NJRSF REGISTRATION LIST
for Bergen County (of residence)
March 22, 2006

Xiaocheng Ma Acad. of Science and Technology grade: 10 age: 16
Palisades Park
advisor: Donna Leonardi (201-3436000 ext 2253)
Anti-cancer Effects of Flavonoids on Human Chronic Myelogenous Leukemia Cell Line: K-562\fR
Flavonoids are treated on cancer cell line K-562 at varying concentrations and time periods to evaluate its effects in antiproliferation, apoptosis induction, and interleukin production.

Danica Mancevska Fort Lee H. S. grade: 12 age: 18
Fort Lee
advisor: Mrs. Phyllis Citrin (201-585-4675)
Post Mortem Human Brain Changes Associated with Tissue pH and RNA Quality.\fR
This research looks to see if post mortem interval (PMI) and the pH of a HD brain tissue sample affect the RNA quality of that sample. Our research indicates that the post mortem interval does not determine the RNA quality therefore the quality of the tissue.

Young IL Seo Acad. of Science and Technology grade: 11 age: 17
Allendale
advisor: Donna Leonardi (201-403-0066)
The Effects of Bisphenol A and Estradiol on Mouse Fibroblast Cells in Vitro and Peripheral Blood Cultures\fR
This project was to describe the effects of primary and secondary exposure of Bisphenol A and 17 B Estradiol on the mitotic rate of mouse fibroblast cells and other cell lines in vitro.

Damon Wang Acad. of Science and Technology grade: 11 age: 16
Fort Lee
advisor: Donna Leonardi (201-343-6000x2253)
RAGE Activation by Fetal Bovine Serum\fR
To correlate degree of activation of the Receptor for Advanced Glycation Endproducts with the concentration of Fetal Bovine Serum in growth media.

Katelyn Marie Carroll Pascack Hills grade: 11 age: 17
Montvale
advisor: Dr. Martin Edelberg (201-358-7020)
Troponin C in Artemia francisana\fR
isolating genes in Artemia fran. and analyzing them, and preforming bioinformatics to identify unknown genes

Katherine Margaret Szigety Acad. of Science and Technology grade: 10 age: 16
Ridgewood
advisor: Donna Leonardi (201-3436000 x2253)
Effects of DMSO Concentration on Mitotic Rate\fR
The purpose of this experiment it to test the effects of DMSO concentration on mitotic rate in cells and how it affects the mortality fraction in a freeze-thaw cycle.

Amna Gul Mehdi Fort Lee H. S. grade: 12 age: 17
Fort Lee
advisor: Mrs. Phyllis Citrin (201-5854675)
Soluble Adenylyl Cyclase Mediates Nerve Growth Factor-induced Neuritogenesis in PC12 Cells \fR
I have used KH7, a small molecule inhibitor of soluble adenylyl cyclase (sAC), to identify sAC as an essential signaling molecule in the neurite formation, induced by NGF and PMA.

Victoria Ann Wells Fort Lee H. S. grade: 12 age: 18
Fort Lee
advisor: Mrs. Phyllis Citrin (201-585-4675)
Pbx1 and Pbx2 affect Hox gene expression and chondrogenesis during limb development\fR
I have determined the significance of Pbx1 and Pbx2 in the development of cartilage. By analyzing Pbx1-/-; Pbx2+/- micromass cell cultures, I was able to differentiate between the rate and size of the growth of cartilage nodules in the mutant line with the wild type, normal, line.

Dina Ginzberg, and Amanda Francine Lomanov
Pascack Hills High School grade: 10 age: 15
Montvale
advisor: Dr. Martin Edelberg (201-358-7020)
The Effects of Resistance Stimuli in the Prevention of TMV\fR
The purpose of the experiment is to determine whether the introduction of salicylic acid, ascorbic acid, or hydrogen peroxide as resistance stimuli increases resistance to Tobacco Mosaic Virus in Arabidopsis thaliana plants.

Kathryn Amanda Koons, and Drew Colin Harris
Pascack Hills H. S. grade: 10 age: 15
River Vale
advisor: Dr. Martin Edelberg (201-3587020)
The Impact of Music on Test Scores\fR
To identify the impact of various types of music on the test results of various types of students.

Adam Robert Kohn Acad. of Science and Technology grade: 11 age: 17
River Edge
advisor: Dr. Todd Crane (201-343-6000 ext 2380)
Color Changes in Indicator Solutions\fR
The goal of this project is to evaluate the color change upon dilution of indicator solutions through analysis of the pH and electronic spectra of the dilutions.

