

## COMMENTARY

# Oral Health Research and Social Justice: the Role and Responsibility of the University and Dental School

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The juxtaposition of the words university and dental school in the title of this article is due in large measure to William J. Gies and his seminal report on dental education to the Carnegie Foundation in 1926 (1). Prior to this, the majority of dental schools were proprietary. As influential in shaping dental education as the Flexner Report had been in medical education, the Gies Report highlighted in its recommendations that:

Dentistry can be most effectively and economically developed ... through extension and improvement in universities, of that system of dental education, which though separate from medical education, is closely related to it, and should be more intimately associated with medical schools, hospitals and dispensaries.

He was a strong advocate of a broader intellectual base for students, a more comprehensive training, and an early recognition of dentistry as part of total health care.

His advocacy of social justice is perhaps not as well known. It was voiced most explicitly in his vision of dentistry's future, enunciated in his response at a testimonial dinner in his honor in Atlantic City on July 11, 1937 BC—Before Casinos (2). He envisioned that:

Dentistry would aggressively seek to perfect, and universally to apply, its measures to prevent dental diseases and their sequelae, and thus to promote dental health ... It will plan and endeavor to bring to all the people the benefits of ample oral care. As a humanitarian profession, it will help to perfect economic procedures for the benefit of all persons who cannot, or without aid could not, pay for needed oral health service. It

will, by action and guidance, achieve these constructive results as a welcome professional opportunity to serve the public, rather than as a task in political servitude ... It will actively advance clinical observation and research to provide adequate new knowledge for steady progress in all its relationships.

This was Gies' "I have a dream" speech—as appropriate today as when he delivered it. Indeed, the implicit challenge in the Gies vision is this: how do we, 60 years later, functionally harness this troika of university, dental school, and oral health research in the service of social justice?



## Role of the University

Socially conscious researchers do not sprout spontaneously like crab grass. They require nurturing—and a critical component of that process is the university. A plethora of academic blueprints outline the role of the university. The traditional view has been to separate the preprofessional and the

professional—or "occupational training," as it is often called. A university education, in the words of Harold Lee Nostrand (3),

means the whole development of an individual, apart from his or her occupational training. It includes the civilizing of his life purposes, the refining of his emotional reactions and the maturing of his understanding about the nature of things according to the best knowledge of our time.

Another educator, John Buchan, suggested that "liberal education should endow recipients with three qualities—humility, humanity and humor" (4). This was a call for a sense of proportion as an antidote to hubris, a deep respect for human nature, and laughter as a response to sham. A tall order. If we really could figure out how best to instill humility, humanity, and humor in students, we could start a chain of "3-H clubs" on college campuses.

According to Henry Rosovsky, former dean of the faculty of arts and sciences at Harvard, "The most significant quality in educated persons is the informed judgment that enables them to make discriminating moral choices." Thus, a liberal education should provide "understanding of, and experience in thinking about moral and ethical problems" (5).

Bringing our issue of concern closer to home, this point of view was independently integrated and extended by H. Garland Hershey, a dentist and vice chancellor for health affairs at the University of North Carolina. In a recent article in the *Journal of the American College of Dentists*, he states that "both higher education and the dental profession must seek to develop dentists who can combine technical competence with sensitivity to ethical and

social concerns" (6). He stresses that attention must be given to integrating the campus as a learning community that promotes an interdisciplinary focus on societal issues. This should occur at both the preprofessional and professional levels. Ideally, mechanisms should be available for expanding dialogue among preprofessional and professional students. Seminar courses at both preprofessional and professional levels should be designed in which challenging societal issues are discussed. The sensitization process should be a continuum.

With such a design we could look forward to "Social Dilemmas 101" in college for preprofessional students (or all students, for that matter) and advanced courses on societal issues in dental schools as students gain clinical experience and begin to interact with a variety of patients in both intra- and extramural settings. Medical schools are moving in this direction because of the many ethical dilemmas being posed by the new technologies, by problems arising from managed care, and the growing concerns over genetic testing and its commercialization.

Apropos, a research program on the ethical, legal, and social implications (ELSI) of the human genome studies has now become the world's largest bioethics program (7). Graduate research programs are mandated by federal funding agencies to provide courses in ethics of science. There is a growing consensus at both the college and professional school levels that higher education has an obligation to foster interdisciplinary student involvement in social, ethical, and moral issues as necessary groundwork for socially sensitive practitioners and researchers (8).

Both the university and the dental school, however, have a role, a responsibility, and an opportunity to go beyond development of formal courses—as important as they may be—to establish an environment, a community, that can serve as a paradigm for social responsibility. At most institutions the increasingly diverse student body itself provides an excellent opportunity for learning to relate, respect, and appreciate different cultures, styles, and points of view. Interestingly, in this regard, a concern recently has arisen over the proliferation of computers and e-mail on most campuses. A recent *New York Times* article

called attention to a change in college culture. Life on college campuses once focused on mingling at the student union. As e-mail has become a favored means of communication—hundreds of thousands of messages are processed daily on many campuses—the melting pot aspect of campus life has given way to electronic isolation (9). This development has many implications for social justice in our society—a topic for another occasion. Fortunately, the group settings make this less of a problem in dental school environments. Administrators should encourage interactive discussion face-to-face, in social as well as educational settings.

