



LI Science & Engineering Fair, Inc.

Promoting Excellence in Scientific Inquiry and Discovery in LI Schools

LISEF 2018 Grand Award Winners

	Award	Name	School	Title
	First	Sydney Bracht	Smithtown High School East	<i>A Reverse Genetic Approach to Identify Novel Regulators of Cell Invasive Behavior</i>
	First	Luke Harris	West Islip High School	<i>Extracting DNA from Killer Whale Mucus as a Non-invasive Alternative to the Use of Biopsy Darts</i>
	Second	Sarah Elizabeth Adamo	Smithtown High School West	<i>Acetylcholine and Nicotine Potentiate Currents in Cells Isolated from the Sea Anemone <i>Nematostella vectensis</i></i>
	Second	Sohum Sheth	Sayville High School	<i>Geospatial Analysis of the Distribution of Sea Turtles and Shark Sightings off the Coast of Long Island, New York</i>
	Third	Nita Susan George	Sayville High School	<i>Geospatial Analysis of Pitch Pine (<i>Pinus rigida</i>) Distribution Infected with Southern Pine Bark Beetle (<i>Dendroctonus frontalis</i>), Sans Souci County Park, New York</i>
	Third	Shermeen Nasir Khan	East Meadow High School	<i>The Accumulation of Fluorescent Nanoparticles in <i>Caenorhabditis</i></i>

Animal Sciences				<i>elegans</i>
	Third	Cameron Reuven Levy	Bellmore John F. Kennedy High School	<i>An Analysis of the Interactions Among the Histone Deacetylase Sir2, TOR Signaling, and the Heat Shock Response Instigator Heat Shock Factor 1</i>
	Third	Jui Patel	Oceanside High School	<i>The Analysis of Malaclemys terrapin Fecal Matter as an Indicator of the Biomagnification of Microplastics</i>
	Honorable M	Sanjida Iqbal Chowdhury, Nellely Paola Lopez, Tyler Joeselyn Sanabria	Brentwood High School	<i>Analyzing the Process of Autophagy in Nematostella vectensis in LC3 and ATG3</i>
	Honorable M	Jack Henry Rosencrans	North Shore High School	<i>Diversity of Spongilla in Long Island waters</i>
	Honorable M	Katie Marie Sierra, Brian Joel Torres	Northport High School	<i>Particle Filtration and Capture by Two Mussel Species: Response of Mussels to Algae and Surfactant Treated Particles</i>
	Honorable M	Julianne Marie Starzee	Northport High School	<i>Is the 6-Hydroxydopamine Lesion Rat Model for Parkinson's Disease a Viable Model to Use to Study the Neurobiology of Paradoxical Kinesia?</i>
	First	Matthew Ryan Mullahy	Smithtown High School East	<i>Alterations in Oligodendroglia Lineage Cells and Their Impact in Major Depressive Disorder</i>
			John L. Miller	<i>The Language of Facial Expressions: A Neuroimaging Study</i>

Behavioral and Social Sciences	First	Amy Shteyman	Great Neck North High School	<i>of how a Smile is Generated and Perceived by Another Person</i>
	Second	Ella Eisenberg	Roslyn High School	<i>The Speed and Accuracy of Responses Based on the Presence of Peripheral Limb Motions as Visual Cues for Biological Motion Perception</i>
	Third	Justin Ross Cohen	Syosset High School	<i>PTSD Symptom Severity in 9/11 Responders: Associations with Anxiety Sensitivity and Distress Tolerance</i>
	Third	Safia Mirza	Plainview Old Bethpage JFK High School	<i>Novel Insight into the Neurobiological Underpinnings of Risky Decision Making During the Feedback Stage</i>
	Third	Kate Weseley-Jones	North Shore High School	<i>How Adoptable is that Doggie in the Photo? The Effects of Manipulating Photos on the Perceptions of Shelter Dogs</i>
	Honorable M	Aaron Geula	John L. Miller Great Neck North High School	<i>Using fNIRS to Determine the Effects of Distractors on Neural Activity and Cross Brain Coherence</i>
	Honorable M	Spencer Robert Lazar	Roslyn High School	<i>Worth a Shot? The Effectiveness of Various Public Health Messages on People's Intent to Get Vaccinated</i>
	Honorable M	Meghan Grace Long	Hampton Bays High School	<i>Daily Self-Weighing to Combat Obesity Among Adolescents</i>
			Paul D.	<i>The Impact of Lack of Access to Medical</i>

