

Abstract List by Scientific Focus

Cancer Biology & Oncology

Monday, Session I

1. Breast Cancer-Derived POLQ Variant E2370K Bypasses DNA Damage Induced by Chemotherapeutics
2. CRISPR Targeting of Merkel Cell Polyomavirus in Merkel Cell Carcinoma
3. Developing Adeno-associated viral deliver of IL-2 and IL-33 cytokines for neoadjuvant therapy for Muscular Invasive Bladder Cancer
4. Generation of Y239C Full-Length DNA Polymerase Theta to Understand Possible Linkages to Melanoma Cancer Development
5. Intratumoral Injection of IL-12 Combination Immunotherapy Improves Local and Systemic Anti-Tumor Responses in Melanoma
6. Sequential Intratumoral Administration of IL-12 and IL-23 Plasmids Followed by STING Agonist for Metastatic Melanoma
7. Synthesis and Analysis of Flufenamic Acid Analogues Targeting YAP-TEAD Protein Interaction within the Hippo Pathway

Monday, Session II

1. Enhancing Systemic Anti-Tumor Immunity Through Intratumoral Co-Expression of IL-12 and IL-36 γ
2. Investigating Glucocorticoid Receptor Mediated STING Localization and Cytokine Production in Triple Negative Breast Cancer
3. Localization of TRM Cells in Metastatic Brain Tumor Mice
4. Testing Bioactive Compounds on Human and Non-Human Cells

Tuesday, Session I

1. The STAT3 Axis: A Driver of Therapy Resistance and Immune Evasion in Glioblastoma
2. Engineering Bottlebrush Hydrogels for Local Dexamethasone Delivery to Prevent Post-Surgical Tumor Recurrence

Microbiology, Infectious Disease & Antimicrobial Research

Monday, Session I

8. A Novel Recombination Strategy to Optimize Genetic Manipulation in *Vibrio cholerae*
9. A Tale of Two Mutants: How Two Genes Disrupt *Pseudomonas* Biofilms and Motility
10. Discovery of Bacteriophages and Bacterial Hosts From Local Swamps In New Hampshire
11. Effects of media salinity and nutrient content on antibiotic production from estuarine bacteria.
12. From dirt to antibiotic producing microbes
13. Impact of *Pseudomonas aeruginosa* when exposed to Lactoyl Phenylalanine using the Tube Biofilm Model
14. Investigating the Genetic Regulation of Induction in the Late Phage Operon of Φ BB-1, a Bacteriophage of *Borrelia burgdorferi*
15. The Isolation and Purification of a Marine Bacteriophage from Odiome State Park
16. Using a CRISPR-Cas-associated transposon system to inactivate type VI secretion in *Burkholderia cenocepacia* K56-2
17. Vancomycin and Tobramycin Efficacy Against Polymicrobial Bone-break Infections

Monday, Session II

5. A Host Range Assay of Three Phages Isolated at NHTI Using *Arthrobacter Globiformis*
6. Functional Profiling of Transposon Mutants in a Bacteriophage-Producing Strains of *Borrelia burgdorferi*
7. Genome-wide overexpression of mycobacteriophage Hoot to identify inhibitors of mycobacterial growth
8. Investigating the Aggregation Behavior of *Malassezia* Fungi within the Human Skin Microbiota
9. Investigating the Role of *cotD* and *sodA* in *Clostridioides difficile* Spore Resistance to Oxidative Stress
10. Big Earth, tiny Discoveries

Tuesday, Session I

3. The Effects of *Bifidobacterium Longum* and *Faecalibacterium Prausnitzii* on the Pmk-1 Inflammatory Pathway in Colitis-Induced *Caenorhabditis Elegans*
4. Host Range of *Salmonella* Bacteriophage ν B_Hercules_SET

Abstract List by Scientific Focus

5. Characterizing rAID-Associated ICE Integration and Defense Function in *Bacteroides thetaiotaomicron*
6. The Discovery and Isolation of Saltwater Bacteriophages from the Northern East Coast
7. A Silent *Pseudomonas* Killer from the Creek: Meet Gloam
8. Molecular Epidemiology of Tick-Borne Pathogens in Locally Sampled *Dermacentor variabilis* and *Ixodes scapularis* Populations via Attractive and Mechanical Sampling
9. Deciphering the role of Virulence Associated Regulatory SNPs in *Vibrio cholerae*

