

Intel Science Talent Search

The Science Talent Search was created to encourage high school seniors who demonstrate exceptional ability in science, math and engineering through individual research projects. Over the years the Science Talent Search has become the most prestigious high school science competition in the country, with broad support of the academic and scientific communities. Educators, scientists, engineers and journalists throughout the U.S. have enthusiastically enabled this annual event. Many STS participants have gone on to distinguished careers; six of these remarkable scientists have won the Nobel Prize.

Science Service is the nonprofit organization which has administered the Science Talent Search since its inception in 1942. The mission of Science Service is to advance the understanding and appreciation of science. In addition to its education programs, Science Service publishes the weekly magazine *Science News*.

2007 Semifinalists

The Semifinalists of the 66th Science Talent Search were chosen from among 1705 entrants representing 487 high schools in 46 states, the District of Columbia, Puerto Rico and five overseas schools. From among the Semifinalists, 40 Finalists will be selected to attend the Science Talent Institute in Washington, D.C. from March 8-13, 2007. During their visit to Washington, the Finalists will present their research to the public, participate in final judging and share in \$530,000 in scholarships.

Each of the 300 students named a Semifinalist in the Intel Science Talent Search will receive a \$1,000 award for their outstanding science research, to be received in April 2007.

Additionally, to recognize excellence in teaching and school support of individual student research, the high schools of Semifinalists will receive an award of \$1,000 for each Semifinalist named in the Intel Science Talent Search. This award is used to further excellence in science, math and engineering education at the recipient school. In the case of home schooling, the awards are given to the affiliated school or school district of the home school. School awards are also distributed in Spring, upon completion by the principal of the School Award Program Application.

Colleges and universities regard the Semifinalist award to be evidence of exceptional scientific promise. Each Semifinalist is provided with a certificate of accomplishment, which may be sent with their applications for college admission and scholarships. A listing in this book, as well as at www.sciserv.org/sts, is also generally accepted as documentation of the honor.

Intel Science Talent Search Finalists will be announced January 31, 2007 and published in the February 3, 2007 edition of *Science News* magazine.

This list of Intel STS Semifinalists is compiled by Science Service, based upon information provided by each student in their entry. If a student's city of residence differs from that of the school, it will be listed also.

ALABAMA

Florence

Shoals Christian School

Everett, Marshall Bradley, 17

Gender Differences in Rationality: If and Why Genders Differ in How Closely They Adhere to the Theory of Rational Behavior

Mountain Brook

Mountain Brook High School

Timberlake, Andrew Thomas, 18, Birmingham

Stroke: An MRI-based Study of Lesion Location and the Effects of Constraint-induced Movement Therapy on the Brain

ALASKA

Fairbanks

Jeannet Home School

Jeannet, Kennan Louisa, 18

Overwintering Physiology of *Cucujus clavipes*: Supercooling, Dehydration, Production of Stress Protein Transcript and Silencing the Expression of Specific Antifreeze Proteins Using RNA Interference

West Valley High School

Daum, Logan Riichi, 17

Atmospheric Model for the Visual Appearance of the Terrestrial and Jovian Planets

ARIZONA

Tempe

Corona del Sol High School

Shi, Veronica Jennie, 17, Chandler

Closing in on Biological Fidelity: A Novel Cellular Automata Approach to Modeling HIV Dynamics and Drug Treatment

CALIFORNIA

Davis

Davis Senior High School

Courtis, Alexandra Maria, 16

Bright Luminescent Silicon Nanoparticles for Biological Applications

Fremont

Mission San Jose High School

Ko, Ryan, 17

Repeated Injection Exposures of Naphthalene Produce Terminal Bronchiolar Clara Cell Tolerance in Female Mice

Ramsundar, Bharath, 16

Analysis of Quantum Computing Interconnection Networks

Fullerton

Troy High School

Li, Charles Huai-Zhi, 17, Chino Hills

Theoretical Mechanisms and Atmospheric Implications of the Reaction of Methyl Vinyl Ether with the Hydroxyl Radical

Wahl, Sean Matthew, 17

Probabilistic One-Dimensional and Spherical Models for the Evolution of Plate Tectonic Systems

- Fullerton** **Troy High School (cont'd)**
Wu, Yueh-Yi, 18
 Quantitative Real time Monitoring of Biochemically Active Ensembles of Biological Molecules by Conventional Fluorescent Microscopy
- Irvine** **University High School**
Yu, Wesley Yung-Hsu, 17
 Understanding Mechanisms of Transcriptional Regulation: Interactions between Mrj, Histone Deacetylases, and Alkb Family Members
- Los Osos** **Saiki Home School**
Saiki, Samuel, 18
 Lower Bounds for Betti Numbers of Polynomial Ring Quotients
- Palo Alto** **Henry M. Gunn High School**
Munshi, Kamran Ashfaq, 16, Los Altos Hills
 Technical Paper Speech Synthesis (TPSS)
- Rolling Hills Estates** **Palos Verdes Peninsula High School**
Suh, Carol Yoon Joo, 17, Rancho Palos Verdes
 Micro-Pathology Lab Chip for Detecting Molecular Lesions of Glioblastoma
- Tang-Quan, Karis Rachel, 18, Rancho Palos Verdes*
 Determining Stroke Core Using CT Perfusion: A Faster, More Cost-effective Modality than MRI
- Woo, Geoffrey Hubert, 18, Rancho Palos Verdes*
 Electron Work Function Changes Produced by Deformations and Defects
- Sacramento** **Mira Loma High School**
Wu, Steven Wei, 16, Folsom
 Optimizing Quadrupole Ion Trap Geometry by Computer Simulations
- San Diego** **Francis W. Parker School**
Hillman, Aryeh Benjamin, 18
 Activity-based Proteomic Profiling of Lysophosphatidic Acid-treated Cancer Cells
- Patrick Henry High School**
Silverstein, Sarah Tamar, 17
 A Longitudinal Study of Stress in First-year Dental Students
- Torrey Pines High School**
Zhang, Joanne Yula, 17
 Effects of MMP-carrying Inflammatory Leukocytes on Tumor Cell Intravasation
- San Francisco** **Olympia Institute**
Liu, Jiyang, 18
 This Requires Action, To Unify IUPAC Periodic Table and Nomenclature
- San Jose** **Oak Grove High School**
Daly, Terik, 17
 Chemical Aspects of the Impact Process
- Presentation High School**
Raman, Daya, 17, Morgan Hill
 Bioprospecting for Effective Mosquito Larvicides and Adulticides

San Jose

The Harker School

Creasman, Adam Michael, 17, Monte Sereno

Characterization of siRNA Microparticle Formation and Encapsulation Using Supercritical Fluids

Dey, Arkajit, 17, Palo Alto

Tree-Realizability of a Distance Matrix

Wang, Carolyn Lu, 17

The Orientation of Polydiacetylene Ethanolamine Monolayers

Thousand Oaks

La Reina High School

Llanes, Christina Kathryn, 17

Determining the Number of Hidden Units in a Neural Network that Optimizes Its Pattern Recognition Performance

COLORADO

Boulder

Fairview High School

MacGregor, Meredith Ann, 17

Cracking the Brazil Nut Effect

Colorado Springs

William J. Palmer High School

Qiu, Diana Yuan, 17

Liquid Crystal Alignment by Ion-etching and Ferroelectric Suspension

CONNECTICUT

Greenwich

Convent of the Sacred Heart

Samant, Ayesha, 17

A Potential Breakthrough in Treating Depression: The Impact of Structure and Pore Size on the Controlled Release of Fluorescein Isothionate from Poly (ethylene co-vinyl-acetate) Matrices

Ridgefield

Ridgefield High School

Cai, Sophie, 16

A Novel Technique for Revealing Serial and Parallel Mechanisms in Visual Processing

