



Westchester-Rockland Junior Science & Humanities Symposium

20th Annual WR-JSHS
Saturday, February 5th, 2022
Hosted by: John Jay High School

Our Sincere Thanks

We gratefully acknowledge our appreciation for:

- The generous commitment of John Jay High School for hosting WR-JSHS
 - Mr. Andrew Selesnick, Superintendent
 - The Katonah-Lewisboro Board of Education
 - John Jay High School Administration
 - Dr. Steven T. Siciliano, Principal
 - Mr. Vincent Bell, Assistant Principal
 - Dr. Samir Biswas, Assistant Principal
 - Ms. Kim Piccolino, Assistant Principal
 - Paul Anello, Network Administrator, Katonah Lewisboro School District
 - John Jay High School Technical Support Team
- The many judges who generously volunteered their time and expertise - you inspire our young scientists
- Upstate JSHS officials for their support and guidance
- All of the student participants for their sincere work and interest in sharing their research

Welcome to WR-JSHS 2022

Welcome to the 20th annual Westchester- Rockland Junior Science and Humanities Symposium (WR-JSHS)! The WR-JSHS is a sub-regional pre-qualifying event for the Upstate JSHS in Albany, New York. Today's event is being conducted in accordance with the national JSHS guidelines.

At the regional and national levels the JSHS provides high school students an opportunity to present authentic research before peers and professionals in the field. Since 1985, the University at Albany has hosted the Upstate Regional JSHS competition with funding from the U.S. Departments of Army, Navy, and Air Force through a grant administered by the National Science Teachers Association.

The WR-JSHS sub-regional event was organized in 2002 to provide a local venue for student researchers and grew to include over 600 multi-grade level participants in 2020, and 344 senior-only participants this year. This is the second year that WR-JSHS is being held in a virtual setting. Local Speaker presentations are by category; top speakers will receive recognition. Top students in the Regional Speaker Sessions will be eligible for a spot at Upstate JSHS where top student projects will be presented at the National JSHS hosted each year by a branch of the Armed Services. Good luck to all!

The 2022 WR-JSHS Committee

Ann Marie Lipinsky	John Jay High School
Angelo Piccirillo	Ossining High School
Valerie Holmes	Ossining High School
Dr. Michele Sugantino	Blind Brook High School
Stephanie Peborde-Burke	Blind Brook High School
Steve Beltecas	Pelham High School
Diana Evangelista	Ardsley Middle School
Kimberly Fleming	White Plains High School
Dr. Linda Rachele Burke	John Jay High School - Retired
Paul Rubeo	Yorktown High School

WR - JSHS 2022 Program Overview

8:15 AM - 8:45 AM	All Student Participants Welcome Webinar Link <i>Zoom link live at 8:10 AM</i> <i>Password if needed: 670952</i> <i>In Zoom select blue link: Join Meeting as an Attendee</i>
8:15 AM 8:15 AM 9:15 AM 11:15 AM	Judge and Moderator Meetings Moderator Meeting Link Regional Judge Orientation Link Local Judge AM Orientation Link Local Judge PM Orientation Link
8:45 AM - 9:20 AM	Symposium Rooms Link Presenters, judges and moderators enter speaker breakout rooms Breakout rooms-select breakout room by its abbreviation-provided on your room page
9:30 AM - 1:55 PM <i>See room pages for details of the schedule and the order of participants.</i>	Regional Speaker Sessions (16 concurrent sessions) Behavior I - IV Biochemistry/Neurology I Biological Sciences I Cell & Molecular Biology I Computational Biology / Bioinformatics I - II Earth & Environmental Sciences I - II Engineering I Genetics I Math / Computer Science I - II Medicine and Health I - III Physical Sciences I
9:30 AM - 11:30 AM (AM SESSION) 11:45 AM - 1:56 PM (PM SESSION) <i>See room pages for details of the schedule and the order of participants.</i>	Local Speaker Sessions (13 concurrent sessions for both AM / PM sessions) Behavior V - VIII Biological Sciences II - V Earth & Environmental Sciences III - IV Medicine and Health IV - V Physical Science II - III
6:00 PM	Awards Ceremony Link <i>Zoom link live at 5:45 PM passcode if needed 768324</i> <i>In Zoom select blue link: Join Meeting as an Attendee</i>

Regional Speaker Sessions Schedule

8:45 AM - 1:55 PM

Speaker Position	Time
<i>All speakers check-in</i>	<i>8:45 - 9:20</i>
Speaker 1	9:30 - 9:47
Speaker 2	9:48 - 10:05
Speaker 3	10:06 - 10:23
<i>Break (5 min)</i>	<i>10:24 - 10:29</i>
Speaker 4	10:30 - 10:47
Speaker 5	10:48 - 11:05
Speaker 6	11:06 - 11:23
Speaker 7	11:24 - 11:41
<i>Break (18 min)</i>	<i>11:42 - 12:00</i>
Speaker 8	12:02 - 12:19
Speaker 9	12:20 - 12:37
Speaker 10	12:38 - 12:55
<i>Break (5 min)</i>	<i>12:56 - 1:01</i>
Speaker 11	1:02 - 1:19
Speaker 12	1:20 - 1:37
Speaker 13 (if applicable)	1:38 - 1:55

Students Dismissed

Judge deliberation immediately following the last speaker

Speaker Session Guidelines

- Students will be allowed to speak uninterrupted for 12 minutes
- 5 minute question and answer session immediately following the conclusion of the student presentation
- No new slides can be presented during Q & A (except the summary link slide)
- There will be no questions from the participants or moderators

Local Speaker Sessions Schedule

SESSION I (9:30 AM - 11:25 AM)	
<i>Session I Speakers Check-in</i>	<i>8:45 - 9:20</i>
Speaker 1	9:30 - 9:47
Speaker 2	9:48 - 10:05
Speaker 3	10:06 - 10:23
<i>BREAK (5 minutes)</i>	<i>10:24 - 10:29</i>
Speaker 4	10:30 - 10:47
Speaker 5	10:48 - 11:05
Speaker 6	11:06 - 11:23

Session I Speakers and Judges Dismissed

SESSION II (11:45 AM - 1:56 PM)	
<i>Session II Speakers Check-in</i>	<i>11:30 - 11:40</i>
Speaker 1	11:45 - 12:02
Speaker 2	12:03 - 12:20
Speaker 3	12:21 - 12:38
<i>BREAK (5 minutes)</i>	<i>12:39 - 12:44</i>
Speaker 4	12:45 - 1:02
Speaker 5	1:03 - 1:20
Speaker 6	1:21 - 1:38
Speaker 7 (if applicable)	1:39 - 1:56

Session II Speakers and Judges Dismissed

Table of Contents With Links

REGIONAL SPEAKER ROOMS	LOCAL SPEAKER ROOMS
Behavior I	Behavior V
Behavior II	Behavior VI
Behavior III	Behavior VII
Behavior IV	Behavior VIII
Biochemistry/ Neurology I	Biological Sciences II
Biological Sciences I	Biological Sciences III
Cell & Molecular Biology I	Biological Sciences IV
Computational Biology/ Bioinformatics I	Biological Sciences V
Computational Biology/ Bioinformatics II	Earth & Environmental Science III
Earth & Environmental Science I	Earth & Environmental Science IV
Earth & Environmental Science II	Medicine and Health IV
Engineering I	Medicine and Health V
Genetics I	Physical Sciences II
Math / Computer Science I	Physical Sciences III
Math / Computer Science II	
Medicine and Health I	
Medicine and Health II	
Medicine and Health III	
Physical Sciences I	