Molecular & Structural Biology/ Chemistry & Biochemistry

Monday, Session I

18. Crystal Structure of Bifunctional protein FOLD from *Helicobacter pylori*
19. Evaluation of Competitive Binders to Improve Payload Release from Silica Surfactant Nanoparticles
20. From Reactions to Simulations: Investigating α -Amylase Activity Through Enzyme Kinetics and Molecular Dynamics.
21. High-Throughput Enzyme Screening Using Droplet Microfluidics
22. Molecular Dynamic Simulations Through Lactase-Lactose System
23. Characteristics of Deleted Loop Regions in zPol θ to Confirm Critical Functional Homology between zPol θ and hPol θ

Monday, Session II

11. Enzymatic Activity of *Helicobacter pylori* Carbon-Nitrogen Hydrolase
12. In vitro Modifications of Therapeutics tRNAs with Dihydrouridine

Tuesday, Session I

10. Spectral characterization of fluorescent proteins in selectively bred aquarium zoanthid morphs using excitation-emission matrix fluorescence
11. Solvent Effects on the Photodecomposition of Potassium Tetrachloroaurate
12. Universal Design in the Chemistry Laboratory: A Novel Interface for Thin Layer Chromatography (TLC) Analysis
13. Solid Phase Synthesis of Lipidated Short Cationic Peptides
14. Planarians as a Model Organism for Investigating Cell Penetrating Peptides

Genetics, Cell & Developmental Biology

Monday, Session I

24. Decellularization of Spinach and Recelling *Spirulina*
25. Impact of Transcriptional Regulation on Heterologous Gene Expression in *Saccharomyces cerevisiae*
26. Investigating the Role of CEP290 in Primary Cilia and Adipogenesis
27. Adopting the Orphans: A Dual-Barcode Master Key for Human Nuclear Receptors

Monday, Session II

13. 67 is Slowing Us Down: The Effect of Knocking Down Transition Zone Proteins on Planarian Motility
14. Affordable Methods for Expansion and Differentiation of Mesenchymal Stem Cells
15. Assembly and annotation of the chloroplastome of *Cypridium reginae*
16. Investigating Regulation of H3.3 during *Drosophila* Oogenesis
17. RNAi-Mediated Knockdown of CCDC39 Reveals Defects in Motile Cilia Function in *Schmidtea mediterranea*
18. Circadian and Circatidal Rhythms: Shared mechanisms?

Environmental Science & Ecology & Toxicology

Monday, Session I

28. Chronic Exposure of Per- and Polyfluoroalkyl Substances (PFAS) Affects Development in the American Horseshoe Crab, *Limulus polyphemus*
29. Distribution of Bioactive Compounds in New England's Pink Lady Slipper, *Cypripedium acaule*
30. Persisting Thermal Refugia for Brook Trout in Piscataquog Headwater Streams
31. Testing eDNA as a Tool for Detecting the Invasive Nudibranch *Archidoris pseudoargus* in the Gulf of Maine

Abstract List by Scientific Focus

32. Evaluating dosages of MS-222 in a zebrafish fry larvae model for both safety, effectiveness, and microglia activation

Monday, Session II

19. Behavior Under the Fin-luence: Using behavioral testing to assess the effects of pesticides on early neurodevelopment in a zebrafish model
20. Comparison of Total Cardenolide Concentration of Three Ecotypes of Swamp Milkweed
21. Determining Pesticide Dosage Thresholds Through Mortality and Physical Morphology in a Zebrafish Model
22. Developmental Arsenic Toxicity in Zebrafish
23. Effects of Environmentally Relevant Chronic Arsenic Exposure on Cell Viability in Mammalian Cells
24. Evaluating the neuro-immune effects of early developmental pesticide exposure using a zebrafish model
25. Exploring Rock Bass Diet and PFAS Exposure in Lake Sunapee
26. Generational Effects of Environmentally Relevant Arsenic Exposure on Life-History Traits in *Daphnia pulex*
27. Macrophage IL-6 signaling pathways potentially disrupted by nanoplastics from bottled water
28. The Effects of Diphenhydramine on The Habituation of *C. elegans* Worms

Tuesday, Session I

15. Repopulation Initiative for *Cyp. reginae* in Northeastern North America
16. Assessing the effects of habitat type on the development of American horseshoe crab eggs using cross-habitat transplants in the lab and field
17. Exploring the Changes to HEY-1 and PAPP-2 Expression Following PFOS Exposure in PANC-1 and HUVEC Cells
18. Exploring the Medicinal Plants of New England Through Community Networks of the Pink Lady's Slipper, *Cypripedium acaule*
19. Exploring the Genomics of a Medicinally Novel Orchid, *Cypripedium Acaule*