### Role of the Dental School

Diversity is not only characteristic of the nation's student population, but in most urban locations extends to the dental school patient population, as well. Discussions of the sociocultural aspects of these populations should be included in teaching diagnosis, prevention, and treatment planning. This approach is a necessary prerequisite not only for appropriate treatment, but also for an appreciation for social justice in oral health research. The dental school clinic experience is a conditioning process for socialization as well as professionalization. Attitudes and habits developed there stay with us. Not only how the student deals with the patient, but how the faculty member deals with both the student and the patient is important in the process. Role models have a long-lasting influence—especially those instructors who appreciate the whole student-patient interaction, not just the finished restoration.

The dental school is a community and we teach community health best by practicing it ourselves. Dental schools (and their universities) have a role and a responsibility in the communities that surround them. Extramural opportunities for services in the community setting are important student experiences and are critical components of sensitization to social justice. These extramural activities should be coupled with discussions extending beyond the technical concerns of patient care and should include sociocultural and behavioral aspects. A preventive thrust should be emphasized and include risk assessment, triage, and targeting, as well as

health education and health promotion. The budding oral health researchers should see first-hand the reality of the epidemiologic studies they have heard about in their course work.

Seminars and courses should be broadly based and include discussions of concerns such as child abuse and dentist recognition and responsibility (mandated in some states), as well as environmental issues and concerns that impact on health—such as lead poisoning, pesticides in the diet, and the effects of hormone-like compounds in the environment. Hormone-like compounds have immediate relevance to dentistry because bisphenol A, a component of sealants and composites, has estrogen-like properties, and has recently been shown to be capable of release into the oral cavity (10). Dental practice today involves a growing list of safety concerns that are important areas for discussion—as well as oral health research—and include infection control, radiation safety, mercury hygiene, amalgam and silver halide disposal, waterline biofilms, and nitrous oxide leakage and its reproductive effects. Discussions should not only deal with risk assessment and risk management, but—equally important—appropriate risk communication to patients (11). Sensitization to patients' concerns in this area is an important part of training. Professions tend to be defensive, eulogistic, and paternalistic—the antithesis of social justice—and alternate scenarios have to be offered to students.

### Oral Health Research

The manner in which oral health research is conducted in a dental school is as important in sensitizing the future researcher to social justice as the many aspects of clinical training discussed before. Paramount in research training, as in clinical training, is a sense of community—with open communication and close cooperation among the various disciplines (12). Unfortunately, there are many examples of a growing tendency to secrecy in science, especially in clinical trials, which vitiates the openness needed when patients' interests come first (13). Universities and dental schools have a responsibility to avoid overcommercialization and restrictions that could impinge on patients' benefits, as well as academic freedom. At a

recent seminar on university-industry relations, former Harvard president Derek Bok is quoted as warning that "The price of corporate support is eternal vigilance" (13).

Students are often subjects in clinical trials, and the manner of recruitment, monitoring, and respect for patients' rights should be beyond reproach. Institutional Review Board requirements provide the basic security for initiation of a study; however, the day-by-day conduct can be an important learning experience for the research-oriented student.

In research training the role of the mentor is critical in the introduction of the trainee into the culture of science. Even more important than a course on the ethics of science is the daily relationship of the mentor to the trainee and the technical personnel. The mentor becomes the role model, very much as in a family. A well-functioning laboratory is very much like an extended family.

Social justice requires that scientific research be responsible as well as responsive. The mentor has the critical responsibilities of checking on experiments and data entry and being alert to any practices that could lead to misconduct or breach of ethics. A research laboratory should be governed by a code of ethics just as student conduct is governed in the school as a whole and clinicians follow a professional code. Education in scientific integrity has to extend beyond lectures and seminars to the everyday operation of a laboratory.

Social justice in research applies directly to publication practices. The

university and the dental school should discourage segmentation of research publications and multiple submissions, granting coauthorship despite minimal input, courtesy coauthorship, and spurious coauthorship in general (14). Authorship is the major reward in science; it is the currency that constitutes wealth—an important lesson in equitable distribution.

The nature of the research conducted and the extent to which it responds to societal needs has become a major issue in recent years. Federal granting agencies have become acutely aware of its importance, as evidenced by a whole set of regulations in grant applications and support for specific types of programs. Dental schools and universities in turn have been increasingly responsive. To be sure, it is due in part to the "Willy Sutton effect"—going where the money is—but it is an important beginning in consciousness raising. In a recent book, Daniel Sarewitz (15) makes the case that the research enterprise has not been going far enough in the quest for social justice in research. His recommendations include greater racial and gender diversity of researchers, more cooperative research among natural and social sciences to help keep progress in the laboratory and progress in society in step, and establishment of broad-based priorities focused on accountability and well-distributed social benefits. Clearly, his bully pulpit speaks to the research community as a whole; but it behooves the university and dental school to consider this message as part of their research mission. The dental

public health community should actively encourage this effort.

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