Westport

Staples High School

Lubin, Miles, 17

A Novel Heuristic Search Method Using Inferential Statistics

DELAWARE

Wilmington

The Charter School of Wilmington

Naik, Tejal Ulhas, 17, Hockessin

Identification of a Gene That Blocks Breast Cancer Cell Invasion

DISTRICT OF COLUMBIA

Washington

Sidwell Friends School

Landes, Arjun Vyas, 17

Solar Radiation Force on GPS Satellites: Off-Nominal Attitude Effects on Orbit Perturbations

FLORIDA

Altamonte Springs

Lake Brantley High School

Burlingame, Kaitlin Elizabeth, 17, Longwood

Entry of Plasmid-encoded Toxin into the Eukaryotic Cell

Fort Pierce

Lincoln Park Academy

Bhalla, Sheena, 17, Port Saint Lucie

Discovery of Compounds Active Against *Staphylococcus aureus* from the Marine Sponge Choristida

Ft. Lauderdale

Pine Crest School

Alvarez, Francisco Nicolás, 17, Weston

Identification and Characterization of the Dihydroisoquinolines, a Novel Family of Anti-metastatic Agents

Miami

Dr. Michael M. Krop Senior High School

Landman, Bryan Nathan, 18

A Java-based Genetic Algorithm Stock Screening Program for Maximizing Return on Investment: Show Me the Money

Wong, Nina Oiyen, 17

Insulin-regulated Intracellular Trafficking mRNAs in Skeletal Muscle Cells

Panama City

Rutherford High School

Finklea, James, 17

A Comparison of Methods of Pollination in the Monohybrid Cross of *Brassica rapa*

Plantation

American Heritage School

Nasirullah, Hasib Fahin, 17, Cooper City

Two Models for the At-line Process Control of Tablet Moisture Content Using Near-IR Spectroscopy in Pharmaceutical Manufacturing

Tampa

Chamberlain High School

Parrish, Robert Michael, 17

The Development of Localized Finite Differencing Computational Fluid Dynamics Applications To Predict Aeronautical Performance

Vero Beach

Saint Edward's School

Makhni, Sonya, 17, Fort Pierce

Predator Behavior of *Corethrella appendiculata*

Winter Springs

Winter Springs High School

Hsu, Jeremy Lutan, 17

Cell Growth in Hostile Environments: An *in vitro* Simulation of *in vivo* Acid-Base Conditions

GEORGIA

College Park

Woodward Academy

Simmons, Christopher Arnold, 17, Atlanta

The Synchronization of Metronomes

Marietta

Wheeler High School

Tiao, Janice, 18

ADAM9 Expression in Human Prostate Cancer Cells: Cell Motility and Evasion of Oxidative-induced Apoptosis

IDAHO

Idaho Falls

Skyline High School

Herring, Marie Kyoko, 17

The Dynamics of Supercooled Liquids with Variations of Volume and Temperature

ILLINOIS

Aurora

Illinois Mathematics & Science Academy

Chen, Chaoran Rachel, 18, Westmont

Analysis of Polybrominated Diphenyl Ethers in Human Placenta Tissue

Dittmer, Susan Juel, 17, St. Charles

Using a Dimuon Analysis to Search for Supersymmetry at CDF Fermilab

Vidula, Mahesh Krishna, 16, Naperville

The Role of a Common Polymorphism of the Prion Protein in the Propagation of Prions

Xu, Nora, 17, Naperville

Modeling of X-ray Scattering for Nanocrystal Superlattice Multilayer Thin Films

Zhu, Lilly Yi, 18, Burr Ridge

Effect of Iron on Pyocyanin Regulation in *Pseudomonas aeruginosa*

Elmhurst

York Community High School

Maduram, Amy, 17

The Shape of Force: Organizing Cell Forces To Achieve a Unified Tissue Response on Micropatterned Surfaces

INDIANA

Evansville

Francis J. Reitz High School

Uduehi, Esther Oluchukwu, 17

Raman Spectroscopy for Quantitation and Identification of Compounds and Substances

Fort Wayne

R. Nelson Snider High School

Bell, Jonathan Brooks, 18

Design, Development and Application of a Computer-controlled Acoustically Driven Portable Biaxial Shaker Table System

Kouts

Kouts High School

Loza, Julie, 17

Can Light Be Used To Detect Blood Glucose Levels *in vivo*?

Saint John

Lake Central High School

Jagadeesan, Nhila, 17, Schererville

The Antimicrobial Properties of *Curcuma longa* and Its Growth Impediment Effects on *Saccharomyces cerevisiae* and *Escherichia coli*

Terre Haute

Terre Haute South Vigo High School

Sperry, Ethan Douglas, 17

A Molecular Analysis of Genetic Variation within a Controlled Population of White-tailed Deer

Zhao, Emily Wenjie, 17

Understanding the Relationship of Protein Essentiality in Protein Interaction Networks

KANSAS

Overland Park

Blue Valley Northwest High School

Chen, Robert Elmer, 17

Computational Modeling and Analysis of the Effects of Retinal Disease on the Formation of Response Feature Maps in the Primary Visual Cortex

Shawnee Mission

Shawnee Mission South High School

Jiang, Boling Xia, 17, Overland Park

Rhizosphere *Pseudomonas* Bacteria as Biocontrol Agents for Phytopathogenic Fungi Suppression

KENTUCKY

Louisville

Ballard High School

Driskell, Amanda Lynn, 17

BDNF Regulates Taste Bud Development at Late Embryonic Ages

duPont Manual Magnet High School

Cai, Yi, 18

Targeting TRAF Proteins as an Anti-tumor Strategy

J. M. Atherton High School

Wu, Yin Yin, 17

The Mechanics of Proton Transport in One-dimensional Water Chains

LOUISIANA

Shreveport

Caddo Parish Magnet High School

Huang, Huang, 18

Curcumin Inhibits $\alpha6\beta4$ Integrin-dependent Breast Carcinoma Cell Motility

MARYLAND

Annapolis

Broadneck High School

Thomas, Danna Elisabeth, 17

Cell Survival, Genomic Instability, and Bystander Effects Induced by Ionizing Radiation

Baltimore

Baltimore Polytechnic Institute

Call, Emma, 18

Self-assembling Three-dimensional Microcontainers for Cell Encapsulation

Bethesda

Bethesda-Chevy Chase High School

Parker, Beatrice Smith, 17, Chevy Chase

Conditioned Place Preference Testing Reveals a Role for Mind Bomb in the Establishment of Long-term Memory in Zebrafish

- Bethesda** **Walt Whitman High School**
Chen, David Chen, 17
A Five Residue Amino Acid Sequence Predicts Sodium Hydrogen Exchanger Membrane Localization
- Frederick** **Frederick High School**
Kamata, Tetsutaro Theodore, 17
TLE1: A Novel Protein Interactor for EphrinB1
- Glenelg** **Glenelg High School**
Vechery, Afton Kerry, 17, Woodbine
Contamination of Proximate Wells in the Piedmont Region
- Greenbelt** **Eleanor Roosevelt High School**
Li, Dayan, 17, Laurel
Thrombospondin-1 Switches Nitric Oxide Function from Inhibitory to Stimulatory for Gene Expression of Human Tumor Endothelial Markers
- Middletown** **Middletown High School**
Remsberg, Jarrett Renn, 17
Structural Analogs of the Second Intracellular Loop of Smoothed as Potent Inhibitors of Hedgehog Pathway
- Rockville** **Thomas Sprigg Wootton High School**
Sheng, David, 18
Amyloid- β Peptides Impair Axonal Mitochondria Transport: A Possible Early Pathophysiological Mechanism in Alzheimer's Disease
- Silver Spring** **Montgomery Blair High School**
Davis, Joseph Samuel, 18, Gaithersburg
Anti-apoptotic Proteins CED-9 and Bcl-x_L Directly Disassemble Ceramide Channels
- Deng, Merlyn, 17, Bethesda*
Host Factors BAT1 and DDX39 Are Responsible for Nuclear KSHV-ORF57 Viral RNA Exporting into the Cytoplasm
- Durnford, Andrew Thomas, 17, Gaithersburg*
Microstructure-Property Simulations for Low Thermal Expansion Ceramic Composites
- Lan, Cyril, 17, Germantown*
Modeling the Dynamics of Excitons in Semiconductor Quantum Dot Arrays
- Lawrence, Brian Robert, 17, Kensington*
Finite Groups with $p^2 - 1$ Elements of Order p
- Lee, Rachel Han, 17, Gaithersburg*
Effect of Plasma Membrane Compositions on Akt Function
- McCutchen, Richard Matthew, 17, Rockville*
Least-Unpopularity-Factor Matching
- Mendhiratta, Neil, 17, Darnestown*
Improving Automated Patient Monitoring with Real Time Heart Rate Variability Analysis

