




The  
26<sup>th</sup>

Semi-Annual  
Poster Presentation



**The Honors &  
Research Scholars  
Poster Presentation**



Wednesday, May 3, 2017  
11 AM-4 PM  
Atrium Ground and First Floors


Thursday, May 4, 2017  
10 AM-3 PM  
Atrium Amphitheater

Awards Ceremony will begin  
at 12:30 PM  
Atrium Amphitheater


# Table of Contents



Honors in a Regular Course	5
CUNY Research Scholars	8
Emerging Scholars	11
Grant-Funded Projects	17
Special Projects	25



# Awards Ceremony



May 4, 2017  
Atrium Amphitheater  
12:55 PM

## Greetings

**Russell K. Hotzler**  
President

**Bonne August**  
Provost and Vice President for Academic Affairs

**Pamela Brown**  
Associate Provost

## Recognition of Undergraduate Researchers

Honors Scholars  
**Janet Liou-Mark and Laura Yuen-Lau**

CUNY Research Scholars  
**Hamidreza Norouzi**

Emerging Scholars  
**Hamidreza Norouzi**

LSAMP Scholars  
**Marvin Bennett**

Grant-Funded Projects  
**Janet Liou-Mark and Laura Yuen-Lau**

Special Projects  
**Janet Liou-Mark and Laura Yuen-Lau**

## Best Poster Awards

**Mercer Brugler**  
Assistant Professor, Department of Biological Sciences



# Honors in a Regular Course



Cytokine Influence on Neurodevelopment  
**Victor Adedara**  
**Prof. Amanda Larracuente**  
BIO 3354: Computational Genomic

Cardiovascular Diseases:  
Potential Risk Factors for  
Alzheimer's disease  
**Tatiana Aquino**  
**Prof. Niloufar Haque**  
BIO 2312: Human Anatomy and Physiology II

Algorithmic Running Times  
**Carlos Alvarez**  
**Prof. Jonathan Natov**  
MAT 2440: Data Structure and Algorithms

Assessment and Instruction:  
The Impact on Career and  
Technical Education (CTE)  
**Amanda Deebrah**  
**Prof. Susan Caprio**  
EDU 3630: Assessing Student Learning Outcomes

Creating a Classroom Website  
**Amanda Deebrah**  
**Prof. Lieselle Trinidad**  
EDU 3640: Computers in Education

Steps to Grow Your Business  
**Mahendra Francis**  
**Prof. Jeannette Espinoza**  
LAW 2302: Business Organizations and Commercial Law

The Search for Extrasolar Planets:  
Are We Alone in the Universe?  
**Harpreet Gaur**  
**Prof. Viviana Acquaviva**  
PHYS 1117: Astronomy I

Algorithmic Running Times  
**Wei Jie Gao**  
**Prof. Jonathan Natov**  
MAT 2440: Discrete Structure and Algorithms

Polar Functions and  
Parametric Equations:  
Exploring Beyond the XY-Rectangular Box  
**Kwok Ching Hui**  
**Prof. Samar Elhitti**  
MAT 1575: Calculus II

