THE DENTAL EDUCATION BUBBLE: ARE WE READY FOR A LEED-STYLE RATING?
This collection of papers marks the inaugural publication of an online-only, open-access, peer-reviewed journal dedicated to critical debate on issues affecting the future of higher education, not only in the United States but also throughout the increasingly interconnected global community of teachers, instructors, lecturers, and mentors.

The mission of the Journal of the Academy of Distinguished Educators (JADE) is to stimulate excitement among teachers around their intellectual content, and translate the perspectives of leading figures in the Academy into renewed interest in local teaching practice, purposeful change, dynamic innovation, and rigorous scholarship. The vision of JADE is to promote the free exchange of ideas regarding higher educational theory, methods, and tools.
Why JADE?

The title of the journal reflects its origin in the think-tank mission of the Academy of Distinguished Educators at the New York University (NYU) College of Dentistry. (1) The global nature of its outreach is consonant with the NYU Global Network University that is both “in and of the city” and “in and of the world.” (2) In order to promote the free exchange of ideas, JADE embraces the open-access model of the Public Library of Science, where authors retain ownership of the copyright for their content, but allow anyone to download, reuse, reprint, modify, distribute, and/or copy the content as long as the original authors and source are cited. (3) As a peer-reviewed journal, JADE ascribes to the Uniform Requirements for Manuscripts Submitted to Biomedical Journals of the International Committee of Medical Journal Editors, which state the ethical principles in the conduct and reporting of research and provide recommendations relating to specific elements of editing and writing. (4) And finally, as an online-only publication, JADE opts for timeliness, efficiency, and conservation of limited and valued resources.

The journalistic and editorial values of JADE are editorial independence, original scholarship, and diverse and provocative viewpoints grounded in strong science. Inspired by Albert Gallatin, the distinguished statesman who served as secretary of the treasury under US Presidents Thomas Jefferson and James Madison and was a founding father of NYU, JADE intends to uphold the charge of NYU in establishing “in this immense and fast-growing city...a system of rational and practical education fitting for all and graciously opened to all.” (5)

Why Now?

Further, JADE endorses the goals of the NYU Academy of Distinguished Educators to enhance the overall teaching mission of the NYU College of Dentistry and to stimulate excitement among teachers around their intellectual content.

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educational program has to offer and what the educational product is really expected to be.” (7)

In his cogently argued rejoinder, Allan J. Formicola asserts that the rating system proposed will not improve the profession, because the current accrediting process does take into consideration differences in dental schools’ missions and goals, “but assures that all schools, new and established, meet standards that are accepted by the academy, the practicing community, and the licensing community.” (8)

Finally, Ronald Bayer places his emphasis on “what the state has a duty to do to assure equitable access to healthcare services, to create just healthcare systems, and to secure the social conditions that promote health and limit disease and disability,” and asserts that a core mission of dental education in the United States ought to be understanding the social forces that may foster or impede the path to dental justice. (9)

**What’s In a Name?**

Even within the NYU Academy of Distinguished Educators, there is controversy regarding its name. Several members respond negatively to a perceived aura of elitism, when the Academy’s goal is to be a continually evolving, dynamic organization that will eventually include the entire faculty of the NYU College of Dentistry. (1) So, too, was concern expressed over the title of the journal, especially when the word jade has certain, well, jaded meanings! What fun, then, to discover this hip definition of “jade” by newyorkgirl1995 in the Urban Dictionary website:

Jade is this awesome amazing girl, who’s a awesome friend, as she is always there for her friends, she sticks up for what she believes is right, all the time, shes loyal to who is loyal to her, but will not be walked all over, she trusts until she has a reason not too and believes in second chances. Shes a big dreamer and determined to make her dreams reality, shes not afraid to say how she feels, shes very caring, very mad, and just an all-round nice person and friend. (10)

At JADE, we intend to dream big dreams, and we are determined to make them a reality. For us, this means creating a forum where educators are free to propose bold theories and are not afraid of encountering opposition. It means stepping away from the former paradigm of the lecturing method and considering innovative forms of instruction, including addressing complex dental, medical, and social problems as healthcare teams that reflect real-world situations. And it means incorporating interactive technological tools as adjuncts to face-to-face engagement with peers and mentors. Finally, it means acknowledging that not every pedagogical idea is going to motivate students to learn, but that in order to discover the ones that will, it is necessary to explore.

**References**


LEED Certified, LEED Silver, LEED Gold, LEED Platinum. These are all designations made by the U.S. Green Building Council (USGBC) when it established a clear framework for the environmental sustainability of new building construction.

LEED is an acronym for Leadership in Energy and Environmental Design. The terminology will be familiar to anyone who’s been involved in major building projects on any university campus in recent years. The ratings reflect the requirements for design, construction, and operation of high-performance, environmentally sound, ecologically sustainable buildings.

What does this have to do with dental education? I bring up the LEED rating system not to discuss the physical construction of new dental school buildings; rather, I’m using a LEED-style rating system as a model that could be adapted to dental education in order to give dental school applicants, faculty members, governmental officials, the media, and the public a more open and honest appraisal of what a given educational program has to offer and what the educational product is really expected to be. This makes sense to me because dental schools have now diverged sufficiently from each other in their ambitions, their educational philosophies, and in the learning experience they offer students beyond the minimum required by accreditation standards to confound interested parties and obscure their significant differences.

In fact, the American Dental Association’s Commission on Dental Accreditation (CODA) statement assures that accreditation cannot be used to differentiate among dental schools:

The program in dental education is accredited by the Commission on Dental Accreditation [optional: “approved with or without reporting requirements”].

That’s it. Even the past practice of giving dental schools commendations for good performance has now been discontinued, probably because dental deans tallied up commendations and used the final number as a public relations tactic to distinguish their own school from the rest. Increasingly, though, different schools have different philosophies, offer different educations, and yield different outcomes. CODA accreditation doesn’t tell us much beyond the graduates’ being eligible for licensure in a given jurisdiction. This is because the CODA system was never designed to look at how dental schools differ from each other, but rather to look at how they are alike in meeting an agreed-upon core of minimum standards.

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standards. While this is entirely appropriate for an accreditation system, I wonder if a point has been reached where more than the minimum requirements is needed? Perhaps we should be thinking about building upon the CODA system through a strictly voluntary, LEED-style system available to interested dental schools in order to make their specific missions, visions, and values more transparent and relevant to the public, including to prospective students. Accordingly, my proposal is not intended as a replacement for the CODA accreditation process, but rather as a supplement to it for interested institutions and individuals. We can think of CODA as similar to a city-issued permit to construct a new building. CODA thereby remains fundamental, but it is only the beginning.

