

Civility of Discourse and Integrative Curriculum: The Overlooked Duo of Academe

Umid R. Nejib, Ph.D.

**Professor of Engineering
Wilkes University**



**Seventh Annual Final Word Lecture
Faculty Recognition Day
Wilkes University
May 15, 2000**

CONTENTS

Abstract	3
Background	4
The Central Role of the Civility of Discourse	5
Civility of Discourse in the Information Age	8
Is Civility of Discourse Measurable?	10
The Challenge to the Standard Curriculum	12
The Fundamentals of an Integrative Curriculum	13
Curriculum Attributes Matrix, C.A.M.©	14
Conclusions	16
Acknowledgements	17
References	17

Wilkes University Press
Wilkes-Barre PA
2000

Abstract

The world as it entered the era of the industrial revolution did not face diminishing trade boundaries, a highly diverse work force, an elevated educational profile, and rapid dissemination of information. Changes were gradual and the information was slow in reaching the general public. International news was a rarity; the moon was a celestial object; Africa was the "Dark Continent"; and the Director of the Patent Office announced that everything worth inventing has been invented. Academe was based on historical disciplines. Contemplation and reflection were the norm, discourse was patriarchal, and the curriculum was inherited. The past was closer and the future – well the future was just there.

In light of contracting time for reflection, rapid technological innovation, viable competitors, efficient marketplaces, and a diverse but strongly linked population – the presence of Civility of Discourse coupled with an Integrative Curriculum on the campus becomes a necessity. They represent not only a basic characteristic of a university prepared to succeed in a new millennium, but more importantly the educational environment for the preparation of productive and conscientious citizens.

Civility of Discourse manifests itself in the freedom of speech, truth in debate, and respect for the individual. It is not only what it is said but also how it is said and what is meant. It is felt rather than seen, thus providing an atmosphere that encourages professionalism and nurtures creativity. Civility of Discourse is not an abstraction but a tangible and, to a certain extent, a measurable phenomenon. On the other hand, Integrative Curriculum is an efficient mode of operation, a learning exercise, and a scholastic undertaking. It is a strategy and a process with well-defined parameters and a viable assessment procedure. It allows the curriculum to respond quickly and in a seamless fashion to meet the educational demands in a rapidly growing knowledge-base of a society networked for speedy information exchange.

This essay is my attempt to provide yet another alternative, which may place academe in a proactive position vis-à-vis the challenges of today and those of tomorrow. In underestimating the role and the importance of Civility of Discourse and Integrative Curriculum, especially at this time in history, academe is not utilizing a powerful duo to sustain its mission.

Background

Today, we are observing the dawn of a new century in the midst of a technological revolution potentially more profound in its impact socially, politically, economically, and educationally than the industrial revolution of the last century. Flowing into that mainstream of technological change has been the United States' economic and political vitalization propelled by the internationalization of commerce, rapid communication, breakthroughs in the sciences, creative presentation of the humanities, and the complex societal issues of a diverse and multilingual population. We have walked on the moon, flown faster than sound, communicated through satellites, looked into sunken ships, and replaced defective hearts. Our students are, and will be, the product of this revolution. They have the ability and the know-how to access a large and diversified knowledge-base and appreciate multidimensional teaching methodologies. While their attention span may seem short, their absorption rate of the material is exceptionally high. And they are not hesitant to voice their opinions about what they perceive as mediocrity. As a consequence, these factors have changed, as well as elevated, the parameters for a university to implement its mission, to attract qualified students, and to compete for funds and resources.

It is granted that the academy has been attempting to address these imperatives in its effort to prepare students for the challenges ahead [1]. The reaction -- and it is a reaction -- from many university faculty and administrators, upon first inspection and review of these facts and keeping in mind their dynamic nature, is that the task seems formidable and multifaceted. Two options are available to academe as it struggles to respond with viable methodologies: Understand and embrace the change or pretend to adopt the change. The fact remains, however, that the seriousness of the accelerating change from the rigidity of the industrial revolution to the fluidity of the ensuing technological revolution will require a fundamental shift in the approach to curriculum design and in the environment of the institution.