## Preparing Tomorrow's Wine Professionals for Continual Growth

**Malika Ikramova**

**Prof. Karen Goodlad**

HMGT 2402: Wines and Beverage Management

## Synthesis of a Model of the BC Ring System of Oxygenated Angucyclines

**Samuel Isaac**

**Prof. Tony Nicolas**

CHEM 2323: Organic Chemistry II

## Relaxational Kinetics of Exciton Polaritons in Emergent Two-Dimensional Materials

**Cynthia Kuang**

**Prof. German Kolmakov**

PHYS 1434: General Physics II: Algebra Based

## Race Springs

**Timothy Medina**

**Profs. Victoria Medialdea & Derek Wilson**

CHEM 1110: General Chemistry I

## Character Sums of Satoyuki Tsukano

**Hashir Qureshi**

**Prof. Brad Isaacson**

MAT 2540: Discrete Structure II

## The Amyloid Hypothesis in Alzheimer's Disease

**Tiffany Ramkisun**

**Prof. Alberto Martinez**

CHEM 1210: General Chemistry II

## Mental Health Conditions and Pharmaceutical Regimen

**Jawad Rashid**

**Prof. Justine Pawlukewicz**

IS 9010: Independent Study

## GAPDH Activity on Cell Surface

**Yulduz Saidinova**

**Prof. Peter Lipke**

MED 3910: Internship/Research in Biomedical Informatics

## Apoptotic Signaling Pathway Relevant to Cancer

**Khosiyatkhon Sayfulloeva**

**Profs. Sanjoy Chakraborty & Isaac Barjis**

MED 3910: Internship/Research in Biomedical Informatics

## Convert One Form of Motion to Another by Using Some Programming

**Arooba Sohail**

**Prof. Farrukh Zia**

EMT 1220: Mechanism

## Alexa-Powered Robot

**Rumana Hassin Syed**

**Prof. Charles Hamilton**

EMT2390L: Operating Systems Laboratory



NYC Department of Environmental Protection:  
Newtown Creek Treatment Plant  
March 3, 2017



Advancing Library Research Techniques  
Profs. Nora Almeida and Monica Berger  
March 16, 2017



New York Food Tour  
March 25, 2017

# CUNY Research Scholars



Effect of Oxidative Stress on  
THD14 mRNA Expression

Emmanuel Adebola  
Prof. Ralph Alcendor

Building a Security Scheme in  
XBee Wireless Sensor Network

Rachel Alexander  
Prof. Xinzhou Wei

Waste-to-Energy  
Combustion Chamber Simulation

Mohammed Ruhel Alif  
Prof. Masato Nakamura

Significance of Entrance Door Infiltration  
to Building Environment

Lev Chesnov  
Prof. Daeho Kang

Interactive Robotic Mannequin

Aryuna Dashidorzhina  
Prof. Farrukh Zia

Design of a  
Cell Phone Charging Exercise Bike  
with Magnets

Utsab Dasrao  
Prof. Angran Xiao

A Study of Cultural Competence and  
Implicit Bias Amongst  
Healthcare Students

Natalia Dembowska  
Prof. Zoya Vinokur

MoDAR (Mobility Detection and  
Auto Recognizing) Robot

Fatime Zahra El Fatimi  
Prof. Andy S. Zhang

Design of an Alternative 911 Mobile  
Communication System Concept

Wei Jie Gao  
Prof. Daniel Wong

Designing a Bowling Ball with Concrete

Bryan Hoy  
Prof. Navid Allahverdi

Design of an Alternative 911 Mobile  
Communication System Concept

Wen Yong Huang  
Prof. Daniel Wong

MoDAR (Mobility Detection and  
Auto Recognizing) Robot

Felicia Jeter  
Prof. Andy S. Zhang

Drug Delivery Tests for  
PDMS-based Scaffolds

Maria Medina  
Prof. Ozlem Yasar

Race Springs

Timothy Medina  
Profs. Gerarda Shields & Derek Wilson

Cognitive Skills and Strategies for  
Anatomy and Physiology Infograms

Rachel Ofer  
Prof. Vasily Kolchenko

Differentiation and Neurotoxicity of  
PC12 Neuroblastoma

Tiffany Ramkisun  
Prof. Jeremy Seto

Building a Security Scheme in  
XBee Wireless Sensor Network

Amelia Ramnauth  
Prof. Xinzhou Wei

Application of High Performance Concrete  
in Structural Design

Brandow Rojas  
Prof. Navid Allahverdi

Design of a  
Cell Phone Charging Exercise Bike  
with Magnets

Christo Sam  
Prof. Angran Xiao

Scaffold Fabrication for  
Cell Viability Analysis

William Santiago  
Prof. Ozlem Yasar

Selection of Materials and  
Techniques for Construction  
Under Extreme Heat Conditions

Harold Saquicela  
Prof. Anne Sowder

## Significance of Entrance Door Infiltration to Building Environment

Javonne Senior  
Prof. Daeho Kang

## A Study of Cultural Competence and Implicit Bias Amongst Healthcare Students

Jerry Strklja  
Prof. Zoya Vinokur & Elaine Leinung

## Drug Delivery Tests for PDMS-based Scaffolds

Navid Taherzadeh Samani  
Prof. Ozlem Yasar

## Gender Differences in Vagal Tone Adaptation in an Expressive Writing Paradigm

Christina Taitt  
Prof. Jean Hillstrom

## Design of an Alternative 911 Mobile Communication System Concept

Brian Esteel Taveras Diaz  
Prof. Daniel Wong

## Implementation of Cyber Physical Systems

Mellissa Valle  
Prof. Farrukh Zia



Writing Effective Cover and Thank You Letters  
Professional Development Center  
April 6, 2017



