

THE 1993 HENRY F. SMYTH, JR. AWARD LECTURE



Professions, Professionals, and Professionalism

by Morton Corn, Ph.D., CSP

Editor's note: Dr. Morton Corn was the 1993 recipient of the Henry F. Smyth, Jr. Award. This award is presented annually by the American Academy of Industrial Hygiene to an individual who has made outstanding contributions to the field of industrial hygiene and improvement of public welfare. Dr. Corn's lecture was given on October 27, 1993, at the Professional Conference of Industrial Hygiene in Cincinnati, Ohio. Dr. Corn is one of the most visible leaders and spokespersons of the industrial hygiene profession. He was the director of industrial hygiene at the University of Pittsburgh prior to serving as the Assistant Secretary of Labor and head of OSHA during the Ford administration. He currently is a professor and director of the Division of Environmental Health Engineering at the Johns Hopkins School of Hygiene and Public Health. His lecture illustrates what it takes to be a professional and to be part of a profession. It comes at a time when state and federal regulations are eroding what is perceived as the domain of industrial hygiene. His lecture is extremely pertinent to the issues of licensing, registration, and ethics, which are currently being debated among the members of our profession.

It is a great pleasure and an honor to be selected as the recipient of the Henry Smyth Award. It is particularly gratifying because I was a colleague and acquaintance of Henry Smyth at the Graduate School of Public Health, University of Pittsburgh, during the late 1960s and early 1970s. I stood in awe of his 1955 Cummings Lecture on TLV[®]s⁽¹⁾ prior to ever meeting him. Henry instructed in toxicology in the Department of Occupational Health; I was responsible for the industrial hygiene and air pollution programs, with attendant teaching responsibilities in courses related to those subject areas. All masters' and doctoral degree candidates enrolled in the toxicology course. It was through them that I learned of Henry's approach to teaching.

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He lectured, but welcomed interruptions in the form of questions. He also assigned questions that required extensive literature search and review prior to formulation of an answer. He was, in the opinions of the students, a hard task-master and laid the groundwork for student critical capacity.

Henry and I discussed many subjects; we were somewhat wary of each other. In 1967 I had been promoted to the rank of professor on the resignation of Professor Theodore Hatch. Henry half seriously warned me of the problem with achieving your goals at an early age; it becomes very difficult to sustain the pace. Our discussions were mostly philosophical.

Perhaps the subject we disagreed most on, and which is closest to the heart of this organization, was the issue of certification. Henry was a strong advocate of certification; I was uncertain of its merits. At Harvard University during my graduate studies, I watched Professor Charles Williams labor with this issue, resulting in the breakaway of the Health Physics Society from industrial hygiene. In the 1950s and 1960s I was also an observer of the breakaway of air pollution professionals to the then Air Pollution Control Association.

Industrial hygiene in the 1960s was in the doldrums. You need only look at the association annual membership numbers if you doubt this descriptor. Certification, in my opinion, was not an effort to protect the public from unscrupulous or incompetent practitioners, but rather a form of "professional closure," namely, restricting those who would practice. In retrospect I believe the benefits of certification have exceeded the disadvantages, but more of that later. Henry and I never reached consensus on this issue. Despite our professional differences, there was mutual respect for the other's views and integrity.

My final disagreement with Henry was related to acceptance of the nomination to serve as Assistant Secretary of Labor for Occupational Safety and Health. Henry was not an advocate of federal regulation. In his view, serving as the head of such an agency in the Department of Labor would not promote my development, and there were better ways to improve occupational safety and health. The hope of the nation

was in fostering better science and professionalism, not government regulation. Good science will prevail, Henry would say. Many would agree with him today.

It was a challenge to focus on a subject true to the memory of Henry Smyth. The subject selected is professions, professionals, and professionalism. What is a profession and what is a professional? We see advertising related to professional carpet cleaning and professional plumbers. Recently I was told one wants a professional as their travel agent. It is my purpose to briefly trace the origins of the learned professions in the United States, indicating the salient features of their development. There is a long and rich literature relating to the development of the professions. In this précis I will draw heavily on scholars in social and behavioral history. The current state of industrial hygiene as an aspiring profession will be contrasted with the evolution of other professions. The characteristics of the current practice of industrial hygiene will be graded against criteria widely accepted as markers of professional maturity.