Silver Spring

Montgomery Blair High School (cont'd)

Schaler, Ethan Weber, 17

Lunar South Pole Magnetic Field Analysis: Models from Lunar Prospector Observations and Constraints on Hydrogen and Water Ice Deposits

Yanovski, Joshua Michael, 18, Rockville

Approximating Graph Isomorphism

Yao, Victoria, 17

The Identification of Chromatin Domains Interacting with the Hox Gene Clusters by a Novel Genome-wide Approach

Zhang, Allen, 17, Potomac

Micromanipulation of Living Cells Using Novel Fiber Optic Tweezers

Towson

Notre Dame Preparatory School

Cyganowski, Anna, 17, Baldwin

Nickel Cadmium Batteries: A Medium for the Study of Metal Whiskers and Dendrites

MASSACHUSETTS

Andover

Phillips Academy

Cao, Gary Guangwei, 17, Cohoes, New York

Resveratrol: A Natural Cyclooxygenase Inhibitor Induces Head and Neck Cancer Cell Arrest through Activation of p53 and Inhibition of PGE₂ Production

Arlington

Arlington Catholic High School

Boltik, Jacqueline Marie, 17, Cambridge

The Effects of the Removal of the Eyestalks or Addition of 20-Hydroxyecdysone Following Multiple Limb Autotomy in Sand Fiddler Crabs, *Uca pugilator*

Boston

The Winsor School

Flier, Lydia, 17, Newton

The Akt and Vitamin D Receptor Signaling Pathways in Prostate Cancer

Greenberg, Rachel Segal, 17, Brookline

Interactions Between Tcf-4 and Olig 2 in Motoneurons

Falmouth

Falmouth Academy

Mann, Benjamin Jacob, 18

Carbon Uptake Dynamics in the Marine Diatom *Thalassiosira*

Holden

Wachusett Regional High School

DeCiero, Daniel Joseph, 17

The Efficacy of Amantadine in Ameliorating Alzheimer's Disease Deficits in *Drosophila melanogaster*

Lexington

Lexington High School

Ramamurti, Arjun Ravi, 17

Exploring the Guenon Mystery: An Evolutionary Analysis Using Phylogenetic Trees

MICHIGAN

Beverly Hills

Detroit Country Day School

Grewal, Amardeep Singh, 17, West Bloomfield

An Extra Spin on Nerve Regeneration Scaffolds: Synthesis of an Electrospun Spinal Cord Nerve Conduit

Mikkilineni, Sohan Venkat, 17, Bloomfield Hills

A Finiteness Property for Integral Points in a Family of Conics

Perni, Subha, 17, West Bloomfield

Analysis of the Impact of Cryopreservation on T-Cell Function by Flow Cytometry

Midland

Herbert Henry Dow High School

Patel, Niral Mukund, 17

The Hydrothermal Synthesis of Inorganic/Organic Coordination Polymers Incorporating 4,4'-Dipyridylamine

Troy

Athens High School

Avrutsky, Maria, 17

Effects of LED Radiation on Respiration Rate in Germinating Peas

Troy High School

He, Temple Mu, 17

Period Analysis of Cataclysmic Variable X10 and Its Implications on the Origin of Low States

Liu, Siyuan, 17

FGF2 and Chronic Stress Alter Exon-specific Expression of FGFR2 and FGFR3 in Frontal Cortex

MINNESOTA

Minneapolis

Breck School

Creasey, Kaitlyn Marie, 17, Plymouth

Tachinid Fly (*Lespesia archippivora*) Parasitism of Monarch Larvae (*Danaus plexippus*)

Lew, Brandon Timothy, 18, Plymouth

Characterization of Anthocyanins in Purple Pods of *Phaseolus vulgaris* cv. Blauhilde

New Prague

New Prague High School

Turner, Carl Anthony, 17

Designing an Optical Sensor to Assess High Pressure Sodium Lamp Condition through Spectral Analysis

St. Paul

St. Paul Academy & Summit School

Zheng, Daniel, 17, Shoreview

Genomic Identification of the Germ-Line Origin of Human Birth Defects: A Simulation Study

MISSISSIPPI

Jackson

Jackson Preparatory School

Beck, Samuel Walker, 18

A Simulator for the Motion of Charged Bodies

MISSOURI

Columbia

David H. Hickman High School

Lin, Evan Ryan, 17

Detection of Apoptosis by Speckle Imaging

Srinath, Meghna, 17

Biocompatible Silver Nanoparticles for Potential Tumor Imaging Applications

NEBRASKA

Nebraska City

Lourdes Central Catholic High School

Arkfeld, Emily Katherine, 17, Dunbar

The Interaction between Known Pork Quality Traits and the Shelf Life Stability of Berkshire Pork

NEVADA

Las Vegas

Advanced Technologies Academy

Lambert, Chalette Maurine, 16

Heat Shock Protein 27 Inhibits the Denaturation of Cytochrome C Bound to Gold Nanoparticles

NEW HAMPSHIRE

Exeter

Phillips Exeter Academy

Hon, Keone David, 17, Kamuela, Hawaii

Remodeling of E-cadherin Junctions by N-glycosylation

Lee, Gongmyung, 17

Improving the Differential Evolution Algorithm: A New Approach to Global Optimization

Mannan, Aristotle, 17, Kalamazoo, Michigan

Dual Oxidase 2: A New Weapon in the War on Worms

NEW JERSEY

Hackensack

Academy for the Advancement of Science & Technology

Drucker, Caroline Beth, 17, Fair Lawn

The Cardinality of the Set of Nilpotent n -by- n Matrices Over the Finite Field of Order q : An Original Enumeration

Hotz, George, 17, Glen Rock

I Want a Holodeck

Iselin

John F. Kennedy Memorial High School

Toth, Laura, 17

Mutants Upstream in the Insulin-like Signaling Pathway Increase the Susceptibility of *Caenorhabditis elegans* to the Pathogen *Alcaligenes faecalis*

Lawrenceville

The Lawrenceville School

Bhatt, Anjali Malavika, 16, Princeton

Experimental Study of Semiconductor-based Negative Refractive Index Materials

Lincroft**High Technology High School*****Handlin, Daniel Adam, 17***

GEONET: A Demonstration of Networked Optical Satellite Tracking with Applications to Science, Engineering and National Security

Srinivas, Raja Ram, 17, Howell

Analysis of Magnetic Drug Targeting in the Human Vascular System Using Implanted Magnetic Elements

Madison**Madison High School*****Blewett, Megan Marie, 17***

Discovering Candidate Ligands of Neuregulin-1 Isoform SMDF Using Small-Molecule Microarray Analysis