Throughout my life as a student, as a professional, and as a man, I learned to underplay the symptoms or the appearances and to seek the fundamental definition that describes a phenomenon, defines a problem, characterizes an issue, or advocates an ideology. To my thinking, Civility of Discourse and Integrative Curriculum represent fundamental ingredients, that will ease the transition and sustain the character of the university in an era where the norm is a rapid technological evolution and global interdependency. Both Civility of Discourse and Integrative Curriculum achieve same objective through mutual reinforcement of each other. They can best be described as the soul and the body of a true university -- a successful university of today and that of tomorrow.

In recent years, there were those who insisted that academe is a business like

any other business. Most of this argument is a result of warranted perception that a university is inefficient in its operation. It is true that an academic institution is a business. It is a "people" business and its "product" is people. The objective of academe is to educate, and the foundation of the learning process is effective teaching, meaningful scholarship, and responsive curriculum. The "product" of the academic "business" requires an operational environment far more delicate than the perceived callousness characterizing traditional corporate business where its "product" is a "thing" in the service of the public. Academic leadership, on the other hand, manages a constituency that is composed of intellectual and professional equals, while corporate leadership deals with subordinates. Nevertheless, the success or failure of a university, like business, is subject to market needs and the ability of its management to foresee and meet these needs.

The absence of Civility of Discourse has the potential of seriously undermining the fundamental mission of a university -- education and freedom of thought. Pessimism will fill the atmosphere, distrust will be the norm, and creativity will begin to erode. Similarly, its absence in the corporate world will lead to the loss of the customer-base and ultimately to insolvency. No customer likes to deal with an organization that is rude and uncaring. In the absence of an Integrative Curriculum, efficiency will suffer, program obsolescence will begin, and the return-on-investment will rapidly decline. Cost will escalate and the financial posture of the university will be weakened.

The Central Role of the Civility of Discourse

It is reasonable to assume that Civility of Discourse is an outcome of a value system. Values are normative standards, which influence thought and action. Values, both personal and communal, form the qualities desired of an individual and that of an educational system. The general perception is that society shapes these values. Today, values are also influenced by governments, major companies, professional organizations and, as always, by the educational process.

In ancient civilizations of Mesopotamia, Greece and India, as well as in western cultures through the middle ages, the heart of traditional education considered worthy of the free mind, consisted of the trivium (grammar, rhetoric, and logic) and the quadrivium (arithmetic, music, geometry, and astronomy). From the beginning it was clear that the central concern had been the reconciliation of the human mind with the mysteries of nature and the material world. Open discussion of philosophy and science were generally intended and marked by an environment of collegiality and to a certain extent admiration (Civility of Discourse). When this environment is distorted totalitarianism triumphs, and when it is allowed to flourish renaissance triumphs.

Society in general and the university in particular hold the key to values. The model of a university creating an elitist culture of graduates succeeds only in advancing the frontiers of knowledge and scientific discovery. Unfortunately, it will fall short in confronting unethical conduct, knowing that it could not do much without risking its position. Because of recent technological advances and global competitiveness, the mission and the responsibility of a university is being redefined to embrace not only community and societal needs but also global need [2]. It is expected, for example, that an engineer must be technically competent, must offer meaningful public service for the benefit of society, and must have a positive outlook directed toward the changing world and its values. On the other hand, a historian must provide relevancy to the past within the context of its science and culture, must believe in diversity, must embrace global change, and must avoid elitist posturing.

It is not surprising that corporate business in the current era of geopolitical movement into trade blocs and multinational organizations considers the understanding of and respect for cultural values to be essential. Corporate business has come to appreciate the profitability of Civility of Discourse in its corporate culture. The barriers among people and nations are diminishing, causing thought and values to be viewed on a wider and a more diverse scale than ever before. Viable choices made must be based on their potential service to mankind as a whole and not on their potential to serve a select group or geographical location. The choice, in other words, is not between French and Chinese values, but between self-serving values and those for the common good.

The lack of Civility of Discourse was the centerpiece of the imperial British policy of divide and conquer. While the policy worked for a while to the benefit of the few, it started the world toward a future of turmoil. The many conflicts of the later part of the 20th Century in Africa, Asia, and the Middle East are an implicit result of that policy. While the argument is that these conflicts are due to ancient disagreements between the various factions, the fact remains that the British policy of creating "independent" territories and "realistic" boundaries had the clear objective of aggravating and exasperating old feuds and differences. It is hoped that the US learns from pitfalls of yesterdays and its universities continue to be the guardians of the Civility of Discourse as well as its teachers.