BEHAVIOR I (BE I) Regional

Moderator:
Dylan Pendergast

Ryan Hadi	An Inverse Relationship between Knowledge and Acceptance of Genetically Modified Foods: A Gap between Scientists and the General Population Remains Across the Socioeconomic Strata
Colette Brand	Associations Between Retirement and Cognition in African American and White Retired Americans
Leandra Quick	Linkage Between Allergies and Anxieties
Five Minute Break (10:24 - 10:29 AM)	
Cameron Takmil	Effects of Virtual Learning on Education: Disparities linked to socioeconomic status and resiliency diminished amidst the pandemic
Rebecca Frieden	Does music make children better helpers & sharers? An examination of age, onset of musical interest, home experiences, & prosociality in preschool musicians
Jack Kelly	Quantifying Linguistic Polarization for Congressional Representatives Facing Primary Challengers: A Random Effects Logit Regression Approach
Jessica Shapiro	Mental Health of Pediatric Cancer Patients
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Kiera Ronan	Patient Perceptions of Physicians
Eva Fava-Rodrigues	Treating Test Anxiety Using Mindfulness and DBT Skills: A Video-Based Approach with High School Students
Alexandra Zaporta	The Comparison of the Effect of the COVID-19 Pandemic on the Mental Health between Adults and Adolescents
Five Minute Break (12:56 - 1:01 PM)	
Caroline Prevost	Negative Symptoms and Fatigue Impact on Effort Levels in Schizophrenia, Bipolar Disorder and Major Depressive Disorder
Jamely Curipoma	The Knowledge, Attitudes, and Behavior of Young Adults Towards Salt Consumption

BEHAVIOR II (BE II) Regional

Moderator:
Allison Blunt

Alexandria Smith	The Measurement of White Privilege in an Academic Setting
Naomi Gordin	How the Quality and Quantity of Language Input Impacts the Language Abilities of Dual Language Hebrew-English Preschoolers
Natalie Calman	Mindfulness-Based Stress Reduction Training Improves the Emotional Well-Being of High School Students
Five Minute Break (10:24 - 10:29 AM)	
Emily Snider	Adolescent Receptivity to COVID-19 Safety Messaging
Hannah Rippy	What's a dax? Investigating the impact of language exposure on disambiguation of novel words in bilingual toddlers
Charles Linder	Analyzing the Effect of Proximity to a Train Station on Housing Prices in Westchester County, NY
Jadyn Turner	The Psychological Impact of Injury on High School Athletes
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Natalyn Kapner	Effect of Social Media on Adolescent Social Anxiety
Dionne Chen	Behavioral Inhibition, Shyness, and Social Anxiety Disorder from Infancy to Preschool: A Longitudinal Study
Fatimah Khan	Moral opposition to gun harm reduction policies
Five Minute Break (12:56 - 1:01 PM)	
Nelson Lojano-Coronel	The Impact of Regional Background on High School Students' Building Color Preference
Grace Wu	Evaluating the Efficiency of Universities' COVID-19 Protocols

BEHAVIOR III (BE III) Regional

Moderator:
Annmarie O'Brien

Edith Bachmann	Tell me a story: The effects of storytelling vs. story-reading on the executive functions of fourth graders
Keelan Vaswani	Patterns in Cognitive Distortions Among High School Students: An Analysis of How Social and Achievement Situations Influence Types of Thinking
Michaela Loughran	Effects of Prenatal Risk on Premature Infants' Neurodevelopmental Outcomes
Five Minute Break (10:24 - 10:29 AM)	
Stella Brail	CreepPin A Novel App for Users to Map and Report Acts of Sexual Harassment in Order to Improve the Efficacy of Reporting & Keep Users Safe
Esther Schriever	The Relationship Between Age and Social Media Usage on Body Dysmorphic Disorder Symptoms
Kathleen Rotmil-Eser	Investigating the Effects of Exercise During the COVID-19 Pandemic on Social Abilities
Nyasha Nyoni	Unhealthy Scrolling: Instagram Influencers Endorse More Unhealthy Food and Beverage Products Compared to Celebrities
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Jickinson Louis	Young Caregivers: A Cross-Sectional Analysis of Anxiety, Distress, and Depressive Symptoms
Andrew Kao	A Direct and Indirect Measurement of How Children of Different Age Groups Experience Grief
Delaney Martin	Comparing the Effects of Fine v. Gross Motor Skill Usage on Selective Attention
Five Minute Break (12:56 - 1:01 PM)	
Jack Tirsch	Evaluating Discrepancies in Suicide Rates in Urban and Rural Counties in Two U.S. States
Edwin Cortazo	The Asch Conformity Effect Within an Immersive Virtual Environment

BEHAVIOR IV (BE IV) Regional

Moderator:
Amy Pirro

Danielle Eder	Creating a path to success: The relationship between youth's sense of purpose goal adjustment in a cohort of teens participating in self-driven learning
Julie Rios	The Effects of Shift Work and Length of Employment on Sleep Disturbances Among Firefighters in the Tri-State Area
Liv Bobby	The Effect of a Growth Mindset Intervention on Adolescent Stress during the COVID-19 Pandemic
Five Minute Break (10:24 - 10:29 AM)	
Sarah Sagner	Convenience, Location, and School Quality: Examining the Role that Transportation Plays in School Choice Decisions
Rose Cioffi	Chronic Exercise Paired with Immersive Virtual Reality Reduces Stress and Improves Cognitive Performance in Adolescents
Anisa Rullan	Mental Health and Social Skills on Middle School Students Before and During the Covid-19 Pandemic

BEHAVIOR V (BE V) Local

Moderator:
Christine Adamo

SESSION I AM (9:30 AM - 11:25 AM)

Gabriella Lopez-Pichardo	Elucidating the Contribution of Animal Companions to Sleep and Mood in Adolescents
Alana Curley	"Are you listening dear?": Investigating communication strategies mothers and daughters use when coping with a breast cancer diagnosis
Jared Damon	The Relationship Between Age and Chronotype on the Reaction Time of Fire Service Workers Using the Psychomotor Vigilance Test

Five Minute Break (10:24 - 10:29 AM)

Joanna Abi Rizk	Investigating the Effects of Exercise During the COVID-19 Pandemic on Social Abilities
Orlando Osgood	Assessing the Distribution of Excessive Noise Exposure and the Risk of Tinnitus Onset in Opera, Orchestra, and High School Musicians
Helennith Jurado	The Effects of Tea on Stress and Attention

SESSION II PM (11:45 AM - 1:56 PM)

Jay Kim	Impact of the Declaration of Leadership on a Participant's Task Completion Efficiency
Ella Fleischer	Steering Seniors to Safety: Determining the relationship between Alzheimer's disease biomarkers, sleep habits, and driving behavior
Charlotte Nanda	Emerging Gender Disparities in Autism Severity Research

Five Minute Break (12:39 - 12:44 PM)

Emily Detres	Differential Medication Use in Children (Ages 3-17) with Attention Deficit Hyperactivity Disorder (ADHD): A Comparison of NYS and the Nation
Charlotte Potter	A Comparison of Emotional Contagion, Emotional Complexity, and Experiences Between Human Relationships and Human-AI Relationships
Riley Fullerton	The Impact of Artificial Intelligence on Nursing
Emily Pizzorusso	Color my world: Identifying differences between females and males in types and clusters of synesthesia

