

# Medical School Mission Statements as Reflections of Institutional Identity and Educational Purpose: A Network Text Analysis

Douglas Grbic, PhD, Frederic W. Hafferty, PhD, and Phillip K. Hafferty

## Abstract

### Purpose

A medical school's mission statement (MS) is an expression of its vision and a reflection of the broader social environment in which it is embedded. The authors examine how the institutional identity of U.S. medical education is projected through the MSs of all U.S. MD-granting medical schools. In addition, the authors examine the extent to which differences between subsets of schools (public versus private; research-intensive versus "social mission"-oriented) are reflected in their respective MSs.

### Method

Whereas existing studies have typically sought to uncover core themes using

content-analytic approaches, for this 2011 study the authors combined text analysis with network analysis to elaborate core concepts within larger networks of meaning across MSs. They computed measures of centrality (i.e., density or "connectivity") for each concept and presented the aggregations of MSs as semantic networks (i.e., representations or maps of the relationships among concepts).

### Results

Analysis across all MSs revealed a dense set of ties among a core set of concepts, indicating a general uniformity

among all medical schools; however, the authors identified appreciable differences within subsets of MSs (public versus private and research-intensive versus social-mission-focused).

### Conclusions

MSs of U.S. medical schools are meaningful statements about values and direction. The use of social network text analysis provides an innovative method for understanding the structure of meaning within MSs and, potentially, how these documents might speak to institutional performance outcomes.

The mission statement (MS) has become an essential document in expressing institutional vision and strategic planning.<sup>1</sup> MSs also allow a view of the physical, political, and social environment in which an institution is embedded. These texts, therefore, reflect a deliberate intention to communicate institutional identity and purpose to both internal and external audiences.<sup>2</sup> Whereas an abundance of research has examined the MSs of corporations,<sup>3</sup> business schools,<sup>4–6</sup> colleges and universities more broadly,<sup>7–10</sup> law schools,<sup>11</sup> and even zoos,<sup>12</sup> this line of inquiry is relatively new to

the field of medicine. We found, with the exception of Lewkonja's<sup>13</sup> cross-national, comparative study, no systematic analyses of medical school MSs.

Researchers examining MSs typically seek to uncover core themes using content analysis (i.e., an analysis of the frequency of words and themes represented in text) as the primary analytical vehicle. Though such an approach allows for the identification of major themes embedded within these texts, these studies typically leave unexplored the connections among such themes—even though these connections can reveal the structure and meaning of texts across multiple institutions within a field, or even how the institutions themselves are related (or not) to one another by virtue of their MSs. Following White and Dandi,<sup>14</sup> we combine text analysis with network analysis (i.e., an analysis of the relationships that exist between social entities)<sup>15–18</sup> to examine all U.S. MD-granting medical school MSs in order to understand how institutional identity is projected through these statements. Further, we examine the extent to which differences in expressed identity exist between subsets of schools (e.g., public versus private).

### MSs in Medicine

Few studies of MSs or other types of institutional texts are available within the field of health care. In addition to the aforementioned cross-national, comparative study of medical school MSs by Lewkonja,<sup>13</sup> only a few researchers—White and Dandi,<sup>14</sup> Smythe and colleagues,<sup>19</sup> and Williams and colleagues<sup>20</sup>—have investigated hospital MSs, and Bhat-Schelbert and colleagues<sup>21</sup> have studied family medicine residency program MSs. More broadly, other studies have examined the teaching, research, and clinical service missions of different medical specialty departments<sup>22</sup> or the oaths used in graduation and white coat ceremonies.<sup>23,24</sup> At an individual level, Rabow and colleagues<sup>25</sup> studied the personal MSs of a national sample of medical students, and Gruenbaum and Jotkowitz<sup>26</sup> conducted a comparative content analysis of codes of ethics written by medical students versus more established ethical codes. Similar to the study of MSs in other fields, all of these studies document how MSs function as a key vehicle for ongoing discussions about the goals and purpose of an institution or program.

**Dr. Grbic** is senior research analyst, Policy Research Studies, Association of American Medical Colleges, Washington, DC.