Personally, I am concerned about the direction industrial hygiene is taking. Industrial hygiene has experienced explosive growth since 1976 when OSHA emphasis shifted from safety to health. Hygienists have been projected into the limelight and they are in demand. It is a time to carefully probe our desires and hopes for what this field will be in 10–20 years rather than merely ride the crest of the wave. This topic would warm the heart of Henry Smyth. He would take the lead in discussing it, throwing down the gauntlet with challenging questions and leaning back with what many, including myself, considered his owlish/impish look, asking the listener to provide a better solution if he/she could.

EARLY ORIGINS OF THE PROFESSIONS IN THE U.S.: 1750-1830⁽²⁾

During the 18th century the American colonies looked to Great Britain for many of their customs. London was the largest and the most powerful city in the western world. In London there were three recognized learned professions—medicine, law, and the ministry. They were graded (Table I). In medicine the first rank was the physician—a gentleman with a classical education and some medical training, who attended to internal diseases and prescribed drugs. He did not work with his hands, as befitted a gentleman. The surgeon did. He treated injuries and he learned his skill through apprenticeship, the so called “barber surgeon.” He was not called “doctor” and he was not a gentleman. And finally there was the apothecary, who dealt in drugs.

In the legal profession the barrister was the gentleman. The attorney and solicitor did not have a classical education

and were not gentlemen: they learned through apprenticeship to the barrister. They could not plead in any courts. They could prepare the case, but they could not try it.

In the church the ranking was bishop, priest, and deacon. All were university educated. Bishops were noblemen and only a few clergyman rose to become bishops. The responsibilities of the church were distributed in accordance with that hierarchy.

The highest-ranking members of these learned professions had a classical education and all of the work they did was grounded in the ownership of land. Gentleman did not take part in manual labor. Indeed, during residence in England during 1961-62 and then 1972-73, one could easily discern these different attitudes with regard to manual labor. Tradition changes slowly.

In the United States these understandings of the three professions were adhered to. Mastery of the technical ingredients of the subject was not as important as classical education and gentlemanly status, which was believed to prepare an individual for dealing with the complexities of life. This belief was the forerunner for a current essential property of a profession, i.e., a code of ethics. The industrial revolution, with its demands for technical proficiency, was to greatly change these views. At a later date advances in science also altered the course of the medical profession, assigning mastery of the technical subject increased importance. However, during this period the English class system was at the heart of professional development. A gentleman could rise to the demands of any profession. The professional’s understanding of the theoretical framework for professional interactions and the classical understanding of the world were more important than menial tasks such as surgery and case preparation. The schools of medicine and law of that day propagated this approach.

The uppermost hierarchies of the professions created associations that maintained these differences. The Royal College of Physicians, The Inns of Courts, and the Convocation included responsibilities for self government and licensing.

In the United States there was no landed gentry to speak of; land was readily available and the English gentlemanly class did not exist. Land was not held by the few; there was a large amount of land and many obtained rights to it. Therefore, the concept of the professions being based on gentlemanly attributes did not survive into the 19th century, but it was a long time dying out.

Alexander Hamilton articulated another characteristic of the professional as a gentleman of special sort

who will fill a neutrality to the rivalry between the different branches of industry and will be likely to prove an impartial arbiter between

TABLE I. 18th-Century Learned Profession Hierarchies in England

<i>Preparation</i>	<i>Medicine</i>	<i>Law</i>	<i>Clergy</i>
Classic Education and Gentleman	Physician	King’s Counsel/Sergeant/Barrister	Bishop
Apprenticeship	Surgeon	Attorney	Priest
Apprenticeship	Apothecary	Solicitor	Deacon



them. Ready to promote either so far as it shall appear to him conducive to the general interest of society.

Thus a professional was neutral, and an impartial arbiter. He stated this because he believed the professions were based on science and understanding that permitted the practitioner to reach a neutral conclusion; there was no vested interest by the gentleman. A professional who demonstrated his understanding of the professional science and knowledge was worthy of the public's trust to reach a neutral decision. There were others who challenged this viewpoint, but to a large extent it prevailed well into the 19th century.

Those who sought to model the American system after the British system established licensing and laws to raise standards. By 1800 three-quarters of the states had such laws for legal practice and by 1830 only three states were without them for medicine. The principal education was a gentleman's education in the classics. More than 90% of Massachusetts lawyers between 1800 and 1830 were college graduates. As a result of the forces released by the American Revolution and later the industrialism of the 19th century, there were intense efforts to try to retain these concepts of the gentlemanly ingredient of the professions and the status of those who would practice them. In the early 19th century these efforts were doomed to failure because of the vast area of the United States and the necessity for professionals to practice at remote sites, essentially providing all services required.

