Research & Recruiting for Secondary Schools Program

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Abstract:
The following document presents an overview of the Research and Recruitment in Secondary Schools (R^2S^2) Program conducted by members of the Georgia Tech Propagation Group.

The Propagation Group’s R^2S^2 program is partly funded through the Propagation Industrial Partnership & Enterprise (PIPE) program, NSF CAREER Grant #0546955 (RET supplement), and NSF STC program DMR 0120967.
Secondary School Outreach Program

The Georgia Tech Propagation Group participates in a three-pronged approach to secondary school outreach, which are summarized below:

**Summer Research Stint:** Each teacher spends 6-8 weeks during the summer working on a customized research project. The research projects, while largely educational in nature, are designed with a level of adjacency to cutting-edge research conducted alongside Georgia Tech graduate researchers. The end goal of each project is to have demonstrably new course material and a laboratory to incorporate into high school physics classes. Often a form of the teacher’s end research product may even be incorporated into a Georgia Tech engineering classroom.

**School Visitation:** An annual, on-site lecture is delivered at the schools of any teacher that has participated in summer research and training at the Propagation Group. These presentations typically involve scientific overviews of radio and electromagnetic technology, with an emphasis on fun and interactive demonstrations.

**Field Trip Hosting:** The Propagation Group hosts annual trips to Georgia Tech campus for participating high school’s science students. The group members provide science talks and demonstrations.

Examples of high-school science presentation topics, including "How to make a 3D picture" and "3D electromagnetic wave animations".

Side View of Vertical Polarization

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Record of Teacher Research Participation

The following lists the history of each year’s outreach participants and their respective secondary schools. The teachers spend 8 weeks on Georgia Tech campus, taking seminars and conducting research alongside graduate student researchers. The following school year, these same teachers coordinate a field trip to Georgia Tech campus for their students as well as a seminar by a Propagation Group researcher.

Summer 2007


Summer 2008

Bhagyalakshmi Gopalsingh (Jonesboro High School, Clayton County GA). “Ferro-fluids and Magnetic Materials.” Funded through an RET supplement to NSF CAREER Grant #0546955. Mrs. Gopalsingh brought AP physics students to Georgia Tech for laboratory field trips in Fall 2008.

William Daly (Gwinnett County GA). “Maximizing the Range of RFID Systems.” Funded through the NSF STEP-UP program.
Summer 2009

William Daly (Gwinnett County GA). “Physics Demonstrations for High School Students.” Also hosted demonstrations for 40 visiting students for Georgia HOT days summer camp program. Funded through an RET supplement to NSF CAREER Grant #0546955.