**Dr. Frederic W. Hafferty** is professor of medical education and associate director, Program in Professionalism and Ethics, Mayo Clinic, Rochester, Minnesota.

**Mr. Phillip K. Hafferty** is a graduate student, School of Art, Division of Art History, University of Washington, Seattle, Washington.

Correspondence should be addressed to Dr. Grbic, 2450 N Street, NW, Washington, DC 20037; e-mail: dgrbic@aamc.org.

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The mission of a medical school itself often serves as a treatise of a social contract—that is, “[m]edical school programs in education, research, patient care, and community outreach are or should become a means to meet [the] overarching mission to improve the nation’s health.”<sup>27</sup> Medical schools, then, are parties to that social contract, making necessary their responsiveness to a variety of internal and external audiences, such as affiliated clinical enterprises, faculty, students, other health professionals, the university, patients and their families, and other medical schools. A stable pattern of relationships among these stakeholders (which can be within or outside any one institution) constitutes an “organizational field” with a well-recognized institutional life.<sup>28</sup> MSs, therefore, can reflect the relationship among stakeholders and between the institution itself and its environment.<sup>1</sup>

Lewkonia’s<sup>13</sup> study of medical school MSs suggests that, even collectively, these statements contain only a small number of specific themes and an almost universal emphasis on (the themes of) education, research, and service. This finding suggests that schools construct their MSs with an existing script predefined by more established peers. As such, and as predicted by institutional theory,<sup>1,28</sup> we expect the MSs of U.S. MD-granting medical schools to be largely homogenous in rhetorical style. From a network perspective, this means that MSs should be densely connected through (i.e., they should have) a similar set of universal themes, making MSs, and schools themselves, largely indistinguishable in terms of their stated mission.

Nonetheless, although particular MS themes may appear to be meta or universal framings within analyses that stress the identification of core concepts, certain types of schools (e.g., public versus private; research-intensive versus “social-mission-focused”—see Mullan and colleagues<sup>29</sup>) do experience different extrainstitutional pressures, making them both dependent on and potentially responsive to specific audiences, such as state governments and/or local communities.<sup>27</sup> Because MSs are texts intended to communicate institutional identity to both internal and external audiences, we hypothesize that key differences in institutional identity

and purpose are projected through school MSs and will become apparent particularly under the lens of a network approach to text analysis. In this report, using a network approach we explore the differences and similarities in the MSs of (1) public versus private and (2) social-mission-focused versus research-focused MD-granting medical schools in the United States.

Moreover, and as noted above, the vast majority of research on MSs has focused on uncovering themes across institutions within a particular organizational field (e.g., community colleges or business schools). Since the development of research and methods in the field of network analysis, researchers have been able to examine the *social structure of meaning* embedded in texts.<sup>30,31</sup> As Carley and Kaufer<sup>32</sup> explain, a concept (e.g., “patient-centered”) is situated within larger messages (e.g., surrounding text or clauses) that enable the concept to be elaborated into larger networks of meaning. For example, though the concepts “education,” “research,” and “service” appear to be universal themes across medical school MSs,<sup>13</sup> “health” as a concept may be closer in proximity to “research” than to “service,” thus fundamentally reshaping the elaborated meaning of “health” from health as medical discovery to health as patient care within the larger text. More broadly, these larger networks of meaning “are windows into the structure of the groups, organizations, and societies discussed in these texts.”<sup>33</sup> For example, White and Dandi’s<sup>14</sup> network text analysis of the MSs of 50 Catholic health systems shows how the relational structure of concepts within MSs expresses variation among Catholic health systems.

## Data and Method

The population for this study comprises the 132 MD-granting medical schools in the United States and Puerto Rico accredited by the Liaison Committee for Medical Education as of May 2010. We first identified the medical schools using the Association of American Medical Colleges (AAMC) member-listing Web site<sup>34</sup>; we supplemented our list of schools through the use of a second AAMC site.<sup>35</sup> We used these two resources to identify each school’s home page, which became the starting point for our search for each school’s MS. In some instances,

a school’s AAMC-identified homepage was something else (e.g., the homepage of its affiliated medical center). In these instances, we identified the true URL using open search engines, such as Google, or combing the originally identified Web site for links to a more appropriate one. Although the primary focus of this study was the text analysis of medical school MSs, we collected additional data (other types of text attached to MSs [e.g., a vision statement or a values statement], the difficulty we encountered in actually finding each MS online, and the degrees of separation between an MS and a school’s homepage [i.e., how many links did it take to get from the former to the latter]).