The legal profession started its growth pattern after adoption of the Constitution. Ours was a nation of laws, not monarch decrees. With acquisition of land, growth of cities, and commerce, the legal framework of a state/federal relationship dictated growth of the legal profession. Both the medical and the legal professions developed their schools and learned societies to guide the progress of the professions.

Table II is a summary of selected characteristics of the learned professions during this period.

1830-1880: LEVELING THE PLAYING FIELD

The migration westward and the introduction of steamboat transportation led to settlement of the great Mississippi Valley. Class distinction and exclusiveness gave way to recognition of those with skills needed in the development of the west. The gentlemanly authority and honor of the professions were eroded. Also, young men increasingly bypassed the liberal education associated with the highest niches of the professions. For example, Massachusetts repealed bar

TABLE II. Profile of the U.S. Learned Professions, 1750-1830

Gentlemen's classic education and code of behavior
Gradual blurring of hierarchy of functions
Start of professional schools and societies
Concepts of neutrality and control

admission requirements in 1835. New York City established its Bar in 1876, thus reversing this downward trend. Medical societies also faced repeal of all admission requirements for the practice of medicine; the societies survived as discussion circles. It was not until 1901 that the American Medical Association was transformed through fundamental constitutional reform. This denoted the reversal of the downward trend in the medical professional.⁽³⁾

Political democracy replaced government by gentlemen. The power of the vote led to political machines. A laissez-faire economy developed a new class of businessmen with their own code of honor rooted in commercial exchange customs. De Tocqueville commented on the increasingly unequal distribution of wealth resulting from commercial success, particularly in urban areas. He was skeptical of the character and talents of persons elevated to wealth by the marketplace.⁽⁴⁾ The net result of these societal forces was that the old world view of "gentleman" vanished: the gentleman and the successful tradesman were equal candidates for elevated social standing and authority.

Increasing numbers of young men bypassed liberal education and concentrated on professional college technical education. The number of medical colleges doubled from 1830-1845. The same trend extended to law; too many schools, too little apprenticeship. The quality of the schools varied enormously. In the words of Haber,

this burgeoning of proprietary schools was but the outcome of that momentous and far-reaching development of the era—the disestablishment of the professions. The equalitarianism of this period through a mixture of ideas and impulses, nevertheless readily led to a partial discrediting of the professions and to the condemnation of their licensing laws as conspiracies against the laity.⁽⁵⁾

Haber indicates "the middle years of the 19th century, from the standpoint of organizational power and effectiveness, were the nadir of the professions in America." In 1800 three-quarters of the states had set educational requirements for the practice of law; by 1860 only one-quarter had any such requirements. In 1800 almost all states had medical licensing laws; in 1860 none had them. With these requirements removed, the professions' claims to authority and honor were undermined. The boundaries between professions and occupations grew very blurred.

Technical developments in the learned professions also affected structure. Physicians of the 18th and early 19th centuries explained disease on the basis of a unified body type system, such as circulation or neural, leading to heroic treatments, e.g., bleeding or narcotics. The increase in medical knowledge fostered the growth of specialists. Previously, specialists were denigrated and termed quacks; they usually had a poorer medical education. The downgrading of physicians permitted the rise of apothecaries to pharmacists and silversmiths to dentists.

The authority and honor of the law also suffered during this period. The sheer mass of law demanded codification

and less reliance on the discretion of the judge. Specialization and contingency fee practices arose permitting lawyers to take fees as a percentage of the award. Increasingly, the law was practiced as a craft, with the lawyer relying on a codified body of law bearing little resemblance to fundamental issues or theory.

Table III summarizes selected characteristics of the learned professions during this period.

1880-PRESENT

If the period from 1830-1880 witnessed the general "disestablishment and humbling of the professions in America,"⁽⁶⁾ how did medicine and law ascend to their strong professional positions in the next hundred years? The answer lies in the transformation of society brought about by industrialization and urbanization.

Pre-industrial society was based on passive property in land and industrial society on actively managed capital. Professional society is based on human capital created by education and enhanced by strategies of closure that is the exclusion of the unqualified.⁽⁷⁾

Perkins further points out that a professional society is more than a society dominated by professionals. The professionals are not another ruling class replacing landlords or capitalists. Professional hierarchies stretch all the way to the bottom of societies. More and more jobs become subject to specialized training, their practitioners claim expertise beyond the layman's acquisition, and they demand the status and rewards of a profession, namely secure income, rising salary scale, fringe benefits, and a pension.