Developing Your LinkedIn Profile & Networking  
Professional Development Center  
April 6, 2017

# Emerging Scholars



## 3D Scaffold Fabrication with Photolithography

Cisco Alers  
Prof. Ozlem Yasar

## Cardiovascular Diseases: Potential Risk Factors for Alzheimer's Disease

Tatiana Aquino  
Prof. Niloufar Haque

## A Feasibility Study of an Energy Recovery System

Josue Bautista  
Prof. Masato Nakamura

## State of Health Care in Texas

Christian Bermeo  
Prof. Katherine Gregory

## Rapid Tooling for Product Thermoforming

Oliver Cabrera  
Prof. Angran Xiao

## Energy and Environmental Simulation Laboratory

Giovanni Campos  
Prof. Masato Nakamura

## Character Sums of Satoyuki Tsukano

Fedora Casimir  
Prof. Brad Isaacson

## A Feasibility Study of an Energy Recovery System

Liza Chiu  
Prof. Masato Nakamura

## Energy and Environmental Simulation Laboratory

Justin Colon  
Prof. Masato Nakamura

## Modeling the Interaction of Multi-Target Compounds with the BACE 1 Enzyme: Implications in the Treatment of Alzheimer's Disease

Coreen Cooper  
Prof. Mai Zahran & Alberto Martinez

Molecular Characterization of Black Corals  
(Antipatharians) from the Flower Garden  
Banks National Marine Sanctuary  
(NW Gulf of Mexico)

Craig Dawes  
Prof. Mercer Brugler

Mathematical Approach to  
Creating 3D-printed Topologies

Marco Dwyer  
Profs. Anne Leonhardt & Satyanand Singh

Open-Source Engineered Flight Controller

Elizabeth Ferreira Pichardo  
Prof. Xiaohai Li

Arduino System in Rapid Tooling for  
Product Thermoforming

Kevin Duong  
Prof. Angran Xiao

Building Packing

Marco Dwyer  
Prof. Hart Marlow

Self-Care Inventory for Psychology  
Graduate Students and ECPs (SCI-PSY):  
Scale Construction and Validation

Aspil Estime  
Prof. Amanda Almond

Characterization of THERM\_00194149,  
a Tetrahymena Thermophila Sirtuin  
Family Member

Edrouine Gabriel  
Prof. Ralph Alcendor

Coding Theory

Adam Gronowski  
Prof. Satyanand Singh

PEGDA Sterilization and  
Drug Delivery Tests for  
PEGDA based Hydrogels

Kerolos Hanna  
Prof. Ozlem Yasar

Town of Mamakating Master Plan

Taylor Hernandez  
Prof. Paul King

Global Supplies and  
Local Transmission of Antibiotic  
Resistance in Aquatic Organisms

Aneeza Hussain  
Prof. Haque Nasreen

Preparing Tomorrow's Wine Professionals  
for Continual Growth

Malika Ikramova  
Prof. Karen Goodlad

Honors Scholars Newsletter  
Strategic Redesign

Hilda Jara  
Prof. Tamrah Cunningham

Implementing Internet of Things with  
Open Source Hardware and Software

Ayesha Javed  
Prof. Farrukh Zia

Noise Filtering in Big Data

Alisa Kalegina  
Prof. Ashwin Satyanarayana



Developing and Delivering Effective Research Presentations  
Mr. Marvin Bennett  
March 30, 2017



Advanced Writing Abstracts for Research Projects  
Profs. Rebecca Devers and Marianna Bonanome  
March 16, 2017

Annotation Tetrahymena –  
A Model Organism for Molecular Research  
Colin Joseph  
Prof. Ralph Alcendor

