

Recurrent Themes

Interdisciplinarity, technology transfer, innovation—these are terms upon which discussions of science policy, research management, and the health of U.S. technology often focus. Each in its own way refers to crossing boundaries—boundaries between disciplines, between institutions, or between fundamental and applied research. They receive focus because they simultaneously represent problems and solutions. Problems, because boundaries are hard to cross. Solutions, because their successful pursuit is viewed as a cure for many modern technological ills. The terms are at risk of becoming meaningless “buzz words” through repeated use. It is therefore important to contemplate the value and validity of the underlying concepts.

Take, for example, interdisciplinarity. MRS is, of course, a leader in applying this terminology to its own programs. It is not a new concept. Even before the explicit terminology came into vogue, perhaps with the establishment of DARPA's *Interdisciplinary Laboratories (IDLs)* in the early 1960s, some laboratories pursued that style of research. The MRS Von Hippel Award reminds us of one such enterprise. It is one thing to espouse interdisciplinarity and another to implement it. Understandably, it is not found along the path of least resistance.

The technical disciplines are self-perpetuating subcultures unto themselves. Each has its own jargon, its own group of alma maters, and its own centers of activity—geographical and institutional. Interdisciplinarity runs counter to the same sort of societal and psychological mindsets that impede bridge building among national, ethnic, or religious subgroups. In the technical arena, the benefits accrued by surmounting the barriers are documented in many of the visible conveniences of modern life and in the not-so-visible underpinning of the national economy and security. The forecasts of erosion of U.S. leadership in materials-intensive technologies therefore compel promotion of enhanced interdisciplinary algorithms. As in the geopolitical analogue, progress depends on the efforts of the statesmen and diplomats of the research community. Beyond this the analogy fails, for the ambassadors are not official emissaries of individual disciplines but are each of us, the individual researchers, when need for expertise beyond our own draws us across the boundaries. An artificially imposed interdisciplinary structure does not account for the extant culture. To paraphrase remarks of Yale's Alan Bromley in the context of university-industry collaborations, “It's more talk than reality, [such] partnerships usually rely on a given individual.”

Donald Braben, head of the Venture Research Unit of B.P. International, Ltd. (UK) goes so far as to say that “believing disciplines really exist is a 19th century attitude.” He believes discipline boundaries are one form of intellectual constraint that imposes an innovation-limiting caution on research. To him, using the term (and thus the idea of) *interdisciplinary* “only papers over the cracks,” a better notion being conceptual coherence. Perhaps some day materials research will evolve so that the unified notion is the default and explicit appeal to interdisciplinarity is the anachronism. For now, let us not be lulled into complacency by continued exposure to these recurring themes.

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Dear Editor:

In Janet Raloff's recent article on the NBS cold neutron moderator, she mentioned the conclusions of the Major Materials Facilities Committee of the National Academy of Sciences Report, but erroneously reported that no plans exist for expansion of Brookhaven National Laboratory's cold neutron facilities. I would like to point out that a Brookhaven proposal to build a neutron guide hall was completed in 1983. This proposal has actually been reviewed by the Seitz Committee and the U.S. Department of Energy's ERAB Panel and received high priorities. The U.S. Department of Energy has had the guide hall proposal submitted by Brookhaven National Laboratory since 1983, but it has not yet been funded.

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Postterminaries

“Postterminary” is not a word, but it ought to be. After all a prejudice of science states that “if it's got symmetry, it must be right.” Well, the word “preliminary” is a perfectly correct combination of the prefix *pre-* (before) and the root *-limin* (threshold or beginning). Thus a preliminary is something that comes before the beginning. Invoking symmetry therefore, *post-* (after) plus *-termin* (limit or end) implies that a postterminary is something that comes after the end. Without appealing to set theory, it is hard to explain how an event which is part of a larger event can come after the latter's end—a paradox indeed—but no more a paradox than a part coming before the beginning. Thus even the paradoxical aspects are symmetric.

Coming after the end, as a postterminary does, means that you can finish reading the BULLETIN without encountering it and without missing it. The POSTERMINARIES department will therefore only include those little snippets which are certainly worth missing. The nonvital nature of the content allows the department's length to be adjusted to the space available, after all the important stuff is laid out and the practical printing constraint of having an integral multiple of four pages in total leaves blank space after the end. The astute reader may immediately fear that a postterminary could thus run 3.99.... pages. This, however, cannot happen, because our talented publication staff has a myriad of wonderfully subtle tricks to condense that last fraction of a page back into the modulo-four mold. In fact the ultimate evidence of precision will be finding that nothing at all comes after the end.