	Honorable M	Julia Karen Ruskin	Schreiber High School	<i>Care during Hurricane Sandy on Mental Health Symptoms</i>
Biochemistry/Biomedical Engineering/Microbiology	First	Irene Antony	Half Hollow Hills West	<i>Subchondral Bone Engineering: Regeneration of Cartilage-Bone Interface to Replace Knee Prosthetics</i>
	First	Julia Park	Plainview Old Bethpage JFK High School	<i>Targeting A Redox Dependency in Pancreatic Ductal Adenocarcinoma</i>
	Second	Julia Catherine Brandenstein	Plainview Old Bethpage JFK High School	<i>A Novel Method Utilizing Diffusion MRI to Determine Optimal Treatment Effectiveness in Bipolar II Disorder</i>
	Third	Adrian Chen	Great Neck South High School	<i>Peroxidase-Mediated Labeling of Periplasmic Proteins in Mycobacteria</i>
	Third	Zachary David Gruber	Paul D. Schreiber High School	<i>Improving the Robustness of ICDs</i>
	Third	Raphael Leon Iskra	Commack High School	<i>The Effects of Nitazoxanide on Bacterial Virulence Factor Assembly by the Chaperone/Usher Pathway</i>
	Honorable M	Zaiff Khan, John Chen, Anoushka Guha	Lawrence High School	<i>Recycling Old Teeth into New Bones- Creating a Novel Graphene Oxide/Iron/Poly-Lactic Acid Composite that Promotes Dental Pulp Stem Cell Differentiation and Proliferation</i>
				Elmont

	Honorable M	Michael J Lawes	Memorial High School	<i>C. elegans Models Following Chronic Glucose Exposure</i>
	Honorable M	Logan Benjamin Samuel	Half Hollow Hills East	<i>A Putative Galantamine Metabolite Functions as a Potent Proteasome Inhibitor Suggesting an Alternative Non-Cholinergic Pathway for Attenuation of Inflammation</i>
	Honorable M	Sahith Vadada, Rushikesh Patel, Vedant Singh	Herricks High School	<i>Evaluating the Effects of Graphene-Loaded Poly(4-vinylpyridine) Electrospun Fibrous Scaffolds and Spun-cast Thin Films on the Proliferation and Differentiation of Dental Pulp Stem Cells in vitro</i>
	First	Rinni Bhansali	Half Hollow Hills East	<i>BIC Augments the Proliferative Effects of miR-155 in Diffuse Large B Cell Lymphoma Via Downregulation of Tumor Suppressor and Anti-Apoptotic Targets</i>
	First	Radhika Patel	Syosset High School	<i>Riluzole Rescues Non-Canonical Akt Signaling and Improves Hereditary Hemorrhagic Telangiectasia Vascular Pathology</i>
	First	Shruthi Shekar	Jericho High School	<i>Binding of SOX Transcription Factors (TF) to MALAT1 lncRNA as an Effective Target for the Treatment of Breast Cancer Metastasis</i>
				<i>MicroRNAs Contribute to</i>