BEHAVIOR VI (BE VI) Local

Moderator:
Katie Saliba

SESSION I AM (9:30 AM - 11:25 AM)

Rowan Proffitt	The Behavioral Effect of Consumers based on the Amount of Media Coverage of Food Product Recalls pre / post CV-19 Announcement Date
Marianna Vataj	Exploring pride and happiness in firefighters through visual expression and mask making: A cohort study
Sabrina Johnston	Calculating the Impacts of Social Media on Motivation, Self-efficacy, and Perfectionism in Athletes

Five Minute Break (10:24 - 10:29 AM)

Antonia DeMaria	The Influence of Academic Anxiety on High School Students' Self-Esteem
Carina Eisenberg	Associations Between Distracted Eating and Diet Quality in Adolescents
John Jarama	Elucidating the Correlation Between Symptoms of Anxiety and Depression and Academic Motivation of Adolescents During the COVID-19 Pandemic

SESSION II PM (11:45 AM - 1:56 PM)

Yousef Kamal	The Effects of Stress-Reducing Strategies on Stress and Anxiety Levels in Competitive Athletes and Their Performance at Competitions.
Eliza Goldman	The Maternal Microbiome Mediates Offspring Neurodevelopment and Behavior in Response to Prenatal Malnutrition
Brandon Astreicher	Effectiveness of Arthroscopic Surgery and the Public Perception of Arthroscopic Surgery

Five Minute Break (12:39 - 12:44 PM)

Rachel Farias	The Effect of Real Life, Video, And Digital Text Environments on Student's Likeness to Lie In An Educational Setting
Amanda Cao	Public Interest in Civilian Space Travel
Aaryanna Matos	The Influence of Media on the General Knowledge of Gluten Free Diets Amongst Teens

BEHAVIOR VII (BE VII) Local

Moderator:
Talia Dardis

SESSION I AM (9:30 AM - 11:25 AM)

Elliot Jones	Frequency of Bipolar Disorder and Schizophrenia Symptoms in African Populations
Sophia Berland	Comparing relationship-oriented vs self-oriented goals created by caregivers using the Wish Outcome Obstacle Plan (WOOP) strategy in their efficacy of producing positive outcomes for spouses living with dementia
Adam Nack	A Cross-Sectional Observational Study On Associations Between Helping Behaviors, Social Support and Perceived Benefits During the CV-19 Pandemic

Five Minute Break (10:24 - 10:29 AM)

Alexandra Garcia	Comparison of Anxiety and Depression Frequency Among Hispanic Adolescents 14-17 in the NE vs South of the US using 2019 CDC NHIS Data
Katherine Uyaguari	Parental Concerns of Children with Diagnosed Special Needs
Karen Jaramillo	The correlation between student-teacher relationships and grit

SESSION II PM (11:45 AM - 1:56 PM)

Jordan Bryant	The Effects of Notifications on Task Switching and Performance
Macarena Hesse	Determining Target Fundraising Practices by Studying Behavioral Shifts in Donor Patterns to Maximize Revenue for Non-Profit Organizations
Jake Goldman	Investigating the impact of the COVID-19 pandemic on teens' e-cigarette usage and perceptions of peers that vape

Five Minute Break (12:39 - 12:44 PM)

Shevaun Cook	Differential learning outcomes in a group work context: the role of gender
Sofia Zamora	The Effects of Formal Musical Training on Cognitive Language Tests
BrendaLee Torres	The Effects of Ethnicity/Race, Gender, Sexuality and house-hold income on High School students' GPAs
William Anderson	GEMS: Game Engine Molecular Simulation

BEHAVIOR VIII (BE VIII) Local

Moderator:
Dean Saghafi

SESSION I AM (9:30 AM - 11:25 AM)

Madison Morgan	The influence of education on environmental consciousness to impact teen apparel purchase decisions
Myla Bridges	The Effect of Music Listening on the Attention Span of Adolescents
Ilana Kersh	Post Treatment Lyme Disease Syndrome: A comparative analysis of symptoms, quality of life & other chronic illnesses in a clinical setting

Five Minute Break (10:24 - 10:29 AM)

Spencer Warshaw	The Effect of Trending Medical Topics on Twitter on the Amount of Research Done by Internet Users on Medical Topics: Google Trends Analysis
Witold Sabath	Reduced Human Coping Ability During COVID-19: Media Effects on Physical Activity with Emotional Regulation Mediation
Sarah Yakout	Different Factors Affecting Students' Motivation in Physical Education

SESSION II PM (11:45 AM - 1:56 PM)

Ava Farrell	Emotional Regulation & Perceived Stress & The Effects on Academic Standing & Achievement
Jack Blackmar	"Keep your eye on the ball" - A comparative study of the visual tracking accuracy of baseball batters and non-athletes during knuckleball tracking
Thomas Morgan	The Perceived Effects of Multi-ingredient Pre-Workout Supplementation on Resistance Exercise Performance in Students vs Student Athletes

Five Minute Break (12:39 - 12:44 PM)

Nishta Nandakumar	Who Is Hurt by Many Career Options? Examining Mainstream Acculturation & Locus of Control as Moderators of Assortment Size on Choice Satisfaction
Julia Schnipper	Analysis of Diabetic Patient Medical Compliance with Prompting of MyChart Application
Matthew Pena	The Astronomy Game: Testing the Effectiveness of an Educational Application on Scientific Knowledge Acquisition in Adolescents
Gian Telemaco	Measuring Businesses Attitudes Towards Cybersecurity & Cybercrime

Biochemistry/Neurology I (BCNEU I) Regional

Moderator:
Guido Garbarino

Caroline Garufi	Quantification of SSTR2 Expression in Meningiomas Stratified by Age and Sex
Charlotte Rubin	The Effect of N-methyl D-aspartate Receptor Shutdown on Neural Stem Cell Proliferation in Zebrafish Larvae
Sophie Card	Assessing The Dynamic Brain States and Transition Energy Between States in People with Multiple Sclerosis
Five Minute Break (10:24 - 10:29 AM)	
Andres Nunez	Synthesis and Study of Fluorescent Antibody Conjugates
Elizabeth Deeks	An Exploration of the Effects of Semaglutide on Western-Diet Induced Matrix Metalloproteinases Changes in the Hippocampus and Tight Junction Protein Levels at the Blood-Brain Barrier
Melissa Soto	Touch sensitivity during the first year of life in human infants: effects of sex, sleep state, and NICU experience
Kalyna Raguso	Distracktor: Assessing the Attention Span of Brain Injured Pediatric Patients Through Innovative Eye Tracking Technology
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Alexa Pearson	The Impact of Covid-19 on Perceived Neurological Problems
Georgia Russello	Exploring dynamic brain states and entropy in acute ischemic stroke
Emily Dodd	Altered Homer1b/c Volumes and mGluR1/5-Homer1b/c Colocalization in Parkinson's Disease-Linked LRRK2 G2019S mice