A Pechant for Rankings

The desire by dental school applicants for comparative information is reflected by the rankings of dental schools found on websites such as http://studentdoctor.net or http://dental-schools.findthebest.com. They grab whatever data they can, but none of the data are backed by a credible or responsible agency, nor is participation voluntary for the institutions named. Weight is accorded any given attribute based on the interests and idiosyncrasies of the person(s) making up the ranking. A good case in point is the now discontinued U.S. News and World Report ranking of dental schools that was formulated on nothing more than asking dental school administrators to rank all schools based on their subjective impressions of the few schools they actually knew about as well as the majority of schools about which they knew precisely nothing.

Despite these defects, however, perhaps the impulse underlying ranking lists and the counting up of commendations ought to be listened to as an expression of a legitimate need. Maybe the penchant for rankings is telling us something important: Insufficient comparative information is available to make informed choices by people who need to know. Maybe some credible method is needed for distinguishing among accredited programs—not with a ranking but with a rating. Maybe a few categories of ratings—certified, silver, gold, platinum, or something similar with well-defined criteria—would offer applicants and the public more information than they get now and might give institutions a tangible goal to strive for.

A rating system could differentiate programs that offer an education from those offering technical training—a distinction aptly described by R. Bruce Donoff (1), who stated that he favored shifting the balance away from training and toward education. Donoff contrasts the qualities of higher education with those of vocational training and argues persuasively that “...the educator must use different methods from those of the trainer. Education encourages critical thought, whereas training can be based on imitation or parroting.” Recognizing this distinction might be important because the differences between accredited dental education programs and the philosophies that inspire them are becoming as great today as they were in the early 20th century.

Some DDS/DMD programs seem to be moving toward a profit-generating vocational training model while others are emphasizing—and investing in—their status as mature components of the nation’s finest research universities. Some see themselves as addressing the increasingly apparent and problematic disparity in access to dental care between the rich and the poor, whereas others remain oriented toward the traditional university values of research, teaching, and service. It’s hard to imagine that the divergence now taking place would be completely irrelevant to the students involved or to the public. An extremely variable and inconsistent educational setting, sometimes driven by proprietary motives, is what necessitated the landmark Gies Report of 1926 with its attendant commitment to making education in the biomedical sciences as central to the study of dentistry as it was to medicine. The result was that innumerable, non-university-affiliated proprietary dental colleges closed.

These closed colleges had names like Barnes Dental College, Central College of Dentistry, German-American Dental College, Homeopathic Hospital College, Interstate Dental College, San Francisco Dental College, Southeastern Dental University, National Medical University of Illinois, and many more. They would be replaced by another category of institution whose members had names like Harvard University, Columbia University, the University of Pennsylvania, the University of Michigan, and the University of California. Not all professions followed the same pattern. For instance, independent chiropractic and osteopathic schools have maintained a model

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whose institutional names continue to evoke the proprietary flavor of the dental schools of the 1890s—as do, incidentally, the dental schools now being spun off by the major osteopathic chains. This is not good or bad, but it does reflect aspirations different from those of the founders of modern dental education, who audaciously aimed to incorporate their field into what would subsequently be recognized as the Carnegie classification’s highest category of research university. For dentistry, the result has been an enormous increase in the quality and uniformity of the educational product, accompanied by the transformation of a trade into a profession. In the 1950s, when the graduates of these major institutions strongly endorsed the fluoridation of public water supplies and the use of fluoridated dentifrice—becoming in the public’s mind the most enthusiastic proponents for putting themselves out of business by eliminating the disease they were educated to treat—the public’s confidence in dentistry as a profession increased immensely, as did dentistry’s prestige as a learned endeavor.

Alas, nothing is forever. Fearing the early signs of a reversion to an older and a discredited model of dental education, Dr. Peter Polverini, dean of the School of Dentistry at the University of Michigan, called a meeting of about half of the nation’s dental school deans in May 2010, in Ann Arbor, Michigan.

Dr. Polverini’s concern centered on “the emergence of a tiered system of dental education resulting from the opening over the past decade of a number of dental schools without a clear research mission.” He pointed out that research-intensive universities demand that all of their schools and colleges, “including dental schools, demonstrate certain standards of excellence in terms of research and discovery. Indeed, such schools are looked upon as full partners within the mission of the university.”

What are the options for dental education? As more schools emerge that do not align with the mission of the research university, does dentistry abandon its hard-won status within the mainstream of higher education—newer schools prospering financially while embracing the look of a community college and the feel of a proprietary enterprise? Not to mention the question posed by Dr. Polverini: “Who is going to lead the profession into the future if all we are doing is training dentists to be technically competent?”

Furthermore, a dichotomy exists not only between newly founded dental schools and long-established ones but also between the diverging educational programs of schools that have been around for years. Many such schools exist within research-intensive universities but without embracing the research mission of the parent university. It was this misalignment between the mission of the university and the actual, if silent, mission of the dental school that played a big part in the epidemic of dental school closings that began in the 1980s.

Polverini’s commentary on the outcome of the Ann Arbor meeting states the key facts for dental schools, both new and old:

Now, for the first time in nearly a century [the importance of the biomedical sciences in the dental school curriculum and research in the basic biology of oral structure and the pathology of oral-facial disease] is being challenged by this new direction in dental education, which is based on the premise that a shift from an emphasis on research to teaching is required to provide more care for underserved populations.... Financially driven resource issues also play a role in explaining the rise of the non-research-oriented dental schools.... A dental education management model that reduces operating costs by contracting out the basic sciences to
a non-residential basic science faculty and shifting institutional priorities from the traditional clinical education, research, and patient care model to an emphasis on clinical education and care can initially appear attractive. But once you mortgage the responsibility of basic and translational research to someone else, you essentially lose control over the future of the profession.

The objective of the Ann Arbor meeting was to prevent such a change from occurring in the foundational premise of dental education. While I agree fully with the motives of the Ann Arbor meeting, I believe the change has already taken place—a tiered dental education has become a reality. This paper advocates being more transparent about it—a goal that a criteria-driven rating system could help to achieve. If a “dental education management model that reduces operating costs by contracting out the basic sciences to a non-residential basic science faculty and shifting institutional priorities from the traditional clinical education, research, and patient care model to an emphasis on clinical education” has taken place, shouldn’t everybody know about it? Not every school can be categorized as research-intensive, and, more important, maybe that’s fine. It’s a choice. A rating system could make the choices that have already occurred more transparent to everyone.

**Why Emphasize Research?**

Maybe I’m placing too much emphasis on the significance of research in dental education as a way of classifying or rating dental schools. After all, research is supposed to be about discovering new treatments, cures, and diagnostic methods, not necessarily about teaching students. Isn’t this why even research-intensive universities draw a distinction within their threefold mission of research, teaching, and service? Indeed, whether new or old, dental schools today legitimately differ among themselves on the importance of research and scholarship. Schools that give lip service to the importance of research may not, in fact, act in accordance with professed beliefs—not even when their parent universities genuinely do have research as an important mission.