Millburn**Millburn High School*****Blumenthal, Alex Michael, 17, Short Hills***

Theoretical Modeling of an Inertial Electrostatic Confinement Fusion Device

Monmouth Junction**South Brunswick High School*****Deshpande, Neha, 17***

A Structure-Function Analysis of Subito and Related Kinesin-like Proteins in Meiosis

Princeton**Princeton High School*****Xu, Denise Jiali, 17, Cranbury***

Designing Microporous Metal Organic Frameworks (MMOFs) for On-board Hydrogen Storage

NEW MEXICO**Las Cruces****Las Cruces High School*****Hshieh, Alan Sien-Wei, 17***

CYSTHSdawn: Developing Software that Utilizes Imaging Algorithms for the Analysis of Cancer Metastases

NEW YORK**Armonk****Byram Hills High School*****Bahnken, Ashley Ann, 17***

Birth Order Effect on Primary Friendship Selection

Cawkwell, Philip Benjamin, 17, Bedford

Examining the Roles of Vascular Endothelial Growth Factor B (VEGF-B) and its Receptor, Vascular Endothelial Growth Factor Receptor 1 (VEGFR1) in Angiogenesis

Granata, John Anthony, 17

Improving the Speed and Accuracy of Character Prediction of the P300 Speller Brain-Computer Interface through a Novel Leaps and Bounds Algorithm and New Intensification Boundaries

Mark, Daniel, 17

Simulating an Extraterrestrial Effort to Search for Earth Utilizing Doppler Spectroscopy

Bellmore**John F. Kennedy High School*****Forman, Jamie Erica, 17***The Effect of Food Brand Labeling and Awareness on Intake at an *ad libitum* Test Meal in Lean and Overweight Children

Bellmore**John F. Kennedy High School (cont'd)*****Krimmer, Ali Charly, 17***

Age-dependent Changes in Neurogenesis in the Adult Brain

Peters, Scott Michael, 17, MerrickAnalysis of the *Arabidopsis* FUSED Ortholog: Is it Required for Cell Division?***Saltzman, Allison Jill, 17, Merrick***Crosstalk between Interferon γ (IFN- γ), Tumor Necrosis Factor- α (TNF- α) and Adenosine A2A Receptors***Samplin, Erin, 18, Merrick***

Dysbindin (DTNBP1) Haplotype, Family History of Psychiatric Illness and Lifetime Severity of Negative Psychotic Symptoms in Patients with Schizophrenia

Tannenbaum, Brian Mitchell, 17, Merrick

Mimicking the Heterozygous State of BRCA2 Carriers in HT-29 Colon Cells

Briarcliff Manor**Briarcliff High School*****Nevendorf, Lauren Elizabeth, 17***Stress Levels in Captive North American River Otters (*Lontra canadensis*) Dependent upon the Frequency of Behavioral Enrichment**Bronx****The Bronx High School of Science*****Berger, Michael Joseph, 17, Hollis Hills***

The Efficacy of Selected Biofeedback Techniques in Mitigating Symptoms Associated with Autism Spectrum Disorder

Chen, Jenny Xun, 17, Kew Garden Hills

Role of Tumor Suppressor Gene PTEN in Chromosomal Stability

Hersh bain, Marni, 17, Forest HillsPotential of *N. pachyderma* in Reconstructing Past Surface Water Conditions***Kvetnaya, Natalya, 17***

Effect of Taxotere Treatment on Heat Shock Protein 90 (Hsp90), ErbB2, Raf-1, Akt and Erk in Breast Cancer Cells

Rasul, Mahbub, 18, Middle Village

The Effect of U.S. Macroeconomic Reports on the Volatility of Unlinked Foreign Exchange Rates

Shao, Bing Lin, 18, BrooklynDevelopment of Salivary Glands in *Drosophila melanogaster* as a Model for Understanding the Formation of Tubular Structures**Brooklyn****Brooklyn Technical High School*****Tauqeer, Zujaja, 17***

The Effects of Protein Kinase X Knockdown on Fetal Mouse Kidneys and Endothelial Cells

Edward R. Murrow High School***Mannapov, Ildar, 17***

Simple Model of Negative Refractive Index Metamaterials

- Brooklyn** **Midwood High School**
Fried, Amanda, 17
 Analysis of Locus of Control of High School Students Based on Academic Performance
- Burnt Hills** **Burnt Hills-Ballston Lake High School**
Allocco, Elizabeth Rose, 17, Ballston Lake
 The Neurocircuitry of Self-Recognition
- Carmel** **Carmel High School**
Goverman, Hannah Cole, 17, Stormville
 Roots of the Community: Phytolith Analysis to Determine Agricultural Practices at an African American Site in the Rural North
- Cedarhurst** **Hebrew Academy of the Five Towns & Rockaway**
Katz, Daniel Scott, 18, Lawrence
 Platinum Nanoparticles: From Hydrogen Storage to Cancer Treatment
- Lawrence High School**
Benvin, Nicole Marie, 17
 The Effects of Musical Training: The Extent to Which Advanced Musical Training Enhances Performance in Musical and Spatial Stroop Tasks
- Feinsot, Stacy Gail, 17, North Woodmere*
 Synthesis and Characterization of Innate Immunity Inhibitors
- Klein, Michael, 17, Atlantic Beach*
 Hypnopaedia: A Study of the Ability to Learn While Sleeping
- Rosen, Marisa, 17, Atlantic Beach*
 Does "It" Really Matter? The Impact of Pronoun Use on Reading Comprehension and Perceived Passage Quality with an Adolescent Population
- Tonetti, Lauren, 17, Atlantic Beach*
 Life After 3 P.M.: The Impact of School Activities on Academic Performance and Self Esteem in Adolescents
- Wagner, Erin, 17, North Woodmere*
 "I Think, Therefore I Am *Not*" Gender Expectations, Aptitude and Mathematical Performance Among High School Students
- Chappaqua** **Horace Greeley High School**
Iyer, Srikanth, 17, Mount Kisco
 The Effects of Moisture on the Optical and Electrical Properties of Low-k Dielectrics
- Mistry, Kavita, 17, Mount Kisco*
 The Effect of Intracellular Calcium Level Fluctuations on the Cleavage of Polycystin-1
- Cortlandt Manor** **Walter Panas High School**
Baskind, Matthew Jordan, 17
 "Who's That in the Mirror?" A Comparison of the Behavioral Responses of *Octopus rubescens* to a Mirror and a Conspecific
- Croton-on-Hudson** **Croton-Harmon High School**
Kaufman, Rebecca Lynn, 17
 Androgen Modulation of Cognitive Functions Relevant to Schizophrenia in Rats

