Adolfo González-Berríos- (fellow since August 2004)- Ph.D. student in Chemical Physics at UPR-Río Piedras. We investigated the time stability of field emission of nanocomposite carbon films made in a custom-made hot filament chemical vapor deposition system, and also the effects that adsorbants have on these field emission properties. Nanocomposite carbon films have shown good field emission characteristics, but these properties need to be stable through time to have applications in the real world. We studied the effect that polar and non-polar solvents have on the stability of the field emission of our films. Emission of an as-grown film was studied by doing two complete measuring cycles, each cycle being an up-and-down voltage sweep, and also by a one week long stability study. Solvent-treated films were studied by doing two complete measuring cycles, and also after a heat treatment. Emission of the as-grown film degraded after the first half cycle, and then stabilized. In a one-week long stability study, the emission degraded further until the second day, where it stabilized. The emission of the solvent-treated samples was significantly less than the emission from the as grown film, but it improved after the first measuring half cycle, but never recovered to the as-grown condition. The field emission improved after the heat treatment, but not by a significant margin. The results for the as grown film can be attributed to the burning-out of conducting nanochannels that cannot withstand the current density produced during emission. The results for the solvent-treated films are attributed to chemical interactions between the adsorbed molecules and the surface of the films. These interactions change to an extent the surface states, on which field emission depends. We are also on our way to study the secondary electron emission (SEE) of our nanocomposite carbon films. We began building the SEE set-up with pulsed electron gun capabilities during the end of the first semester 2005-2006. We hope to have it finished by the first week of March 2006, and to obtain results by the third week of March 2006. The pulsed electron gun feature is necessary to study SEE in our films because a continuous electron beam would damage the surface composition. List of publications: Effects of adsorbates on field emission reproducibility of sulfur-incorporated nanocomposite carbon films, A. González-Berríos, B.R. Weiner and G. Morell, submitted for publication to Journal of Vacuum Science and Technology B in October 2006. González-Berríos A, Piazza F, Morell G, "Numerical study of the electrostatic field gradients present in various planar emitter field emission configurations relevant to experimental research" JOURNAL OF VACUUM SCIENCE & TECHNOLOGY B 23 (2): 645-648 MAR-APR 2005; Kishore Upireddi, Adolfo González-Berríos, Fabrice Piazza, Brad R. Weiner, and Gerardo Morell, "Effects of a nanocomposite carbon buffer layer on the field emission properties of multiwall carbon nanotubes and nanofibers grown by hot filament chemical vapor deposition", Journal of Vacuum Science & Technology B -- March 2006 -- Volume 24, Issue 2, pp. 639-642; G. Morell, A. González-Berríos, B. R. Weiner, S. Gupta, "Synthesis, structure, and field emission properties of sulfur-doped nanocrystalline diamond", Journal of Materials Science (accepted for publication).