But research within an educational institution is not only about new discoveries; it’s also about a prevailing environment congenial to intellectual activity: The kinds of faculty members a research-intensive institution attracts and the influences those kinds of faculty exert on the education of dental students are very different from a setting in which faculty members are completely unengaged in research. Henry Rosovsky’s classic book, *The University: An Owner’s Manual* (3), argues that it makes a difference when the person behind the podium is also the person who wrote the textbook; that university-level teaching is difficult without the new ideas and inspiration provided by research. “A combination of teaching and research is part of the university faculty identity. The university professor is not a teacher who is expected to confine him- or herself to the transmission of received knowledge to generations of students. He or she is assumed to be a producer of new knowledge, … who transmits state-of-the-art knowledge to students at all levels.” Similar arguments can be made about whether a school’s faculty will include tenured full-time academics and basic scientists, or whether it will consist exclusively of superannuated dentists who have left private practice and are willing to undertake a part-time or voluntary teaching position as a retirement diversion?

Does a dental school integrated within a major research university offer something different—does it contribute something more to the education of students? If so, how is such a difference acknowledged? Rosovsky (3) reflects on the impact of research universities in society at large. There are slightly over three thousand institutions of higher education in the United States. At the top, in his view, are the best research universities, numbering about 50, both public and private. He considers these institutions to be “the cutting edge of our national life of the mind. They determine the intellectual agenda of higher education. They set the trends.”

“A high level of success in incorporating dental schools into research universities of the highest stature could be one index of dentistry’s success over the past century in reinventing itself not only as a discipline and vocation, but as a learned profession.”

(3) In this way, they also establish the priorities. Is this something we in dental education are willing to give up? How will it be decided who has a seat at the table of higher education leadership if all dental schools are considered equivalent in name but not in substance? How have (or have not) the nation’s dental schools become distributed among these elite research universities, or, to put it another way, among the nation’s finest universities, how many have opted to have dental schools?

A high level of success in incorporating dental schools into research universities of the highest stature could be one index
of dentistry’s success over the past century in reinventing itself not only as a discipline and vocation, but as a learned profession. Answering this question requires knowing which universities qualify as the nation’s best. Rosovsky never actually enumerated his list of the top 50 or 100 US universities. But he did make clear the kinds of places he had in mind: universities that “lead the world in basic science research; provide a significant share of the most competitive graduate programs; [and] are generally at the cutting edge…” Such universities are competitive. “Institutions of the same class compete for faculty, research funds, students, public attention—and much else.” Rosovsky says that at top American universities, “faculties are assembled largely on the basis of individual quality without the constraint of considering where they received their education.” Quality and competitiveness dictate. At such places there are no reservations about the beneficial effects of competition, seeing it as a strategy to prevent complacency or indolence, and prompting the drive for excellence and change. Such universities assume that the quality of their faculty plays the single most important role in maintaining reputation and position. “The best faculty attracts the finest students, produces the highest-quality research, [and] gains the most outside support.” (3) Few would argue that dentistry should not have a seat at the table—but increasingly, dental education institutions are not willing to commit themselves financially or psychologically to making this happen. In fact, the trends that impelled the convening of the Ann Arbor meeting suggest that dental schools are working to reverse the gains of the last century.

**A Slippery Slope**

Contemplate this statistic: Between 1982 and 2000, seven dental schools closed—none of them having a significant research portfolio. Forget the dental schools themselves. Look, instead, at the parent universities of the dental schools that closed. Five of the seven parent universities are the kinds of institutions that today have in aggregate almost a billion dollars of research funding and qualify as research-intensive universities. Lacking a significant research portfolio, those particular dental schools didn’t really fit within the parent universities that housed them.

Now look at the parent universities of the first five dental schools that have opened since 2000: The NIH research funding of the parent universities amounts to only $3.5 million. Remember, we’re talking about the parent universities, not the dental schools. This means that the aggregate NIH funding of these five parent universities equates to about the same amount as the research funding of the single dental school ranking 21st among dental schools in NIDCR funding today.

What this means is that the parent universities of these institutions themselves do not see research as part of their mission; will not attract research-oriented faculty; and that the dental schools they host—statements to the contrary notwithstanding—will have little orientation toward research. This has to mean something about the environment within which students in these schools will be educated, yet we pretend that all dental schools are the same because they are all accredited. Should anyone care? It’s not for me to say, but it should at least be known. Some system for making such a difference more transparent would be a more honest way to go.

Ratings in higher education are nothing new, with perhaps the most well-known being the Carnegie Classification of Institutions of Higher Education. (4) The interesting thing is that it appears that dental schools are no longer being established within the highest Carnegie classification of “doctorate-granting universities with very high research activity” (RU/VH) or “high research activity” (RU/H). Today, with one possible exception, new dental schools are mainly associated with parent universities identified as “special focus institutions.” This Carnegie category includes theological seminaries, Bible colleges, other faith-related institutions, freestanding medical schools and medical centers, other health professions schools, and other special-focus institutions. This is not necessarily a bad thing, but it may signal a shift in the public’s perception of the dental profession, and, more than that, it may predict
something about dentistry’s stature in the future. I do think that having dental schools at the most prestigious universities in the country has made a difference in how the dental profession has been viewed as a whole. I do worry that the richness and diversity of health sciences education within a major research university is at risk of being lost.

**Elements of a Rating System Going Beyond Research**

Research, of course, is only part of the story. For instance, consider those schools that sacrifice a research agenda in the name of educating dentists to help redress the disparity in access to care between the affluent and the indigent. Do such schools offer a markedly reduced tuition and/or a greatly enhanced financial aid package? Do the graduates of such schools bear significantly lower debt burdens, making it more likely that they can enter the public service sector? If this is not the case, is there some logical resolution to the inconsistency between a stated mission to serve the broader public health while at the same time burdening students with a debt level that almost assures traditional private practice as the only financially viable option available to them?

From the institution’s perspective, does charging a high tuition while at the same time not investing in faculty, preclinical and clinical facilities, and research programs accomplish anything beyond generating significant financial surpluses for the owners of the dental school?

The approach taken by some of the newer schools is not the only one worth discussion: Consider long-established public dental schools offering a modest tuition for in-state residents. Are the residents in those states that are subsidizing the education of dental students getting their money’s worth? Do tuition-subsidized graduates of public dental schools give a sufficient return on the state’s investment in them? For instance, absent the debt burden carried by private dental school graduates, do dentists who graduate from public dental schools charge their patients less on average? Are they more likely to participate in Medicaid reimbursement programs? Are they more likely to accept patients who are on public assistance or are completely indigent? Are they more likely to practice in underserved areas? Are graduates who benefited from heavily state-subsidized educations even likely to remain in the state that paid for a big chunk of their education?

