

News Release

Eighth Annual DFHS Science Symposium Showcases Student Research

Research projects garner regional, state and national recognition

Dobbs Ferry, N.Y. May 21, 2014- Seven seniors and one junior who have participated in the Dobbs Ferry High School Science Research Program (the seniors for the last three years) will present their individual research projects at the **Eighth Annual Science Research Symposium on Tuesday evening, May 27th at 6:30 p.m. in the High School Commons**. Each student will explain their research project followed by a new Q & A format where audience members will be able to speak individually with the students following the presentations. This is the largest group of award-winning science research students ever featured at the annual Symposium. Altogether there are over 50 students in the program encompassing unique research within the fields of biology, chemistry, physics, psychology, sociology and computer science.

The 2014 DFHS Science Symposium features an array of exciting research projects:

Ian Leeds- (American Psychological Association Award) has been studying the effects of bioethics intervention on HS students. *Ethical Principles Involved in the Termination of Life-Sustaining Treatment: An Educational Intervention with High School Students*, points out that high school students are not being educated on ethical issues facing them in society. He also hypothesizes that the public is not as informed as they should be on end of life care and euthanasia. His findings confirmed that educating students on bioethical issues needs to be ongoing and built into a school's science or health curriculum to be impactful. Ian will be attending Brandeis University in September.

Faariah Shakil- (3rd Place Medicine & Health at WESEF/Acorda Scientific Excellence Award) has been studying the impact of estrogen on neurons and whether or not treatment has a protective effect on neurons, specifically in regards to seizures and infantile spasms. In her research, *Neonatal Estradiol Effects on GABAergic Inhibition*, she looked at the effectiveness of hormone treatment at reducing spasms and whether or not potential side effects from hormone therapy outweighed the gains. Part of Faariah's work was conducted at a professional lab at a local medical facility. She will be attending New York University next year as a pre-med major.

Maya DeBellis- (2nd Place in Animal Science at WESEF/Acorda Scientific Excellence Award/5th Place at WesRoc in Environmental Science) studied attenuation of elephant communication in a forest environment. She took data from recording devices placed in the forest and studied how far elephant messages could travel in that environment, with the hope of better understanding their behavior. Forest elephants are endangered and could be eradicated by 2025. The acoustic data that Maya used was recorded in Gabon (Africa) by researchers from Cornell University. Her project, *The Attenuation of Forest Elephant Vocalizations in the Rain Forest*, closely examined if the forest would inhibit the range of the animals' communication. Maya is heading to Tufts University.

Ben Hord- (2nd place at WesRoc in Physical Science/State Presenter at JSHS/Acorda Scientific Excellence Award/Intel Research Paper of Distinction) studied a phenomenon around black holes called quasars and how they move about the black hole. He used data from telescopes in Hawaii to discern the physical motion of quasar (HE0435-1223) and its broad line regions. His project, entitled *Analysis of Quasar HE0435-1223 to Discern the Physical Motion of Broad Line Regions*, won the Acorda Scientific Excellence Award and 2nd place at WesRoc. Students have to come in the top two spots to qualify for the state symposium (Upstate NY Junior Science Humanities Symposium) held at the University of Albany. Another first for the DFHS Science Research Program. Ben will be attending Columbia University in the fall and wants to study astrophysics.

Max Freiman- (“Future of Medicine Award” at WESEF) looked at the repurposing of drugs already approved by the FDA to treat Noonan’s Syndrome in *Drosophila Melanogaster* in the hope that pre-existing drugs would be able to counteract the symptoms of the disease without having to go through the lengthy FDA approval process. His project title is *High Throughput Drug Screening using a Drosophila Model*. Max will be a freshman at Oberlin College in the fall.

Dale Storti- (2nd Place in Earth & Space Science at WESEF) called his project *The Relationship of Mid-Atlantic Ridge Migration to Seafloor Subsidence, 28°N-32° N*. It investigated the seafloor on and around the Mid-Atlantic ridge between the latitudes 28°N and 32° N to better understand how the movement of Eurasian and North American tectonic plates affects the seafloor’s subsidence observed around the ridge. Dale is headed to the University of Vermont next year.

Taylor Wilde- (American Metric Society Award/Intel Research Paper of Distinction) conducted a comparison of old telemetry on BL Lacertae from FermiLAT data versus more recent data in a search for differences in gamma radiation levels emitted from the blazar. In his project *Fermi-LAT Analysis of the Blazar BL Lacertae*, he surmised that these differences could give clues about previously unknown processes in the natural cycles of blazars, which is the center of a galaxy that emits tremendous amounts of radiation. Taylor will be a freshman at Northeastern University this fall.

Gabe Natale- (11th grade, Yale Science and Engineering Award) studied the use of PyROOT (computer program) to more accurately calculate the flow of liquid xenon through a dark matter detector to maximize efficiency and therefor reduce costs incurred upon the laboratory through the purchase of liquid xenon.

According to Science Research teacher Tom Callahan, “this is the most diverse set of topics that we’ve had in one graduating class and each project distinguished itself both in terms of research and the awards won.” Dobbs Ferry had eight students presenting at WESEF (Westchester Science and Engineering Fair) this year, almost double what the program had last year. The science research program will have approximately 60 students enrolled for 2014-2015. The program has been up and running since 2007 starting with only four students. In that short time, students have been recognized as National Intel STS semifinalists, an International ISEF finalist, two NY upstate JSHS participants and last year four out of five WESEF entries place in the top three of their categories. The program also boasts a Milton Fisher Scholarship winner and runner-up, both cash scholarship prizes.

The goal of the **Science Research Course** is to provide students with the opportunity to conduct authentic and original scientific research of their own choosing, as part of their high school experience. This is a three-year course of study, beginning in 10th grade, and is geared toward students who are passionate about science. Students team up with a mentor in

developing a project that ultimately culminates in a research paper to be submitted to local and national science contests. It is vital to the program that the students be matched with local researchers and scientists at the forefront of their fields.

Any local or neighboring resident of Westchester County, who would be willing to serve as a mentor to a student in the Dobbs Ferry Science Research Program, should contact Tom Callahan in the DFHS science department. He can be reached via email at callahant@dfsd.org

For more information, please contact:

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