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

Alice M. Ford Oak Knoll School of the Holy Child grade: 12 age: 18
Chatham
advisor: Dr. Christopher Gee (908-522-8137)
Protein, Lipid, and Carbohydrate Degradation in Human Pancreatic Enzyme Solution in vitro\fR
The experiment studied the degradation rates of proteins, lipids, and carbohydrates in food when exposed to pancreatic enzymes and led to the formation of an equation that gives the approximate time needed to wait for food digestion.

Christa Marie Frodella Acad. for Math, Science, and Engineering grade: 12 age: 18
Riverdale
advisor: Sean Robinson (973-664-2309)
DNA Extraction Protocol for Wheat Germ\fR
By varying detergents, alcohols, and "DNA Collection Tools", a maximum DNA extraction yield from the wheat germ will be found.

Natalie Maria Stein Acad. for Math, Science, and Engineering grade: 12 age: 18
Lincoln Park
advisor: Tom Smock (973-6642300)
Eye Shadow and Pupil Dilation\fR
Tests the effect of eye shadow on personality perception as determined by pupil dilation.

Constance Yaway Li Acad. of Science and Technology grade: 11 age: 16
Lincoln Park
advisor: Yvonne Doyle (973-6642309)
A Study on the Responsive Behavior of Chinchillas\fR
This study will involve the documentation of chinchilla behavior due to sound stimulation. I will play rock and classical music and record the changes in the amount of food they eat, their sleeping habits, and their behavioral characteristics.

Simona Saracco, and Anny Okrainets
Acad. for Math, Science, and Engineering grade: 12 age: 17
Boonton
advisor: Sean Robinson (973-2642309)
An Analysis of Lies\fR
The official standard lie detection process is expensive and often rather complicated, whereas in our project, analyzing lies can be simplified down to a chug-and-plug process. With a set of Pasco probes, we are set to prove that respiration rate/pressure and heart rate are enough to determine with relative success the truth quotient of a simple statement read by a test subject. Our proof lies in graphs made by the equipment that we test out on subjects picked randomly.

Stephanie Ann Spelman, Stephanie Stranz, and Noelle Christine Wisbauer
Acad. for Math, Science, and Engineering grade: 11 age: 17
Randolph
advisor: Yvonne Doyle (973-664-2309)
Audio Chip with Educational Applications\fR
We will be testing a book with only pictures and a recording, pictures and words, and then with pictures, words, and recording to see which book the young students remember the best.

Sean Patrick Bailey, and Derek Thomas Little
Acad. for Math, Science, and Engineering grade: 12 age: 18

Chatham
advisor: Sean Robinson (973-664-2309)
Application of the Facial Action Coding System\fR
The purpose of this experiment is to determine the feasibility of the Facial Action Coding System by video recording the facial movements of subjects previously prompted to tell the truth or lie to a particular set of simple questions, and later analyzing the data.

Casey Abraham Cotton Cotton Homeschool grade: 11 age: 17
Kinnelon
advisor: Barbara Cotton (973-492-0413)
The Use of Polymers in Plant Disease Prevention.\fR
The purpose of the experiment is to find the ideal chemical ratio of PVAc (polyvinyl acetate) to PVA (polyvinyl alcohol) in a mixture for a slow release of chemical over several months. A colorant will be bound to the PVAc and PVA in place of a chemical. Mixtures with a higher PVAc content will release colorant more slowly in water because PVAc is less soluble than PVA.

Victoria Elizabeth Lee West Morris Mendham H. S. grade: 12 age: 17
Mendham
advisor: Dr. Bruce DeBona (973-5432501)
Could Copper Binding Be The Key To Alzheimers Disease?\fR
Copper is suspected to play a key role in the precipitation of beta-amyloid plaques in Alzheimers Disease. This study explores the precipitation of protein by copper and the resolubilization of the precipitate.

Markus Brian Beissinger Randolph H. S. grade: 9 age: 15
Randolph
advisor: Robert Maier (973-3612400)
Controlling Autonomous Robotic Vehicle Speed by Reading Speed Limit Signs\fR
A computer program that uses computer vision and AI to enable autonomous robotic vehicles to recognize and read speed limit signs.

Jason Andrew Johansen Acad. for Math, Science, and Engineering grade: 12 age: 18
Parsippany
advisor: Sean Robinson (973-664-2309)
Exploring CNC\fR
My science fair project will be to build both the mechanical and electronic aspects of a CNC machine and then use the machine to collect specific data. Being a student interested in engineering this science fair project will give me a basic understanding allowing me to have hands on experience seeing the factors that affect quality control in machines construction, computers, electrons, stepper motors, and production efficiency

David James Cattan, Roque Rios, and Elie Farah
Acad. for Math, Science, and Engineering grade: 11 age: 16
Denville
advisor: Yvonne Doyle (973-664-2309)
Laser Transmission\fR
To send data from one computer to another by laser.