There are those who chastise leaders who are advocates and practitioners of Civility of Discourse as being "weak" on leadership. George Washington, Abraham Lincoln, Mahatma Ghandi, and Salah Al-Din exemplify leaders who are both strong and effective. The Civility of Discourse was the mode of teaching of Moses, Jesus, Mohammed, and Buddha – and they have most of the world population listening and following their teaching. On the other hand, the history books sites many infamous, but "strong," leaders who discarded the values professed by the Civility of Discourse. Stalin, Hitler, Mussolini, Machiavelli are know for their intolerance to discourse and civility. It is possible to link the decline of voter participation in the

United States electoral process, to negative campaign strategies. The rise in the use of the wedge issues, the dehumanization of opponents, and demagoguery in general are measures of deteriorating Civility of Discourse. The nature of the recent Bradley-Gore contest for the Democratic Party nomination was marked by its attempt to practice civility and discuss issues. The hope is that the Gore-Bush campaigns for the presidency of the United States will have the same mark. Unfortunately, the Las Vegas odds-setters are betting against it. It is interesting to point out that the public despises, but to a certain extent tolerates, the behavior of underhanded campaigning tactics of politicians. That same public does not tolerate and will not accept similar behavior from academe.

Civility of Discourse in the Information Age

The emergence of the "Information Age" meant that the only way to tackle global competition was to have access to information. Like any medication one has to be prepared for the side effects. No one is claiming to forego the medication, but overlooking the side effects exemplifies ignorance. Every time a technological breakthrough is announced by the telecommunication industry, the question arises as to when and how human beings will catch up and be worthy of these advances. "For if the truth is told – selling cellular phone to a public that is not ready for them is a little like handing typewriters to chimps. They may be able to punch the buttons, but boy, the results are far from satisfactory" says M. Sanghvi, columnist for the Times of India. She continues, "Not only are basic human courtesies disregarded, but also a whole gamut of unfamiliar rudeness has been introduced into our lives." She continued to provide a variety of examples some of which were amusing. Sad to say, most were indicative of civility in retreat. Most of you have encountered examples of such rudeness.

It is fascinating to read that Andrew Rosenheim, Managing Director of Penguin Press, said that in fifty years the book would be extinct. Almost all of the parameters of a successful library are now managed by computers and stored in their peripherals. Libraries and bookstores will inevitably be linked to networks, sharing resources and maximizing the use of scarce funding. Networks will dominate the operation. It would be the smart and the logical plan to follow so libraries and bookstores may increase efficiency and stay competitive. If libraries are to survive in the future they must harness the new technologies. The obvious consequence is that the customer in general and students in particular need not interact with staff for any activity such as borrowing, returning or buying a book. The outcome will then be not only the loss of user-friendliness and personal transactions, but also the increase of isolation. With the predictable decline and potential demise of the book, academe must and should address the consequences of generations of students being isolated and insulated. The university should ascertain

that its plans for the modern library would ensure the presence of the Civility of Discourse.

If the book is lost and the interpersonal relationship that humans need is lost, then civility will be lost. And with the loss of civility civilization will give way to the dark ages. The public expects the Civility of Discourse as the norm of campus life. It expects that the university will avoid the pitfall of blindly following a dead-end path under the guise of materialistic efficiency. It expects that the academy will continue to resist the temptations of short-term gains at the expense of being the sanctuary of the book and the freedom of thought.

Meanwhile, some may take consolation in the salutary words of T. S. Eliot, "Where is the wisdom we have lost in knowledge and where is the knowledge we have lost in information?" On the other hand, the 11th century scientist-poet Omar Khayyam in his *Robaayat* metaphorically articulates an alternative when told that he and selected others would profit tremendously if he were to adjust the days of the calendar, which he was commissioned to develop [3]: he replied,

Ah, by my Computations, People say,
Reduce the Year to better reckoning? – Nay,
'Twas only striking from the Calendar
Unborn Tomorrow and dead Yesterday.