The industrial society was permeated by the entrepreneurial ideal based on active capital and competition, on business investment as the engine of the economy run by the active owner-manager, ideally the self-made man who rose to wealth and power by his own intrinsic worth and won out in open competition. The rival ideal of the working class, never achieved in practice, was the collective ideal of labor and cooperation, of labor as the sole source of wealth and cooperative endeavor as the fairest means of harnessing and rewarding it, and of the workers' right to the whole produce of labor.⁽⁸⁾

The professional ideal, in contrast, is based on expertise and selection by merit. It is an ideal that develops in the

course of a society growing more complex and specialized, literally demanding specialization of citizens and the offering of their services to other citizens to enable them to deal with their lives on a day-to-day basis.

The half-century or more during which there was no professional regulation of lawyers and doctors in the United States generated a reform-oriented literature of reconstruction, most notably through comprehensive studies of the medical, legal, and engineering professionals.⁽⁹⁾ Perhaps the most comprehensive study of the establishment of the most powerful U.S. profession, medicine, during this period, is by Starr.⁽¹⁰⁾ The Flexner report of 1910 was an important template for codification of education and behavior for a profession benefiting enormously from the availability of new scientific tools arising from major new understandings of germ theory and disease.

The history of the medical and legal professions during this period is a continuing saga of perfecting closure mechanisms to restore public trust. After the repeal of licensing laws, there was growth in the number of ill-prepared practitioners due to the increased need for services resulting from explosive national population growth and advances in medical and legal science. Many of the closure mechanisms, including those pertaining to race and sex, would be corrected by the law almost a century later. Nevertheless, these professions and the church grew in prestige, influence, and power.

It is interesting to note that the development of the English and U.S. professions briefly traced here was dependent on relatively stable and tolerant governments. With highly conservative governments in the mid-19th century and the National Socialist regime in 1933, the German professions were restricted with regard to association and organization, leading to different development.⁽¹¹⁾

The rise of large corporations and institutions of learning was the basis for the growth of the engineering and teaching professions, groups of salaried specialized aspirants to the status of the learned professions. These are viewed as fringe professions not quite on a par with medicine, law, or the clergy, primarily because they lack independence of action with regard to their clients. This statement brings me back to the questions raised at the beginning of this talk, questions we can now address after this very basic highlighting of the professions and their development in the United States.

TABLE III. Selected Characteristics of the Learned Professions, 1830-1880

Breakdown of entry requirements
Relinquished classical education. Increased emphasis on "professional" education, regardless of quality.
Greater accessibility; increase in numbers
Repeal of licensing requirements
Sellers market; maintained personal relationships with clients
Attempted to maintain intellectual content of their work, while expanding the science and skills
Cities were centers of professional activity

DEFINITION OF A PROFESSION AND STATUS OF INDUSTRIAL HYGIENE

Originally a profession meant any work that afforded a livelihood. One can trace the word back to the Roman tax-gatherer requiring a taxpayer's statement of occupation to facilitate tax assessment. All occupations were professions. The meaning of the word was elevated in mid-18th century England to denote the learned professions, as described above; medicine, law, and divinity were so characterized. Some extended the term to military officers.

One current definition of a profession is by the presence or absence of essential properties. Table IV lists common,

currently acceptable characteristics of a profession if one defines profession in this way. Professionalism is defined as the process of achieving professional status, and some would define a profession based on this process.⁽¹²⁾ I will utilize the essential property approach here, fully recognizing that closure based on exclusion, namely keeping others away from the advantages one has in society, is key to professionalism. Professions do not have a monopoly on exclusionary strategies; ball players, artists, musicians, etc., utilize them, but some argue that the way in which professions use them is different. Adherence to the essentialistic analysis of professions may preclude appropriate analysis of the professional development in the non-English speaking societies.⁽¹³⁾

The Table IV "essentials" represent a type of ideal for the professions. Some essentials are disputed in discussions of specific professions. For example, do engineers have autonomy, or do accountants have a monopoly of the market? Regardless of these challenges, Table IV is a good place to begin when considering the current status of an aspiring U.S. profession. I have graded industrial hygiene for each of the Table IV properties. A grade of 1 is the highest rating; 4 is the lowest.