Croton-on-Hudson	<u>Croton-Harmon High School (cont'd)</u> <i>Sitts, Rachel Ellen, 17</i> Do Bumblebees Make Foraging Decisions Based on Those of Others?
Dewitt	<u>Jamesville-Dewitt High School</u> <i>Basu, Siddhartha, 17, Syracuse</i> Numerical Simulations of Capillary Force-driven Interactions Among Floating Particles
Dix Hills	<u>Half Hollow Hills High School West</u> <i>McDonough, Alexandra, 17</i> Teacher Perception of Student Drug and Alcohol Use and Their Ramifications
East Setauket	<u>Ward Melville High School</u> <i>Kirsch, Sarah, 17, Setauket</i> Gender Differences in Hypersensitivity Behavior in a Rat Model of Autism <i>Lin, Hillary, 17, Stony Brook</i> Sex Differences in Brain Activation During the Viewing of Facial Affect <i>Yu, Rui Hui, 16, Stony Brook</i> Development of Molecular Single-Electron Device Components: Synthesis of Acetylide (Bisocyanide) Rhenium Complex as a Corner of a Molecule Cage <i>Yu, Rui Zhi, 16, Stony Brook</i> On the Brink of Chaos: Study of Fermi-Pasta-Ulam Effects in 2D
Fairport	<u>Fairport High School</u> <i>Wang, Rui, 17</i> Computational Modeling of Spectral Properties of Nickel Dithiolene Dyes
Farmingdale	<u>Farmingdale High School</u> <i>Feiner, Sean Michael, 18</i> Not So Tasty: Synthesis and Crystallization of Heteroleptic Cerium Sandwich Porphyrinate
Farmingville	<u>Sachem High School East</u> <i>Palmaccio, Samantha, 17</i> Longitudinal Evaluation of <i>in vitro</i> Osteoblast Biomineralization and Differentiation Using Alkaline Phosphatase Quantification and Confocal Scanning Laser Microscopy
Flushing	<u>Townsend Harris High School</u> <i>Wazed, Bushra, 17, Jamaica</i> The Effect of Resistance to Imidacloprid on the Immunocompetence of <i>Leptinotarsa decemlineata</i>
Fresh Meadows	<u>St. Francis Preparatory School</u> <i>Pickel, James Christopher, 17, Hollis Hills</i> The Genetics of Gender Determination: A Study of Novel Genes
Garden City	<u>Garden City High School</u> <i>Rohatgi, Abhinav, 17</i> The MTBE Fuel Additive Induces Mortality in Marine Life Through Nitric Oxide Signaling
Glen Cove	<u>Glen Cove High School</u> <i>Ding, Michael, 16</i> DNA Electrophoresis on Nanoporous Polyethersulfone Membrane Surfaces

Glen Head

North Shore High School

Mandel, Kenneth Victor, 17, Sea Cliff

The Effects of Human Growth Hormone and Insulin-like Growth Factor-1 on Bovine Articular Cartilage Extra-cellular Matrix

Great Neck

John L. Miller-Great Neck North High School

Hollander, Zachary, 17

Genetic and Environmental Causes of Variation in Size and Growth Form in Dwarf and Normal Stature Pitch Pines, *Pinus rigida*, in Controlled and Field Experiments

Leibowicz, Benjamin Daniel, 17

The Tolman VII Solution and the Upper Limit to the Central Density of a Neutron Star

Melnick, Joanna Nicole, 17

Variation in Observed Pulse Period Support Existence of Planets Orbiting Pulsar PSR B0329+54

Yee, Debbie, 17

Using Thiol-functionalized Metallic Nanoparticles to Increase the Efficiency of the Polymer Electrolyte Membrane (PEM) Fuel Cell

North Shore Hebrew Academy High School

Strauss, Jason Arel, 17

Polymer Confinement in 3D: Impact on Nanolithography

William A. Shine-Great Neck South High School

Kim, Robert Yeon, 17

Understanding Transcription Factors in Sugar Beets: Differential Expression and Conservation Between Related Germplasm and Genetic Mapping

Kurtz, Anna Isabelle, 17

The Effect of Long-term Musical Training on Short-term Memory

Wang, Victor Jyhshiarn, 18

Seeing the Phase of Light: An Experimental Investigation of Doughnut-shaped Laser Beams Produced by a Few-Mode Optical Fiber

Hewlett

George W. Hewlett High School

Haber, Samuel Benjamin, 17, Woodmere

Social Security Reform: A Model Combining Market and Non-market Solutions To Achieve Political Consensus

Seidman, Shari Allison, 17, Woodburgh

Reality Television Confronts Perception of Self: An Examination of the Determinants of Adolescent Viewing and Future Expectations

Hewlett Bay Park

Stella K. Abraham High School for Girls

Levine, Emily, 17, Great Neck

Optimizing Recycled Polymer Blends Using Supercritical Carbon Dioxide

Irvington

Irvington High School

Jacobs, Jonathan Herbert, 17, Tarrytown

The Effect of Blood Sugar Levels, Measured by Glycemic Index and Glycemic Load, on Acne Vulgaris in Adolescents

Jericho

Jericho High School

Chopra, Rishi, 17

The Application of Morphine and Cholecalciferol in the Prevention of Oxidative Stress: Implications in the Treatment of Neurodegenerative Diseases

Ellner, Samantha Grace, 17, Old Westbury

Using Machine Learning for the Prediction of Cognitive States: How Virtual Navigation Illustrates Fundamental Cellular Mechanisms

Jiang, Quan Betty, 17, Westbury

East Meets West: A Cross-cultural Analysis of Levels of Life Satisfaction among High School Students in the New York and Shanghai Metropolitan Areas

Kwak, Esther Bora, 17, Westbury

Alginate Microspheres Combined with Pluronic Copolymers for a Controlled and Targeted Release of Lidocaine

Katonah

John Jay High School

Gleason, Chelsea Lynn, 17, South Salem

The Relationship between Eating Disorder Symptoms and Reactions to Visual Stimuli in an Adult Population

Kings Park

Kings Park High School

Finzel, Kara Liann, 17, Fort Salonga

Effect of Organic Substitute on the Belousov-Zhabotinsky Reaction

Stephan, Rachel Elizabeth, 17

Development of a Novel Method of Eliminating Polychlorinated Biphenyls from the Environment

Lawrence

Rambam Mesivta

Hagler, Michael David, 17, West Hempstead

Sophorolipids: A Novel Therapy for Asthma and Other Diseases of Altered IgE Regulation

Mamaroneck

Mamaroneck High School

Ryan, Megan Eve, 17, Larchmont

Sensitivity of Diffuse Large B-cell Lymphomas to DNA Methyltransferase Inhibitors is Associated with a Specific Epigenetic Signature

Westchester Hebrew High School

Saltzman, Adam, 17, Scarsdale

Toward a Unified Theory of Spelling and Reading Deficits

New Hyde Park

Herricks High School

Venkateswaran, Nandini, 17, Manhasset Hills

Synthesis of Cupric Oxide (CuO) Nanostructures for Gas Sensing and Catalysis Applications

Viswanathan, Vidya Bhavani, 17

Health Trends and Their Relationship to Locus of Control and Intervention in High School Students

New York

Abraham Joshua Heschel School

Bayefsky-Anand, Sarah Dana, 17

Echolocation Call Variation in *Tadarida teniotis* (Chiroptera: Molossidae)

New York

Stuyvesant High School

Frankel, Zachary Michael, 17, Brooklyn

Cellular Pathways of Telomere Damage Responses in Normal Human Melanocytes

Gonzalez Goodman, Andres, 17

Moving the Masses: A Longitudinal Study of the Effects of Voter Confidence, Ideological Positioning and Economic Factors on the Rise of the PRD in Mexico

Krivitski, Margarita, 17, Forest Hills

Relative Expression of Voltage-gated Sodium Channel Isoforms in the Rat Central Nervous System

Li, Kevin Weikeung, 17, Brooklyn

Supplying Wal-Mart: The Consequences of Stocking the Shelves of the World's Largest Retailer

Nikolov, Stanislav, 17, Astoria

TopicWeb: A Novel Approach to Automatic Document Similarity Measurement and Categorization

Wong, Victor, 17, Brooklyn

Developments in Highly Sensitive Optically Induced Fractionation

Yang, Ann, 17, Flushing

Non-REM Sleep Improves Declarative Memory Consolidation

The Chapin School

Friedman, Kathryn Blair, 18

Evaluation of Cross-reacting Peanut and Sesame IgE Antibodies and Their Clinical Consequences

North Massapequa

Plainedge High School

Devlin, James Patrick, 17, Massapequa

An Analysis of the Effects of Sleep Deprivation on High School Student School Performance and Causes of Sleep Deprivation

Duncan, Kaitlin, 17, Massapequa

Demographic and Program Related Factors Affecting the Success or Failure of School Budget Referenda: A Case Study of One Long Island Community and Its Values

