



### Note from the Chair

In 1995 the Plasma Science Committee of the National Research Council (NRC) published a remarkable small book, called *Plasma Science*. Composed by a sub-panel chaired by Cliff Surko and John Ahearne, *Plasma Science* assessed the state of our discipline, as well as related physics and engineering fields, and made recommendations for its improvement. The book is full of insight and good sense. Probably for this reason it was widely read and actually influenced federal science policy. In particular the recently announced collaboration between the National Science Foundation and the Department of Energy to fund basic plasma physics is in large part a response to the NRC study.

But what interested me most in *Plasma Science* was its identification of a central issue in the culture of our discipline: "Despite its fundamental character, plasma science is frequently viewed in the academic community as...focused on a large collection of applications." Plasma physics, more than such disciplines as condensed matter physics, tends to be viewed as a servant of various other sciences (such as astrophysics) or technologies (such as materials processing). It is less frequently appreciated for its intrinsic scientific depth. I consider this point, which the study amplifies in some detail, both accurate and important.

The NRC study should not be misunderstood: it fully appreciates the value of plasma science applications and the many ways in which they enrich our discipline. Applications continue to drive major scientific advances. To mention just one example, the need to predict performance of the international tokamak experiment has led to important advances in the understanding of magnetized plasma confinement. Indeed, the rich applicability of plasma physical ideas and methods is a selling point—one that has attracted, and should continue to attract, talented young scientists into the field. Yet the message of *Plasma Science* is that our research constitutes "a fundamental scientific discipline," to be weighed by more than its applications.

How do working plasma physicists see their field? Is it a body of knowledge directed, say, toward the advancement of fusion? Or is it a field of science with, like other areas of physics, its peculiar intellectual perspective (such as many-body interactions, or fluid closure schemes) and set of key unsolved problems (such as magnetic self-organization, or turbulent transport)? We needn't—and certainly wouldn't!—agree on common answers to such questions, but they matter: how we view our research determines, in particular, the sense of plasma physics among the larger physics and scientific community.

Scientists in other areas learn about plasma physics from us. If some of them (and of course there is a wide spectrum of attitudes toward plasma physics) think our work somehow less intrinsically interesting than other subdisciplines of physics, it is because we have told them so, intentionally or otherwise. And the attitudes of our scientific brethren matter, especially now, as painful changes affect the national appetite for research.

The NRC characterization of plasma science rings true for me. I think plasma physics has many applications *because* it is good, fundamentally important physics. I am convinced that understanding long-range interactions in a many-body system is on the short-list of things that physics needs to do. But however one characterizes the field, what must be appreciated is that we are telling a story—and, as it says in the movies, the audience is listening.

Regards,  
Richard Hazeltine

### **Undergraduate Research Poster Session in Pittsburgh**

For the second year there will be a special poster session entitled “Undergraduate Research in Plasma Physics” at the DPP Annual Meeting in Pittsburgh. The session provides an opportunity for undergraduates to present results from summer and thesis research, as well as to meet other plasma physicists (both students and senior researchers). Last year's session featured 26 presenters from 17 institutions and was very successful.

Students should submit their abstracts as contributed papers according to the abstract submission instructions in this newsletter. Choose category 9, Undergraduate Research from the Subject Classification Category Listing. DPP will waive registration fees for undergraduate presenters, and roommates in Pittsburgh will be coordinated to reduce costs. The session will be held on Tuesday, November 18, 1997.

If you have any questions about the session or would like to place your student with a roommate, please contact Michael Brown at Swarthmore College (mbrown3@swarthmore.edu).

### **Workshop Presenter Solicitation Science Teachers' Day — Tuesday, November 18**

In an effort to expand DPP membership participation at the annual APS-DPP Science Teachers' Day, we hereby solicit high school and middle school level workshop presenters. Workshop presentations are typically one hour. The Agenda below will include parallel science teacher workshops.

Each year starting with the 1988 DPP annual meeting, DPP and the APS Office of Education and Outreach Programs have jointly sponsored a Science Teachers' Day during the November meeting. More recently, the Science Teachers' Day has been integrated with the DPP sponsored "Plasma Physics Open House" also held in conjunction with the annual meeting.

Science Teachers' Day is designed to provide information for science teachers (middle and high school) on plasma science and its applications, with a special emphasis on fusion energy. The workshops are an integral part of the Teachers' Day activities as exemplified by the sample agenda below:

### Typical Science Teachers' Day Agenda

8:30	8:45	Registration and Coffee
8:45	9:00	Welcome/Introduction
9:00	9:45	Plasma/Fusion Education Material (inertial)
9:45	10:30	Plasma/Fusion Education Material (magnetic)
10:30	10:45	Coffee Break
10:45	12:00	Workshops
12:00	1:00	Lunch
1:00	14:15	Workshops
14:15	14:30	Conclusion/Evaluations
14:30	16:30	Education and Outreach Poster Session of the DPP Meeting

If you are interested in participating as a workshop presenter, please respond to Don Correll <correll@llnl.gov>.

Include your:

Workshop Title

Your Name/Affiliation

Brief description of your workshop presentation (300-500 words)

Estimate number of teachers attending workshop: > 20

Your reference material/visuals for workshop presentation (if available)

Your response is due Tuesday, 8 July 1997. Notification of acceptance will be Wednesday, July 30, 1997.