Anthony Warren Grand, and Jose Sevilla
Acad. for Math, Science, and Engineering grade: 12 age: 18
Rockaway
advisor: Sean Robinson (973-6642309)
The Study of the Practical Applications of Hovercrafts\fR
The purpose of the project is to determine if there can be practical uses for a hovercraft. Through the

testing of different aspects of a hovercraft, the experiment should be able to determine whether or not there can be a practical use for hovercrafts.

Jay M. Patel, Andrew Portuguese, and Nick Tromba
Acad. for Math, Science, and Engineering grade: 11 age: 16
Rockaway
advisor: Yvonne Doyle (973-664-2309)
Germinator: Garbage Can of the Future\fR

The Germinator is a motion-sensor waste receptacle that will reduce the spread of bacteria and viruses.

Corbin Michael Dean Acad. for Math, Science, and Engineering grade: 12 age: 18
Hackettstown
advisor: Mr. Consales (973-664-2309)
Wind-powered Generator Blade Design: Pitch vs. Power\fR

This project will test different degrees of pitch of a wind-powered generators blade and compare them to the power output.

Abigail Leigh Bricker Acad. for Math, Science, and Engineering grade: 12 age: 17
Denville
advisor: Sean Robinson (973-6642309)
Compression and Tensile Strengths in Different Ratios of Portland Cement\fR

Throughout the experiment, different ratios of Portland cement to sand will be tested based on their resulting compression and tensile strengths to investigate different properties of cement to create potential lab activities.

Kelsey Faith VanGelder Acad. for Math, Science, and Engineering grade: 11 age: 16
Denville
advisor: Yvonne Doyle (973-664-2309)
DNA Extraction and Comparison of Springer Spaniels Through Electrophoresis and Fingerprinting\fR

DNA is extracted from three Springer Spaniel dogs, one mother, one daughter, and one unrelated dog. The DNA is analyzed through electrophoresis and the fragmental comparisons apparent between the mother and daughter are recorded, as opposed to the unrelated dog.

Sagar Kamlesh Chokshi, Preeti Pundalik Shenoy, and Ravi Hitendra Upadhyaya
Parsippany H. S. grade: 12 age: 18
Parsippany
advisor: Mr. Keith Bush (973-263-7001)
Effects of Endocrine Disruptors on Embryonic Development\fR

Testing the plausibility of the detrimental effects of endocrine disruptors during embryonic development using Drosophila melanogaster as a model system.

Megan Marie Blewett Madison H. S. grade: 11 age: 16
Madison
advisor: Stan Pazden (973-593-3137)
Geostatistical Analyses of Etiological Agents in MS, Lyme, and Related Conditions \fR

This project uses geographic visualizations and statistical analyses to examine common spirochetal involvement in Lyme Disease, MS, ALS, and some cancers using data from the CDC and from all the U.S. state epidemiologists.

Jon Petur Karlsson, Bridget Elyse Alameda, and Lucas Javier Cifuentes
Acad. for Math, Science, and Engineering grade: 11 age: 17

Lincoln Park
advisor: Yvonne Doyle (973-664-2309)
Optimal Physics for impacting a soccer ball\fR
The purpose of our project is to discover and test the optimal angle and force at which to strike a ball that will give us the best results.

Matthew N Tessier, Joseph Harrison, and Jay Deshmukh
Acad. for Math, Science, and Engineering grade: 12 age: 18
Budd Lake
advisor: Richard Consales (973-6642309)
Force Effects on Various Metals\fR
Analyzing the effects of impact forces on varying metals by use of acceleration, distance and velocity measures through visual and graphical means.

Ryeon Kim, and Chris Milonas
Acad. for Math, Science, and Engineering grade: 11 age: 17
Lincoln Park
advisor: Yvonne Doyle (973-664-2309)
The Fallacy of the Perfect Circle Loop\fR
This project investigates applications of physics to roller coaster design and the perfect circle loop.

Zain Boghani, Jimmy Huang, and Scott Bennett Shapiro
Acad. for Math, Science, and Engineering grade: 12 age: 17
Flanders
advisor: Sean Robinson (973-2642309)
An Exploration of Tennis Ball Elasticity\fR
Investigation into the relationship between temperature and elasticity loss of a standard tennis ball.

Kristin Margaret Smith Acad. for Math, Science, and Engineering grade: 11 age: 17
Boonton
advisor: Yvonne Doyle (973-664-2309)
Wood vs. Composite Field Hockey Sticks\fR
This project compares the performance of field hockey sticks in terms of how their composition influences their ability to apply impact force.