Old Westbury

The Wheatley School

Yadoo, Courtney Paige, 17, East Williston

Risky Business: An Analysis of Adolescent Attitudes Towards Self Destructive Behavior

Ossining

Ossining High School

Egerman, Marc Andrew, 17

The Identification of a Myostatin Signaling Pathway: An *in vitro* Study of Myotube and Myoblast Response

Liu, Tina, 17

The Impact of Vision-related Behavioral Factors on Myopia Development Within Each Level of Parental Myopia

Shiovitz, David Ari, 18, Briarcliff Manor

The Mechanism and Effects of Stress on Neuropeptide Y Gene Expression in Noradrenergic Neuronal Systems

- Oyster Bay** **Oyster Bay High School**
Schlingheyde, Catherine, 16
 Proteomic Analysis of microRNA-mediated Repression
- Pelham** **Pelham Memorial High School**
Mazur, William Weyl, 17
 Programming Yeast Using Chemical Complementation
- Pleasantville** **Pleasantville High School**
Sarro, Richard William, 17
 Investigating the Role of the Actin Cytoskeleton in Mammalian Myoblast Fusion
- Port Washington** **Paul D. Schreiber High School**
Ehrlich, David, 18
 An Investigation of Consumer Price Index in Consumer Behavior: An Experimental Approach
- Fox, Marissa Amanda, 17*
 Pigeons' Ability to Discriminate Artificial and Natural Stimuli
- Jaffe, Benjamin, 17*
 JNK Inhibition by siRNA in an Oxidant Injury Model
- Koopersmith, Daryl Jason, 17*
 A Structural Model for the Intelligent Development of a Tracking System Utilizing Array-based Multi-sensor Data Fusion
- Schechner, Elizabeth, 17*
 Computer Simulation of Affect of Disorder on Electromagnetic Modes at the Photonic Band Gap
- Singer, Zachary Harris, 18*
 Differences in the Effect of Intravenous Anesthetics on Working and Long-term Memory as Measured by the Serial Position Effect
- Rochester** **Allendale Columbia School**
Cok, Alexandra Mary, 18
 Development of Polar Direct Drive Designs for Initial NIF Targets
- Brighton High School**
Culakova, Zuzana, 17
 Improved Laser Damage Resistance of MLD Gratings through Vapor Treatment with Organosilanes
- Rockville Centre** **South Side High School**
Hartstein, Lauren, 17
 The Identification of Defining Characteristics of Emotive Facial Expression
- Roslyn Heights** **Roslyn High School**
Fishbein, Samantha Rose, 17, Roslyn
 When Don't Means Do: The Impact of Anti-smoking Advertising on Teenagers
- Sag Harbor** **Pierson High School**
Diner, Ian Samuel, 17
 Isolation and Structure Elucidation of Biologically Active Compounds from Natural Sources

Westbury

Walter Tresper Clarke High School

Cameron, Natalie Avella, 17

Can Actions Speak Louder than Words? A Longitudinal Study of the Effects of Instructional Intervention and Student Seating Position on Instructional Time Management and Student Behavior

White Plains

White Plains High School

Neubardt, Samuel, 17

The Effects on Read Performance from the Addition of a Long-term Read Buffer to YAFFS2

NORTH CAROLINA

Durham

Durham Academy

Pardon, John Vincent, 17, Chapel Hill

On the Unfolding of Simple Closed Curves

North Carolina School of Science & Mathematics

Chung, Hae Rhee, 17, Cary

Engineered "Sticky" Magnetic Bacteria for Microscale Power Generation

Kim, Grace, 17, Chapel Hill

Synaptic Plasticity in *Aplysia californica*: Understanding Learning and Long-term Memory

Ko, Suk Moon, 17, Raleigh

Synthesis and Characterization of Functionalized Aliphatic Polyesters Using Condensation Polymerization

Lin, Steven Yang, 17, Cary

Quantitative Structure-Property Relationship (QSPR) Analysis of Ring Stability Using *ab initio* and Hybrid DFT Methods

Raleigh

William G. Enloe High School

Yang, Liyuan, 17

Lightweight, Low-cost, High-efficiency Automatic Transmission Using Magnetorheological Fluid

NORTH DAKOTA

Grand Forks

Red River High School

Brockman, Gregory Drew, 18, Thompson

Asymptotic Behavior of Certain Ducci Sequences

OHIO

Akron

Firestone High School

Heimbaugh, Elizabeth Ann, 17

An Investigation of DNA High-resolution Melt Curve Analysis as a Screening Method for Spinal Muscular Atrophy

Cincinnati

The Summit Country Day School

Dunnmon, Jared, 17

A Comparative Investigation of One Zone Models of the Neutron Star RP-Process Site and Subsequent Optimization for Approximation of a Multizone Simulation

Hudson

Western Reserve Academy

Chen, Zhihan, 16

Circles in Analysis of Electrical Properties of Biological Tissues

Shaker Heights

Hathaway Brown School

Dreier, Ashley Elizabeth, 18, Chagrin Falls

Statistical Analysis of Varying $J\beta$ Distributions of the Complementarity Determining Region 3 (CDR3) of T Cell Receptors

Schikowski, Erin Marie, 17, Solon

Toward Metallo-Supramolecular Block Copolymers

Wang, Joanne Helen, 17, Highland Heights

The Detection of Alkaline Phosphatase, Aspartate Aminotransferase and Alanine Aminotransferase Using an Electrochemical Biosensor to Diagnose Liver Disease

OKLAHOMA

Oklahoma City

Westmoore High School

Masterman, Mary, 17

Development of an Inexpensive Raman System and a Littrow Spectrograph

OREGON

Eugene

South Eugene High School

Vaintrob, Dmitry, 18

The String Topology BV Algebra, Hochschild Cohomology and the Goldman Bracket on Surfaces

Hillsboro

Liberty High School

Cao, Yufei, 16, Beaverton

The Expression of Membrane Progesterone Receptors in Rhesus Macaque (*Macaca mulatta*) Oocytes

PENNSYLVANIA

Ambler

Wissahickon High School

Gao, William Zhoulei, 17, Blue Bell

Definition of the Novel HEPL Protein as a Member of the Cas Family of Scaffolding Proteins

Kintnersville

Palisades High School

Thomas, Nathaniel Cabot, 17, Riegelsville

3D Segmentation of Neurons from Electron Micrographs

Lebanon

Cedar Crest High School

Toll, Micah Lathaniel, 17

Rebuilding Lives in Post-catastrophic Disaster and War Torn Areas: A New Technology for Portable Constructional Beams, Their Production and Use, with Specific Applications to Survivor, Refugee, and Developing World Populations

RHODE ISLAND

Providence

Classical High School

Wan, Shu, 17

Retinoic Acid Protects Against Ultraviolet Radiation-induced Dehydration via Modulation of Water Channel Protein Aquaporin-3 in Human Skin Cells

TENNESSEE

Oak Ridge

Oak Ridge High School

Gu, Alice Ping, 17

From Integrative Systems Biology to Improved Bioremediation Solutions

Tullahoma

Tullahoma High School

Wenren, Larissa Man-Yin, 16, Estill Springs

A Conjecture that Euler Almost Made, and Its Proof

TEXAS

Bellaire

Bellaire High School

Bennett, Neal Kelsey, 17, Houston

Detection of Iodide in Urine: Comparison of Ion Chromatography-Mass Spectrometry and an Iodide Ion Selective Electrode

Conroe

Academy of Science & Technology, Oak Ridge High School

Kubota, Elizabeth Anne, 17, The Woodlands

Mining in the Deep Ocean

Denton

Texas Academy of Mathematics & Science

Chyan, Yieu, 17

Energy Conversion Devices from Hybrid Nanoparticle and Conjugate Polymer Network Materials