Data collection began in May 2010 and continued through January 2011.

We used a combination of text analysis and network analysis, or network text analysis, which we defined as an analysis of the relationships between words and concepts within text, to examine our population and specific subsets of MSs.<sup>30</sup> Through the use of two software programs, AutoMap (version 3.0.8, Pittsburgh, Pennsylvania) and Organizational Risk Analyzer or ORA (version 2.3.6, Pittsburgh, Pennsylvania), we extracted *concepts* and analyzed the relationships among them. For our purposes, using previous research,<sup>17,31</sup> we defined concept as a single idea represented by a word or a phrase, such as “medical school” or “health care.” We worked with the idea that concepts “are devoid of meaning except as they related to other concepts.”<sup>31</sup> Thus, the concepts “supply” and “primary care” are endowed meaning when they are connected to each other in the form of a *statement*, as in “increase the *supply of primary care* physicians.” A *statement* is a relationship between two concepts. In turn, a map of all these statements together forms a *semantic network* (Figure 1). The structure of those relationships (i.e., how the statements connect to one another) and the relative position of each concept within the semantic network reflect the rhetorical style of a set or subset of MSs.

## Refining and analyzing the text

Before analyses, texts must first undergo preprocessing. The preprocessing phase involves deletion and translation.<sup>2</sup> Deletion removes articles, prepositions, conjunctions, and other nonsignificant



**Figure 1** A concept map or semantic network of the mission statement of one example medical school. Concepts visually proximate to each other tend to share a similar pattern of ties to other concepts. Furthermore, the size of the node is scaled by the frequency with which it appears in the text.

words from the text. Translation requires, first, stemming of the text (i.e., converting plural to singular) and, then, identifying words with similar meaning in order to aggregate those words into meta or higher-order concepts. For example, most medical schools use their formal name and/or related pronouns or identifiers (e.g., we/I/our) in their MS. Because each medical school name would be a unique concept (but of no real analytical value), we aggregated all names and pronouns under the concept “medical\_school.” That way, we could retain this aggregated concept in, or remove it from, the analysis, depending on the question we were asking. As a second example, we found that medical schools frequently employ adjectives, such as “consistently superior,” “preeminent,” “world class,” “cutting edge,” and “exemplary,” within their MSs. To simplify both our maps and our analysis, we aggregated these (and similar) terms (adjectives only) under the higher-order concept of “premier.” A third example is the use of nouns, such as “medical educator,” “teacher,” and “educator,” to refer to “faculty.” Notably, in this translation phase, we aggregated only synonymous concepts; we did *not* group concepts that, though not synonymous, could conceivably describe a meta (universal) concept, such as “service.” One of us (D.G.) carried out the actual translation using a thesaurus feature within AutoMap.

After preprocessing is complete, AutoMap converts the MSs into a central graph, or semantic network, composed of a series

of nodes to indicate concepts and arrows to indicate connections and/or direction of relationships (see Figure 1 for an example). To define ties between concepts within a sentence, we used a proximity approach whereby a given concept is linked to another within a specific “window” size of text.<sup>33</sup> The larger the window size, the greater the number of ties among concepts. We used a window size of 3, which means that we created ties for (or counted links to) every pair of concepts within three units, or concepts, of each other. We used the network analysis program ORA to visualize and analyze the resulting semantic network.

Below, we have provided an example of the process of refining the texts for analysis using a randomly selected MS. The original, anonymized MS reads:

The [Surname] School of Medicine has a threefold mission/objective provided by the [U.S. state] General Assembly. These are: to increase the supply of primary care physicians in [U.S. state], to provide outstanding medical care to the people in Eastern [U.S. state], and to provide educational opportunities to minority and disadvantaged students.