Medical Marijuana and Epilepsy  
Hebah Kharoufeh  
Prof. Niloufar Haque

File Organization Admin Tool  
Volodymyr Komendyak  
Prof. Ohbong Kwon

The Peer Led Team Learning Handbook  
Victor Lee  
Prof. Janet Liou-Mark

High Fat Diet and its Effect on HPG Axis  
Theresa Li  
Prof. Sanjoy Chakraborty

Roof Farm Study  
Oscar Martinez  
Prof. Ivan Guzman

Species Delineation within the Black Coral  
Genus Tanacetipathes  
Sheila Moaleman  
Prof. Mercer Brugler

The Peer Led Team Learning Handbook  
Fathima R. Mohamed Rafeek  
Prof. Janet Liou-Mark

Mathematical Approach to  
Creating 3D-printed Topologies  
Allon Morgan  
Prof. Anne Leonhardt & Satyanand Singh

The Importance of Constructivism for  
Identifying Disease  
Gisela Morocho  
Prof. D.Robert MacDougall

Servo Network Based  
Heteromorphism Robot  
Gene Nadela  
Prof. Xiaohai Li

Mamakating Master Plan and Visitor  
Center Vision Study  
Emily Northia  
Prof. Paul King

Mathematical Approach to  
Creating 3D-printed Topologies  
Asli Oney  
Prof. Anne Leonhardt & Satyanand Singh

Building Packing  
Asli Oney  
Prof. Hart Marlow

Significance of Entrance Door Infiltration  
to Building Environment  
John Paschos  
Prof. Daeho Kang

Mental Health Conditions and  
Pharmaceutical Regimen  
Jawad Rashid  
Prof. Justine Pawlukewicz

Black Males Hiring Rates are Low, and  
Acknowledgement Rates are Lower.  
Reasons Why, and How We Can Improve  
This Problem  
Darius Richards  
Prof. Dan Wong

Brooklyn Korean War Veterans Plaza  
Kameisa Richards  
Prof. Michael Duddy

Luxury Advertising: Gender Portrayal,  
Sexual Objectification, and Brand Loyalty  
Alyssa Rocas  
Prof. Alyssa Dana Adomaitis

Unpacking the Role of the “Wall”  
in History as a Primary Element of  
Architecture and Urban Planning  
Heraldi Sadmojo  
Prof. Claudia Hernandez Feiks

Health Promotion and Self Care:  
Impact of Microaggressions,  
Intersectional Identities, and  
Self-Compassion  
Yulduz Saidinova  
Prof. Amanda Almond

Mathematical Approach to  
Creating 3D-printed Topologies  
Mimu Sakuma  
Prof. Anne Leonhardt & Satyanand Singh

Building Packing  
Mimu Sakuma  
Prof. Hart Marlow



Studying the Over-diagnosis of  
Mental Illnesses in  
Children of Low-income Families  
Gideon Sargeant  
Prof. Gulgun Bayaz Ozturk

High Fat Diet and its Effect on HPG Axis  
Khosiyatkhon Sayfulloeva  
Prof. Sanjoy Chakraborty

Analysis of Students' Progress and  
Workshop Participation in  
Peer-Led Team Learning  
Foundational Mathematics Courses  
Farjana Shati  
Prof. Janet Liou-Mark

Robo-Queen II  
Jennifer Solomon  
Prof. Farrukh Zia

Simulation of Robotic Arm  
Rumana Hassin Syed  
Prof. Farrukh Zia

Hydrogel Fabrication Using  
Maskless Photolithography  
Joyce Tam  
Prof. Ozlem Yasar

Mathematical Approach to  
Creating 3D-printed Topologies  
Adel Yaseen  
Profs. Anne Leonhardt & Satyanand Singh

Building Packing  
Adel Yaseen  
Prof. Hart Marlow

A Feasibility Study of an  
Energy Recovery System  
Runtao Yao  
Prof. Masato Nakamura

Gardening the Backyard to Connect our  
Communities and Green the City  
Mei Zhu  
Prof. Sean P. Macdonald

# Grant-Funded Projects



**National Science Foundation  
Louis Stokes Alliance for  
Minority Participation (LSAMP) in STEM**  
Program Coordinator: Mr. Marvin Bennett

Cytokine Influence on Neurodevelopment  
Serifat Adebola  
Prof. Jeremy Seto

Characterizing a Novel Ionophoric  
Polyphenol Compound  
Victor Adedara  
Prof. Ralph Alcendor