Lin, Amelia Heyi, 18, Plano

Encapsulation of Single-walled Carbon Nanotubes in Microgels

Lu, Monica Ann, 18, Plano

How the Past Affects the Present: A Magnetoencephalographic Study of the Prior Antisaccade

Ouyang, Da, 17, Houston

The Electrochemical Synthesis and Characterization of Nanocrystalline Praseodymium Oxide and Praseodymium Hydroxide Films

Seam, Alisha, 16, San Antonio

Enhanced Nanotribology and Optimal Self-lubrication in Novel Polymer-Metal Composites

El Paso

Americas High School

Mendoza, Gabriel Joel, 18

Deterministic Analysis of Transovarial Transmission of West Nile Virus in *Culicidae*

Houston

Clearlake High School

Banerjee, Sinchan, 17, Friendswood

SPONJ: The Educational Software Suite for Children with Cerebral Palsy

Plano

Plano East Senior High School

Chattopadhyay, Arhana, 17

A Novel Coupled Atomistic-Continuum Model for Reaction Kinetics at the Pt/YSZ/O Interface in SOFCs

Venkateswaran, Sai Prasanth, 16

Analysis of Artificial Neural Network Architectures for Speech Processing

Plano Senior High School

Ha, Gabriel Alexander, 18

Application of Low-cost Uncooled Infrared Technology in Severe Weather Observations

Shah, Aatman, 17

Novel Combination Therapies with Telomerase Inhibition for Treatment of Pancreatic Cancer

Xu, Louisa, 18

Analysis of Interactions Between HIV-1 Tat and TRRAP Using FRET Microscopy

Zhou, Sunshine Xu-Yang, 17

The Effect of Temperature on Activity and Enantioselectivity of an Alcohol Dehydrogenase from *Pyrococcus furiosus* in Asymmetric Ketone Reduction

San Antonio

Northside Health Careers High School

Satsangi, Nancy Noopur, 17

A Novel Regeneration Device for Enhanced Biomimetic Response of Osteoblast Progenitors

VIRGINIA

Alexandria

Thomas Jefferson High School for Science & Technology

Bogdan, Caroline, 17, McLean

The Dynamics of Coronal Streamers

Bojő, Peter Tor, 18, Vienna

LH-PCR Analysis of Smallmouth Bass from the Shenandoah River

Brooks, Raillan, 16, Manassas

Developing a Model for Impurity Transport in Collisional Fusion Plasmas in Large Aspect Ratio Tokamaks

Li, Andrew Amos, 17, Herndon

Valproic Acid Down-regulates the Anti-apoptotic Protein HSP70 and Exerts an Anti-proliferative Effect in C6 Glioma

Marzen, Sarah Elizabeth, 17, McLean

On the Relationship Between Solute Size and Solvation Thermodynamics

Nettimi, Soumya, 17, Oakton

A Novel Method of Drug Delivery: The Use of Cyclodextrins to Optimize Absorption of Insoluble Drugs

Raj, Aanchal, 17, Chantilly

The Effect of Fire Fighting Foam Used to Stop Wildfires on the Growth of Vegetation

Alexandria

Thomas Jefferson High School for Science & Technology (cont'd)

Seetharam, Karthik Iyengar, 17, Great Falls

Red Wine Ingredient, Resveratrol, Induces Catalytic Bioscavenger Paraoxonase 1 and Protects Against Chemical Warfare Nerve Agent Exposure

Shor, Joel Eric, 17, Reston

Using Artificial Neural Networks to Recognize Gestures

Wang, Peiyu, 17, Fairfax

Cotranslational Protein Folding Studied with Lattice Models

Wu, Danyi, 17, Vienna

Development of Highly Efficient and Scalable Transient Gene Expression of HIV Envelope Protein in Mammalian Suspension Cells

Xiao, Jianzhou, 17, Oak Hill

FTIR Spectroscopic Analysis of an Extension to Bayer's Reaction for Polyurethane Ionomer Synthesis

Zeng, William Joseph, 17, Great Falls

Dynamics of Sequence Dependent Intrinsically Curved DNA

Zhu, Victor Zhang, 17, Arlington

Development of an Improved Method for Avian Malaria Diagnosis in African Penguins

Richmond

Maggie L. Walker Governor's School

Sircar, Sohini, 17

Aquatic Animals as Models for Aging, Cancer and Tissue Regeneration

WASHINGTON

Bellevue

Bellevue High School

Wang, Jeffrey, 17

Analysis of the Slope of the Rate of Distortion Function

WEST VIRGINIA

Parkersburg

Parkersburg South High School

Welcker, Kelydra Elizabeth, 17

Quantification, Removal and Recovery of APFO from Contaminated Drinking Water with a Concomitant Endocrinological and Epidemiological Assessment

WISCONSIN

Glendale

Nicolet High School

Pezzino, Jonathan James, 18, Fox Point

Rewiring Networks to Perform the Density Classification Task: A Social Approach

Madison

West High School

Meisner, Matthew Harvey, 17

Persistence of *P. pequodorum* via Interference of Spotted Aphids in *A. ervi* Foraging