After—first—deleting articles, conjunctions, and other words that, in this context, do not convey a concept (the, a, and, etc.), and—then—applying the thesaurus, the MS reads as follows:

benefactor medical\_school provide state\_general\_assembly. increase supply primary\_care physician state provide premier medical health\_care people

region provide education opportunity minority disadvantage student.

After deletion and translation, this MS contains 19 concepts (e.g., “primary\_care,” “provide,” and “region”) and 36 statements (e.g., region-people and health\_care-people). Figure 1 shows the semantic network for this MS. Briefly, the example school’s concept map is notable in two respects. First, its MS contains a core concept: “provide.” Moreover, the map contains three groupings of concepts: (1) a lower left group of eight concepts (e.g., supply, state, and medical\_school), (2) an upper group of five concepts (e.g., premier, medical, region), and (3) a group of five concepts on the right (e.g., education, opportunity, minority). These three groupings appear to identify two constituencies: students (particularly disadvantaged/minority students) in the lower right and external constituents in the upper group.

Whereas network analysis may aid in the dissection of individual MSs and, as is the case with our example school, reveal a structure or groupings of concepts, analysis may also reveal that an individual school’s MS is void of any structure (itself an important finding). Examining multiple MSs, however, allowed us not only to identify core concepts and groupings of concepts across our population of MSs but also to attach a measure of centrality to those findings. The centrality of a concept in a network can be measured in a number of ways (e.g., density and conductivity

Table 1

**Descriptive Data Regarding Concepts\* That Appear Within the Mission Statements (MSs) of 132 U.S. MD-Granting Medical Schools and Within the MSs of Four Subsets of Medical Schools**

Schools by category	No. of schools	Mean words per MS (preprocessing <sup>†</sup> )	Mean no. of concepts per MS	Minimum no. of concepts per MS	Maximum no. of concepts per MS	No. of unique concepts for MSs by category
All schools	132	61	28	4	101	528
Private schools	54	65	31	6	77	374
Public schools	78	58	26	4	101	385
Top 20 research schools <sup>‡</sup>	20	56	26	8	90	180
Top 19 social mission <sup>§</sup>	19	56	27	6	67	175

\*For this context, the word “concept” signifies a single idea represented by a word or a phrase, such as *medical school* or *health care*.

<sup>†</sup>Preprocessing comprises, first, deletion (the removal of articles, prepositions, conjunctions, and other nonsignificant words) and, second, translation (the stemming of words [i.e., converting plural nouns to singular] and then identifying and aggregating words with similar meaning [e.g., teacher and instructor]).<sup>2</sup>

<sup>‡</sup>As defined by the total dollar amount in awards received by the National Institutes of Health between 2005 and 2009.

<sup>§</sup>As defined by the percentage of graduates who work as primary care physicians, the percentage of graduates serving in medically underserved areas, and the percentage of graduates who are underrepresented minorities.<sup>29</sup>

[see below]), but it generally refers to the concept’s location within the network; concepts that have greater centrality typically occupy strategic locations in the network. In this way, our study of MSs adds a distinctly quantifiable aspect to its analysis.

### Connectivity and meaning within MSs

One means to measure the centrality of concepts is through their connectivity. To explore the connectivity of concepts within MSs, we examine a concept’s *density* within a semantic network.<sup>32</sup> *Density* refers to the “breadth of meaning” of a concept across texts in that the greater the density of a concept, the greater is its connectivity within the semantic network. This dimension of connectivity is measured by the number of other concepts to which a concept is directly tied, regardless of directionality. In Figure 1, “provide” has the highest density score (score = 11) and, as such, is both located centrally and is the largest node.