Neuroscience & Behavioral Science

Monday, Session II

29. Differences in Skin Conductance while Expressing Sadness in Parkinson's Disease
30. Prenatal Acetaminophen Effects on Neonatal Pain and the Long-term Consequences in the Brain and Behavior
31. Tracking Eye Movements Within Motion Induced Blindness: A Pilot Study Examining the Effects of Target Placement on the Duration and Frequency of Disappearance
32. Relationship between Quality of Life, Health, and Facial Masking in People with Parkinson's Disease

Tuesday, Session I

20. Rat Fetal Alcohol Syndrome Disorder Model: Optimized Immunofluorescence and Image Analysis Pipeline for Quantifying Astrocyte Reactivity
21. Self-Perceptions of Facial Expressivity in People with Parkinson's Disease and Neurotypical Controls
22. Gender Differences in Facial Expressivity between People with Parkinson's Disease and Neurotypical Controls
23. Color and Luminance effects on accuracy, reaction time and eye tracking measures in visual search tasks
24. Relationship Between Autism Spectrum Disorder Characteristics and Negative Menstrual Symptoms in Women

Clinical & Health Sciences

Monday, Session I

33. Acute Effects of High-Intensity Exercise on Cognitive Flexibility and Neuroelectrical-Activation in Older Adults
34. Decreased Expression and Physiological Responses of Happiness in Parkinson's Disease
35. Evaluation of Barriers to Timely Extubation Following Cardiac Surgery
36. Expressing Anger and Fear in Individuals with Parkinson's Disease

Abstract List by Scientific Focus

- 37. Non-Prescription Scar Treatments
- 38. The Relationship Between Expressing Disgust and Physiological Responses in Individuals with Parkinson's Disease
- 39. Use of Local Pain Management Options in Colposcopy and Cervical Biopsy to Improve the Patient Experience
- 40. Predicting pancreatic disease progression via hybrid neural ODE and PBPK modeling

Monday, Session II

- 33. Acute effects of moderate exercise intensity on cognitive flexibility and brain oxygenation in older adults
- 34. Acute Exercise-Induced Prefrontal Oxygenation Is Associated with Cognitive Performance in Healthy Older Adults
- 35. Blood Glucose, Stress, and Caffeine in Healthy, Young Adults
- 36. Cross-Method Validity Determination of a VO₂max Prediction Toolbox: A Pilot Study
- 37. Examining the impact of music and meditation on the gut microbiome and mental health in college students
- 38. Systemic Hormone Therapy for Menopause Related Symptoms
- 39. Obstacles to Oncology Palliative Care

Tuesday, Session I

- 25. The Relationship Between Glucose and Chronotype
- 26. Acute Effects of Moderate-Intensity Exercise on Cognitive Flexibility and Prefrontal Cortex Hemodynamics in Young Adults
- 27. Acute Effects of Post-Meal Stretching vs. Seated Rest on Blood Glucose in Healthy Young Adults
- 28. Gut Microbiome Diversity in College Students After Relaxation Interventions

Engineering, Technology & Biomedical Health Innovation

Monday, Session I

- 41. A Privacy-by-Design Framework for Secure Telehealth Service in Advanced Electronic Health Record (EHR) Ecosystems
- 42. Baffling: 3D Printing Efforts to Recreate a Discontinued Fish Tank Filter
- 43. Local Attack Surfaces in Voice-Controlled Assistive Robots: A Case Study with ACARobo
- 44. Serious Games as Community-Scale Interventions for Trauma Awareness and Resilience Promotion

Monday, Session II

- 40. Quantifying Ocular Pain in Mice Using Deep-Learning-Based Feature-Tracking Software
- 41. Tracing Vulnerabilities from Source to Stripped Binary: A Firmware Security Benchmark and Tiered Cyber Reasoning System
- 42. When Recon Traffic Looks Benign: Understanding Reconstruction-Based Detection Failures in IoMT

Tuesday, Session I

- 29. Behave Yourself: Do-It-Yourself Design and Build of a Universal Zebrafish Developmental Behavioral Testing System
- 30. Growing Our Future
- 31. Human Stem Cell Spheroids Bioprinted and Characterized
- 32. Integrity-Aware Wound Classification Under Image Degradation in Healthcare IoT Systems
- 33. Utilization of an Automated Liquid Handling Robot for Developing Biochemical Workflows