CHINA

Hong Kong

Hong Kong International School

Ho, Dawn Lued Fon, 17

Epigenetics Profile of Prostate Cancer

Alvarez, Francisco.....	6	Devlin, James.....	19	Iyer, Srikanth.....	15
Allocco, Elizabeth.....	15	Dey, Arkajit.....	5	Jacobs, Jonathan.....	17
Arkfeld, Emily.....	12	Diner, Ian.....	20	Jaffe, Benjamin.....	20
Avrutsky, Maria.....	11	Ding, Michael.....	16	Jagadeesan, Nhila.....	7
Bahnken, Ashley.....	13	Dittmer, Susan.....	7	Jeannet, Kennan.....	3
Baker, Amy.....	21	Dreier, Ashley.....	23	Jiang, Boling.....	8
Banerjee, Sinchan.....	24	Driskell, Amanda.....	8	Jiang, Quan Betty.....	18
Basaran, Zeynep.....	21	Drivas, Theodore.....	21	Kamata, Tetsutaro.....	9
Baskind, Matthew.....	15	Drucker, Caroline.....	12	Katz, Daniel.....	15
Basu, Siddhartha.....	16	Duncan, Kaitlin.....	19	Kaufman, Rebecca.....	15
Bayefsky-Anand, Sarah.....	18	Dunnmon, Jared.....	22	Khan, Hermain.....	21
Beck, Samuel.....	11	Durnford, Andrew.....	9	Kim, Grace.....	22
Bell, Jonathan.....	7	Egerman, Marc.....	19	Kim, Robert.....	17
Bennett, Neal.....	24	Ehrlich, David.....	20	Kirsch, Sarah.....	16
Benvin, Nicole.....	15	Ellner, Samantha.....	18	Klein, Michael.....	15
Berger, Michael.....	14	Everett, Marshall.....	3	Koopersmith, Daryl.....	20
Bhalla, Sheena.....	6	Feiner, Sean.....	16	Ko, Ryan.....	3
Bhatt, Anjali.....	12	Feinsot, Stacy.....	15	Ko, Suk.....	22
Blewett, Megan.....	13	Finklea, James.....	6	Krimmer, Ali.....	14
Blumenthal, Alex.....	13	Finzel, Kara.....	18	Krivitski, Margarita.....	19
Bogdan, Caroline.....	25	Fishbein, Samantha.....	20	Kubota, Elizabeth.....	24
Bojő, Peter.....	25	Flier, Lydia.....	10	Kurtz, Anna.....	17
Boltik, Jacqueline.....	10	Forbes, Crystalee.....	21	Kvetnaya, Natalya.....	14
Brecher, Oren.....	21	Forman, Jamie.....	13	Kwak, Esther.....	18
Breidbart, Samuel.....	21	Fox, Marissa.....	20	Lambert, Chalette.....	12
Brockman, Gregory.....	22	Frankel, Zachary.....	19	Lan, Cyril.....	9
Brooks, Raillan.....	25	Fried, Amanda.....	15	Landes, Arjun.....	5
Burlingame, Kaitlin.....	6	Friedman, Kathryn.....	19	Landman, Bryan.....	6
Cai, Sophie.....	5	Gao, William.....	23	Lawrence, Brian.....	9
Cai, Yi.....	8	Gleason, Chelsea.....	18	Lee, Gongmyung.....	12
Call, Emma.....	8	Gonzalez Goodman, A.....	19	Lee, Rachel.....	9
Cameron, Natalie.....	22	Goverman, Hannah.....	15	Leibowicz, Benjamin.....	17
Cao, Gary.....	10	Granata, John.....	13	Levine, Emily.....	17
Cao, Yufei.....	23	Greenberg, Rachel.....	10	Lew, Brandon.....	11
Cawkwell, Philip.....	13	Grewal, Amardeep.....	11	Li, Andrew.....	25
Chattopadhyay, Arhana.....	25	Gu, Alice.....	24	Li, Charles.....	3
Chen, Chaoran.....	7	Haber, Samuel.....	17	Li, Dayan.....	9
Chen, David.....	9	Ha, Gabriel.....	25	Li, Kevin.....	19
Chen, Jenny.....	14	Hagler, Michael.....	18	Lin, Amelia.....	24
Chen, Robert.....	8	Hall, Kristin.....	21	Lin, Evan.....	12
Chen, Zhihan.....	23	Handlin, Daniel.....	13	Lin, Hillary.....	16
Chopra, Rishi.....	18	Hartstein, Lauren.....	20	Lin, Steven.....	22
Chung, Hae Rhee.....	22	Heimbaugh, Elizabeth.....	22	Liu, Jiyang.....	4
Chyan, Yieu.....	24	Herring, Marie.....	7	Liu, Siyuan.....	11
Cok, Alexandra.....	20	Hershbain, Marni.....	14	Liu, Tina.....	19
Courtis, Alexandra.....	3	He, Temple.....	11	Llanes, Christina.....	5
Creasey, Kaitlyn.....	11	Hillman, Aryeh.....	4	Loo, Christopher.....	21
Creasman, Adam.....	5	Ho, Dawn.....	26	Loza, Julie.....	7
Culakova, Zuzana.....	20	Hollander, Zachary.....	17	Lubin, Miles.....	5
Cyganowski, Anna.....	10	Hom, Jimmy.....	21	Lu, Monica.....	24
Daly, Terik.....	4	Hon, Keone.....	12	MacGregor, Meredith.....	5
Daum, Logan.....	3	Hotz, George.....	12	Maduram, Amy.....	7
Davis, Joseph.....	9	Hshieh, Alan.....	13	Makhni, Sonya.....	6
DeCiero, Daniel.....	10	Hsu, Jeremy.....	6	Malin, Jenessa.....	21
Deng, Merlyn.....	9	Huang, Huang.....	8	Mandel, Kenneth.....	17
Deshpande, Neha.....	13	Hung, Victoria.....	21	Mannan, Aristotle.....	12

Mannapov, Ildar.....	14	Shah, Aatman.....	25	Xu, Denise.....	13
Mann, Benjamin.....	10	Shao, Bing.....	14	Xu, Louisa.....	25
Mark, Daniel.....	13	Sheng, David.....	9	Xu, Nora.....	7
Marzen, Sarah.....	25	Shiovitz, David.....	19	Yadoo, Courtney.....	19
Masterman, Mary.....	23	Shi, Veronica.....	3	Yang, Ann.....	19
Mazur, William.....	20	Shor, Joel.....	26	Yang, Liyuan.....	22
McCutchen, Richard.....	9	Silverstein, Sarah.....	4	Yanovski, Joshua.....	10
McDonough, Alexandra.....	16	Simmons, Christopher.....	6	Yao, Victoria.....	10
Meisner, Matthew.....	26	Singer, Zachary.....	20	Yee, Debbie.....	17
Melnick, Joanna.....	17	Sircar, Sohini.....	26	Yu, Rui Hui.....	16
Mendhiratta, Neil.....	9	Sitts, Rachel.....	16	Yu, Rui Zhi.....	16
Mendoza, Gabriel.....	24	Sperry, Ethan.....	8	Yu, Wesley.....	4
Mikkilineni, Sohan.....	11	Srinath, Meghna.....	12	Zeng, William.....	26
Mistry, Kavita.....	15	Srinivas, Raja.....	13	Zhang, Allen.....	10
Munshi, Kamran.....	4	Stephan, Rachel.....	18	Zhang, Joanne.....	4
Naik, Tejal.....	5	Strauss, Jason.....	17	Zhao, Emily.....	8
Nasirullah, Hasib.....	6	Suh, Carol.....	4	Zheng, Daniel.....	11
Nettimi, Soumya.....	25	Tang-Quan, Karis.....	4	Zhou, Sunshine.....	25
Neubardt, Samuel.....	22	Tannenbaum, Brian.....	14	Zhu, Lilly.....	7
Nevendorf, Lauren.....	14	Tauqueer, Zujaja.....	14	Zhu, Victor.....	26
Nikolov, Stanislav.....	19	Thomas, Danna.....	8		
Ouyang, Da.....	24	Thomas, Nathaniel.....	23		
Palmaccio, Samantha.....	16	Tiao, Janice.....	7		
Pardon, John.....	22	Timberlake, Andrew.....	3		
Parker, Beatrice.....	8	Toll, Micah.....	23		
Parrish, Robert.....	6	Tonetti, Lauren.....	15		
Patel, Niral.....	11	Toth, Laura.....	12		
Perni, Subha.....	11	Turner, Carl.....	11		
Peters, Scott.....	14	Uduehi, Esther.....	7		
Pezzino, Jonathan.....	26	Vaintrob, Dmitry.....	23		
Pickel, James.....	16	Vechery, Afton.....	9		
Plano, Gabriel.....	21	Venkateswaran, Nandini.....	18		
Qiu, Diana.....	5	Venkateswaran, S. P.....	25		
Raj, Aanchal.....	25	Vidula, Mahesh.....	7		
Ramamurti, Arjun.....	10	Viswanathan, Vidya.....	18		
Raman, Daya.....	4	Wagner, Erin.....	15		
Ramsundar, Bharath.....	3	Wahl, Sean.....	3		
Rasul, Mahbub.....	14	Wang, Carolyn.....	5		
Remsberg, Jarrett.....	9	Wang, Jeffrey.....	26		
Rohatgi, Abhinav.....	16	Wang, Joanne.....	26		
Rosen, Marisa.....	15	Wang, Peiyu.....	26		
Ryan, Megan.....	18	Wang, Rui.....	16		
Saiki, Samuel.....	4	Wang, Victor.....	17		
Saltzman, Adam.....	18	Wan, Shu.....	24		
Saltzman, Allison.....	14	Wazed, Bushra.....	16		
Samant, Ayesha.....	5	Weinberg, Michael.....	21		
Samplin, Erin.....	14	Welcker, Kelydra.....	26		
Sarro, Richard.....	20	Wenren, Larissa.....	24		
Satsangi, Nancy.....	25	Wong, Nina.....	6		
Schaler, Ethan.....	10	Wong, Victor.....	19		
Schechner, Elizabeth.....	20	Woo, Geoffrey.....	4		
Schikowski, Erin.....	23	Wu, Danyi.....	26		
Schlingheyde, Catherine.....	20	Wu, Steven.....	4		
Seam, Alisha.....	24	Wu, Yin.....	8		
Seetharam, Karthik.....	26	Wu, Yueh-Yi.....	4		
Seidman, Shari.....	17	Xiao, Jianzhou.....	26		