Copper Binding Properties and  
Anti-amyloidogenic Ability of  
Multi-target Ligands  
Miguel Gomez  
Prof. Alberto Martinez

The Effect of Oxidative Stress on  
T. Thermophila Calpain 1  
Robin Koiner  
Prof. Ralph Alcendor

Creation of a Virtual Space using  
Maya, Unreal Engine 4 and HTC Vive  
Josue Magallanes  
Prof. Aparicio Carranza

Design and Fabricate low cost RC car  
Gamal Mansour  
Prof. Andy Zhang

Network Limbs Sensor  
Gabriel Martinez  
Prof. Yu Wang

Characterizing A  
Novel Ionophoric Polyphenol Compound  
Kabiru Omolaja  
Prof. Ralph Alcendor

Selection of Materials and  
Techniques for Construction Under  
Extreme Heat Conditions  
Harold Saquicela  
Prof. Anne Marie Sowder

## Energy Recovery

Alex Taylor

Prof. Masato Nakamura

## Tunnel Construction in Urban Settings

Danielle Telemaque

Prof. Navid Allahverdi

## Examining the Effect of Oxidative Stress on *Tetrahymena thermophila* Sirtuins

Masood Usman

Prof. Ralph Alcendor

## National Science Foundation Research Experiences for Undergraduates in Satellite and Ground-based

### Remote Sensing at NOAA-CREST: Expanded Opportunities

(NSF REU Grant # AGS-1560050)

Profs. Reginald Blake, Janet Liou-Mark, and

Ms. Laura Yuen-Lau

## Observing Seasonality of Inundation Patterns across the Pacaya-Samiria National Reserve Region Through the Use of Sentinel SAR 1

Carlos Alvarez

## Measurements of Aerosol and Cloud Layers Using a Multi-Wavelength Elastic-Raman Lidar

Anjeza Arapi

## Evaluation of *Karenia Brevis* Detection Techniques Using MODIS and VIIRS Imagery Against in Situ Measurements on the West Shelf of Florida

Claudia Duran

## Sampling Fluorescence Reflectance from Ocean Color Satellite Imagery Using Fluorescence Line Height Algorithm

Rezwon Islam

## Use of Landsat 8 to Classify Coral Reefs and Evaluating the Effects of the Chemical Oxybenzone on *Porites Furcata*'s Reflectance Signature

Michael Mateo

## Satellite Data Visualization, Processing and Mapping Using MODIS Imager Data

Aye Phyu

## Seasonal Variability of Precipitation Extremes in New York City

Wheleennis Polanco

## Thermal Structure of the Urban Boundary Layer During a Heat Wave Period

Jeremy Sanchez

## Evaluation of Differences Among Near-surface Air Temperature, Land Surface Temperature and Soil Temperature Using Remote Sensing and Ground-Based Observations

Farjana Shati

## The Contribution of Climate Change and Urbanization to Streamflow Variation

Gnimdou Tchelim

## Applications of Remote Sensing and In-situ Measurements for Studying Lateral Carbon Fluxes between Tidal Marshes and Connected Estuarine Waters

Usaama Van



Washington, DC  
April 7-9, 2017



Washington, DC  
April 7-9, 2017

**National Science Foundation GP-EXTRA:  
Recruiting and Retaining  
Non-geoscience Minority STEM Majors  
for the Geoscience Workforce  
(NSF IUSE GEO Grant #1540721)**

Profs. Reginald Blake, Janet Liou-Mark, Hamidreza Norouzi, Viviana Vladutescu, and Ms. Laura Yuen-Lau