Jason Jon Pflueger Acad. of Science and Technology grade: 11 age: 17
Lodi
advisor: Dr. Todd Crane (201-343-6000 ext. 2380)
Encapsulating pH-indicating dyes in sol-gel matrices\fR
The goal of this project is to create sol-gel indicators to detect pH ranges through color changes.

Caroline Drucker, and Molly Fitzpatrick
Acad. of Science and Technology grade: 11 age: 17
Fair Lawn
advisor: Dr. Todd Crane (201-343-6000 ext. 2380)
Analysis of Edible Oils Using Infrared Spectroscopy\fR
Examining the IR spectra of brand name vegetable oils will determine whether their vibrational frequencies correspond to those of pure vegetable oils, perhaps indicating that they are of lesser purity.

Michael Ty Acad. of Science and Technology grade: 11 age: 17
Rutherford
advisor: Todd Crane (201-3436000 ext 2380)
Thermodynamics of toluene solubility in aqueous media\fR
This experiment will determine the solubility of toluene in different cosolvent solutions and will calculate the change in free energy when transferring toluene between the different solutions.

Zachary Zappala Bergen County Academies grade: 10 age: 16
Mahwah

advisor: Rachel Stott (201-3436000)

Bioremediation by Means of Mathematical and Situational Analysis\fR

Experiments the reliability of computer simulations to agree with real life situations(in this case, environments).

Henry Thomas Lajoie Acad. of Science and Technology grade: 12 age: 18

River Edge

advisor: Dr. Karuv (201-343-2000 x2310)

Designing with Complex Programmable Logic Devices (CPLDs)\fR

Advanced digital circuits will be developed with CPLDs. One example will be an ISA bus interface.

Ricky Zhou Acad. of Science and Technology grade: 10 age: 15

Cliffside Park

advisor: Bahadir Karuv (201-3436000/2310)

Remote Control of Appliances via Internet\fR

A web server and custom Linux distribution will be used to control appliances through a serial port.

Brigid Ann Blakeslee, Alyssa Joan Mancini, and Jasmin Sadegh

Acad. of Science and Technology grade: 9 age: 15

Oradell

advisor: Bahadir Karuv (201-343-6000)

Circuits of Safety\fR

We are creating an LED display board for bus drivers to monitor whether or not the students on the bus are sitting down and buckled up. A model of a seat with its seatbelt complete with ciruitry will also be created.

Christine Yuanling Paxson Acad. of Science and Technology grade: 10 age: 15

Oradell

advisor: Dr. Bahadir Karuv (201-343-6000)

Servo Controlled Marionette To Imitate Human Motions\fR

The project developed an inexpensive servo controlled marionette capable of imitating basic human motions.

George Francis Hotz Acad. of Science and Technology grade: 11 age: 16

Glen Rock

advisor: Bahadir Karuv (201-3436000)

NeuropiloT\fR

The goal is to build a life size, rideable, multidirectional driving platform that can be controlled using only the mind

Peter David Koch Acad. of Science and Technology grade: 10 age: 15

Demarest

advisor: Dr. Bahadir Karuv (201-3436000)

Experiments with Magnetic Liquids\fR

The properties and potential applications of a magnetorheological fluid, a class of Non-Newtonian ferrofluid, were explored.

Matthew Scott Rosoff Acad. of Science and Technology grade: 12 age: 18

River Edge

advisor: Dr. Karuv (201-3436000)

Balancing Robot\fR

A robot will balance on two wheels using Microcontrollers, PID feedback loops, and a kalman filter.

Justine Soo Yun Yoon Acad. of Science and Technology grade: 12 age: 17

Englewood Cliffs
advisor: Dr. Bahadir Karuv (201-343-6000)
Pre-Hot Zone Temperature Detector \fR
This device will enable firefighters to determine the temperature of a hot zone before they enter a building.

Kimberly Lauren DeLoreto, and Daniel Bruce
Pascack Hills H.S.grade: 11 age: 17
Montvale
advisor: Dr. Martin Edelberg (201-358 7020)
Using Daphnia and Lettuce Seed Bioassays to Assess the Toxicity of Local Waters\fR
Test local water ways with Daphnia and lettuce seed bioassays for a number of different contaminants.

