetiana Soloviova  
Profs. Subhendra Sarkar and Chen Xu

#### Metric Dimension and Strong Metric Dimension of Graphs

Luc Telemaque  
Prof. Nadia Benakli

# EMERGING SCHOLARS

## Parametric Art

Daanial Ahmad and Shaun Pollard  
Prof. Satyanand Singh

## The Energy Challenge: Moving from Fossil Fuels to Bio-fuels, Hydrogen and Green Energy Sources

Abrar Alhashidi and Russybel Richiez  
Prof. Ivana Jovanovic

## A STEM-COMD Interdisciplinary Approach to Illustrating STEM Manuscript

Edward Alston  
Prof. Sara Woolley

## What Entrepreneurial Start up Project Would You Open in the Current COVID-19 Environment?

Yaneth Arevalo  
Prof. John DelloRusso

## The Impact of eDiscovery and Technology in the Practice of Law

Mercedes Aznar  
Prof. Marissa Moran

## 3D Bionic Arm

Anny Baez Silfa  
Prof. Farrukh Zia

## Signal and Noise Comparison between Ultra-low Electromagnetic Digital Energy Response as in MRI and High Energy Electromagnetic Beams as in Mammography

Bleidis Buitrago  
Prof. Subhendra Sarkar

## Immunotherapy in Cancer Treatment: Synthetic Approaches and Mechanisms of Action

Keyandra Bussey  
Prof. Alberto Martinez and Diana Samaroo

## Sexual Dimorphism, Obesity, and COVID-19

Travis Caraballo, Bushra Miah  
and Yomary Vargas  
Prof. Sanjoy Chakraborty

## Sustainable Renovation of Historical Buildings

Melita Cekani  
Prof. Jihun Kim

## Mindcontrol of Mobile Robot

Bingfang Chen  
Prof. Farrukh Zia

## Using Statistical Analysis to Examine Weather Variability in New York City

Ryan Chen and Yuhang Wang  
Prof. Jiehao Huang

## Heat Transfer Effects in Animal Tissues by Mammography and Signal and Noise Comparison of Nanoparticle Modified Animal Tissues in MRI

Daniela Costin  
Prof. Subhendra Sarkar

## Object Recognition and Voice Assistant with Augmented Reality

Juan Estrella  
Prof. Aparicio Carranza

The 1935 Hurricane Houses of Islamorada:  
A Case of Successful and Rapidly Deployed  
Post-Disaster Housing

Gloria Garcia and Kendra Gibbs  
Prof. Anne Marie Sowder

Markov Chains and the PageRank Algorithm

Mahoutin Godonou  
Prof. Nadia Benakli

Blast + Velocity: Animated Web

Shisir Humagain  
Prof. Marcos Pinto

Open Educational Resources:  
What do Students Want?

Aneeza Hussain and Joyette Noel  
Prof. Tatiana Voza

Virtue at the Coffee House: Poetry and Community  
in Contemporary America

Jessyca Jones  
Prof. George Guida

Understanding of Aerosol Transmission of  
COVID-19 in Indoor Environment

Jacob Lopez, Sherene Moore  
Cathal O'otoole, Matthew Quinones  
and LiaLun Xiao  
Prof. Daeho Kang

Improve the Prototype of Low-cost Near-Infrared  
Diffuse Optical Imaging System

Mohammed Shakil  
Prof. Chen Xu

Principal Component Analysis for Predicting the  
party of the Legislators

Afsana Mimi  
Prof. Nan Li

Benefits of Pre-Construction Analysis: CET Senior  
Capstone Expands Understanding of an Urban  
Refuge at GallopNYC Sunrise Stables

Aalaa Mohammed  
Prof. Anne Marie Sowder

Use of sustainable Architecture in Nigeria in  
Relation to Electricity, Water, and Pollution

Ololade Owolabi  
Prof. Paul King

Diffusion Tensor MRI in Late Onset of Alzheimer's  
Disease: A Critical Assessment of ADNI Databases

Jennifer Padilla  
Prof. Subhendra Sarkar

Oral History of Contemporary Immigration to  
New York City

Valeria Recalde  
Prof. Peter Catapano

Human Rights content in Human Services Major-  
Measuring existing HUS Student Knowledge and  
Interest to Learn about Human Rights

