

his fixation on earth conduction of electric power led him to view Hertz waves as transmission losses—but few radio pioneers owed their success to sound theory. Modern extremely low frequency (ELF) research has actually confirmed Tesla's claim that the entire earth can resonate electrically, a principle useful for submarine communication. ELF transmitters do provide some free power, but only to local farmers in the disconcerting form of "electrified" fencing.

BEN JOHNSTON

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Engineering Education

The problems described by John Walsh (News and Comment, 25 Sept., p. 1479) are pervasive within engineering education. Large class loads, poor equipment, increased administrative demands, declining support services, and the paucity of American Ph.D. candidates are common sources of stress. Unfortunately, Walsh does not discuss what might be the most crucial crisis of all.

In our effort to manage the problems mentioned, we are ceasing to be a scholarly community. The time spent in the library for independent, scholarly study has been sacrificed in order to hustle grants, complete contracts, conduct consulting, and manage the overflow of students. Sustained interdisciplinary dialog is eliminated in order to manage specialized technical and administrative tasks. Independent inquiry is given up in order to meet the specific assignments of contracts, grants, consulting, administration, and overloaded classes. In short, faculty are becoming functionaries, not just within engineering but throughout higher education.

The unique attractiveness of higher education has always been the excitement of belonging to a scholarly community. Few people ever went into higher education for the money. Few students pursue a Ph.D. because it is "cost-effective." A livable income is of course needed, but, beyond that, the freedom and excitement of scholarly work within a supportive environment has been the essential attraction. We have lost that attraction, and it should be of no surprise to us when our best and most creative students go elsewhere.

DAVID A. BELLA

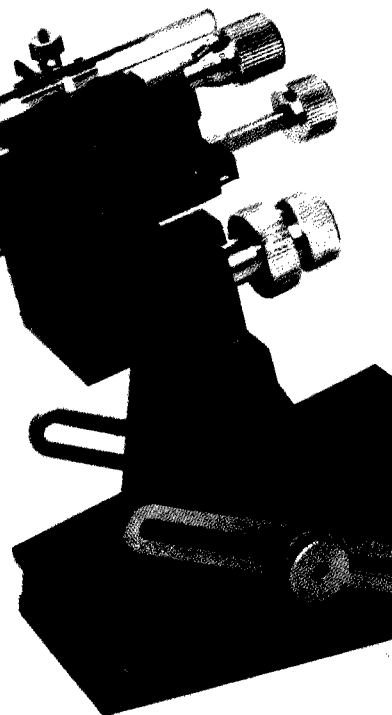
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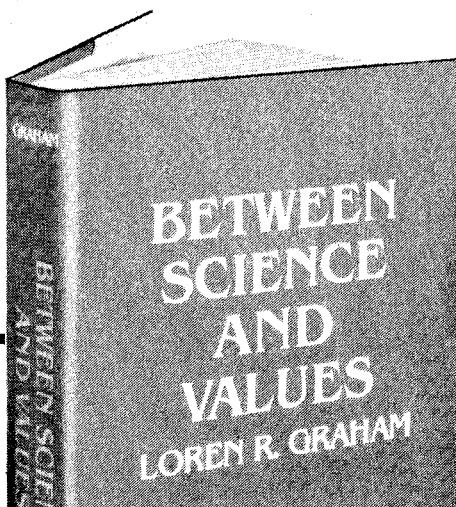


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