Gabrielle Sarah Rabinowitz Acad. of Science and Technology grade: 11 age: 16
Fair Lawn
advisor: Donna Leonardi (201-343-6000 ext 2253)
Degradation of 2,4-D by plasmid PJP4 in Pseudomonas putida.\fR
I will prove the ability of plasmid PJP4 from putida to degrade 2,4-D.

So Yeon Kim Acad. of Science and Technology grade: 11 age: 17
Fort Lee
advisor: Ms. Donna Leonardi (201-343-6000-2253)
Effects of Turbulence on Philodina Rotifers Exposed to Toxicity\fR
The purpose of this experiment was to study the toxic effects of herbicide 2,4-D under turbulence on the freshwater rotifer, Philodina sp.

Lauren Todd Acad. of Science and Technology grade: 12 age: 18
Emerson
advisor: Donna Leonardi (201-3436000)
Effects of Goose Feces on Water Quality and Aquatic Life\fR
The purpose of this experiment is to measure nutrient and mineral depletion in water and observe how aquatic life survives in water introduced to feces.

Steven Konstantin Lisica Bergen County Academies grade: 10 age: 16
Oakland
advisor: Donna Leonardi (201-343-6000)
Adaptive Resistance of E. coli to Triclosan and Antibiotic Cross-Resistance\fR
The purpose of this research was to test if the adaptive resistance of E. coli K12 to triclosan led to cross-resistance to antibiotics.

Laura Evelyn Argintar Pascack Hills H. S. grade: 10 age: 15
Woodcliff Lake
advisor: Dr. Martin Edelberg (201-358-7020)
The effect of natural anti-carcinogens on yeast cells when exposed to UV light\fR
How natural anti-carcinogens, vitamin C, vitamin E and green tea effect cancer formation in yeast cells when exposed to UV light

Da Young Lee Acad. of Science and Technology grade: 12 age: 18
Alpine
advisor: Donna Leonardi (201-343-6000x2253)
Which Contacts are Right for Your Eyes? The Relationship Between Various Types of Contact Lenses and Binding of P. aeruginosa to Corneal Epithelial Cells\fR
The purpose of this research was to answer whether different types of contact lenses affect the amount of bacterial binding to corneal epithelial cells. Each pair of contact lenses that differ in material and

duration of use was worn for the recommended number of days. On the last day of its use, each pair was placed in an isotonic saline solution. Each lens was then placed in an Eppendorf tube, into which a loop of bacteria, namely Pseudomonas aeruginosa, was placed. The mixture was incubated and observed under microscopy to determine differences in the amount of bacterial binding to cells.

Jordan Ted Figman, and Ryan Scott Genkin
Pascack Hills H. S. grade: 10 age: 15
Woodcliff Lake
advisor: Dr. Martin Edelberg (201-385-7020)
The Effect of Natural Substances on Bacteria \fR
natural substances: garlic, aloe vera, olive leaf extract, grapefruit seed extract

Benjamin James Smith Acad. of Science and Technology grade: 12 age: 17
Englewood
advisor: Donna Leonardi (201-343 6000x2253)
The Effect of Calcium Ions on Apoptosis in C. elegans\fR
In the project, C. elegans were exposed to high levels of calcium in order to observe any changes in the rate and level of apoptosis in their nerve cells.

Belinda Shao Bergen County Academies grade: 10 age: 16
Paramus
advisor: Donna Leonardi (201-343-2253)
Green Tea to Cure Acne?\fR
A component of green tea was examined for possible bactericidal effect against acne agent Propionibacterium acnes

Janine Chun Hsuen Lin Fort Lee H. S. grade: 12 age: 17
Fort Lee
advisor: Phyllis Irene Citrin (201-5854675)
An Investigation into Antigenic Variation in Trypanosoma brucei: RNAi Knock-down of Proteins Interfering with RNA Polymerase I Transcription of VSG Expression Sites in Procyclics\fR
Using RNA interference knock-down procedures, we interferred with the RNA Polymerase I transcription of Varient Surface Glycoprotein Expression Sites in the procyclic form of the trypanosoma brucei.

Lucy Huang Lin Bergen County Academies grade: 10 age: 16
Montvale
advisor: Mrs. Rachel Stott (201-343-6000 ext. 2253)
Effects of Isatis indigotica on nicotine and cell death\fR
It was tested whether Isatis indigotica, known to have anti-endotoxic and immunostimulatory effects, has a protective effect on cells exposed to nicotine at toxin levels.