BIOLOGICAL SCIENCES I (BIO I) Regional

Moderator:
Tyler Esposito

Morgan Aronsky	"The Immortal Jellyfish": An investigation of genetic networks involved in the reverse development of <i>Turritopsis dohrnii</i> through a pairwise DGE analysis of the colonial polyp and the reverse polyp
Gabriela Marraccini	Evaluating the Relationship Between a Human's Mood and a Pet/Companion Dog's Emotional State
Aaron Song	Elucidating Terrestrial Optical Refrigeration Through Transpiration in <i>Rhizophora mangle</i> and Chlorophyll a Fluorescence in Low-Polarity Mediums
Five Minute Break (10:24 - 10:29 AM)	
Amelia Koff	The Use of Cannabidiol On Seizure Activity in Canine Idiopathic Epilepsy
Jenna Lombino	Identifying Individual Bobcats (<i>Lynx rufus</i>) Using Camera Traps
Charlotte Klurfeld	The Effect of Human Activity on Wildlife in Protected Areas in Suburban New York: A Minimally Invasive Trail Study Using Motion Activated Cameras

BIOLOGICAL SCIENCES II (BIO II) Local

Moderator:
Ryan Beaudoin

SESSION I AM (9:30 AM - 11:25 AM)

Yoo Cheol Tanai	Investigating Juvenile American Eel Migration, A Longitudinal Approach
Benjamin McNulty	Comparison of Survey Methods for Mechanical Harvesting of Invasive Eurasian Watermilfoil in New York State's Adirondack Park
Kate Ryan & Luisa Scioscia	Population Size Estimation for Bottlenose Dolphins per year in the Adriatic Sea
Five Minute Break (10:24 - 10:29 AM)	
Connor Noyes	Examining the effect of noise pollution on biodiversity in Vermont
Kathleen Quito	Surveying the abundance and distribution of ticks in Westchester County, NY

SESSION II PM (11:45 AM - 1:56 PM)

Desiree Burckin	Observing Social Dynamics in a herd of Capra hircus in a farm sanctuary setting
Ava Liebmann	The Effect of Temperature on the Function of RuBisCO
Rachel Levine	Determining the Safety and Efficacy of a Xenogenic DNA Vaccine with Human Tyrosinase in Dogs with Foot Pad Melanoma
Danielle Freedman	Identification of antibiotic-producing bacteria isolated from the epidermal mucus of great white sharks

BIOLOGICAL SCIENCES III (BIO III) Local

Moderator:
James Dowd

SESSION I AM (9:30 AM - 11:25 AM)

Catherine Seok	Apolipoprotein E4 impairs cerebrovascular regulation via brain perivascular macrophages
Eleanor Wu	Quantitative Histo-Cytometry Analysis of H9 Kidney Organoids in Vitro
Oskar Smeal	Characterizing Differential Activation in the Hippocampal CA1 Following Morphine Conditioned-Place-Preference

Five Minute Break (10:24 - 10:29 AM)

William Strutton	The Influence of TiO ₂ and ZnO Nanoparticles on bacterial infection of HeLa Cells
Ashley Ye	Identifying Small Molecule Inhibitors of EBV Deubiquitinating Enzyme BPLF1
Reinesse Wong	Exploring BTL Gene Function In Conferring Resistance to Antifungals in Rhizopus-Mycetohabitans

SESSION II AM (11:45 AM - 1:56 PM)

Julia Zimmerman	Small molecule inhibitors of MAGE-A3 in multiple myeloma
Grace Condon	Permeability Between Region Sides and its Correlation to Sex and Age
Ronan Gandhi	Targeting Glioblastoma Stem Cells Using Novel ATP-Binding mTOR inhibitors vs. RapaLink-1

Five Minute Break (12:39 - 12:44 PM)

Siena Edwards	Mission to Mars: Investigating the Use of Low-Dose Radiation Pre-Treatments as a Countermeasure to High-Dose Ionizing Galactic Cosmic Radiation
Zara Rust	SGK1, Akt1, and Akt2's Role on Proliferation in the Thyroid of a Pten ^{thy-/-} Mouse Model
Ava Wade	Symptomatic vs Asymptomatic Concussed Athletes' PCSS

BIOLOGICAL SCIENCES IV (BIO IV) Local

Moderator:
Erum Hadi

SESSION I AM (9:30 AM - 11:25 AM)

Eva Shraye	Exploring the Role of Microglia to Elucidate the Relationship between epilepsy and Alzheimer's Disease
Matthew Eichenberg	Circuitry of Color Vision Along the Horizontal Cells, Bipolar Cells, and Cones
Alta McQuillen	Investigation of the Therapeutic Potential of Small Molecule Inhibitors of AR-V7 in CastrationResistant Prostate Cancer
Five Minute Break (10:24 - 10:29 AM)	
Jenipher Tenesaca	Friedreich's Ataxia Skin Fibroblasts Display Mitochondrial Calcium Uptake Defects: Calcium Dysregulation as a Mechanism of Disease Pathology
Daniel Johnston	Affinity Tuning of Mesothelin Nanobody for CAR-T Cell Therapy
Vicente Lyon	Identification of Peripheral Blood Biomarkers Associated with Human Babesiosis to Better Understand the Parasite Pathogenesis

BIOLOGICAL SCIENCES V (BIO V) Local

Moderator:
Bobbi Pinnow

SESSION I AM (9:30 AM - 11:25 AM)

Sydney Charron	Exploring signaling-dependent inflammatory gene transcription responses in IL-33-treated human skin mast cells through IgE receptor cross-linking stimulation
Andrew Lucassen	A comparative genomic assessment of quorum sensing genes within genus <i>Vibrio</i> and model pathogenic organisms
Shoshana Daly	Rational design of a lipase from <i>Geobacillus stearothermophilus</i> T6 for increased stability in methanol T

Five Minute Break (10:24 - 10:29 AM)

Brett Waldman	Investigating binding capabilities and thermodynamic properties of a computationally-designed binder protein on monomeric CTLA-4
Grace Nadecki	Independent Predictors for COVID-19 in Westchester County; A Comparative Study of COVID-19 Mortality
Ella Rimland	RNA Single Cell Sequencing Analysis of Nicotine Sensitive Brain Regions via Scanpy Pipeline

SESSION II PM (11:45 AM - 1:56 PM)

Liam Tuohy	Bioinformatic Promoter Prediction of NAC(Nitrogen Assimilation Control) Gene Homologs in <i>Pseudomonas aeruginosa</i>
Sabrina Lin	ALKBH6's Role in ADHD: A Look Into ALKBH6 and Its Possible Blockage
Ulysses Conrad	Validation of Prioritization of Substance Use Disorder Dark Targets

Five Minute Break (12:39 - 12:44 PM)

Annly John	Data Curation using cBioPortal, in Pediatric Medulloblastoma Patients
Gabriella Colabello	Investigating the unexplored genome: A comparative study elucidating the involvement of the long non-coding RNA (lncRNA) Morbid in the development of inflammatory Bowel Disease (IBD)

CELL & MOLECULAR I (CM I) Regional

Moderator:
Melissa Shandroff

Caera Matthews	Single Cell RNA Sequencing Reveals Differences in Myeloid Cell Transcriptome Enriched in the Inflamed Intestines of Ulcerative Colitis Patients
Sean O'Donnell	Endoplasmic Reticulum Stress' Effect on UPR Activation and Beta Cell Proliferation in Diabetes
Beth Corelli	Identification of biomarkers for human cardiomyocyte proliferation.