Is it the role of industry to teach civility? The answer for that question is that industry is responsible for the behavior of its own personnel, and civility is one characteristic that it rewards and strives to reach. After all an uncivil salesperson produces no income. On the other hand, educating the public is academe's primary responsibility. A technology-driven global economy is in dire need of graduates who are educated to understand that raising the standard of life (the ability to relate to other human beings) is different from raising the standard of living (weighing everything in terms of material comfort). Civility of Discourse is what makes this understanding possible, and where but in the university's learning environment are the students expected to observe it and experience it.

To change the focus from traditional boundaries of thinking to a global outlook requires an explicit and realistic mission by an educational institution coupled with the adoption of an effective plan. In many cases such a change presents a threat to the status quo. The academy is not a utopian site, and it has its complement of those who, in the pursuit of a selfish agenda, would rather ignore the role of the university as the custodian of civility and constructive discourse by blaming technology, professional programs, corporations, and government. This agenda is based on a hypocritical argument intended to avoid responsibility by fostering discontent.

Establishing and maintaining Civility of Discourse on campus can not be achieved through the standard mechanics of teaching "relevant" courses augmented by the use of instructional technologies. It is rather obvious that such an approach

is a transparent excuse of avoiding the responsibility of being a teacher. The values professed by the Civility of Discourse are learned by observing the conduct of teachers and mentors, and for that matter—the conduct of all university personnel with each other and with the students. One may venture to say that Civility of Discourse is professionalism at its best, an experience that should be continuously nurtured by the teachers and the university leadership.

Is Civility of Discourse Measurable?

Academe is continually struggling with assessment and evaluation. It is only logical that the question will be asked – How does one measure Civility of Discourse? It is a valid question but the answer is neither simple nor obvious. It is synonymous to the eternal questions of: How to measure the appreciation of a sunset? How to measure the love of a child? How to measure the feel of solitude? and How to measure love? In all case writers, philosophers, scientists, poets, and prophets attempted these measures throughout history.

Within the university context, Civility of Discourse, among other things, is a description of the state-of-being in the work environment of a university. Consequently, the best measurement that can be offered under the circumstances is a citation from a question and answer session with a Prophet when asked about work in an environment where Civility of Discourse is present—

The Prophet's answers are found in the book of Gibran Khalil Gibran [4]. And I quote:

Then a ploughman said, Speak to us of Work.

And he answered, saying:

You work that you may keep pace with the earth and the soul of the earth.

For to be idle is to become a stranger unto the seasons, and to step out of life's procession, that marches in majesty and proud submission towards the infinite.

Work is love made visible.

And if you cannot work with love but only with distaste, it is better that you should leave your work and sit at the gate of the temple and take alms of those who work with joy.

For if you bake a cake with indifference, you bake a bitter bread that feeds but half man's hunger.

And if you grudge the crushing of the grapes, your grudge distills a poison in the wine.

And if you sing though as angels, and love not the singing, you muffle man's ears to the voices of the day and the voices of the night.

And what is to work with love?

It is to weave the cloth with threads drawn from your heart, even as if your beloved were to wear that cloth.

It is to build a house with affection, even as if your beloved were to dwell in that house.

It is to sow seeds with tenderness and reap the harvest with joy, even as if your beloved were to eat the fruit.

It is to charge that all things you fashion with a breath of your own spirit.

And to know that all blessed dead are standing about you and watching.

It is possible to conclude then that if the individual experiences and exhibits these qualities at work most of the time, then Civility of Discourse is present and well.

The Challenge to the Standard Curriculum

The initial university structure in the USA is a transplant of an early European form, which has evolved over the years and assumed its own characteristics. The standard approach to curriculum design has served the academy well over the years. While the curriculum maintains certain similarities to its 19th century heritage, the approach to its design should accommodate and respond to the changes being mandated by the new revolution, a revolution where rapid technical and scientific progress, especially in the communication area, is moving the world from regionalism to global. By the 21st century, industry will be global, the marketplace will be global; the competition is already global. Within the context of the new revolution, a university program advocating the delivery of good education exclusively through standard curricula development augmented by "high-tech" delivery system is pursuing a "virtual" reality.