Such a critique can be tailored to any dental school: Are the high-tuition, research-intensive dental schools really delivering on what the students are paying for? As important as I think an education colored by research may be—one taught by the highest-quality faculty at the best universities—maybe that’s not what a lot of students are really interested in. Maybe the best students go to the cheapest schools because their academic records are the most competitive and they have the choice of attending any dental school they want. Maybe what’s left are the less academically gifted who are the least likely to benefit from the kind of education a first-rate faculty and a first-rate university can offer. If a high-tuition, research-intensive dental school really is offering a better educational product, it ought to be able to prove it.

It is precisely because each of these viewpoints is credibly defensible that I think a rating system is a good idea. Let everyone know exactly what they’re getting into.

**The Difficulties of Devising a Rating System**

Inevitably, a rating system is values-driven. For instance, the ad-containing website [http://dental-schools.findthebest.com](http://dental-schools.findthebest.com) offers rankings based on what it claims are “unbiased, data-driven comparisons.” However, the data has to be evaluated by someone—and whoever that anonymous person is, he or she will have a value system that decides what will be included, what will be excluded, and what the weight accorded each category will be. The ranking is based on the “schools’ programs and statistics, including average DAT scores, mean GPA admitted, class size, NIDCR funding, and more.” The website states that “FindTheBest gathers ratings from the most respected experts in each category.” Who exactly are these experts and how do the chosen input data make a difference in the eventual educational outcome—the thing we’re really interested in? I wonder why mean college GPA, DAT scores, tuition, location,
percentage of the applicant pool admitted, or class size would be factored into a rating system. These are all things that have some interest to an applicant seeking admission to a particular school, but distilling such data into a ranking doesn’t make much sense because the data are so easily available to applicants through public sources. A much more important and impressive metric for a rating system might be one based on what a dental school actually achieves with the students they do admit.

When excellent students enter a school and equally excellent students exit it four years later, it doesn’t really say much about the educational program—whether transformative change attributable specifically to the school, its programs, and its faculty is a realistic expectation. Good students in a bad environment typically make the best of it and still learn a lot even when the system, in effect, works against them. On the other hand, when students with marginal backgrounds go on to brilliant careers, it says something about the educational program itself, as opposed to the qualifications the students came in with. Rather than focus on admission numbers—easy though they are to secure—it might make more sense to look at the pass rate on Part I and Part II of the National Board Examination and on regional licensing examinations.

This all distills to a simple fact: Data-driven rankings are not that useful when the institutions being ranked are not voluntary participants in the rating system because the quantity and quality of data are often only whatever is publicly available. The elements of a rating system would need to go far beyond this—what the educational program actually produces, especially in terms of outcome measures that are not publicly evident. I don’t think it would take long for well-intentioned educators, practitioners, a highly qualified think tank such as the Santa Fe Group, and members of the public to define the appropriate parameters—parameters based on outputs, not inputs. It would require that the voluntarily participating institution be willing to invest time, money, and effort in securing follow-up data reflecting the real impact of its educational programs. Examples were mentioned earlier:

• Some schools purport to educate public service-oriented graduates who will disproportionately seek employed positions in the public sector rather than in higher-income private practice. Does such a school credibly deliver on that claim over the long term? Such information could be factored into a rating.

• Schools accepting major subsidies from state governments could account for a disproportionate benefit to the citizens of the state that paid the bill if such a benefit actually exists.

• High-tuition schools that claim outstanding faculty and strong research programs ought to be able to differentiate the performance of their students on objective external measures of achievement in comparison to other schools.

Beyond the necessity of participation by the school being rated, protracted preparation time would be required, as would a site visit by a knowledgeable review team. This would be a worthwhile investment for an institution if there’s a platinum rating in the offing. None of this is easy, but it’s important and worthwhile.

As with the U.S. Green Building Council’s LEED rating, the founding premise has to be stated unambiguously so that institutions can know the criteria they need to aim for in each rating category. As with the LEED system, it would be important for an institution to target the rating it is seeking; that is, not every institution should aim for platinum, and, failing that, be granted gold or silver as a consolation prize. Criteria for categories would need to be defined in sufficient detail so that an institution can pretty much know that it qualifies ahead of time. Of course, the designations platinum, gold, silver, and certified do convey an implicit statement of quality—but they are all good. The designations for a rating system could be non-hierarchical, resembling the Carnegie classifications mentioned earlier rather than the LEED-style rating.

Is Ethics a Legitimate Outcome?

Just about everybody knows that the dental profession has gotten itself in a terrible fix. The death of a 12-year-old from dental disease brought to public attention an egregious disparity in access to dental care between rich and poor. Today, when the dental profession is mentioned in the media, the news is too often bad—a real public relations disaster. I do believe that when considering dentists as a whole, a significant segment of the population thinks that dentists are more interested in their
own financial well-being than in the health of the public. This is true not only for dentists but for almost anyone in any profession. (5)

Even the American Dental Association (ADA) has sometimes been seen as much an advocacy group for dentists as for the public. Nevertheless, excellent and trusting relationships continue to be lived day-by-day between patients and their own dentists. But the negative perception of dentistry organizationally is leading to legislative initiatives to improve access based on the belief that dentists cannot be trusted to help those in need without the coercive hand of the state. Thus, entirely new categories of dentists are being formulated—dental therapists—that move past the American Dental Association and the existing dental profession as a whole. Will this new secondary tier of dentists actually improve access to care? I doubt it—especially as lower-paid dentist-therapists make fully corporatized dental care more profitable to corporations that hitherto have been unable to enter this marketplace successfully. But my point here is that maybe dental schools have to bear some share of the blame for the access-to-care problem if viewed as an ethical issue. Have we lost sight of the eleemosynary responsibility of every professional person? Dentists denying care to patients in need or declining to participate in public assistance reimbursement programs might be interpreted as a failing in the way we teach ethics. Maybe a rating system of the type I am proposing could incorporate not what is taught in our ethics curricula—a simple input—but rather how effectively what we teach actually plays out in dental practice, especially for patients unable to pay. Again, such a schema would require that the rated institution participate, establish systems to track such information, and incentivize their own graduates to be forthcoming.