Five Minute Break (10:24 - 10:29 AM)

Julia Yang	Helping to Make Blood: Characterization of the Erythroid Specific Macrophage
Mark Tarazi	The Expression of NQO1 and GSTP1 in A549 and NHBE Cells with Varying Doses of Cigarette Smoke Extract
Ana Isabel Wirengard Gil	miR-21 Nature in Different Cell Tissues and Diseases
Matthew Mione	Altered Organelle Morphology in Hypothalamic Arcuate Nucleus Neuropeptide-Y Neurons Linked to Accelerated Weight Loss in Alzheimer's Disease

Eighteen Minute Break (11:42 AM - 12:00 PM)

Alicia Huang	Comparing the use of single-nucleus RNA-sequencing and single-cell RNA-sequencing to understand axolotl (<i>Ambystoma mexicanum</i>) limb regeneration
Stella Schlumbom	Evaluating Expression of Kinases in Primary Endometriosis Cell Culture to Identify New Therapeutic Targets
Max Trager	Characterizing Muller Glia Ripples Using Optophysiology

Five Minute Break (12:56 - 1:01 PM)

Anastasia Tchernikov	Mission to Mars: Investigating the Use of Low-Dose Radiation Pre-Treatments as a Countermeasure to High-Dose Ionizing Galactic Cosmic Radiation
Arianna Tabankin	Dengue virus nonstructural protein 1 activates p38 mitogen-activated protein kinase in human endothelial cells via toll-like receptor 4
Isabelle Balachandran	Combinatorial Approach of Experimental and Systems Biology in Multi-indication Drug Discovery Efforts Targeting Kif19

COMPUTATIONAL BIOLOGY/ BIOINFORMATICS I (CBIF I) Regional

Moderator:
Nadia Parikka

Tiffany Chao	Tissue-Preferred Expression Analysis for Drosophila Melanogaster
Nora Lowe	Making sense of disorder: Investigating intrinsically disordered proteins in the tardigrade proteome via a computational approach
Jacob Sellitti	Using an Image Classifier for Quality Assessment of Dermoscopic Images
Five Minute Break (10:24 - 10:29 AM)	
Mihir Patil	Integrative Analysis of PDAC Microenvironment with an Emphasis on CEACAM6
Michaela Kirby	Identifying Target Gene Candidates for Regression of Devil Facial Tumor Disease in the Tasmanian Devil
Jingyan Zhang	Formulating “Lipinski’s Rule” for Antibody Drugs: Large-scale Bioinformatic Analysis of 648 Clinical Antibodies’ Physicochemical Properties
Manolis Huerta-Stylianou	Using Cosine Similarity and Topological Data Analysis to Determine the Connectivity of Genes Affected by Marfanoid Progenoid Lipodystrophy
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Joyce Lu	Machine Learning and Statistical Analysis of Clinical Variables Predict ICU Care for COVID-19 Patients
Dyllan Hofflich	An Open Source Anterior and Posterior Chest Radiograph Classifier Using EfficientNetV2 for Deep Learning Medical Imaging Diagnosis and Databases
Armaan Ahmed	Design of a SHERLOCK-based low resource screening assay for HIV-1 drug resistance
Five Minute Break (12:56 - 1:01 PM)	
Jaden Halevi	A Novel Natural Language Processing Approach for Analyzing Lengthy Terms and Conditions Agreements
Daniel Zhang	Identification of Candidate Drug Targets for Alzheimer’s Disease Treatment Using a Deep Learning & Network Analysis Based Computational Framework

COMPUTATIONAL BIOLOGY/ BIOINFORMATICS II (CBIF II) Regional

Moderator:
Jeff Wuebber

Jack Liu	Association Analysis of ABO and Rhesus Blood Group and BMI in Chinese Populations
Isabella Montero	Somatic Mutation Signature Analysis in the Alzheimer's Disease Brain Highlights the Relevance of Somatic Mosaicism to Brain Aging
Alicia Carvalho-Evans	Modeling Neurofilament Light Chain (NfL) as a Plasma Biomarker to Longitudinally Track Neurodegenerative Diseases
Five Minute Break (10:24 - 10:29 AM)	
Carla Hu	A Comparison of the Gene Expression Profiles and Molecular Phenotypes of Preclinical Alzheimer's Disease Models
Tingting Chung	An Investigation of Central Pattern Generators in Neuronal Models via An Integrated and Fire Simulated Method
Eliza Lichtman	The Role of PDS5 Proteins in Diffuse Large B Cell Lymphoma
Renata Fu	Super5Path: gene set enrichment analysis and identification of pathway overlaps between five pathway databases
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Alex Berkman	Evaluating the role for pH-dependent histidines to mediate the release of the Ebola virus fusion loop using a molecular dynamics approach
Ann Liu	Investigating Strategies For Retinal Regeneration In Mammals Via An Integrated Analysis Of Single-Cell RNA Sequencing Datasets
Daniella Uvaldo	Analyzing Brain Expression Differences as a Possible Explanation for Sexual Dimorphism in Autism
Five Minute Break (12:56 - 1:01 PM)	
Daniel Pereira	Improving the User Experience of cBioPortal for Computational Researchers
Katherine (Katie) Pflieger	How can the BNM-III-170 molecule be synthetically improved in order to be a better inhibitor for the HIV-1 entry protein gp-120?

EARTH & ENVIRONMENTAL SCIENCE I (EES I) Regional

Moderator:
Joseph DiBello

Josh Linett	Mercury Concentrations of Dragonfly Larvae in New York State: A Comparative Study across Time and Space
Celia Holden	A Spatial Analysis of Sky Brightness in U.S. National Parks
Amelia Chung	Transcriptomic description of the symbiont <i>Breviolum</i> in <i>Pseudodiploria strigosa</i> corals

Five Minute Break (10:24 - 10:29 AM)

Liliane Missbrenner	Survival Time of Coral Species in Response to Ocean Warming and Acidification Conditions
Lyla Loria	Measuring Locomotion of <i>Caenorhabditis elegans</i> in the Presence of Triclosan
Eileen Dockery	Impact of Speed Limits and Road Sinuosity on Wildlife-Vehicle Collisions Surrounding a Preserve in The Suburban Northeastern United States
Oliver Fuchs	Examining the Associations between Historical Redlining Maps and Asthma Emergency Department Visits Across New York City

Eighteen Minute Break (11:42 AM - 12:00 PM)

Samantha Levin	The Relationship Between the American Eel Population and Chlorophyll Fluorescence
Jane Zeltner	Effects of algal symbiont density on coral bleaching susceptibility and severity
Stephanie Otavalo	The Importance of Biomonitoring via Family Level Identification of Macroinvertebrates to Ascertain Seasonal Differences in Freshwater Pollution

Five Minute Break (12:56 - 1:01 PM)

Anushka Sundar	The Comparative Analysis of Carbon Sequestration in Different Municipalities in Response to Forest Land Cover Loss
Sera Mishra	Comparing Variations in Overall Health of Emerald Ash Borer (EAB) Infested North American Ash Trees Based on Surrounding Canopy Cover and Soil Moisture Content
Rachel Masterson	Assessment of Changes in Ozone Level during the COVID-19 Pandemic and Ozone's Connection to COVID-19 Mortality Rates

EARTH & ENVIRONMENTAL SCIENCE II (EES II) Regional

Moderator:
Michelle Zielinski

Ada Hossfeld	Regional Coherence Between the Surface of Water Temperatures of Northern Maine Lakes and its Correlation with Mean Lake Depth & Inter-Lake Distance
Rylie Berwanger	Paleoecology and Carbon Content of Manitou Marsh, Hudson River, New York
Joseph Kleiman	Footprint Allometry of Developing Theropod Dinosaurs

Five Minute Break (10:24 - 10:29 AM)

Benjamin Goldman	The Impact of Anthropogenic Forcing on ENSO Amplitude
Morgan Remeza	Assessing the Impact of Climate Change by Using High Power Rocket Aerial Imagery
Linda Sun	Mapping Long-Term Solar Radiation Patterns Across the Contiguous United States
Derek Araki-Kurdyla	Elucidating the role of environmental context in the carbon sequestration and preservation of seagrass sediment carbon through an analysis of sediment grain size and carbon lability.