Carley and Kaufer<sup>32</sup> present an additional measure of “centrality”—*conductivity*—which refers to the number of connected paths through the concept. Concepts can lead both into (in-links) or out from (out-links) a concept. With its many in-links and out-links, a highly conductive concept lies at the crossroads of many possible paths in the network. Nonetheless, a concept can, theoretically,

have high density but low conductivity if it has many ties that flow in only one direction. For example, the concept of “benefactor” has a low conductivity across all MSs because it, as highlighted in Figure 1, always lies on the path that leads into another concept, “medical\_school.” Although some concepts do occasionally serve solely as “push-off points” to other concepts (e.g., benefactor), our analyses showed that conductivity correlated highly with density for both our overall population of MSs as well as for subsets of MSs ( $r > 0.9$ ). In our analysis, therefore, we present centrality results using only the density or connectivity measure.

In our study, we use the measure of density to identify core concepts within the MSs of all schools. We also examined the MSs of particular subsets of schools: (1) public versus private and (2) the top 20 research schools (as defined by total dollar amount in awards received by the National Institutes of Health between 2005 and 2009) versus the top 19 “social mission” schools (as defined by the percentage of graduates who work as primary care physicians, the percentage of graduates serving in medically underserved areas, and the percentage of graduates who are underrepresented minorities).<sup>29</sup>

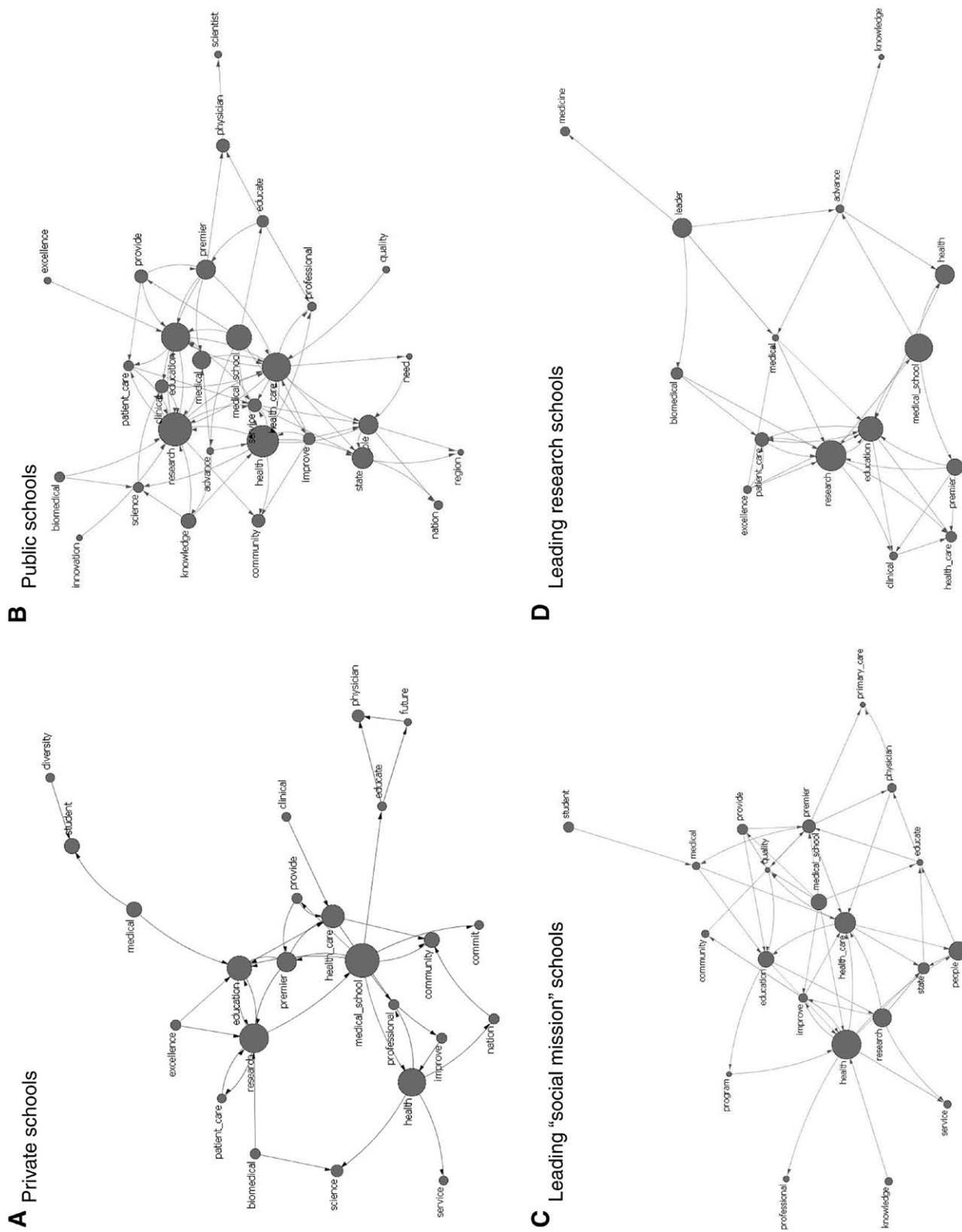
Given the overall number of concepts (N = 528) that appear across all MSs

