THE ROLE OF HUMANITIES IN THE EDUCATION OF ENGINEERS
Jack L. Kerrebrock

The generally accepted description of modern engineering, as the science of application of scientific understanding to the satisfaction of human needs, implies both the opportunities and the difficulties of incorporating humanities into the education of engineers. Some understanding of the humanities, if not a humanitarian viewpoint, is necessary to the successful pursuit of engineering if the work of the engineer is to be informed by the engineer's perception of societal needs. On the other hand, the very idea that one should expect logically from the perception of needs to their satisfaction through technological means, sometimes described as instrumental, is in tension with the desire of many humanists to understand, but not to modify, their environment. This difference of viewpoints between the engineer, who seeks to bring about a change by application of technology, and the humanist who wishes to understand what is and what has been, presents both the essential problem and the opportunity for the humanistic education of engineers.

Thus in seeking a rationale for the inclusion of the humanities in the crowded education of engineers, there are at least two possible justifications. One is that engineers broadened by humanistic studies will be better, and happier, citizens, able to understand issues outside the narrow domains of their profession.

RELATIVE FACULTY SALARIES
David Gordon Wilson

We are all interested in our salaries, and in how they compare with those of others. The comparisons can be made at three principal levels:
1. average salaries relative to other colleges;
2. average values for schools or departments at MIT; and
3. distribution of salaries within departments.

The third category is not published; we gain isolated data when we as individuals submit budgets in collaborative proposals. This editor asked Constantine Simonides, Vice President and Secretary of the Corporation, for any publishable information in the first two categories. He said that school deans jealously guard information about the average salaries in their various departments. He passed our request for (continued on page 2)

IMPACT OF HASS-D ON EDUCATION AT MIT
Margery Resnick

While the former Humanities Distribution (HUM-D) requirement was not without flaws, it highlighted for MIT students the rich diversity of fields in the humanities, art, and social sciences. The problem of the humanities is that, when joined to the more intellectual concerns, engendered by the need to expand the studies of philosophy. The consequence of this is that, at the level of the general faculty, the humanities program provides a necessary intellectual challenge to the faculty. The new Humanities, Arts, and Social Sciences (HASS-D) requirement may well be a major step forward.

The Maier Committee, charged with recommending curricular reform, proposed that the HUM-D requirement be replaced by a new Humanities, Arts, and Social Sciences (HASS-D) requirement. With some modification, the details of this proposal are now being implemented. The stated goal of the proposal is to: a) increase breadth in a manner that complements the concentration component; b) provide a more structured and intellectual curriculum; and c) increase the overall HASS requirement.

The new plan limits HASS-D subjects in terms of categories and total numbers, and standardizes the format of these courses. Faculty teaching courses "licensed" by one of the five HASS-D committees must agree to "mechanical" criteria, including a three hour comprehensive exam. A hard look at this new program shows rather than enriching the Humanities, Arts, and Social Sciences at our institution, it has negative consequences for MIT education. A brief review of five of the most serious issues follows.

1. The first concern is the breadth of the offerings. The requirement divides all HASS fields into (continued on page 3)

What people want is very simple. They want an America as good as its promise.

Barbara Jordan

INVITATION TO A DIALOGUE
Editorial Board

Yes, MIT does need a faculty newsletter. And the success of this enterprise will ultimately depend on the interest that our colleagues throughout the Institute may have in contributing to it. We welcome your input in the form of essays (approximately 750 words with a maximum of 1000 words) and shorter contributions such as letters, editorials, quotations, etc. Our aim is to provide a forum for the discussion of issues which are important to the MIT community at large. Our present plan is for the newsletter to appear periodically.

SHOULD EVENTS IN THE HUMANITIES, ARTS AND SOCIAL SCIENCES CONCERN YOU?
Vera Kistiakowsky

The abolition of the department of Applied Biological Sciences (ABS) caused a strong reaction among members of the faculty. There were certain reasons for this reaction, but explicit among them was the perception that the change had been undertaken in an arbitrary manner and carried out in an unconsidered fashion. What captured the attention of so many faculty members was the thought that it could happen to them.