Highly Specialized and Advanced Education

Surely, industrial hygiene encompasses highly specialized knowledge and, as an aspiring professional the would-be hygienist is encouraged to acquire a master's degree in industrial hygiene, but we do not require it. In fact, the majority of new entrants to the field in the 1980s have bypassed this requirement. Medicine and law do not waive the professional degree. The industrial hygiene certification process does not require an applicant to have the degree as a prerequisite to sitting for the exam. Thus, the certification process has to some extent (not easily assessable) enabled industrial hygienists to achieve an important marker of "professional" status without acquiring the professional degree.

Other aspiring professions (architecture, accounting, pharmacy, management) are affirming the need for their professional degree at this time, a trend that industrial hygiene is not following. This is a major issue for industrial hygiene, one that should be more directly rather than passively addressed by our associations. The desires of senior respected industrial hygienists can only be inferred by

younger recruits through deciphering requirements for association membership or certification. Curiously, industrial hygiene has taken the very major accreditation step for professional education while not requiring the education. Do we or do we not have a professional degree? The answer to this question belongs up front in our association membership book. Needless to say, the professional degree is a major historical tool of professional closure, albeit for the public well being. I have rated our education a 2 in Table I because the professional degree is an optional educational requirement.

A Special Code of Conduct

The ethics code exists, but it is very general and vague. Some think it also contains contradictory elements. There are few (if any) enforcement actions, and there is no body of "case law" to guide our members. Thus we meet this criterion in having a printed code, but I have downgraded our rating to 2 because it is a criterion without teeth; it could be construed by outsiders to the field as "window dressing." Ilka evaluated the American Occupational Medical Association code of ethics after 10 years of usage, and while recognizing its existence as a landmark event, concludes it is a "delusion having little influence on practice." The industrial hygiene code is, unfortunately, in this same category.

Altruism/Public Service

As a teacher of future hygienists since 1960, I can attest that a strong sense of altruism and public service exists among our ranks. That is not to say that all U.S. hygienists can be so characterized, but the vast majority are motivated to improve the condition of working people. They anticipate a good income and a solid middle class life, but the acquisition of wealth or power is not the main driving force. Most hygienists want to do good while earning a living. The altruism/public service essential derives from the gentleman's code of conduct ingredient of early U.S. professionals. This attribute is essential if we are to be viewed as neutral arbiters of issues, as Alexander Hamilton viewed it. A grade of 2 is assigned.

Rigorous Competency Tests, Examinations, Licensing

The industrial hygiene certification test is the only one associated with proficiency testing, excluding those administered by degree-granting institutions. An appropriate and timely question is whether a written test is sufficient to judge professional competence. The ability to test well is distinctly different from the abilities needed for professional achievement. I know certified hygienists who have never taken an air sample and others who know little of how to solve a real problem in the field. An interview requirement would

TABLE IV. Essential Properties of Professions and Ranking of Industrial Hygiene

<i>Property</i>	<i>Grade Industrial Hygiene^A</i>
Highly specialized and advanced education	2
Special code of conduct ("ethics")	2
Altruism/public service	2
Rigorous competency tests, examinations, licensing	3
High social prestige	4
High economic rewards	2
Occupational career pattern or ladder	4
Monopolization of market in services	4
Autonomy	3

^AGraded 1-4, with 1 representing fully meeting the essential property



at least alert the Academy to these deficiencies. A certification apprenticeship/preceptor program might cure them. In the professions, as with legal tender, the bad will dilute and even drive out the good.

Industrial hygiene in the United States was born from the marriage of medicine and engineering. Alice Hamilton, a physician, started the practice of industrial hygiene. It was codified into an academic program at the Harvard University School of Public Health in the 1920s under the leadership of Philip Drinker, a chemical engineer, and his brother Cecil, a physician and physiologist.⁽¹⁵⁾ The development of industrial hygiene in these early years is described by Jacqueline K. Corn in her history of the American Conference of Industrial Hygienists.⁽¹⁶⁾ The field derives from two strong professional disciplinary bases. Is that heritage being perpetuated today?

AIHA has been on a membership drive and even awarded a one-week Caribbean cruise for a member among those responsible for recruiting the largest numbers of new members. What is AIHA seeking—numbers, or quality? What is our goal as an aspiring profession? The issue should be openly debated.

Also, it is my understanding that the AIHA Board no longer passes on new members. A simpler administrative procedure exists that assigns this role to the Membership Committee. This is worrisome. The approval of new entries to our association is one of the most important functions of elected board members. I grade industrial hygiene 3 with regard to this property.

High Social Prestige

All professions desire this. It is a precious but elusive goal. Obviously, it derives from contributions to society and the perception of other professionals and laymen. Industrial hygiene is barely recognized by the public. It has a long way to go to achieve high social prestige. This property is rated 4.

