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Colleges and universities are very old, traditional institutions. It is no surprise that professors are some of the few people left in our utilitarian society who, along with members of the judiciary and ordained clergy, dress up in funny hats and gowns in public and are treated as objects of respect, rather than ridicule. Our odd garb on ceremonial occasions, we believe, demonstrates our continuity. Our origins go back to the first universities of the Mediterranean world, created by Islamic and

tenure committees at the college or university level are always fun to watch when you have someone like a mathematical neuroscientist trying to evaluate the tenure dossier of an expressionist painter. The point is, we do embrace all. We should be as ecumenical with our students.

My second response is to say that liberal arts was never only about breadth of general education, in the sense of producing the well-rounded individual, or only about the freedom of inquiry. It has also been about learning by doing. Much of the traditional liberal arts are encapsulated in knowledge or free inquiry—what one might call, to use the ancient terms, scientia, sophia, or philosophy. But the liberal arts have also included what the ancients or the Renaissance humanists would have called rhetoric or oratory. If philosophy was about learning in order to think, to know, and to discover, oratory's goal was to persuade, to test, and to act. Testing one's ideas, discovering how knowledge is applied, and learning how action and knowledge interact is as much as part of the liberal arts as is disinterested general education or freedom of inquiry.

3. H ca e ac ?

One of the glories of undergraduate research is also one of its most frustrating aspects. As I have argued, it can and must take a wide variety of forms, at least as varied as the work of my faculty, which spans the spectrum from high-energy physics to Tibetan Buddhist texts to dance choreography. The best way undergraduate research can be done is within a small capstone seminar. But for a variety of reasons, some departments use their senior seminars to emphasize research less and integrative teaching more. We argue about this a good deal, but not every capstone or senior seminar, which almost every program has, provides an undergraduate research experience. Other departments or programs find ways other than seminars to have students do research. Chemistry at William and Mary has every student majoring in the department do a research stint with a faculty member as a requirement for the major. Many colleges and universities proudly tout statistics on undergraduate research. I have found the data behind these claims, perhaps understandably, often to be less than convincing. At my college, we have surveyed both departments and programs, on the one hand, and the transcripts and individual experiences of graduating seniors, on the other. About third of the students reported that they had done a significant body of research with a faculty member in an organized seminar class. This squares with the syllabi of the senior seminars. A little more than another third of the graduating seniors had done research with a faculty mentor during the summer, through an independent study during the semester, or via an honors thesis. All told, about 65 to 70 percent of the students said that they had done what we would consider undergraduate research. If undergraduate research is going to be one of the major goals of our education, we need to do a better job of tracking it. Surveying its progress and learning its weaknesses are essential to helping departments and programs to do it more effectively. Ideally, we would like a Web-based system tied into our student records, into which both students and faculty would enter key data. Updating the data would make it much more useful—later publications coming out of research experiences, post-graduation education, etc. We have made progress, but once someone's research. And, done properly, few things teach