The standard approach to curriculum development or modification starts by defining its components (courses) based on loosely inherited historical objectives and requirements. When successfully completed the curriculum should produce a graduate who possesses the knowledge, the ability, and the skills to function in tomorrow's society. Changes are introduced through the addition, deletion, and sometimes content modification of these courses. The development of courses is conducted with a micro view rather than a well-defined macro. It is a long tedious process, and in many instances, a very frustrating process. It is further complicated by intra-college discussions, which is tenuous at best. In any event there are voices that claim that alteration to this approach is a threat to a well-established "tradition" and format. The appropriate answer is a question: Is tradition a static phenomenon? And the answer is no. Observe the evolution of the US curriculum over the past century. Better still; ask a historian or a theologian.

Today and definitely tomorrow the norm is flexibility and speed so as to keep

pace with the rapid expansion of discovery, the swiftness by which these discoveries are disseminated, and serious competition. In the absence of Civility of Discourse, this built-in conflict between response-time and knowledge-base will heavily task faculty time and entrench the problems of low efficiency and high costs. The product of such a program will be a graduate who lags behind in ability and knowledge in meeting the paradigms of the new revolution.

Redefining the format and the content of an educational program is not a simple task given the fact that formal US education is the transplantation of early European (English) educational system. The dichotomy presenting itself to faculty and administrators alike is a conflict between the realities of the industrial revolution of an insulated regional order, and the realities of the technological revolution of an open global order. A need to reevaluate the current approach to curriculum design has become apparent. Fortunately, the same tradition provides the premise to initiate these changes: progress. Progress is an excellent catalyst; it can stimulate educators to seek alternatives rather than edit standards. One such alternative is an instructional strategy based on the concept Integrative Curriculum. Integrative Curriculum is dynamic and can respond and anticipate change quickly and effectively. Such a curriculum is characterized by the fact that at the early stages of the program, the students follow a well-articulated outline of courses, labs, and activities. However, the students' responsibilities vis-à-vis learning increases as they progress through the program [5]. An integrated curriculum is well suited for a millennium that is best described as being fast moving and global.

The Fundamentals of an Integrative Curriculum

One may define Integrative Curriculum as being a curriculum where the interrelationship between its various components is clearly defined as well as interdependent in meeting program objectives and goals. It is characterized as being fast in its response to changes of goals or emphasis with a built-in assessment process. Integrative Curriculum is a multidimensional process whose degree of success depends on two foundations: A university environment exhibiting a healthy degree of Civility of Discourse, and a faculty whose value system includes discovery, teaching, application and integration. Professional development is closely linked to the four functions desired of the faculty [6].

Curricula can be classified as being in a conceptual stage or in an operational mode. The approach used to adapt or construct an Integrative Curriculum has strong resemblance to a systems design process. First, the product is defined (in this case the attributes/goals) followed by the development of the necessary components (in this case the syllabi). The attributes as defined here are those characteristics and skills envisioned by the faculty and acquired by the student upon graduation from a specific program of study. The faculty should avoid the classical trap of course

titles being synonymous to attributes and serious effort should be made to minimize the number of these attributes.

Attributes are divided into two categories: General Traits and Program Specific. For example the General Traits may include Creative Problem Solving and Constructive Reasoning; Effective and Clear Communication Skills; Science/Math Interrelationships; Teamwork and Collaborative Effort. On the other hand, Program Specific attributes in Electrical Engineering may include: Computer integration and software utilization; Electronic device modeling, and fabrication; Measurement, data acquisition, and testing; Modern communication & optics; Project design, integration, and management.

There are four basic steps in structuring an Integrative Curriculum or adapting it to an existing one. These are Identify the attributes; Define the time necessary to complete the process; as well as individual time slots for the completion of each segment; Construct the Curriculum Attribute Matrix C.A.M.© [7]; Review the matrix and proceed to develop and/or modify courses and syllabi to meet the desired goals.

The first step, and probably the most important and challenging, is to articulate the attributes (characteristics, skills, objectives, and goals) of a given program. Attention should be made to the axiom that perfection in defining the attributes is not a goal. Defining the attributes is not a terminal process. They must and should be revisited and periodically reevaluated in anticipation of changes. It should be evident that in the absence of Civility of Discourse, open and unselfish discussions will be difficult, and consensus on realistic and meaningful attributes will be hard to achieve.