Eighteen Minute Break (11:42 AM - 12:00 PM)

Camille Gowda	Chloride bromide ratios and their implications for deep aquifer well arsenic contamination in Araihasar, Bangladesh
Maya Karintholil	Effect of Selected Freshwater Microalgae on Adult Emergence and Flight Morphology of the Midge Chironomus dilutus
Riley Keating	Simulating the Impacts of Climate Change on Hurricanes Using the CHAZ Model

Five Minute Break (12:56 - 1:01 PM)

Maggie Graseck	Oysters and Crabs: Comparing the eating habits of Hemigrapsus sanguineus and Penopeus herbstii
Olivia Pollock	Developing and Assessing Fucose-Based Water-Soluble Bioplastics
Katelyn Keefe	Implementation of Dynamic Tick Population Model in NY

EARTH & ENVIRONMENTAL SCIENCE (EES III) Local

Moderator:
Andrew Ying

SESSION I AM (9:30 AM - 11:25 AM)

Adam Soomro	Predictive Modeling of Wildfires using Boosted Regression Trees
Quinn Connor	Microplastic Tides: Examining the effects of tidal patterns on microplastic concentration in the Hudson River
Blair Ocheltree	Remediation of Excess Pedospheric Nitrogen Using a Brassica Prototype

Five Minute Break (10:24 - 10:29 AM)

Anabelle Hicks	Enterococcus Contamination and Plastic Pollution on Long Island Sound Beaches
Mason Balber	Determining The Feasibility Of Novel Batteries To Replace Lithium-Ion Batteries For Use In The U.S. Electrical Grid

SESSION II PM (11:45 AM - 1:56 PM)

Gabriela Velasquez	The Importance of Biomonitoring via Family Level Identification of Macroinvertebrates to Ascertain Seasonal Differences in Freshwater Pollution
Jaewon Yeo	Investigating the Quality of Urban Green Spaces Between Neighborhoods of Different Poverty Rates in New York City
Nicolas Bauco	A Novel Analog Model of Ice Flexure on the Bands of Jupiter's Moon Europa Based on Tectonic Forces at Island Chains

Five Minute Break (12:39 - 12:44 PM)

Matthew Finnerty	Utilizing The Black Walnut Tree to Prevent Algal Blooms
Jacqueline Ceja	The Effect of Tree Growth on Carbon Sequestration

EARTH & ENVIRONMENTAL SCIENCE IV (EES IV) Local

Moderator:
Sally Mitchell

SESSION I AM (9:30 AM - 11:25 AM)

Jake Stevenson	Testing the Significance of Climatic Zones through Analysis of Agricultural Yield and Marine Arthropod Growth, Survival, and Reproduction rates
Ryan Huang	A Study of Arthropod and Plant biodiversity in Hillside Woods
Adarsh Nair	Effect of Selected Freshwater Microalgae on Adult Emergence and Flight Morphology of the Midge <i>Chironomus dilutus</i>
Five Minute Break (10:24 - 10:29 AM)	
Stephen Hotchkin	Microplastic Pollution in the Hudson River Due to Limitations of Wastewater Infrastructure
Claire Zobel	Anthropogenic and Environmental Influences on Benthic Community Structure on a Coral Reef Atoll
Anna Mkandawire	Urban Population Growth Dynamics and Land Cover Changes in a Sub-Saharan African Country: A GIS Spatial Model

ENGINEERING I (ENG 1) Regional

Moderator:
Stephanie Greenwald

Mack La Rosa	Comparing Gripping Efficacies of Rigid Servo-electric and Soft Pneumatic Grippers
Juliet Lovelace	Get in Touch: Fabricating a Soft Prosthetic
Brooke Dunefsky	A Novel Device that Utilizes Neuroplasticity for the Rehabilitation of Stroke Victims
Five Minute Break (10:24 - 10:29 AM)	
Aiden Oates	Deep Learning Drivers-Ed: Analyzing the effect of various light intensities on autonomous vehicle object detection
Jasmine Li	Investigating Pores of Collagen Sponges for Skeletal Muscle Regeneration
Alexandra Griffin	The Home Application of the Freeform Reversible Embedding of Suspended Hydrogels Form of 3D Bioprinting
Jerome Orans	Development of a Multi-Terrain RHex Leg for Swimming, Running, and Climbing
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Anika Puri	ElSa: A Novel Real-time Wildlife Poacher Detection Solution Leveraging Machine Learning Driven Spatio-temporal Analysis of Nighttime UAV Thermal Infrared Videos
Luke Mackool	Creation of a New Atraumatic Two-Fold Nitinol Wire Expansion Device
Shivi Jain	Design of a Multi-Material 3-D Printed Strain Sensor to be Fully Integrated Into a Cable-Driven Leg Exoskeleton, C-ALEX

GENETICS I (GEN I) Regional

Moderator:
Erica Curran

Lucy Kwittken	Epigenetic modifications associated with maternal stress: A hypothesis-driven approach to examining how DNA methylation of stress-sensitive genes predicts infant health
Manuel Iglesias	Using Chromosomal Microarray Analysis Results to Differentiate Noise from Mosaicism based on Variation of Year and Specimen Type
Natalia McMorris	Gene Expression: Analyzing Coregulated Genes and their Correlation with Post-Traumatic Stress Disorder using DEAR Analysis
Five Minute Break (10:24 - 10:29 AM)	
Mary Ford	Dose and Dose-Rate Dependent Gene Expression Switching in Internal, Acute, and Protracted External Exposures to γ Radiation: A Genomics Approach to Biodosimetry
Kate Dougherty	HIV-1 Stop Codon Usage and Its Clinical Impacts in HIV-1 Positive Patients
Valentina Rubio	Analysis of Genetic Expression of Orexin Neurons Between Male and Female Subgroups

MATHEMATICS / COMPUTER SCIENCE (MCS I) Regional

Moderator:
William Maelia

Tanmay Singhal	Transfer Learning Object Detection Framework for Indoor Environments
Peyton Schales	Randomized Benchmarking of Quantum Qubit Fidelity and Error Correlation
Alana Foreman	Machine Learning for Classification of COVID-19 Vaccine Misinformation on Twitter
Five Minute Break (10:24 - 10:29 AM)	
Joshua Chang	Correlating machine learning classification of traffic camera images with snow-related vehicular crashes in New York State
Kwabena Boateng	Novel Motor Training Environments Improves the Sense of Agency and Movement Coordination
Austin Chin	Theorems of Pappus and Desargues do not generalize for 11 and 12 lines
Fanglin Yuan	A Novel Approach Applying Deep Learning to Optical Music Recognition