Liana Angela Senaldi Fort Lee H. S. grade: 12 age: 17
Fort Lee
advisor: Mrs. Phyllis Citrin (201-585-4675)
Creation of a Novel Chimeric T-cell Receptor with Co-Stimulatory Signal 4-1BB to Redirect T-Lymphocytes Targeting Tumor Cells \fR
I have created a novel chimeric antigen receptor to provide a co-stimulatory response, using signal 4-1BB, in T-cell activation against tumor cells specific for PSMA. 4-1BB can influence cytokine production, proliferation, and survival of T-cells in vitro and in vivo.

Michael Anthony LoGalbo Bergen County Acad. grade: 11 age: 17
Hillsdale
advisor: Donna Leonardi (201-3436000)

Neutralizing Effects of Antioxidants on Oxidizing Metals in Whole Blood Cells\fR

Metals in the blood can have harmful effects on the body. When they are oxidized, the metals produce free radicals which are injurious to the cells and organs. Antioxidants are substances that neutralize the oxidation of the metals. In this experiment, the neutralizing ability of the antioxidant flavanone, often found in cocoa beans, was administered to cells under oxidative stress. It was hypothesized that the antioxidant will reduce the cytotoxicity of the metals. Various concentrations of flavanone were tested and after the experiment the cell viability was tested with a NOVA cell viability test. The results are pending.

Jillianne Amber Maravilla Tiongko Acad. for Medical Science Technology grade: 12 age: 17
Rochelle Park
advisor: Donna Leonardi (201-343-6000)

Chitosan:Does it help improve or accelerate the wound healing process?\fR

My project will illustrate whether or not chitosan (a derivative of chitin) helps to improve or accelerate the wound healing process by stimulating the proliferation of T lymphocytes during cell reproduction.

Sandhya Rawal Bergen County Academies grade: 10 age: 14
Waldwick
advisor: Donna Leonardi (201-343600)

The Effect of Acrylamide on Mouse Fibroblasts\fR

This project is an investigation on the effect of acrylamide on mouse fibroblasts in order to determine the toxicity of the chemical.

Si Hyeon (Joanna) Lee Bergen County Academies grade: 10 age: 16
Old Tappan
advisor: Donna Leonardi (201-343-6000 ext. 2253)

Effects of Arsenic Trioxide in Human Bone Marrow With Chronic Myelogenous Leukemia (k562)\fR

Testing arsenic trioxide on K562 cell lines and normal fibroblasts and observing the rate of apoptosis and comparing them. Also observing the cytotoxicity effects the arsenic trioxide has on the cell lines.

Justin Kwai Fort Lee H. S. grade: 12 age: 17
Fort Lee
advisor: Mrs. Phyllis Citrin (201-5854675)

Effect of Lovastatin on Astrocytes Stimulated By Cytokines to Form Pro-inflammatory Substances Mcp-1 and Nitric Oxide\fR

Astrocytes are the focus of this investigation as they are shown to degrade amyloid beta, a suggested inducer of Alzheimers disease, while simultaneously producing pro-inflammatory substances that damage brain cells. Treatment by lovastatin in order to reduce an inflammatory response insued.

Emi Ling Acad. of Science and Technology grade: 12 age: 17
Cresskill
advisor: Donna Leonardi (201-343-6000)

Beta-Adrenergic Receptor Mediated Amyloiogenesis in Mouse Astrocytes\fR

Primary astrocyte cultures of TG2576 mice were used to observe the effects of propranolol, a cardiovascular drug, on cell viability, ABeta 40 and ABeta42 production, and cytokine production to determine a possible mechanism of astrocyte-mediated amyloidogenesis.

Danielle Aronsky, and Erica Beth Kirshensteyn
Pascack Hills H. S. grade: 11 age: 16
Woodcliff Lake
advisor: Dr. Martin Edelberg (201-3587020)

The Effect of Artificial Sweeteners on Developmental Mutations in Caernorhabditis elegans\fR

Testing the effects of aspartame, sucralose, saccharin, and sucrose on the behavioral and

developmental mutations in Caernorhabditis elegans, which can lead to a greater understanding of the effects of artificial sweeteners on humans.

Jessica Blake Kunikoff Fort Lee H. S. grade: 12 age: 18
Fort Lee
advisor: Mrs, Phyllis Citrin (201-585-4675)
Customized Brain Atlas Labeling for Pre-Surgical Localization\fR

We performed Mindboggle operations on two subjects (one with epilepsy, and one with a tumor)and it proved to be an excellent tool for locating functional brain networks to be avoided during surgery.