**Retrieving Cloud Optical Depth for Low Level Clouds Using Mini Micro Pulse LIDAR**

**Jason Benjamin**  
Prof. Viviana Vladutescu

**Application of Remote Sensing Observations for the Detection of Lake Ice**

**Joel Chapman**  
Prof. Hamid Norouzi & Dr. Satya Prakash

**Application of Remote Sensing Observations for the Detection of Lake Ice**

**Mukkader Cinar**  
Prof. Hamid Norouzi & Dr. Satya Prakash

**Exploring Oceanographic and Meteorological Data through the Time of Hurricane Irene and Superstorm Sandy**

**Shannon Evans**  
Prof. Derek Wilson

**Retrieving Cloud Optical Depth for Low Level Clouds Using Mini Micro Pulse LIDAR**

**Nigel Franklyn**  
Prof. Viviana Vladutescu

**Assessment of the Heat Island Effect Using Remote Sensing**

**Kevin Geronimo**  
Prof. Masato Nakamura

**Assessment of the Heat Island Effect Using Remote Sensing**

**Caylan Groome**  
Prof. Masato Nakamura

**Traffic Analysis**

**Harrys Hounbedji**  
Prof. Derek Wilson

**Assessment of the Heat Island Effect Using Remote Sensing**

**Christian Lopez**  
Prof. Masato Nakamura

**Application of Remote Sensing Observations for the Detection of Lake Ice**

**Thanbir Miah**  
Prof. Hamid Norouzi & Dr. Satya Prakash

**PHYS 1002ID D 604: An Introduction to the Physics of Natural Disasters**

Prof. Reginald Blake

**Hurricane Research Team**

**Blown Away: NYC vs. Hurricanes**

**Junhao Chen, Stephen Marsham, Erizon Santos, Kajol Thapa, and Martin Witkowski**

**Earthquake Research Team**

**Aftershocks of Earthquakes**

**Winston Chen, Ahmed Gabr, Umar Munir, Jashae Stephenson, and Steven Yee**



Small Talk: Elevator Pitch  
Professional Development Center  
March 30, 2017



ePortfolios for Academic and Career Advancement  
Prof. Karen Lundstrom  
April 6, 2017

### **Climate Change Research Team**

Weather You Like It or Not –

What a Greenhouse Catastrophe

Ana Arellano, Joel Chapman, Mukadder Cinar, and Joel Kurian

### **Flood Research Team**

Sink or Swim NYC – Jaws of Nature

Sharise Imbert, Nicholas James, Syeda Nazia, and Edgar Rivera

### **Volcano Research Team**

The Blast Zone

Kishan Mangar, William McGuire, Agustina Olvera, and Ravneet Virk

### **PHYS 1002ID D 606: An Introduction to the Physics of Natural Disasters**

Prof. Reginald Blake

### **Earthquake Research Team**

Affluent vs Impoverished:

The Quaking Planet

Mariano Huaman, Jonathan Mercado, Bukadiri Trawally, and Xiohan Xan

### **Flood Research Team**

Over Our Heads and Under Water

Gloria Aldana, Anthony Cruz, David Fernandez, Henry Ovalle, and Armin Salazar

### **Volcano Research Team**

Volcanic Activity – The Gates of Hell

Saul Colon, Christopher Li, and Dave Persaud

### **National Institute of Health:**

#### **Bridges to the Baccalaureate Program**

Associate Provost Pamela Brown, Profs. Liana Tsenova, Nathan Astrof, Pa Her, Jean Hillstrom, Janet Liou-Mark, Diana Samaroo, Armando Solis, Tatiana Voza, and Ms. Lori Younge

### **Health Promotion and Self Care:**

Impact of Microaggressions, Intersectional Identities, and Self-Compassion

Nalda Abellard

Prof. Amanda Almond

Barcoding and Sequencing of DNA Extracted from the Scales of Phataginus Tricuspis for Fse in Forensics of Wildlife Trafficked in International Trade and Biodiversity Studies

Brittania Brown

Prof. Olufemi Sodeinde

Barcoding and Sequencing of DNA

Extracted from the Scales of Phataginus Tricuspis for Fse in Forensics of Wildlife Trafficked in International Trade and Biodiversity Studies

Shenika Burke

Prof. Olufemi Sodeinde

Barcoding and Sequencing of DNA

Extracted from the Scales of Phataginus Tricuspis for Fse in Forensics of Wildlife Trafficked in International Trade and Biodiversity Studies

Unyque Cruz

Prof. Olufemi Sodeinde

Health Promotion and Self Care:

Impact of Microaggressions, Intersectional Identities, and Self-Compassion

Jermaine G. Fairweather

Prof. Amanda Almond

Factors Affecting Emotional Regulation and Vagal Tone in an Expressive Writing Paradigm