MATHEMATICS / COMPUTER SCIENCE (MCS II) Regional

Moderator:
Lisa Papernik

Hayden Weiss	Detecting Revenge: The creation of a novel revenge-interpreting machine learning model and its application to vengeful Tweet frequency surrounding a recent sport failure
Martin Trpceski	Using Convolutional Neural Networks for classification of Alloys using Microstructure Images
Mark Takken	Transferring Go AI to New Topological Surfaces Without Additional Training

Five Minute Break (10:24 - 10:29 AM)

Ritika Brahmedesam	An Active Fairness Algorithm for Estimating Socioeconomic Status from Household Surveys and Satellite Images
Matthew Kahn	The Integration of Technical Indicators into a Deep Q-Learning System to Increase Profitability in Simulated Stock Market Trading
Ella Chee	Developing a Convolutional Neural Network Classifier to Identify Atrial Fibrillation Rhythms from Electrocardiogram Recordings
Juan Desmaras	The Development of a User-Friendly Method for the Quantification of Tumor Vascular Network Images Obtained via Raster Scanning Optoacoustic Mesoscopy

MEDICINE & HEALTH I (MH I) Regional

Moderator:
Jake Schofield

Michael Zhong	The Identification and Characterization of Novel Targets and Pathways of Alzheimer's Disease
Sofia Jacobson	Human Papillomavirus Vaccine Perspectives and Barriers Among Healthcare Providers Caring for Childhood Cancer Survivors
Tanya Postian	Using a Lower Extremity Vein Graft in Immediate Lymphatic Reconstruction to Prevent Lymphedema Development in Breast Cancer Patients
Five Minute Break (10:24 - 10:29 AM)	
Olivia Molz	The Role of SHMT1 and SHMT2 in One Carbon Metabolism
Ava Tsapatsaris	Project ScanVan: Mobile Mammography Services to Decrease Socioeconomic Barriers and Racial Disparities Among Medically Underserved Women in NYC
Ella Harshman	Assessing the Relationship Between Villus Packing Density in the Placenta and Autism Spectrum Disorder
Jason Lavender	A Descriptive Analysis of Needle Chest Decompression in US and Coalition Forces During Combat Operations in Afghanistan and Iraq
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Tista Goswami	SMART-Screen: A Point-of-Care COVID-19 Active Replication Detection System
Graham Yuen	ATF3 Antagonist Peptide Development Towards Targeting of Lung Cancer Oncogenes
Heather Vamossy	The Evaluation of Altered Genes and Pathways During Toxoplasma gondii Infection
Five Minute Break (12:56 - 1:01 PM)	
Jared Sonkin	Analysis of the Responses of a Carbon Nanotube-based Sensor to Estrogen Receptor Alpha
Jamie Kaplan	Identifying the sex-based differences responsible for variations in human immune responses to the measles mumps and rubella vaccine

MEDICINE & HEALTH II (MH II) Regional

Moderator:
David Erenberg

Anisha Kumar	Impact of Differential Dosing Regimens for Methylphenidate Treatment on Bone Vascularity
Sydney Levy	Revealing the mechanosensitive-ATP-purinergic signaling pathway that underlies fibrosis resulting from mitral valve prolapse
Abigail Tsuji	TDO2 (Tryptophan 2,3-Dioxygenase) as a Novel Target for the Diagnosis and Treatment of Triple Negative Breast Cancer
Five Minute Break (10:24 - 10:29 AM)	
Angelica Arevalo	Chemotherapy Mediates Increase in JAG1+ Macrophage Density and Invasive Cancer Cells in Mammary Tumors via NOTCH Signaling
Aditi Hegde	Longitudinally Monitored Immune Biomarkers Predict the Timing of COVID-19 Outcomes
Benjamin Wang	Assessing the role of constitutive JAK/STAT signaling in JAK-p53 post-MPN leukemia cell maintenance using a novel knock-in/knock-out mouse model of JAK2V617F
Rebecca Herzberg	Aortic Regurgitation Mortality and Neighborhood Socioeconomic Status
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Olivia Addeo	Utilizing the microbiota to suppress food allergy: An exploration of the efficacy of monotherapy versus therapy with a consortium of Clostridiales
Sophia Pak	Fluoroscopy Technique to Assess Metacarpal Rotation
Samantha Min	The Lasting Impact of COVID-19 on Screening Mammography Volumes and Breast Cancer Metrics Over a Three-Year Period
Five Minute Break (12:56 - 1:01 PM)	
Caroline Shi	Acute Kidney Injury Recovery in Hospitalized Patients with COVID-19
Srishti Tandon	Evaluating the Efficacy of Elastin Alginate Cryoelectrospun Scaffolds on Vimentin and CD140(α,β) Production

MEDICINE & HEALTH III (MH III) Regional

Moderator:
Lawrence McIntyre

Emily Allendorf	The association between cancer-related distress and COVID-19
Archana Kumaran	Atrial Fibrillation and Alcohol intake: Do patients know about this relationship - A questionnaire survey study
Katelyn Wasilenko	Pediatric BMSC Exosome Treatment Requires Interaction with Bone Tissue Defect Environment to Improve Bone Repair
Five Minute Break (10:24 - 10:29 AM)	
Colette Baek	The Effect of Sex on Associations Between Depression and Mild Cognitive Impairment or Dementia Associated with Alzheimer's Disease
Julia Lucchino	A novel therapeutic approach to multiple sclerosis (MS): Vagus nerve stimulation to prevent bone loss in an experimental autoimmune encephalomyelitis MS rat model
Ava Solis	Targeting the Microtubule-Severing Enzyme Fidgetin-Like 2 to Accelerate Wound Healing
Emily Cao	Investigation of the effectiveness of Trametinib in treating Costello Syndrome in Drosophila
Eighteen Minute Break (11:42 AM - 12:00 PM)	
Joaquin Teper	Long-Term Persistence of Neutralizing Antibodies to SARS-CoV-2 Following Infection accounting for comorbidities and socio-demographic factors
Jarvis Savage	Effects of Aging and Opioids on Reward Sensitivity, Motor Control, and MicroRNA Expression
Katie valente	Development of a Probe to Detect the Presence of Food Protein in Food Samples Using Mammalian Olfactory Bulb Inspired Machine Learning Algorithms
Five Minute Break (12:56 - 1:01 PM)	
John Ndocaj	Elucidating the effects of temozolomide resistance on glioma sensitivity to oncolytic virotherapy
Jimena Perez-Tetuan	Functional Ability Impacted by Combinations of Physical Activity, Sleep Quality and Depression in an Aging Arthritis Population

MEDICINE & HEALTH IV (MH IV) Local

Moderator:
Alejandro Victoria

SESSION I AM (9:30 AM - 11:25 AM)

Molly Flicker	Exploring Potential Causes of Unexplained Pregnancy Loss with Placental Pathology
Lucy Zwaka	SCA4 Locus Associated Gene Ronin (Thap11) Increases Ataxin-1 Protein Levels and Induces Cerebellar Degeneration in Mouse Model of Ataxia

Five Minute Break (10:24 - 10:29 AM)