In this first issue of The Newsletter, three articles out of six deal with issues principally in the areas of Humanities and Social Sciences, a School which contains only seventeen percent of the faculty. Why are the issues discussed of interest to the majority of the faculty? The first reason is that changes are now being planned (continued on page 2)

LEARNING FROM THE ABS EXPERIENCE
Editorial Board

The decision last Christmas to close the Department of Applied Biological Sciences (ABS) led to considerable debate among the faculty. One consequence was the commissioning of an ad hoc Committee on Reorganization and Closing of Academic Units composed of Glen Borchardt, John Essigmann, Morris Halle, Henry Jacoby, Phillip Sharp, Arthur Smith and Sheila Widnall (Chair). Their (continued on page 2)
narrow domains of their profession, and able to enjoy the pleasures of the arts and nonacademic discourse. Another is that engineering is not, or should not be, a narrow, single-minded vocation, for some comprehension of the humanities, arts and social sciences (HASS), which strongly influence, or are influenced by, human needs and desires, is necessary to the fully successful pursuit of an engineering career.

The latter viewpoint has been adopted by the School of Engineering and incorporated in its statement of goals for Engineering Education, following the study conducted by the Commission on Engineering Education and the Profession in the fall of 1986. In placing the goal, that MIT's engineering graduates should "have begun to understand and appreciate the nature and history of human societies, as well as their literary, philosophical, and artistic traditions," in parallel with the more traditional goals for technical education, the School has taken the position that such understanding is needed by all the engineering students for the practice of their profession, as well as their personal enjoyment. This goal signifies a deeper and more open-minded commitment by the School to its students' education in the HASS fields.

Since enunciation of the Goals for Engineering Education, there have been substantial changes in the opportunities for their realization by engineering students. The subject offerings for the HASS Distribution Requirement, for example, have changed in such a way that engineering students and their advisors should be given a broader range of courses of study which appeal to the students' natural interests and at the same time offer the broadening which is fundamental to this part of the educational experience. A minor in HASS is now available, so that students have a more intensive and structured educational experience in some branch of HASS, in parallel with their engineering education. The School Christine views these both as important enabling steps toward the realization of its goals.

At the same time, there is wide recognition that the development of these opportunities by the Schools of Humanities, Social Sciences, and Architecture and Planning is not sufficient, that the culture of undergraduate education in the School of Engineering must continue to be more supportive of serious study in HASS. Clearly, the attitudes of the accreditation agencies, and the trend is away from the perception that there is any form of "liberal education" necessary if engineers are to reach their full potential in the rapidly developing technological society of the future, MIT should lead the change in this evolution as it has in many others.

In the past thirty years, had the total dollars we spent on military R&D been expended instead on those areas of science and technology promising the most economic progress, we would probably have achieved on the road to self-sufficiency in far fewer years. Few of the MIT faculty see themselves in a position to control as many areas of science and technology as have thus far been proved to be necessary, including the development of television and the development of the internet. By making a serious effort to control the most important areas of science and technology, MIT would become a more effective force for the future. MIT should lead the way in this effort.

The role of the interface between science and technology and society. MIT has been successful in the maintenance of a system of shared governance. Few of the MIT faculty see themselves in a position to control as many areas of science and technology as have thus far been proved to be necessary, including the development of television and the development of the internet. By making a serious effort to control the most important areas of science and technology, MIT would become a more effective force for the future. MIT should lead the way in this effort.

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LEARNING FROM THE AJS EXPERIENCE
(continued from page 2)

feel that the Administration and faculty should be doing more for the furthering of the education of AJS.

The challenge, then, is to continue the process through to the end. At least, the AJS has become a large - a curriculum that sensitizes students to the problems of social and political issues. At the philosophical level, they involve different conceptions of what MIT is and should be about, on conceptions on which the student may not have views. At the political level, any real change would shift the current balance of power among the Institute, where faculty, student, time, and enrollments constitute a very high level of institutional grade. But the differences are not small. They are among the crucial. The Mill is faculty on the whole more complex than that of the MIT’s culture is more coherent, concepts like fairness and efficiency play a larger role here than in our sister institution. The preponderance of the Engineering faculty gives the Institute a pragmatism less visible up the hierarchy. And the MIT faculty and student body are less likely to demand a curriculum that embodies Eternal Truth and more likely to settle for one that works. All of this means that changes of reform are reasonably good at MIT.