High Economic Rewards

Industrial hygiene salaries and fees have advanced very significantly in recent years. Industrial hygienists compete well with engineering practitioners with similar years of experience, but are not as well represented as engineers in the upper levels of management. Industrial hygienists are not as well remunerated as physicians and lawyers, but those incomes are within reach in both the industrial hygiene salaried and private practitioner arenas. I rated this property 2 in Table IV; some might rate it 3.

Occupational Career Pattern or Ladder

Young industrial hygienists do not have clearly defined career paths identified, nor has the groundwork been done to establish the equivalent of internships or clerkships in medicine or law, respectively. This is an important agenda item for the profession. This property is rated 4.

Monopolization of Market in Services

The marketplace is flooded with other practitioners claiming to meet traditional industrial hygiene needs. Federal

and state government have promoted these “buyer beware” situations with three- and five-day certification courses for asbestos removal, assessment, and control, and radon assessment, for examples. The OSHA Reform Act dialogue includes discussions of voluntary audits and audit certifiers established by the states. If the past is any measure of the future, qualifications for certifiers will be at a very low level. Industrial hygienists must oppose the extension of highly technical and judgmental tasks to three- and five-day “wonders,” products of short courses required for practice in many states. Once again, the bad will drive out the good.

The recent New York City Public School scandal involving asbestos⁽¹⁷⁾ probably would not have occurred had seasoned professional industrial hygienists been involved in the effort. However, industrial hygienists in name were involved. Inspections were flawed, some were never performed, but were reported completed and public trust was, in general, undermined. Perhaps most important, the magnitude of the absolute risk involved, and the associated relative risks, were never made clear to the public. Monopoly is a denigratory business term in the United States. When it comes to professional tasks, monopolistic practices have many benefits to the public and closure mechanisms are appropriate. However, one must ensure that newcomers with the competence and the public service commitment can gain entry. If highly skilled services are to be delivered to the public, we cannot allow those poorly prepared to claim they can deliver them. I rate industrial hygiene 4 in this property.

Autonomy

The most controversial professional essential is autonomy. Some hygienists have it, most do not. Salaried hygienists in organizations serve as staff professionals. They recommend safety and health program ingredients and practices. They do not have line authority. Thus, it is arguable if they have independence distinct from the power and prestige of their line manager it very much depends on the individual organization. In my consulting experience, some do and some do not, almost entirely as a result of the individual hygienist/line manager relationship.

With regard to purely technical task fulfillment, such as sampling surveys, controls design, etc., there is total autonomy. It is with regard to the use of results after their organizational transmittal with associated recommendations that hygienist autonomy is subject to compromise.

The subject of professional autonomy is complex and, as with other topics touched on in this talk, it requires further discussion. I rated industrial hygiene a 3 in this regard. We have a long way to go.

SUMMARY

This opportunity has been utilized to briefly trace some salient features of U.S. learned profession development, and to then take stock of where industrial hygiene stands relative to nine essential properties often used to define a profession. Review of the past reveals that industrial hygiene is not

unique. It is an aspiring profession in a complex society with many groups representing specialized skills. All are clamoring for professional status. The scorecard for industrial hygiene indicates that we are a long way from parity with two well-developed U.S. learned professions, medicine and law; we are in midstream development. If we do not get swept downstream by some of our own sponsored activities, which appear at times to be at cross purposes with achieving essential professional properties, we have a good chance of achieving learned profession status in the next decade or two.

U.S. citizens repeatedly assign high priority to the quality of the work and outdoor environments, and will continue to do so for years. This is an opportunity seldom offered an aspiring profession—a match between expertise and public concern. We must stay close to our roots in medicine, public health, and engineering and pay more attention to where we want to be in 10 years as a profession. It is time to consolidate, use carefully considered closure mechanisms, define goals, and chart a 10-year course. If we do not, we may lose any identity we now have.

There is a real risk that the elitism of the professions will be rejected, as it was in the mid-19th century, if they do not perform as promised. We must more visibly and effectively serve our clients, including the public, if this risk is to be minimized. It is difficult to imagine, but governmental regulatory mechanisms, so ubiquitous in our society, could carefully define the needs we seek to meet and provide pathways for others to meet these needs. Ayn Rand in *Atlas Shrugged* depicted the ultimate casting off of the qualified and talented in society to further equalitarianism. It remains sobering reading and a warning, albeit an extreme one.

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