<p align="center">Biomedical Health Science/Cell & Molecular Bio</p>	Second	Michael Kaiyuan Lu	Ward Melville High School	<i>Angiotensin II-Mediated Regulation of Transmural Electrical Remodeling in the Heart</i>
	Second	Monet Lou Yuan	Syosset High School	<i>Synthetic Lethality Assay of the PIM1 and PIM2 Genes</i>
	Third	Andrew J. Bacotti	Island Trees High School	<i>Impact of Prior Systemic Therapy on Lymphocytic Infiltration in Surgically Resected Breast Cancer Brain Metastases</i>
	Third	John Anthony Labbate	North Shore High School	<i>Combination of BCL6 and BRD4 Targeted Therapy Agents Induces Synergistic Effects in Diffuse Large B-cell Lymphomas</i>
	Third	Justin Leu	Roslyn High School	<i>Identification of Clinically Derived COP1 Mutations in Melanoma</i>
	Third	Kimberly W Lu	Great Neck South High School	<i>Establishment and Characterization of Topotecan Resistant NCI-H460/TPT10 Cells</i>
	Third	Shrey Digesh Thaker	Smithtown High School East	<i>The Role of miR-34a in Colorectal Cancer Racial Health Disparity</i>
	Honorable M	Theodore David Berger, Ling Shi	North Shore Hebrew Academy High School	<i>Glutamate is a Regulator of the Bone-derived Hormone Sclerostin: A Potential Treatment for Bone Metabolism Diseases</i>
	Honorable M	Matthew Elan Berman	Roslyn High School	<i>The Pancreatic Cancer Microbiome Promotes Oncogenesis by Induction of Innate and Adaptive Immune</i>

				<i>Suppression</i>
	Honorable M	Casey Keller Leimbach	Sacred Heart Academy	<i>The Dissociative Action of Dicer1 on R-loops</i>
	Honorable M	Gabriella Isabel Shayani	Jericho High School	<i>The Effect of Cigarette Smoke on Cardiomyocyte FTO and SERCA2a Expression, Viability and Contractility</i>
	Honorable M	Rebecca Lily Sparacio, Lance Lampert	The Wheatley School	<i>Identification and Characterization of the DELLA protein in L. minor</i>
Computational Biology and Bioinformatics	First	Vanessa J Zhang	Manhasset High School	<i>Molecular Characterization of Prioritized Non-coding Autism Mutations</i>
	Second	Arianna Pahlavan	Jericho High School	<i>Solving Heterogeneities in Defibrillation for a Vascular Remodel of the Heart</i>
	Third	Kathleen Nguyen Esfahany	Ward Melville High School	<i>Organization of Neural Population Code in Mouse Visual System</i>
	Third	Kiana Ziadkhanpour	Plainview Old Bethpage JFK High School	<i>Generation of Novel Fatty Acid Binding Protein (FABP) Inhibitors With Analgesic and Anti-cancer Properties</i>
	Honorable M	Gillian Bartholomew	Oceanside High School	<i>Default Mode Network Connectivity Relates to Aesthetic Responsiveness</i>
	First	Emily Alexandra Cruz	Manhasset High School	<i>Climate Change on Hudson and Gateway Estuaries</i>
		Dylan Makani,	North Shore	<i>Mitigation of TiO2 Stress and Characterization of a</i>

Earth and Environmental Sciences	First	Tong Cassandra Ye, Jacqueline Olivia Balestrieri	Hebrew Academy High School	<i>Putative Brassinosteroid Insensitive-1 Gene in Lemna minor</i>
	Second	Emily Wang	The Wheatley School	<i>The Use of Electrospun Molybdenum Disulfide Nanofibers for Air Gap Membrane Water Desalination</i>
	Third	Mackenzie Layne Damon	Sayville High School	<i>Analysis of Mutagenicity and Sublethal Response on Eisenia fetida when Exposed to Roundup</i>
	Third	Delina M Levine	Commack High School	<i>Applying a Quadrature Representation to Model Aerosol-Cloud Interactions</i>
	Third	Michal Lewkowicz, Rohil Agarwal	Hicksville Senior High School	<i>Converting Water Vapor to Drinkable Water in a Self-Contained Apparatus</i>
	Honorable M	Meghan Brady-Fuchsman, Elizabeth Ruggiero, Sonia Sarju	St. Anthony's High School	<i>ZnO NP Regulation: Identification of the IRT1 Ortholog in Lemna minor</i>
	Honorable M	Yuktha Chiguripati, Hitangee Mitesh Jain, Nicholas Anthony Venturini	W. Tresper Clarke High School	<i>Pretreatment of Brassica rapa with Pyrabactin Increases Tolerance to High Salinity</i>
	Honorable M	Victoria Paige Palone	North Shore High School	<i>The Influence of Predicted Future Climatic Conditions on Habitat Range Suitability in Sister Taxon of Species of the Genus Brookesia</i>
	Honorable M	Kyle Pilotti	Sanford H. Calhoun High	<i>Predicted and Observed Wind Speed Profiles at</i>

