
LLE's Summer High School Research Program

During the summer of 1999, 12 students from Rochester-area high schools participated in the Laboratory for Laser Energetics' Summer High School Research Program. The goal of this program is to excite a group of high school students about careers in the areas of science and technology by exposing them to research in a state-of-the-art environment. Too often, students are exposed to "research" only through classroom laboratories, which have prescribed procedures and predictable results. In LLE's summer program, the students experience all of the trials, tribulations, and rewards of scientific research. By participating in research in a real environment, the students often become more excited about careers in science and technology. In addition, LLE gains from the contributions of the many highly talented students who are attracted to the program.

The students spent most of their time working on their individual research projects with members of LLE's technical staff. The projects were related to current research activities at LLE and covered a broad range of areas of interest including laser modeling, diagnostic development, chemistry, liquid crystal devices, and opacity data visualization (see Table 80.VI).

The students attended weekly seminars on technical topics associated with LLE's research. Topics this year included lasers, fusion, holography, optical materials, global warming, measurement errors, and scientific ethics. The students also received safety training, learned how to give scientific presentations, and were introduced to LLE's resources, especially the computational facilities.

The program culminated with the High School Student Summer Research Symposium on 25 August at which the students presented the results of their research to an audience including parents, teachers, and LLE staff. The students' writ-

ten reports will be bound into a permanent record of their work that can be cited in scientific publications. These reports are available by contacting LLE.

One hundred and five high school students have now participated in the program since it began in 1989. The students this year were selected from approximately 80 applicants.

In 1997, LLE added a new component to its high school outreach activities: an annual award to an Inspirational Science Teacher. This award honors teachers who have inspired High School Program participants in the areas of science, mathematics, and technology and includes a \$1000 cash prize. Teachers are nominated by alumni of the High School Program. The 1999 William D. Ryan Inspirational Teacher Award was presented at the symposium to Mr. John Harvey of Honeoye Falls-Lima Senior High School. Mr. Harvey, a mathematics teacher, was nominated by Jeremy Yelle and David Rea, participants in the 1997 program. Mr. Yelle wrote, "I have never met another teacher that was so passionate for what he teaches and communicates himself well enough to get even the most complicated of ideas into the simplest of minds." He added, "Mr. Harvey has expanded my interest in science and mathematics not only by opening doors and giving his insight, but also showing me that mathematics can be learned not only in a classroom, but in an open forum, or even in the applications of daily life." Mr. Rea wrote, "I can think of no teacher that has given me a greater gift of learning than Mr. John Harvey." He added, "Mr. Harvey must also be recognized for his dedication to students after the books have closed and the homework has been passed in." Mr. Peter Cardamone, principal of Honeoye Falls-Lima Senior High School, added, "John's excellence in teaching is balanced well with his concern and interest in students under his tutelage."

Table 80.VI: High School Students and Projects—Summer 1999.

Student	High School	Supervisor	Project
Kendra Bussey	Pittsford Sutherland	K. Marshall	Synthesis of Highly Soluble Near-IR Dyes for the Liquid Crystal Point-Diffraction Interferometer
Michael Harvey	R. J. Davis, Livonia	M. Skeldon	Characterization of the Signal-to-Noise Ratio in a Regenerative Amplifier
Peter Hopkins	The Harley School	S. Craxton	Comparing Opacity Data Groups with a Java-Based Graphical User Interface
Jyoti Kandlikar	Brighton	R. Epstein	Statistical Properties of Continuous and Discrete Distributed Phase Plates
Brian Kubera	Webster	R. Boni	Bandwidth Measurement of Fiber Optic Bundles
Aman Narang	The Harley School	W. Donaldson	Spectroscopic Analysis of an OMEGA Beamline
Lutao Ning	Brighton	M. Guardalben	Characterization of the Liquid Crystal Point-Diffraction Interferometer
Rohit Rao	Brighton	S. Craxton	Computer-Aided Modeling of the Liquid Crystal Point-Diffraction Interferometer
Alice Tran	Spencerport	C. Stoeckl	Integrating Hard X-Ray Diagnostics into OMEGA Operations
Jordan VanLare	Victor	K. Marshall	Calculating the Optical and Dielectric Anisotropy of Liquid Crystalline Systems
Jeffrey Vaughan	Fairport	P. Jaanimagi	Correcting Distortion in an X-Ray Streak Camera
Emily Walton	Fairport	J. Knauer	Measurement of Scattered 351-nm Light from OMEGA Targets