Whether creation of new categories of dentists will or will not improve access to care is beyond the scope of this paper. I bring up the matter only to underscore the importance of a rating system for schools that confer the DDS or DMD degree. Doctoral-granting institutions will need to differentiate themselves from new dentist-therapy schools because the public is not going to make such fine distinctions despite significant differences in the comprehensiveness of education. This point resonated powerfully for me in a statement made in a PBS documentary, *Frontline*, broadcast on June 26, 2012. A newly trained Minnesota dental therapist, speaking on behalf of a newly created discipline, argued confidently:

*We are trained to the level of a dentist. How I’m taught to do a filling, how I’m taught to do a root canal on a baby tooth, how I’m taught to extract a baby tooth is identical to the type of education dentists receive. I am trained to that level. I’m just trained in fewer things than a dentist is trained to do. I don’t know why anyone would want to oppose a very well-trained professional treating someone who otherwise would not get treated.*

The opening statement is the most worrisome: “We are trained to the level of a dentist.” But is this really true? The most dangerous people are those who don’t know what they don’t know. The therapist is talking about a specific number of very limited technical procedures—but what about the complications from those procedures? It echoes the distinction Donoff makes when talking about the difference between receiving an education versus receiving training or parroting. The therapist’s self-description as a “very well-trained professional” is precisely the point. Who’s to say? Who is impartial enough to prevent self-interest from intruding into the equation? Subsequently in the broadcast, the president of the American Dental Association expressed the view that “Our concern is the idea of a lesser-trained individual doing surgical procedures.” It seems a very reasonable concern; however, those with the highest qualifications as experts are increasingly being delegitimized because they are seen as having a vested interest in a particular self-serving outcome.

That society has gotten to the point that it has lost its trust in its own experts is tragic (5), and reminiscent of Livy’s first-century lament that “we can endure neither our vices nor their cure.” (6) Maybe a more apt analogy would be that we can endure neither our problems nor their solutions.
The Bubble: The Market for Dental Services vs. the Market for Dental Education

A key point made by Polverini at the Ann Arbor Dental Deans Forum (2) was that a motivation for the founding of new dental schools is that “a shift from an emphasis on research to teaching is required to provide more care for underserved populations.” It is important for dental educators to understand that there are two separate but interrelated markets. One is the market for dental services; that is, the public’s demand for direct dental care. At the moment, this market is problematic because given the supply of dentists and the demand for services, some people are being left out—those who can’t pay and therefore are unable even to enter the market for services. Public health dentists, the government, and the media advocate for such individuals to be cared for outside the market system. But the dental services market is not really the market that the newer dental schools are entering. Rather, they are entering the market of people seeking a dental education. Over the long term, it may be true that as the supply of dentists increases, the cost of services could decline, and the public’s interest would be served. But markets are complex, and the way the market for dental services and the market for dental education are related may not conform to expectations. As long as there are more people seeking admission to dental school than there are available seats, the market for dental education can be very profitable. The problem is that the tuition and fee structure of new schools is very high; thus, the graduates of these schools are not likely to be in a position to provide for the needs of the underserved, who require services outside the existing market system. In reality, new dentists are being added for those patients who can already pay for care and for whom there’s not much of a shortage of dental services.

Add to this the emergence of dental therapists who, over time, may radically change the market for dental services. If a relationship emerges between dentists and dental therapists that is comparable to the one that now exists between dentists and dental hygienists, it could make dental practice even more profitable. Alternatively, if dental therapists become the basis for a fully corporatized model of dental care, as has happened in pharmacy with the large chains, it’s more difficult to guess what the impact on independent dental practice will be.

It’s no exaggeration to say that today’s dental students are really speculators willing to pay a high price for an education that may or may not yield the return on their investment that they expect. Should the bubble burst for dental education, evidenced by a smaller number of applicants than available positions, schools will need to compete for students more intensely. Driven strictly by economics, the most successful schools will be those that offer the fewest services, have the lowest expenses, at the highest possible tuition. Under those circumstances—all things being equal—the most successful and sustainable schools will be the newest ones with the most robust financial plans. But maybe all things are not equal. Maybe some schools will offer services that will continue to be valued by applicants beyond acquiring basic technical skills leading to dental licensure. Perhaps some applicants will see the differentiating value of an education that conforms to the highest standards of the best universities. Maybe those contemplating specialization will gravitate to those places they think will help them gain access to the best postgraduate programs. I’m not really sure that this is true; however, I do think that a rating system of the sort I am proposing could be a step in the right direction.

The purpose of the Ann Arbor Dental Deans Forum was to frame a way of leading the profession into the future. Quite possibly the historical moment for that opportunity had passed before the forum ever took place. The worry at that time was that we were on the verge of “making a dangerous mistake about the standing of the dental profession going forward … [and that] we will begin to look more like a trade than a profession, a posture that jeopardizes the long-term prestige and progress of the dental profession.” (3) I believe that we are beyond that point. The least we can do is to be honest about it. A rating system might help us do so.

References
Charles Bertolami’s essay, “The Dental Education Bubble: Are We Ready for a LEED-Style Rating?” raises myriad questions far beyond the usefulness of developing a system to rate dental schools, as he proposes. In order to support the notion of a rating system, he describes the current and recurring dilemma dental education has faced and that once again has resurfaced.

Namely, while it is generally recognized that the type of education students receive shapes the profession, the tension between the setting of dental schools in the nation’s higher education system and the dual emphases on the technical training required to practice dentistry and on the biomedical sciences necessary to educate a learned practitioner has never been fully resolved.

Over the past five years, this issue has resurfaced due to the opening of 10 new dental schools, most of which are located on osteopathic medical campuses. Bertolami suggests that these schools are inferior and fears that they will lead to a decline in dentistry’s professional reputation.

This commentary will focus on two underlying related issues raised in Bertolami’s essay: (1) the vision for dental education, and (2) the research mission and the institutional setting for dental schools. The interrelation of these two issues and their impact on the dental profession will be discussed.

The Vision for Dental Schools from Gies Onward

The vision for dental education during the first and second decades of the 20th century was not clear. William Gies, a professor of biochemistry at Columbia University, was chosen by the Carnegie Foundation to assist the profession in standardizing the education necessary to become a dentist. The Foundation was well aware that when Gies began his five-year study of dental schools in 1921, “it was not then clear whether dentistry ought to become a specialty of the conventional medical practice, or whether it should remain a field of practice for a separate body of practitioners.”

The general opinion at the time could be summarized as follows: Because of the “mechanical requirements made upon the practitioner...dentistry was a mechanical art of restoration and not a branch of medicine.” However, Dental Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching, which is better known as the Gies Report, published in 1926, concluded that the practice of dentistry should be a health service of equal recognition with other specialties of medicine, although it should remain a separate profession from medicine. The type of curriculum required for the study of dentistry was described in the report as follows:

“The courses should be equal in quality to those in the corresponding subjects in the undergraduate curriculum in medicine...” (2)

The Gies Report is largely credited with establishing the foundation...
for dental education in the United States and emphasizing the need for full-time faculty who are devoted to pedagogy; for including a research agenda in dental schools; and for requiring two years of prerequisite college-level coursework for entry. Regarding the latter, Gies understood that a “liberal education…guards against the relatively narrowing influences of a professional training….” and that such preparation for dental school “awakens and stimulates curiosity and the spirit of enquiry (and) expands views and improves judgment…..”