(see Table 1), we needed to reduce the amount of data before we could present the network maps. Therefore, we retained concepts with density scores with a value of 10% or more of the maximum possible density (10% provided an adequate, but not overwhelming, number of concepts to examine). For example, for all MSs (Figure 2), we map concepts with density scores above 52 (10% of 528). Secondly, we show only the links (i.e., statements) that have higher degrees of agreement across MSs (i.e., two degrees of agreement for smaller maps and five degrees for larger maps—again, simply to provide an adequate, but not overwhelming, number). Carley and Kaufer<sup>32</sup> referred to this agreement as consensus—the more schools share the same links that flow in or out of a concept, the greater the “social consensus” among them. In essence, we ignored pairs of concepts that are tied together only infrequently. This allowed us to prune the network and observe those concepts most central within the map.

### Results

We examined the MSs of all but 1 of the 133 MD-granting medical schools that were founded prior to May 2010. As far as we could determine, the University of Iowa Roy J. and Lucille A. Carver College of Medicine did not have an MS at the time of data collection. Further, Mullan and colleagues<sup>29</sup> included this school





**Figure 3** Semantic networks of most central concepts within subsets of mission statements. The concept map presents only concepts that have five or more ties with at least one other concept for (A) private schools and (B) public schools, and concepts that have two or more ties with at least one other concept for (C) leading "social mission" schools (as defined by the percentage of graduates who work as primary care physicians, the percentage of graduates serving in medically underserved areas, and the percentage of graduates who are underrepresented minorities)<sup>28</sup> and (D) leading research schools (as defined by the total dollar amount in awards received by the National Institutes of Health between 2005 and 2009).

Table 2

**Top 10 Concepts for Mission Statements (MSs) of All U.S. MD-Granting Schools and of Four Subsets of Schools\***

Concept	All schools (n = 132)	Private schools (n = 54)	Public schools (n = 78)	Top 20 research schools <sup>†</sup>	Top 19 social mission schools <sup>‡</sup>
medical_school	<b>1</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>6</b>
health	<b>2</b>	<b>2</b>	<b>1</b>	<b>= 3</b>	<b>1</b>
health_care	<b>3</b>	<b>5</b>	<b>2</b>	<b>9</b>	<b>2</b>
research	<b>4</b>	<b>3</b>	<b>5</b>	<b>= 3</b>	<b>3</b>
education	<b>5</b>	<b>6</b>	<b>4</b>	<b>6</b>	<b>5</b>
premier	<b>6</b>	<b>4</b>	<b>= 6</b>	<b>= 3</b>	<b>7</b>
medical	<b>7</b>	<b>9</b>	<b>= 6</b>	19	11
community	<b>8</b>	<b>8</b>	<b>= 10</b>	26	<b>10</b>
student	<b>9</b>	<b>7</b>	14	= 15	<b>8</b>
people	<b>10</b>	= 18	<b>= 8</b>	12	<b>4</b>
leader	19	<b>10</b>	33	<b>2</b>	= 27
knowledge	11	24	<b>= 8</b>	= 15	14
state	27	181	<b>= 10</b>	72	13
medicine	33	30	35	<b>= 7</b>	69
biomedical	17	= 18	17	<b>= 7</b>	= 27
patient_care	32	28	29	<b>10</b>	49
provide	13	14	12	22	<b>9</b>