		School	Southampton, NY	
Embedded Systems/Systems Software	First	Natasha Aviva Dilamani	John L. Miller Great Neck North High School	<i>Typing Without Touch: A Touchscreen Accessible Device for the Visually Impaired</i>
	Second	David Xu	Jericho High School	<i>Write Anywhere: Filtering Low-cost IMU Data for Small-scale Motion Reproduction</i>
	Third	Taylor W Giles	East Meadow High School	<i>Developing a Voice Analysis Program for Personal Identification</i>
	Third	Kyle Markland	Rocky Point High School	<i>A Novel Kalman Filter Latent State Estimator for GPS/INS Reference Point Acquisition</i>
	Honorable M	Vineet Malhotra	Bay Shore High School	<i>A Novel Approach to Improving Communication between Lung Cancer Patients and Healthcare Professionals via Mobile Application</i>
Energy: Chemical/ Chemistry	First	Kendra Zhang	Jericho High School	<i>Paper-based Microbial Fuel Cells for Self-powered Sustainable Disease Monitoring</i>
	Second	Aashini Samir Shah	W. Tresper Clarke High School	<i>Investigating a New Synthetic Route for Trifluoromethylated Dithienylethene Photoswitches Utilizing Monohalogenated Reactants</i>
			Manhasset	<i>Investigation of Electrochemically Modulating Hydrophobicity in Redox-Response</i>

	Third	Tiffany Chen	High School	<i>Gels and Optimization for Selective Adsorption in Release of Organics</i>
	Third	Helen Zhang, Ruoxin Lu, Jarrad Li	MacArthur High School	<i>Optimizing Molar Ratios of Gold-Silver Alloy Nanoparticles to Enhance the Performance of Proton Exchange Membrane Fuel Cells</i>
	Honorable M	Alexis Lauren McCauley-Pearl	Smithtown High School East	<i>Cellulose-Based Filtration for Lead Removal for Potable Water</i>

Energy: Physical/Materials Science	First	Susan Xiaoshu Wu	Manhasset High School	<i>An Investigation of a Simple, Inexpensive Apparatus for Lipid Nanoparticle Fabrication with Controllable Size and Dispersity with in vitro Applications</i>
	Second	Jeongbin Hwang	Plainview Old Bethpage JFK High School	<i>Fabrication of Superhydrophobic and Oleophilic Meshes by Laser Induced Polymerization</i>
	Third	Stephen John Lee	Manhasset High School	<i>Developing Aluminum-Doped Zinc Oxide (AZO) Nanoparticle-Based Electrodes for Electrodynamic Screens (EDS) to Mitigate Soiling Effects in Solar Collectors</i>
	Third	Iyin Martins Tugbobo	Elmont Memorial High School	<i>The Effect of Bottom Ash Aggregate Replacement on Concrete Composites</i>
	Honorable M	Isabella DeBrino	Northport High School	<i>The Effect of a Nano-Spike Surface Coating on Bacterial Growth in Biological</i>