While the Gies Report was very clear in declaring the type of professional education required for the practice of dentistry, there has been a long-standing debate about the emphasis on the basic biomedical science courses and the technical clinical training needed to educate competent practitioners. For example, in 1941, O’Rourke and Miner (3) put the argument as follows: “A common aim of dental education has been that of providing opportunities for the development of skill…. The traditional, but fallacious, concept of skill as something almost entirely manual is common…. Motor activities must be incidental, however, to intellectual effort if the dangers of rule-of-thumb methods and empiricism are to be avoided.”

In more recent times, the 1995 Institute of Medicine (IOM) Report, Dental Education at the Crossroads: Challenges and Change, again discussed the pros and cons of dentistry as a medical specialty. While the report concluded that such a designation was not possible for a variety of practical reasons, it urged dentistry to move closer to medicine so that “…practitioners will become better prepared to work as part of a health care team in a more integrated health care system.” It urged curriculum reform, closer integration between medical and dental education, and a year of post-graduate education for all graduates with an emphasis on general dentistry. The report noted that “too many dental schools and dental faculty are minimally involved in research and scholarship” and urged schools “to formulate a program of faculty research and scholarly activity that meets or exceeds the expectations of their universities.” (4)

The 1995 IOM Report also noted the high degree of variability in curriculum emphasis based on course hours among dental schools, a situation that continues today. While there is consensus on the major blocks of subject matter (e.g., basic sciences, clinical sciences, and social sciences), there is no consensus on the emphasis among the different blocks to be studied, with the result that dental schools traditionally have had wide latitude in how much time they devote to subject matter. In fact, in 2008–09, the ADA Curriculum Survey showed that the range of total hours varied from 3,531 to 6,954. There was also great variation in curriculum time for each of the major blocks of subject matter, specifically, basic biomedical sciences, preclinical science, and clinical sciences. For example, the variation among schools in biomedical sciences course hours is between 452 and 1,455 hours. The schools with the fewest reported biomedical sciences hours (University of California, San Francisco) and the highest number of hours (Harvard University) are both highly respected schools. (5)

Bertolami quotes from Dr. Peter Polverini, dean of the University of Michigan School of Dentistry and host of an invitation-only conference in Ann Arbor, in stating that “…for the first time in nearly a century [the importance of the biomedical sciences in the dental school curriculum …] is being challenged by this new direction in dental education ….” (6) In fact, wide latitude among schools on the emphasis of the biomedical sciences has always existed. Interestingly, of the three new schools listed in the 2008–09 American Dental Education survey of dental education, one reports over 1,000 hours of biomedical sciences instruction (A.T. Still-Arizona) and two report 505 and 546 hours of instruction
(Midwestern University Dental School and Nova Southeastern University College of Dental Medicine, respectively), more hours than the University of California, San Francisco, and close to Boston University’s Goldman School of Dental Medicine, which offers 597 hours.

Similar variability can be seen in the percent of the clinical curriculum devoted to patient care in school clinics versus community locations. Even before the establishment of the new dental schools, there was no consensus on the emphasis in the curriculum required to educate a dentist.

The data clearly show that there is much variability in what the established dental schools consider necessary to educate students. The same is true of new schools. Simply put, the number of course hours devoted to the major blocks of course content do not necessarily equate with the quality of education, nor should they be considered representative of a dental school’s educational philosophy.

The Institutional Setting for Dental Education and the Research Mission

To elevate dental education from proprietary status and to improve pedagogy, the Gies Report recommended that all dental schools be part of the higher university system in the United States and Canada. Bertolami suggests that the new schools may be shortchanging research—ostensibly in favor of teaching and service—and that they are not located in the “best” universities. He states that dental schools should be in major research universities and questions whether “the nation’s finest universities may not opt to have a dental school.” He suggests that the incorporation of dental schools into the finest research universities is a way forward for dentistry “in reinventing itself not only as a discipline and vocation, but as a learned profession.”

Using National Institute of Dental and Craniofacial (NIDCR) grant support as a marker of a school’s research productivity, about half, or 34, of the 62 operating dental schools in the United States had grants of $1 million or more in 2011. (7)

Most of the funded schools are in the public or private Carnegie Doctoral/Research Universities-Extensive category (the term Research I Universities is no longer used). These schools must meet the mission of their universities through faculty research programs that are on a par with others within the university. The 34 schools on the list are generally recognized as doing so. In total, the 62 schools break down as follows: 37 are in the public or private Carnegie Doctoral/Research Universities-Extensive category and 25 are in the Carnegie Foundation Specialized/Medical institutions or similar campuses category. (The latter category was instituted by Carnegie to recognize the many academic medical centers that were established in the 1960s and 1970s that were not part of an existing university.) Research in a scholarly environment is going on not only in dental schools that are able to obtain grant funding from NIDCR, or those that are part of Carnegie Research-Intensive Universities, but also in schools that have a mission that includes a heavy commitment to community service and service learning. (8)

Boyer, in Scholarship Reconsidered: Priorities of the Professorate, broadens the category of research to include scholarship of integration, application, and teaching, in which faculty integrate, interpret, and apply research findings to problems in society. (9) Unfortunately, it appears that Bertolami, using wording
from the Polverini article (6), narrowly
defines research in the terms of “basic
biology of oral structure and the pathology
of oral-facial disease.” This leaves
out the many questions inherent in being
a profession that is in service to the public.
Scholarly research in all these areas—public health, sociology, health services,
bioethics, and economics—is important
to the societal role dentistry plays. In
many of the established dental schools,
this type of scholarly activity is either
self-funded by schools and universities or
funded by foundations. New schools as
well as established schools can create a
scholarly environment with a public service or societal mission in mind.

Schools that emphasize community
service often are engaged with such re-
search and can just as often be in
Carnegie Research-Intensive Universities
and/or academic medical centers as on
osteopathic medical campuses. A “pre-
vailing environment congenial to intel-
tlectual activity” can only go on, according
to Bertolami, from research about “dis-
covering new treatments, cures, and diag-
nostic methods, not necessarily about
teaching students.” (Italics are mine.) This
is a narrow view of scholarship and im-
plies that pedagogy is not able to create a
scholarly environment. However, Boyer,
in Scholarship Reconsidered, further rec-
ognizes “scholarship of teaching,” which
can be seen in many respected liberal arts
colleges and universities. This also ap-
plies to dental education.