Another difference is that at the Institute reform was first focused on the so-called “Humanities” Distribution (HUM-D) requirement, which had become a smorgasbord of over 150 subjects that no longer even pretended to form a coherent introduction to the social sciences, arts and humanities. A new distribution system, christened “HASS-D”

We reviewed the major departmental reorganizations and closings since 1976 (APPENDIX A). We found that changes appear to have been carried forward without the rendering of the community of the faculty with the feelings that actions were poorly informed or badly implemented.

The matter of the closure of the ABS has called into question the pattern of shared responsibility, and the reaction is universal. Everyone to whom we spoke deplored the process; no one came forward to defend it.

Wonders are many, and so are more wonderful than man.

Sophocles
average salaries of different colleges to Kerry Wilson, Assistant Director for Personnel, who suggested the special annual report of Acadrate, the bulletin of the American Association of University Professors, as the best source of data. This was used as the basis for the numbers in the accompanying table, MIT NUMBERS.

We are also reproducing in full a table of average salaries for full professors and new assistant professors in different fields from "a survey of eighty large (mostly public) research-oriented institutions" from the same issue. This is copyrighted material, but we are reproducing it only in a very small proportion with proper acknowledgement. We do not know whether these numbers are representative of the situation at MIT.

The situation with respect to relative salaries among leading schools presented in Acadrate 26, 2 (March/April, 1988) shows that MIT's salaries are at or above the 95th percentile for all faculty categories. Only a few schools have higher average salaries in some categories, and these are often balanced elsewhere. For instance, in Massachusetts, the average of full-professor salaries at MIT are exceeded only by those at Harvard, where the averages of associate and assistant professors are considerably below MIT levels.

The averages include the salaries of faculty in the business and law schools, generally acknowledged to be higher than those in engineering, science, and the humanities. (Therefore, Harvard, having large and highly prestigious schools in these areas, could well have average non-business, non-law full-professor salaries higher than MIT). We have heard some rather wild conjectures of the salaries paid to new business school faculty in highly leveraged areas. However, the data in the table of salaries by discipline show differences that, though significant, are nowhere near the level of the rumors.

The data also show that:
1. the percentage of salary as a percentage of salary not greatly different at MIT (25%) from that at other competitive institutions;
2. the percentage of tenured associate professors is lower at MIT (65%) than at most of the schools with which we compare; and
3. there is still a significant difference between the average salaries of men and women faculty.

There is not more information about salaries at MIT than the above data should be published is a question that involves both fairness on the one hand and the right to privacy on the other. We welcome your comments.

RELATIVE FACULTY SALARIES

***MIT NUMBERS***

1987-88 FACULTY SALARIES AND COMPARISONS WITH OTHER UNIVERSITIES

The following figures are based on tables appearing in Acadrate 26, 2 (March/April, 1988). The salaries are given in thousands of dollars.

The two columns on the right are for doctoral level (category-I) schools.

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SHOULD EVENTS IN THE HUMANITIES, ARTS AND SOCIAL SCIENCES CONCERN YOU?

Kistlakowa

(continued from page 1)

Learning from the ABS Experience

Editorial Board

(continued from page 3)

MIT NUMBERS

will be a regular feature of the Newsletter. If there are numbers you would like to see published, please let one of the editors know.

Ecrire, c'est déjà organiser le monde, c'est déjà penser apprendre une langue c'est apprendre comment penser dans cette langue.

Il est inutile - - de demander à l'auteur de se réciter, s'il n'est pas décidé à se re-penser.

Roland Barthes

"Writing is equivalent to organizing the world; it is equivalent to thinking (learning a language is learning how to think in that language). It is therefore useless to ask someone to rewrite himself, if he is not ready to publish himself."