Nazish Ghulam

Prof. Jean Hillstrom

Factors Affecting Emotional Regulation and Vagal Tone in an Expressive Writing Paradigm

Natalie Gonzalez

Prof. Jean Hillstrom

Effects of Activin B, BMP4 on

Differentiation of Mouse Neutrospheres

Juanita Marin

Prof. Andleeb Zameer

Factors Affecting Emotional Regulation and Vagal Tone in an Expressive Writing Paradigm

Sehar Munawar

Prof. Jean Hillstrom

Factors Affecting Emotional Regulation and Vagal Tone in an Expressive Writing Paradigm

Marvelous Nkrumah

Prof. Jean Hillstrom

Examine the Effect of Oxidative Stress on Tetrahymena Thermophila Sirtuin Family Members

**Kingsley Okolo**  
**Prof. Ralph Alcendor**

Prediction of the 3D Structure of a Derivative of the Porphyrin

**Nadia Okyere**  
**Prof. Mai Zahran**

Searle's Biological Naturalism is Not a Refutation of Strong AI

**Almas Qamar**  
**Prof. Lauren Park**

Characterizing the Antioxidant Properties of a Novel Ionophoric Polyphenol, Compound - AM20

**Jitendra Singh**  
**Prof. Ralph Alcendor**

**DOE MSEIP: Strategic Changes to Increase and Sustain The Participation of Women and Underrepresented Minority Students in Computer Science (DOE MSEIP Grant #P120A150063)**

Associate Provost Pamela Brown, Profs. Sandie Han, Boyan Kostadinov, Janet Liou-Mark, Johann Thiel, and Suhua Zeng

The Peer Led Team Learning Handbook

**Carlos Alvarez, Victor Lee, Fathima R. Mohamed Rafeek, Julia Rivera, and Farjana Shati**

Highlighted Efforts to Increase the Participation of Women and Underrepresented Minorities in Computing

**Carlos Alvarez, Joel Chapman, Mukadder Cinar, Jiehao Huang, and Xuebin Zou**

**National Endowment of the Humanities A Cultural History of Digital Technology (NEH Grant #AC-234555-16)**

Profs. Anne Leonhardt, Sandra Cheng, Satyanand Singh and Peter Spellane

Topological Delights

**Asli Oney, Marco Dwyer, and Allon Morgan**

**Abstract:**

We examine impossible Cylinders, Sierpinski Gaskets, Mandelbrot sets, Anamorphosis and Mobius Maps and their entwined topological properties that are ubiquitously linked to the humanities.

# Special Projects

Water Treatment Plant Design for Tafton, Pennsylvania

**Abdoulaye Bah, D'Uneeg Bent, Elias Capellan, Evelyn Carrera, Ghenadie Covaliv, Anika Dwyer, Joel Fekete, Antony Frias, Matthew Goldstein, Cheng Han, Kyaw Htun, Schefferson Ismera, Kervins Joseph, Mark Anthony Miranda, Diana Molina, Marlon Perry, Gregory Poulon, Elvis Ramirez, Brandow Rojas Perez, Ezriel Swimer, Artur Szarzynski, Jonathan Valencia, and Joshua Warner**

**Prof. Robin Sanchez**  
**Department of Construction Management and Civil Engineering Technology**

Creation and Exploration of Culinary Identity to Innovate Signature Dishes for Competition

**Martin Benitez, Vanessa Chen, Andrew Rodriguez and Jerry Zhao**

**Abstract:**

The route from student culinarian to chef and more requires progress in critical thinking, creativity, managerial skills and passion to achieve career growth. The study, practice and display of signature dishes or creative works applies student's core knowledge to explore their inspirations and build their craft. Professional culinary competitions act as milestones to help students discover, cultivate and articulate their culinary voices while nurturing critical thinking. These exhibitions of original creations provide guidance, opportunity and mentorship as they mature into tomorrow's industry leaders. Continued study and work in these creative works may lead to unique and unimagined pathways for these student's futures.