\* For this context, the word “concept” signifies a single idea represented by a word or a phrase, such as *medical school* or *health care*. The top 10 concepts (in boldface type) are those with the highest network density (or those with the most connections to other concepts). Column 1 presents the 10 highest-ranking concepts for all MSs. Subsequent columns show where these same 10 concepts rank in terms of their density for each subset of MSs. The authors have added any top 10 concept for an individual subset that does not also appear in the top 10 for all schools to the list in a stepwise fashion. For example, the top 9 concepts for private schools are the same, albeit in different order, for all schools. However, the concept with the 10th-highest density score for private schools is “leader” and thus appears as the 11th concept in Column 1. For all schools, “leader” was found to have the 19th-highest density score. An equal sign indicates that the concept has the same rank order (i.e., the same density score) as another concept.

<sup>†</sup> As defined by the total dollar amount in awards received by the National Institutes of Health between 2005 and 2009.

<sup>‡</sup> As defined by the percentage of graduates who work as primary care physicians, the percentage of graduates serving in medically underserved areas, and the number of graduates who are underrepresented minorities.<sup>29</sup>

the most central but also that other themes or connected concepts appeared in specific places or “regions” of the network maps. For example, the concepts grouped in the lower right portion of the map appear to reflect the schools’ internal audiences (“physician” and “student”), and the concepts in the upper central portion are schools’ external audiences (“community,” “nation,” “people,” “region,” and “state”). These external audience concepts are linked to the core through the concepts of “health\_care” and “improve,” whereas the internal audience concepts are linked to the core through the concept of “educate.” Toward the left portion of the map are concepts that reflect varying aspects of institutional identity, such as “biomedical,” “science,” “knowledge,” and “patient\_care,” as well as “innovation,”

“discover,” “leader,” and “excellence.” “Diversity” appears as a marginal concept (lower right) and is linked through student and not through, for example, “patient” or “people.” (Notably, the concept “service,” which was a core concept in Lewkonja’s study,<sup>13</sup> appears in our semantic networks as a more marginal concept, along with such concepts as “educate,” “people,” and “community.”)

Figures 3A through 3D present concept maps for each subset of MSs. First, although the number of concepts contained within the MSs of both private (Figures 3A) and public schools (Figure 3B) are almost identical (see Table 1), the core (centrally located) concepts in the MSs of private schools have fewer ties to one another and therefore reflect

a lower degree of consensus (which is reflected in the lower density of the private school MS semantic network). For example, the concept “leader” is connected to many other concepts; it has high centrality (and *density*; see Table 2—ranked 10th), but it does not appear on the concept network map because its location within the network lacks consensus across schools. This greater dispersion of concepts suggests that there is more variation among private schools in the notion of “mission” compared with public schools. Second, the maps illustrate differences in the relationships of concepts in the MSs of public versus private schools by showing differences in the relative positions of certain concepts. To illustrate, in the MSs of public schools, the concepts of “state” (e.g., Minnesota) and “people” (e.g., the residents of Minnesota) are more closely bound to the concept of “health” as illustrated by their proximal locations on the network map (Figure 3B) compared with the map for private schools (Figure 3A, which does not include “people” or “state” at all). In contrast, in the MSs of private schools, the concept of “we/I/our” (medical\_school) holds a more central position (and thus appears on the private school map closer to the concepts of “premier,” “research,” and “health\_care”; Figure 3A).

The institutional identity of leading research versus leading social mission schools also differs quite noticeably (Figures 3C and 3D). “Health,” “health\_care,” “state,” and “people” are more central for leading social mission schools (Figure 3C) compared with leading research schools. Also, the concept “service,” though not a central concept, has a high degree of consensus with “health” and “research” for the social mission schools (and does not appear at all on the network map for leading research schools). The concept map for leading research schools (Figure 3D), on the other hand, reveals a stronger projection of self-identified (versus other-identified) institutional identity, with the “we/I/our” concept (“medical\_school”) being most central along with the concepts “leader,” “excellence,” “patient\_care,” and “biomedical” (none of which appear on the network map of leading social mission schools). Further, the MSs of leading social mission schools appear to be more responsive to external and internal audiences

compared with those of leading research schools, as the concepts “community,” “people,” “state,” “student,” and “physician” appear on the network map of the former, but not the latter.