Research universities are beginning to
recognize the importance of teaching in
their tenure decisions. Boyer further
noted that “When defined as scholarship,
however, teaching both educates and enti-
tices future scholars. Indeed, as Aristotle
said, ‘Teaching is the highest form of un-
derstanding.’ ”

The Accreditation Process, Benchmarking, and Rankings

Accreditation

Bertolami’s essay is pessimistic about
the future of dental education based on
what he calls the arrival of a two-tier sys-
tem of schools engendered by the open-
ing of new schools associated with
osteopathic medicine. Because it appears
that these schools emphasize community
service in their mission, it is inferred that they
will bring down the entire profession, making it
more vocation than learned. However, that is
not necessarily true, as a mission
that emphasizes community service does
not translate into a school with a lack of
scholarship, as discussed above.

There have always been different types
of dental schools, some more research-
oriented than others, just as there are dif-
ferent types of medical schools and law
schools. This does not mean that we have
a two-tier system of dental education, of
medical education, or of law schools. In
dentistry, all of the schools adhere to a
set of standards set up by the American
Dental Association’s Commission on
Dental Accreditation (CODA). (10)

According to Bertolami, meeting
CODA standards is not sufficient to dif-
ferrntiate schools’ philosophies, curricu-
um, and outcomes. He suggests that a
ranking system is needed to inform the
public and applicants and to differentiate
between the schools that he infers are
part of the two-tier system. My con-
tention is that no ranking system, will protect the public from unsavory prac-
titioners any more than do the current li-
censing regulations of the states and the
CODA accreditation process. Similarly,
nor ranking system can be devised that is
too better than the already extensive infor-
mation available to inform students of a
school’s philosophy, educational ap-
proach, and outcomes. Let’s first briefly
examine the accreditation system’s ability
to assure that there is only one tier for all
dental schools—those worthy of being
accredited—and then look at benchmarking
and ranking sys-

CODA exam-
ines six critical
standards for
dental schools:
institutional ef-
fectiveness, edu-
cational program, faculty and staff,
educational support services, patient care
services, and research program. Each
standard has a set of substandards,
which have been revised consistent with
established trends in dental education
and with national requirements for ac-
credited institutions. Accrediting teams
are drawn from knowledgeable faculty,
and schools prepare a self-study assess-
ment in relation to the standards. The
standards are constantly reviewed, up-
graded, and, to my mind, represent what
a contemporary dental school should
offer to students. New schools are
granted initial accreditation, indicating
that the “developing education program
has the potential for meeting the stan-
dards,” and this status is granted after
one or more site visits to the school and
until the school is fully operational. It
should be noted that the new schools are
being led by deans and faculty recruited
from existing schools.

It is beyond dispute that the faculty is
the most important ingredient in the quality of a school. While there are always shortages of full-time faculty, the accreditation process closely examines the number and distribution of faculty in relation to the school’s mission, goals, and objectives. The accreditation standard does not stipulate a specific number of faculty or thwart innovation, but it assures that the faculty is able “to maintain the vitality of academic dentistry as the wellspring of a learned profession.” So, there is a standard that promotes a learned profession, a vision upon which the entire profession agrees. Moreover, site visit teams are charged with assuring that schools meet that standard.

I disagree with Bertolami’s essay because the accrediting process does take into consideration differences in dental schools’ missions and goals, but assures that all schools, new and established, meet standards that are accepted by the academy, the practicing community, and the licensing community. If all schools meet these standards, there is not a two-tier system; instead, there is a system that allows differences in program around a set of commonly agreed-upon standards. This makes the entire dental education system dynamic and competitive and keeps the profession strong. Dentistry has made enormous advances as a profession in scientific understanding of disease, including prevention and treatment, from basic to translational research and into practice. The means are at our disposal as a profession through accreditation to keep the profession vital and learned.

**Benchmarking and rankings**

The first system for ranking dental schools occurred in 1918, at the request of the Surgeon General. Schools were rated as Class A, B, or C schools. (2) The implication was that “The graduates of Class A schools are more competent than the graduates of Class B and C schools to pass a given state board examination.” However, that was not the case, as there was no correlation between the two. Graduates of Class B and C schools were just as likely to pass the examinations as those of Class A schools. The ranking of dental schools was discontinued in the early 1990s, and the Council on Dental Education (the predecessor to CODA) was set up to examine schools under an accreditation process.

I don’t agree that benchmarking or rankings of schools is necessary or will provide the public and applicants with more information than is already available. The public is assured through accreditation that schools adhere to minimum standards and that their graduates are ready for licensure. In a 2010 American Dental Education Association (ADEA) Symposium, “Assessment: Portraits of Change,” I made the following comments:

> Ranking of universities and graduate schools became popular with the lay public in the 1980s when the *U.S. News and World Report* began its ranking system. While medical schools are ranked, dental schools are not. Some have asked why *U.S. News* doesn’t rank dental schools. Initially, there was a ranking for dental schools, but after examining the ranking methodology, there was a backlash by dental educators against the ranking system and all dental schools refused to participate. It was viewed as a popularity opinion poll of the faculty and administrators who answered the survey rather than a true assessment of the schools. Dentistry isn’t the only component of higher education to criticize the rankings, but we are the only ones who have been able to keep out of what many consider a flawed system that doesn’t fairly represent the quality of programs.

The *U.S. News* ranking system has come under much criticism and some critics state that it is just a list of criteria that “mirrors the superficial characteristics of elite colleges and universities” (11) The rankings are big business for *U.S. News*; the printed issue of the rankings sells 50 percent more magazines than the regular issue and the website has 10 million page views on a rankings issue compared to 500,000 in a typical month.

Given the flawed nature of the *U.S. News* rankings, are our potential students better off in selecting a dental school to attend without dentistry being included? Potential students for dentistry have to do more research and are far better informed about schools from their research than by blindly following the *U.S. News* rankings or any other such rank-
ings. Predental students can access much information on dental schools to make an informed decision. The ADA Annual Survey of Dental Schools has a plethora of data, from course hours to finances and from student tuition to clinic revenue, all in rank order. The official guide to dental schools published by ADEA has extensive information on every school, including the average DAT and GPA scores for all entering students. The NIDCR website has a ranking of research dollars received by dental schools.

A study of 239 applicants to the University of Pittsburgh demonstrated that, on average, applicants visited 13 different dental school websites and found that information on tuition, entering class statistics (DAT/GPA), admission requirements, acceptance rates and diversity to be what they sought the most. Forty percent of the applicants indicated that they based decisions equally on the dental school websites and other sources.(12)

Of course, college students also rely on peers and pre-health advisors, but they are searching the Web to get answers to their most important questions. So, we depend on students doing their own research regarding the best school for them to attend rather than some third party such as the U.S. News rankings. Personally, I’d rather have a student who does his/her own research and demonstrates independent thinking than one swayed by a superficial, one-dimensional ranking system.