Kaishawn Scott  
Prof. Smita Dewan

Improve the Prototype of Low-cost Near-Infrared  
Diffuse Optical Imaging System

Mohammed Shakil  
Prof. Chen Xu

# GRANT-FUNDED PROJECTS

## A Year of Encounter: The 1948 Photo Album of African American Soldiers Stationed in Gifu, Japan

Manhoor Sheikh  
Prof. Emilie Boone

## Worm Reduction Gearbox

Alcha Soumailou  
Prof. Zhou Zhang

## Customized Global Tip Calculator

Tatyana Taylor  
Prof. Marcos Pinto

## AngularJS: Top Client-Side Javascript Framework for Web Pages

Andray Whyte  
Prof. Marcos Pinto

## Brain Glioblastoma Morphologic Features in MRI: Predictive Models for Spread

Ruth Zero and XiangFu Zhang  
Prof. Subhendra Sarkar

## Data Analysis and Visualizations of Drosophila Behavioral Phases

Xiaona Zhou  
Prof. Boyan Kostadinov

## A STEM-COMD Interdisciplinary Approach to Illustrating STEM Manuscript

Jennie ZhuPan  
Prof. Sara Gomez Wooley

NATIONAL SCIENCE FOUNDATION LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION (LSAMP) IN STEM

## Design and Prototyping of a Speed Reducer GearBox

Sheikh Ahmar  
Prof. Angran Xiao

## Defining Practices to Mitigate the Effects of Orbital Debris in Space

Caroline Eco  
Prof. Mohammad Razani

## Care and Maintenance of Dental Restorations

Ibeth Erazo  
Prof. Anthony Sena

## Mechanical Characterization of Nano-material Doped Polydimethylsiloxane (PDMS)

Robert Janik  
Prof. Ozlem Yasar

## Response Abilities: Digital Health Literacy through Words and Images

Judeen Peters  
Prof. David Lee

NATIONAL SCIENCE FOUNDATION RESEARCH EXPERIENCES FOR UNDERGRADUATES (NSF REU GRANT #1950629)

Prof. Abdou Bah, Reginald Blake,  
Hamid Norouzi, Janet Liou-Mark,  
and Ms. Julia Rivera

## Streamflow Prediction using Deep Learning Models

Ana Abreu  
Prof. Arezoo Bybordi

Ozone (O<sub>3</sub>) And Particulate Matter (PM<sub>2.5</sub>):  
Summer Heat and High Pollution Within the NY  
Metro Region

Babacar Dieng  
Prof. Yonghua Wu

The Effects of Late Spring Frost on Forest and  
Landscape Health and Recovery of the Black Rock  
Forest, New York

Caroline Eco, Oliver Imhans  
Profs. Aaron Davitt and Andrew B. Reinmann

Analysis of Surface Temperature Trends of Global  
Lakes Using Satellite Remote Sensing Observations

Christal Jean-Soverall,  
Profs. Abdou Bah, Reginald Blake  
and Hamid Norouzi

Estimating Hourly Brightness Temperature Data  
Using SSMIS and GMI Sensors

Mamadou Balde  
Prof. Zahra Sharinezhadazizi

Microfibers: From the store to the shore

Maria DeLeon  
Prof. Valerie Were

Detecting Forecast Error Signatures

Stance Mason  
Prof. Hannah Aizenman

Investigating Water Usage Patterns Tied to  
California State Water Project

MXiaoqing Wu  
Prof. Indrani Pal

PHYS1002ID: An Introduction to the Physics  
of Natural Disasters

Prof. Abdou Bah

Earthquake Evacuation Plan for NYC Public Schools

Sherene Moore, Jude R Valon,  
Ruben D Vecino Gazabon, Jing Wang,  
Myat K. Thar, Olawale S Ayeni

Hurricane: Nature's Circle Pit

Ely J. Gonzalez, Kevin Vincens, Brian D Maison,  
Faiza Naz, Melissa Agosto, Oumou Diallo

United States Contribution to the Mitigation  
of Global Warming

Raihan Hossain, Arelis Gutierrez,  
Fabio Gonzalez Colacicco, Jiaxiang Chen,  
Ronald Ezekiel Felipe, MD Shahid Himel,  
Mahim Pritom, Estephany Tapia

New York City's Preparations for Major Flooding

Naved Khan, Ashley Mateo, Eliza Mullins,  
Albin Mulic, Mohammed Sharif, Siobhan Smith

BIO 1201ID: Biology II

Prof. Tatiana Voza

Open Educational Resources: What do  
Students Want?

Aneeza Hussain and Joyette Noel



# Honors Scholars Program GRADUATE SCHOOL FAIR



## Join us virtually in Second Life and Zoom

Over 100 programs will be represented!

### Second Life Session

December 3, 2020, 9:30AM-2PM



### Zoom Info Session

December 3, 2020, 4-5PM

Organized by Dr. Reneta D. Lansiquot, Mr. Christopher A. Navarrete, and Prof. Tamrah D. Cunningham.



## WHERE CAN TECHNOLOGY TAKE YOU?



## THE 33<sup>RD</sup> SEMI ANNUAL

DR. JANET LIOU MARK  
HONORS AND UNDERGRADUATE  
RESEARCH SCHOLARS 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. Iman Abdulfattah  
Ms. Lauri Aguirre  
Mr. Abdou Bah  
Prof. Tamrah D. Cunningham  
Mr. Christopher Navarrete  
Ms. Laura Yuen Lau

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

Ralph Alcendor	Boyan Kostadinov
Navid Allahverdi	Nan Li
Nadia Benakli	Sean MacDonald
Monica Berger	Alberto Martinez
Josh Borja	Ariane Masuda
Stephanie Boyle	Elizabeth Milonas
Susan Brandt	Marissa J. Moran
Gwen Cohen Brown	Camille Phaire Morton
Yu Wen Chen	Marcos S. Pinto
Tamrah D. Cunningham	Myldred Prévil
Susan Davide	Nandi Prince
Aida Egues	Noemi Rodriguez
Ossama Elhadary	Satyanand Singh
Li Geng	Denise Sutton
Katherine Gregory	Christopher Swift
Joseph Jeyaraj	Chen Xu
Nanette Johnson	Zoya Vinokur
Ivana Jovanovic	Robert Walljasper
Laina Karthikeyan	Mai Zahran
Ellen Kim	Zhou Zhang
Jinwon Kim	Zheng Zhu

A special recognition and appreciation to  
Ms. Or Szyflingier for designing the program

Organized by City Tech's Honors Scholars Program