Curriculum Attributes Matrix

The Curriculum Attributes Matrix, C.A.M.© is a tool intended to provide a macro view of the curriculum and also add a new dimension to the assessment of a given course or activity including its impact and contribution to the curriculum as whole. This pseudo-quantitative method simplifies and streamlines the curriculum design or modification process.

The matrix is a two-dimensional table of attributes vs. courses/labs/seminars. It generates a variety of tables organized according to the nature of the courses such as "Required Courses in the Discipline," "Required Courses Outside the Discipline," etc. The optimal number of tables is set at five to avoid, once again, the problem of being overwhelmed by data that will detract from having a meaningful feel for the curriculum as a whole. The table is completed by assigning a value to the contribution of every course/activity to each attribute using the single digit known scale of 0, 1, 2, 3, and 4. The choice of the scale is intentional to accommodate inherent overlaps between attributes as well as between courses. Keep in mind

that the objective is to develop an overall understanding for the curriculum and not to develop an accounting scheme. The data is then totaled and normalized with the results given in percentages and identified by (course) Assessment and (program) Emphasis" as shown in Table 1.

Table 1 is an illustration of the "Required Courses in the Discipline" table using the example attributes given above. The values shown are arbitrary. Any resemblance of the attributes, number of courses, and assigned rating shown in the table is purely coincidental.

Table 1: Required Courses in the Electrical Engineering

Required Courses in the Discipline Course/Lab Credit Hours	EE1 3	EE2 1	EE3 3	EE4 4	EE5 2	Emphasis
General Trait Attributes						
Creative problem solving and constructive reasoning	1		2		1	16%
Effective clear communications skills	2		1			13%
Science/math interrelationships			4		1	20%
Teamwork, collaborative effort, leadership			3			13%
Assessment	30%	0%	56%	6%	9%	100%
Program Specific Attributes						
Computer integration and software utilization	3	2			4	22%
Electronic device modeling and fabrication	1	2				6%
Measurement, data acquisition, and testing	1	3	4	4	3	46%
Modern communications systems and optics	2	4	1	1		20%
Project design, integration and management	1	1			1	7%
Assessment	28%	14%	17%	23%	18%	100%

There are two reasons why the program faculty should complete of these tables. The first is to ensure a consensus as to the objective of a specific course and its contribution to the attributes. The second is to articulate what the program faculty "perceive" to be the contribution of the courses outside their discipline. This perception can be the catalyst for faculty exchange among departments and programs with the intent of achieving a clear understanding as the objective of a specific course.

Once the tables are completed and examined, the faculty will be able to affect changes of emphasis and/or distribution through syllabi adjustments and achieve the intended goals of the program. For example, while EE2 is a strictly program specific course that does not contribute to any of the general trait attributes, all the general trait attributes have been addressed. Furthermore, the "Measurement, data acquisition, and testing" seems to be the emphasis of this program.

Conclusions

Civility of Discourse and Integrative Curriculum manifest themselves in the quality of education, the credibility of the leadership, the morale of the constituency, and the commitments of its benefactors. Within the university context, Civility of Discourse is a description of the state-of-being in the work environment, and Integrative Curriculum is an operational mode that provide the tool to respond efficiently to the educational demands in a rapidly growing knowledge-base. Their presence often indicates success and a vibrant campus, but their absence often reflects decline and confusion.

Ideal cases exist only in a theoretical sense, and academe in the United States is no exception. The positive tradition of encouraging the creative process in the individual that distinguishes the educational paradigm in America will always be challenged by the thought and action of pseudo-intellectuals who, in the name of tradition, attempt to enforce a self-serving policy rather than cultivate ideas and motivate people. This delicate fiber that is Civility of Discourse can only be nurtured and protected by the ability of the university family to adopt civility as the norm of conduct.

I can not think of a better ending to this essay than a quotation from Omar Khayyam who so wonderfully and eloquently described those who chose to follow the path of teachers and be teachers themselves. Omar Khayyam said,

With them the seed of Wisdom did I sow,
And with mine own hand wrought to make it grow,
And this was all the harvest that I reap'd –
"I came like Water, and like the Wind I go."