## Discussion

This study illustrates how the MSs of U.S. medical schools function as statements of values and direction. Using a combination of text and network analysis (network text analysis), we have shown how the relationships among concepts within these documents reveal both a universal rhetorical style across all U.S. MD-granting medical school MSs and important differences by subsets of medical school. The MSs of all schools are unified in their emphasis on “health” as an objective (i.e., health of the people) and of “health care” as a vehicle for achieving the mission. Further, the concepts “research” and “education”—as well as the adjective “premier”—appeared (almost) universally in supportive rhetorical roles. This universality suggests that within this organizational field of stakeholders, including other medical schools, MSs largely are homogenous in content and meaning. However, different interpretations of the notion of “mission” also exist within some subsets of MSs, as defined by school characteristics. MSs, our findings show, also function as windows into understanding differences in institutional identity among certain segments of schools—in our case, public versus private and research-oriented versus social-mission-oriented schools. For instance, public schools place an emphasis on and have a stronger consensus (as defined by the number of ties) among core concepts related to “the health of the people of the state.” Projecting a different kind of social mission, leading research schools emphasize their self-identity (“medical school”), leadership in biomedicine, and their premier education and research, all evidenced via our network approach to text analysis. The analyses showed how medical schools can relate differently to the groups and institutions within their social contexts.

Many other research questions can be explored using medical school MS semantic networks and/or a network analysis approach like the one we used. For example, initial analysis

(not shown) suggests that the newer schools (those founded since 2006) may differ appreciably from their older peers—thus yielding additional insights into institutional theory, educational innovation, and mission differentiation.

Future investigators could also focus on a specific concept, such as “diversity,” in order to better understand both how that concept is positioned within the universe of medical school MS concepts (central or marginal) and how that issue relates or is framed relative to other key concepts, such as “physician,” “student,” “health,” or “community,” within the world of medical education. The methodological approach presented here is uniquely suited to this form of investigation because it provides a visual network map to examine relationships among concepts. In this study, we took a conservative approach when aggregating concepts—choosing *not* to aggregate most concepts; however, other researchers may aggregate references to (concepts such as) “minority” or “disadvantaged,” into a higher-level concept such as “diversity,” which would better allow for connections among other less similar concepts to emerge. At the same time, schools with a high density score for a concept (such as, to continue with our example, “diversity”) could form a subgroup for further analysis. That is, they could “unpack” or examine the aggregate concept of “diversity” to explore the relationships among its component parts (e.g., “disadvantaged” or “minority”)—and thus better understand the semantic network of this key issue. Finally, the data derived from examining ties among concepts within MSs allow for the possibility of examining the structure of the similarities and differences among the MSs of individual medical schools.

Although we do know that the MSs of, for example, public schools are in the aggregate different from those of private schools, we made the comparisons reported herein only to establish the validity of using the MS as a statement of institutional purpose and not as a test of schools’ operational fidelity to their MSs. Ultimately, we hope that these and related comparisons will provide an empirical platform from which to explore questions about the ways in which institutional performance remains faithful to—or deviates from—its stated

purpose. After all, we would be remiss in not pointing out that although we found “health” (as in “health of the public”) to be the core concept both in terms of organizing individual MSs and in linking all U.S. medical school MSs, an open (and important) question remains. That is, do U.S. medical schools, taken as a whole, *actually* function to advance the health of *all* citizens—whether through the types of students they train, the practice locations of their graduates, the quality of the medicine their trainees and graduates deliver, and/or the quality of the care and services they themselves provide? The need to aggressively explore the alignment between what institutions say they do (as reflected in their MSs) and what they actually do (as reflected in their institutional practices) is a necessary next step in better understanding how well all medical schools and medical educators do in fulfilling medicine’s social contract with society.

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