Rebecca Ann Landzberg Acad. of Science and Technology grade: 12 age: 18
Montvale
advisor: Donna Leonardi (201-343-6000)
The Effect of Progesterone and 17-Beta Estradiol on Fibroblast Proliferation\fR

Mouse embryonic fibroblasts were cultured and then incubated in several concentrations of estradiol and progesterone solution. Samples were analyzed with a hemocytometer for cell proliferation.

Mia Song Northern Highlands Reg. H. S. grade: 11 age: 16
Ho-Ho-Kus
advisor: Mrs. Rose Amatuzzi (201-327-8700)
Statistical Analysis of Lifestyle Choices and Type II Diabetes\fR

Diabetes is becoming a increasing concern among many people in recent years. Statistics about certain characteristics in populations diagnosed with diabetes may be used to find a correlation between the characteristics and the diagnosis of diabetes. This can lead to become more aware and cautious of certain factors in daily lifestyle.

Lisa Keiko Ito Bergen County Academies grade: 10 age: 15
Woodcliff Lake
advisor: Donna Leonardi (201-3436000)
Effects of caffeine and counter-effects of fluvoxamine on cell apoptosis\fR

The rate of apoptosis in mouse fibroblasts fed with caffeine were examined to determine detrimental effects of caffeine. Then, both caffeine and fluvoxamine maleate were given to the same line of cells to determine if the counter-effects of fluvoxamine ceased apoptosis.

Changhan (Kevin) Lee Acad. of Science and Technology grade: 11 age: 17
Closter
advisor: Bahadir Karuv (201-343-6000 ext. 2310)
Study of Acoustic Vibrations in Metals Using Fourier Analysis\fR

The project involved the use of the Matlab software to obtain the waveform and power spectrum of acoustic vibrations in different metals for comparative analysis.

Kishen Raghunath Rutherford HS grade: 11 age: 16
Rutherford
advisor: Alexander Robayo (201-438-7675)
A Computer Model of Self-Phase Modulation (SPM) as Applied to Optical Waveguides\fR

Computer simulations together with theoretical parameters were used to model a pulse propagating through an optical waveguide.

Vincent Luo Acad. of Science and Technology grade: 10 age: 16
Bergenfield
advisor: Bahadir Karuv (201-343-6000 Ext. 2310)
Experiments on Simple Harmonic Motion and Studies of Resonance\fR

Have you ever wondered what the world would be like without the radio, the TV, or computer technology at all? Well behind all of this technology is the concept of resonance. Resonance is a vibration

of large amplitude in a mechanical or electrical system. The goal of this project is to study the simple harmonic motion of a spring/slinky and determine how it resonates. A spring/slinky was attached to a motor that was then hooked up to a microprocessor chip which controls the timing. Similar to a swing, if the only a small amount of energy is inputted into the system but at the right time, coinciding with the object s natural frequency of oscillation, then the amplitude of the oscillation would grow rapidly.

Mitchell Bernard Rubenstein Acad. of Science and Technology grade: 11 age: 17
Saddle Brook
advisor: Dr. Bahadir Karuv (201-343-6000)
Amplitudes Dependence on Sounds Position in an Open-ended Tube\fR
This project investigates the correlation between the position and amplitude of a standing sound wave that is projected through an open-ended tube of air.

Stephanie Claire Bohaczuk Acad. of Science and Technology grade: 9 age: 15
Wyckoff
advisor: Bahadir Karuv (201-343-6000)
Gravitational Acceleration Demonstration\fR
Optical sensors placed 10 cm apart will time the acceleration due to gravity of a falling object.

Jayme Figueroa Acad. of Science and Technology grade: 12 age: 18
Lyndhurst
advisor: Donna Leonardi (201-343-6000)
A Study of Guppie Growth when Fed Different Rotifer Cultures\fR
The guppies are fed conventional fish food and rotifers cultured in bacteria for 2 weeks while growth rates are measured.

Jeremy Michael Kaufmann, and Jenna Ruth Kastan
Pascack Hills H. S. grade: 10 age: 16
Woodcliff Lake
advisor: Dr. Edelberg (201-358-7020)
The Effect of Hydrogen Peroxide on Wild Type and Catn-1 Populations of Drosophila melanogaster\fR
We will test the effect of hydrogen peroxideon population sizes of both the Wild Type and Catn-1 strains of Drosophila melanogaster.