

Mr. Magnet Invites Students to Discover Plasma

MIT's Mr. Magnet brings plasma education to Albuquerque schools as part of APS-DPP educational outreach events

Living on a planet where we are surrounded mainly by matter in the familiar states of solid, liquid and gas, many of us are not aware of a fourth state of matter – plasma. On October 28 and 29, students at Eldorado High School and Jefferson Middle School will learn more about this fascinating and puzzling mixture of ions and electrons, when Paul Thomas from the Massachusetts Institute of Technology (MIT) brings his popular hands-on science lecture about plasma and spectroscopy to their schools.

Until recently plasma was rarely mentioned in high school textbooks, though matter in the plasma state makes up 99% of the visible universe. Our sun, stars, northern lights, solar flares, lightning bolts are all examples of naturally occurring plasmas. Man-made plasmas are used for lighting (fluorescent lights), sterilizing medical equipment, welding, manufacturing computer chips, fusion energy research and even surgery.

Albuquerque students participating in Thomas's assembly program will use special equipment to create a gaseous glow discharge plasma, allowing them to observe how magnetic fields affect it. They will also use spectrographic techniques to record the unique spectral fingerprints of each gas as it is transformed into the plasma state. In addition, Paul Thomas will focus their attention on meaningful careers in science and engineering, emphasizing that women as well as men can make an impact through scientific exploration.

Paul Thomas is a technical supervisor at the MIT Plasma Science and Fusion Center. As "Mr. Magnet," Paul travels each year to elementary and middle schools in the New England region, bringing with him a truckload of entertaining and educational experiments. He is in Albuquerque to participate in educational events being hosted by



Paul Thomas (right) is bringing the same plasma education equipment to Albuquerque that he typically shares with Massachusetts high schools and MIT graduate students. Photo by Paul Rivenberg

the American Physical Society - Division of Plasma Physics (APS-DPP) during their annual meeting (October 26-31). Jefferson Middle School teacher Margaret Showalter has helped the society organize their week of local education events.

During this week, the APS-DPP is presenting workshops for teachers ("Teachers Day" - October 28), and a "Plasma Sciences Expo" to introduce students, teachers and the Albuquerque community to plasma science and the benefits of plasma research. At the Expo, plasma laboratories and industries from around the world will provide hands-on experiences with plasmas and related science. Local high schools and middle schools have been invited to participate in these activities at the Albuquerque Convention Center on October 30 and 31. The general public is encouraged to attend a special evening Expo on Thursday, October 30, 6:30 - 8:30 PM, free-of-charge. Mr. Magnet will be on hand, encouraging all to discover plasma.