Marcellino Rau	Effects of MAGE, BAGE, and GAGE genes on Immune System Response
Rachel Weber	Geographic Clustering of HIV and Opioid Overdose Rates and Distribution of Ryan White Clinics in New Jersey
Eugenia Kaltsas	Whole Transcriptome RNA-Seq Comparison between Human Multipotent Adult Stem Cells and Human Bone Marrow-Derived Mesenchymal Stem Cells and Placenta-Derived Mesenchymal Stem Cells

SESSION II PM (11:45 AM - 1:56 PM)

Alexandra Downes Tess Davidowitz	Reporting of Race, Ethnicity, and Sociodemographics in Cochlear Implant Clinical Trials: A Systematic Review
Leyla Selman	Identifying and Treating Ovarian Cancer Cells Sensitive to the Loss of PTEN
Isabell Mathew	Epidemiological Observations of COVID-19 Death in Race, Age and Sex, and Geography

Five Minute Break (12:39 - 12:44 PM)

Maggie Peng	Cardiorespiratory Coupling Response to Chest Wall Strapping in Chronic Obstructive Pulmonary Disease
Anay Mody	The Gene CSRP1 Mediates Antidepressant Effects of Tricyclic Antidepressants and SSRIs and Also Mediates Protective Effects in Alzheimer's Disease Phenotypes

MEDICINE & HEALTH V (MH V) Local

Moderator:
Kesiah Mathew

SESSION I AM (9:30 AM - 11:25 AM)

John Weynand	Radiation Levels in Positron Emission Tomography Scans on Image Clarity and Standard Uptake Value Accuracy
Augustin Kiriyanthan	Efficacious Drugs that Slow AD Progression in Caenorhabditis Elegans and their Targets
Samantha Franks	Effect of Apolipoprotein E ϵ 4 Allele on Rate of Cognitive Decline in Alzheimer's Dementia Patients

Five Minute Break (10:24 - 10:29 AM)

Anosuya Kundu	The Effect of 3-aminopropionitrile Fumarate Salt (BAPN) on the Progression of Abdominal Aortic Aneurysm (AAA) and Thoracic Aortic Aneurysm (TAA) in Male and Female Mice
Rabiah Nasir	Effects of Computer Vision Syndrome on Females and Males During the Covid-19 Pandemic
Julianna Coppola	How Holistic Chiropractic Care Affects Quality of Life and Pain

SESSION II PM (11:45 AM - 1:56 PM)

Daniel Mandell	A Study on The Adoption of Artificial Intelligence into Healthcare
Rowan Haffner	Unicompartmental knee arthroplasty had lower joint awareness and higher function at 5 yrs compared to total knee replacement: A matched comparison
Derrick Zhang	Effects of IVF on the Composition of the Maternal-Fetal Microbiome During Pregnancy of Mothers and Early Childhood of Infants: A Pilot Study

Five Minute Break (12:39 - 12:44 PM)

Dylan Haber	Neural control of inflammation: Testing electrical and optogenetic vagus nerve stimulation on a model of lung injury
Sophia Magann	Persistent Symptoms of Lyme Disease and how they are Affected by CV-19
Jungyeon Park	An Analysis of the Outcomes of Sternoclavicular Joint Instability/Injury Reconstruction

PHYSICAL SCIENCES I (PS I) Regional

Moderator:
Caroline Matthew

Andrew Kelly	The Purification of Oleic Acid and the Effect of Oleic Acid Purity on the Size of CdSe Nanocrystals
Ryan Geiger	An Analysis of the Relative Emission Intensity of Laser Diffraction Through the Utilization of a 2-Column Time Series
Mai Blaustein	Identification of Chemical Contaminants in Spiked Beverages with the use of Infrared Spectroscopy through Development of Inexpensive and Inconspicuous Device to Identify Date Rape Drugs
Five Minute Break (10:24 - 10:29 AM)	
Eadin Block	X-ray Analysis of a Variable Active Galactic Nucleus in the North Ecliptic Pole Region
James Findikyan	Analysis of Trends in Large Binocular Telescope Dome Seeing
Francesca Mangione	Electrochemical Characterization, Implementation, and Testing of Novel Graphene-Noble Metal Aerogel Solutions in Batteries as Lightweight Energy Storage Devices for Military and Consumer Applications

PHYSICAL SCIENCES II (PS II) Local

Moderator:
Amy Ma

SESSION I AM (9:30 AM - 11:25 AM)

Zafir Sayyed	Classifying the Daubert Challenge with Neural Networks and Linear Models Through Natural Language Processing
Owen Fleischer	Comparing a variety of machine learning algorithms to improve the accuracy of the P300 brain-computer interface
Kiernan Van Engen	Object Permanence in Drones: Improving the Effectiveness of Real-Time Object Tracking Algorithms

Five Minute Break (10:24 - 10:29 AM)

Samantha Janos	The Effects of Minimum Wage on Unemployment Rates in Different States
Isabel Braun	Developing an Algorithm-Prototype in order to Locate Exo-Moons Orbiting Hot Jupiter-Like Planets Given Geometric Albedo and Wavelength

SESSION II PM (11:45 AM - 1:56 PM)

Jonah Halperin	SatBlock: A Novel Application of an Active SPD Glass Shutter Mechanism for Satellite Trail Mitigation Techniques in Observational Astronomy
Josh Hiller	What is the correlation between directional uncertainty and energy proxy of neutrino events observed in Ice Cube
Nishi Uppuluri	Developing the Writing Skills of Elementary Schoolers Using Computational Linguistics Techniques

Five Minute Break (12:39 - 12:44 PM)

Josh Handelman	The Development of a Novel Simulation to Test the Effects of Various Control Methods on the Spread of SARS-CoV-2 in a School-Like Environment
Joseph Nadol	A Specialized Searching Algorithm to Locate Single-Transit and Long-Period Exoplanets in Brightness Time-Series Data

PHYSICAL SCIENCES III (PS III) Local

Moderator:
Katherine Jacobson

SESSION I AM (9:30 AM - 11:25 AM)

Neel Raut	Dijkstra's and Bellman-Ford's Pathfinding Algorithms: Improving Dijkstra's Algorithm from a Baseline Comparison of its Run-Time Complexity with the Bellman-Ford Algorithm
Iva Chee	Developing a Convolutional Neural Network Classifier to Identify Atrial Fibrillation Rhythms from Electrocardiogram Recordings
Sander Miller	The Effects of Core-Edge Temperature Gradients on Intrinsic Rotation during H-Mode in Tokamak Reactors

Five Minute Break (10:24 - 10:29 AM)

Jinlin Cai	Optimization of a Novel Neural-Net-Based Higgs Tagger Xbb in the $Y \rightarrow XH$ Analysis
James Cecere	Non-Newtonians Under a New Scope

SESSION II PM (11:45 AM - 1:56 PM)

Jobin Binu Daniel	The Effect of Concrete Bricks on Climate Change
Paige Felgner	Data and Statistical Analysis of Public Company Internal Controls
Julian Batshaw Emanuel Ifraimoff	Evaluation of The K Level Scale for Prosthetic Limbs Based on Applied Force

Special Thanks to our Regional Speaker Judges

Dr. Nareen Abboud	Dr. Myrna Klotzkin	Dr. Nicolas Robine
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Dr. Michelle Hoffner O'Connor	Dr. Helen Remotti	Dr. Qiao (Joe) Zhou
Mr. Anthony Ianniello		

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Hendrick Hudson	Valhalla
Horace Greeley	Westlake
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