				<i>Artifact Storage Containers</i>
Environmental Engineering	First	Smiti K Shah	Bethpage High School	<i>Solar Powered Nanotech Water Filtration Device with Personal Robotic Transport System</i>
	Second	Mutahara Nurit Bhuiyan	Jericho High School	<i>Sustainability in Water Treatment: Heavy Metal Remediation via Nitro-oxidized Carboxycellulose Nanofibers</i>
	Third	Daniel Hyunsoo Lee	Commack High School	<i>Wind Field Estimation using Deep Convolutional Neural Networks</i>
	Third	Molly Ann McLoughlin	Paul D. Schreiber High School	<i>Design and Implementation of a Filtration Mechanism to Remove Perfluorooctanoic Acid and Butylated Hydroxytoluene from Water</i>
	Honorable M	Michelle Xing	Great Neck South High School	<i>Direct Functionalization of Algal Nanocellulose to Enhance Biosorption for Lead(II) Remediation</i>
Mathematics	First	Merrick H Cai	Kings Park High School	<i>Euclidean Geometry Through Quaternions</i>
	Third	Joseph Melkonian	Paul D. Schreiber High School	<i>Improving Player Value Approximation in Cooperative Transferable Utility Games</i>
	Honorable M	Vinny Steven Pagano	Long Beach High School	<i>Restoring Wild Oyster Reefs: Optimization of Population Sustainability Through Mathematical Modeling of</i>

				<i>Fertilization Dynamics</i>
	Honorable M	Lucas Sam Rosen	Bellmore John F. Kennedy High School	<i>PEACE and WAR: Eliminating Luck to Project True Offensive Value of Major League Baseball Batters</i>
Physics and Astronomy	First	Chiu Fan Bowen Lo	Jericho High School	<i>Near-Field Nanoscopy Simulation by Incorporating Harmonic Demodulation and Cone-Shaped Probing Tip</i>
	Second	Ashley A Fuchs	Ward Melville High School	<i>Simulation and Measurement of Ultra-Low Beam Emittance</i>
	Third	Cindy Wang	Great Neck South High School	<i>Observation of the Chiral Magnetic Effect in the Quark-Gluon Plasma Produced in Au+Au Collisions at the Relativistic Heavy Ion Collider</i>
	Third	David Kyle Wendt	Island Trees High School	<i>Modeling Negative Thermal Expansion in ScF₃</i>
	Honorable M	William L Peng	Manhasset High School	<i>Exploring Hadronization in Quantum Chromodynamics through Semi-Inclusive Deep Inelastic Scattering</i>
		First	Fred Chu	Manhasset High School
Second		Kyle Robert Spinelli, Sean Pak	Commack High School	<i>Deep Learning for Classification of Non-small Cell Lung Tumors in CT Scans</i>

Robotics and Intelligent Machines/Engineering Mech	Third	Aria Eghbali, Yeil Kim	Commack High School	<i>A Sensitive Wide-Band Antenna System to Detect RF Radiation of Various Frequencies and Polarizations with High Directionality</i>
	Third	Rachael Kang, Shawn Kang	Waldorf School of Garden City	<i>Unsupervised Image Filtering using Generative Adversarial Networks</i>
	Honorable M	John Tianci Li	The Wheatley School	<i>Three Efficient Inventions That Work Together to Reduce the Time and Cost of Automobile Transmission Fluid and Filter Changes by 3/4th</i>
Translational Medical Science	First	Eish Maheshwari	Herricks High School	<i>Strategies for Tuning the Release Profile of Curcumin-Loaded Nanoparticles to Improve Drug Bioavailability and Optimize Sustainable Delivery</i>
	Second	Hannah Philipose	Jericho High School	<i>Potent Treatment for Retinal Degeneration: Transcriptional Regulator for PGC-1β Decreases Oxidative Stress in Retina</i>
	Third	Sydney Caldwell	Hampton Bays High School	<i>The Apoptotic Effect of a Novel Curcumin Derivative on Pancreatic Cancer Cells</i>
	Third	Ethan Noah Ertel, Aman Malhotra	Half Hollow Hills East	<i>A Targeted Stem-Cell Based Tumor Therapy Mediated Through miR-137 Induced Apoptosis</i>
	Honorable M	Asia Zhang, Eric Jon Bae	Great Neck South High School	<i>A Probe-able Solution: Exploring the Characteristics of a Novel Fluorescent Probe BDP-CC-292</i>