**Prof. Robert Walljasper**  
**Department of Hospitality Management**

## Analysis of Water Quality: East River, Tap Water, and Distilled Water

Mohammad B. Abdelfatah, Alika Austin, Adam Dwyer, Mubeen Ghafari, Kamel Hammadi, Carmen Hilario, Thierry Kouassi, Tian Leng, Zoe Lugo, Marzieh Nassiri, Charlie Obonaga, Kingsley Okolo, Mbele B. Owona, Almas Qamar, Atika Rahman, Tiffany Ramkisun, Vishaun Ramroop, Manuel A. Razuri, Eugene Spivak, Omar Stephens, and Kevin Vidal

### Abstract:

In this experiment “Analysis of Water Quality: East River, Tap water, & Distilled water” standard operating procedures were followed to analyze the East River/ Brooklyn waterfront water stream. Samples of East River water were collected on March 20th, 2017, and tested for dissolved oxygen (DO), conductivity, hardness, pH, and nitrate/nitrite levels. Tap and distilled water were also analyzed for comparison purposes. Oxygen levels were found to be higher in the East river (10.0 ppm) than in distilled (7.2 ppm) and tap (9.0 ppm) water samples. The increased levels of oxygen in the East River might be due to its exposure to more O<sub>2</sub> coming from the atmosphere, lower temperatures (5.5 °C, as opposed to room temperature for distilled and tap water) and geology of the area. Furthermore, the oxygen saturation was found to be 83.3% in the East River, 89.9 % in tap water and 94.0 % in distilled water. The East River water conductivity was 34,518 mS/cm, substantially higher than distilled water (23.7 mS/cm) and tap water (112.7 mS/cm), mostly due to the mixing with salty water from the Atlantic Ocean. East River pH level was 8.5, compared to 7.6 and 6.5 of tap and distilled water, respectively. Measurements of nitrate and nitrite levels revealed average values of 5.83 ppm (nitrates) and 0.13 ppm (nitrites) for East River water; the tap water nitrate value was 4.16 ppm, while nitrite was 0.11 ppm; distilled water nitrate was 1.67 ppm and its nitrite was 0.03 ppm. Hardness, which measures the amount of magnesium and calcium levels in the water, was found to be 363.6 in the East River (hard), but soft in tap (14.7) and in distilled water (4.16). In conclusion, values of hardness, oxygen saturation and nitrates/nitrites in the East River can be explained by the presence of natural minerals, but also suggest the influence of human activity through waste and other forms of pollution, as a consequence, putting aquatic life and public health in danger.

**Prof. Alberto Martinez**  
**CHEM1210L: General Chemistry II**

## Lack of Life in the East River: Comparative Analysis of Three Aquatic Environments

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### Abstract:

Three water samples were drawn to compare dissolved oxygen levels, pH, nitrate/nitrite levels, and conductivity. It is important to understand the aquatic environments around us, and whether they are balanced, healthy ecosystems. If they are no balanced, steps should be taken to inform key decision makers to ensure that balance can be restored. In this experiment, the three water samples we used were tap water, distilled water, and a sample from the East River. The dissolved oxygen levels were found to be higher in the east river (10.44 ppm) than the tap water (2.75 ppm) or distilled water sample (7.5 ppm). There are a number of factors that could have contributed to these differences, but many weather factors most likely contributed. Temperatures at the time of collection were lower and there had been recent snowfall. Exposure to wind, and turbulence of the river are also likely factors. The conductivity of the East River was significantly higher (32226 mS/cm) than that of distilled water (1 mS/cm) and tap water (1 mS/cm). The hardness of the east river water sample (400 ppm) was also significantly higher than that of the distilled water (0 ppm) and tap water (0 ppm) samples. Once dissolved, minerals will not show in a sample, which could explain the absence in tap water and distilled water. There are pollutants from ships, factories and inorganic contribution to the river that could account for the higher level of contaminants in th East River, The nitrate levels were consistently low at 5 ppm. This is within the range that is both safe for drinking and for supporting aquatic life (both < 10 ppm). The pH of the East River is slightly basic at 8, and the tap and distilled water samples both had a pH of 6, which is slightly acidic. pH is considered a secondary contaminant in drinking water and is therefore not regulated. With that said, the East River sample falls within the safe level of 6.5 – 8.5, and the tap and distilled water fall slightly below that level. In Conclusion, the East River water sample shows some signs of pollution, and is not an optimal aquatic environment to support life.

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