A new ranking system along the lines that Bertolami suggests will be subject to the same foibles as the Class A, B, and C rankings of old and the same subjective type of rankings as seen in the U.S. News and World Report. Who sets up the values, and how do you get balance between the social mission and the research mission? The thought behind Bertolami’s ranking system as delineated in his essay is, it seems to me, based on a biased perspective; that is, unless schools are in research-intensive universities, they are unable to create a scholarly environment and to educate thinking professionals of the highest levels. The ranking system proposed will not improve the profession.

We should keep in mind that all of our dental students are well prepared and can think for themselves in selecting a dental school. Eighty-nine percent of enrolled dental students hold bachelor’s degrees, while only 30 percent of 25-year-olds in general hold bachelor’s degrees, and 7.1 percent of dental school enrollees hold master’s or higher-level degrees. These well-prepared students are
enrolling in the established schools as well as in the new schools. I have confidence that the next generation will continue the tradition of improving the profession and concern for the public’s welfare, thus keeping the dental profession strong.

**In Summary**

Dental education has served the profession of dentistry and the public well over the course of the 20th century and into the 21st century. Startling advances in science and technology have dramatically improved treatment and prevention, and the public rates dentistry as a profession to be trusted. Schools in research universities have added immensely to the knowledge base of disease. However, since the 1960s, dental schools have realized their obligation to reconsider their patient care and service missions.

Schools reorganized clinical programs to emphasize comprehensive patient care in which students learn to consider the entire patient from a sociomedical perspective. In 2000, the US surgeon general’s report, “Oral Health in America,” jolted the public and profession into realizing that we had left a lot of people behind in gaining the benefits of prevention and intervention of oral disease. Accordingly, for the past decade, when schools were reconsidering their mission, community service and service learning became legitimate missions and a responsibility for all schools. State legislators recognized that school clinics are part of the safety net system in the United States and outreach to underserved populations is important. It isn’t surprising, then, that new schools would see an important niche for their mission. This does not mean that because some schools will focus more heavily on the public service mission, they will be lesser schools relegated to a second tier. All schools can achieve a scholarly environment and educate learned professionals with the capacity to serve on faculties, in private practice, and in the public health system.

This is not to say that there are not many problems for the education community to grapple with in order to keep the system strong. Problem areas include high tuition in all schools; a significant decrease in state support to the public schools; a better appreciation for the need to understand workforce issues—including a better understanding of population-to-dentist needs; the potential for newer forms of allied health dental workers to enhance practitioners’ ability to treat the growing number of children and older adults in need of oral health services; and outreach to those who are disabled and poor.

Within the academy, it is important to emphasize interprofessional educational collaborations with medicine, nursing, and the other healthcare professions that can yield a more coordinated and higher-quality health system. There is a need to recommit to providing a postgraduate year for every graduate, given the complexities of today’s practice environment. A ranking system will have no effect on these important issues. By constantly striving for excellence within each school and through participation in the schools’ organization (ADEA) and the Commission on Dental Accreditation (CODA), standards can be kept high. Discussion and debate of these major issues are continually needed to sharpen our thoughts and keep the profession strong. Schools will change. However, the basic values intrinsic to the profession over the past 100 years should not.

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I am not a dentist, and I think that the closest I have ever come to a dental school was when I was an adolescent on the Lower East Side of New York (before it was hot!). I was a patient at the NYU College of Dentistry. Nevertheless, despite this slight acquaintance, I found the exchange between Charles N. Bertolami and Allan J. Formicola compelling for two reasons.

First, as a professor of public health, I have spent the better part of the past three years engaged in rethinking the core curriculum at Columbia University’s Mailman School of Public Health, and so I have confronted the question of what it means to educate—not simply train—professionals whose mission is to advance our collective well-being. Hence, it was illuminating to witness and learn about the fierce debate that characterizes the world of dental education.

Second, as someone who has worked on the issues of public health, I have thought not only about the duty of professionals to provide needed care, but also about the much broader and far more important questions of what the state has a duty to do to assure equitable access to healthcare services, to create just healthcare systems, and to secure the social conditions that promote health and limit disease and disability.

In this brief commentary I cannot hope to do more than touch on these issues.

Educating and Training Dentists

It is clear that we want dentists, as well as physicians, to be technically competent so that they can diagnose and treat the maladies that affect us. What scientific base is necessary for such technical capacity is clearly a matter of open dispute among dental schools, even among those located in great universities. As interesting to me is the question of how dentists are exposed to biostatistics, epidemiology, and the social and behavioral sciences. One can be trained to do dental prophylaxis, fill cavities, and do simple extractions. But to understand why dental disease takes form in various social classes and at particular moments in history requires far more. To understand why dietary changes occur, and what their impacts are in terms of the distribution of dental disease by class and race/ethnicity, necessitates an education that is both disciplined and broader than that which is conventionally thought of as involving only a good “tool kit.” To understand the forces that make possible or that create impediments to public health policy with implications for dental health requires more than dental training. Finally, to fully understand the ethical responsibility of dentists as professionals and the dental profession collectively demands an education that goes beyond the ability to recite a simple code of ethics.
It is, of course, an empirical question of whether freestanding dental schools that are conceived of implicitly or explicitly as for-profit institutions or that are embedded in universities that are framed by a profit motive can provide the broad education that I have alluded to, but I have my doubts. My doubts stem from a suspicion that there is a deep clash between the values that inform the choices of for-profit institutions and the marketplace more generally and the values of those institutions that see themselves as serving a broadly defined public good.

**Justice**

This leads me to my final point. In both the Bertolami and Formicola essays, there are allusions to dental inequities; that is, the extent to which access to dental services is affected by social class. The United States, as we know too well, is the only advanced industrial democracy that does not guarantee access to health care to all its citizens. Fifty million Americans have no health insurance; many more are covered by inadequate insurance. For decades, reformers sought to address this glaring inequity. With the passage of the Affordable Care Act and its gradual implementation, there will be extraordinary progress. But some will be left behind.

What is the story with dental care? How many cannot get the care they need? How many must pay out-of-pocket charges that are very burdensome or so burdensome that needed care is delayed?

These are questions that well-educated dentists and the dental profession as a whole need to address. They are questions that cannot be resolved by appeals to charity care or public clinics for the poor. They require an effort by the profession to argue and press for a guaranteed right to dental care as part of a broader right to healthcare services. Raising this question in a systematic way requires understanding the social forces that may foster or impede the path to dental justice. This ought to be a core mission of dental education in the United States.