Acknowledgments

I am indebted to so many of my friends, colleagues, mentors, and students who over the years have influenced my thinking and broadened my perspectives. Their collective efforts in making this undertaking a reality is hereby acknowledged. This work is dedicated to those who believed in the concept and nurtured it; to those who benefited from it and helped others; and to those who were skeptics but encouraged its growth.

References

- [1] Bordogna, J., "Diversifiers and Unifiers: Fractionaters and Integrators," *IEEE Education Society Newsletter*, Fall, pp. 1-3, 1991.
- [2] Nejib, U. R., "Integrating Values and Knowledge in the Preparation of Scientists and Engineers," Invited Paper, Proceedings of the International Conference on Values and Attitudes in Science and Technology, September 3-6, 1998, Kuala Lumpur, Malaysia.
- [3] Khayyam, O., *The Robaiyat*, Edward Fitzgerald Translation, Grosset & Dunlap Publishers, New York, N.Y., 1971.
- [4] Gibran, G. K., *The Prophet*, Alfred A. Knopf publishers, New York, N.Y. 1926.
- [5] Nejib, U. R., "The Evolution of Engineering Education into the 21st Century: The Wilkes Approach." Invited Paper, Proceedings of the PCM '96 Pacific International Conference on Manufacturing '96, October 29-31, 1996, Seoul, Korea.
- [6] Boyer, E. L., "Scholarship Reconsidered: Priorities of the Professoriate," *Report of the Carnegie Foundation for the Advancement of Teaching*, Princeton Publishing, Princeton, NJ. 1992.
- [7] Nejib, U., "C.A.M.©: A Tool for Evaluating and Adjusting Engineering Curriculum." *Proceedings of the Frontiers in Education Conference FIE '99*, November 11-13, 1999, San Juan, PR.

Concerning the Speaker

Dr. Umid R. Nejib, Professor of Electrical Engineering and Engineering Management

Educational Background:

Received his doctorate ('66) in electrical engineering from Carnegie-Mellon University and his baccalaureate (honors '59) from the University of Baghdad.

Career Highlights:

Served as a Research Fellow at CMU and as professor at the University of Baghdad, the University of West London (Brunel), and Wilkes University. He led as well as conducted many specialty and educational programs in six other major universities in the USA and the UK. Consulting and industrial experience included organizations such as DOD, DOE, Ford Motor Company, Frito-Lay, GE/Harris, NASA, NSF, UNESCO, and Westinghouse, the development and initiation of the Industrial Resource Center (NEPIRC), and the EARTH Conservancy. Served in a reserve status with the TAC 14th Group. His service at Wilkes included the development and implementation of the Engineering programs, the Technology Transfer program, the EQ Center, the GIS/RS Center, and the restructuring of the Health Sciences programs and the Computer Center; the development and initiation of the of the Pharmacy program; and the deanship of the School of Science & Engineering. Published over ninety papers, invited presentations in fifteen countries, holds four US patents, and secured & managed multi-million dollar projects.

Honors & Professional Membership:

Selected to the US Air War College ('95) and as an advisor to the Assistant to the President of the United States for Science and Technology ('89-'91). Nominated for the United States presidential medal for engineering & technology ('88); recognized by two Pennsylvania governors ('86, '91); elected to the professional honorary Societies of the Sigma Xi ('68), Sigma Pi Sigma ('90), and the Eta Kappa Nu ('91); and the Pennsylvania and New York Academy of Sciences ('73, '79). He is a Senior Member of IEEE, the Society of Women Engineers, Association of Old Crows (AOC), the American Society of Engineering Education (ASEE), and the Institute of Industrial Engineers (IIE). He served as president of the Association of Engineering Colleges of Pennsylvania ('88, '97). Board member of the NEPIRC, the Pennsylvania Society of Professional Engineers, and president of the Association of Engineering Colleges of Pennsylvania ('88, '97).

Personal:

Family- Barbara (wife), Perri (daughter); Hobbies- reading, music, movies, flying, outdoor activities, and photography; Member- AOPA, the Cousteau Society, NPAAA, National Geographic Society, Smithsonian Institution, and St. Vincent De Paul Kitchen.

Concerning the Lecture

The premise of the Final Word Lecture is that the lecturer has only six months to live and would like to sum up a career of teaching and scholarship for colleagues, students, and friends. While the selected professor is, in fact, healthy, the hypothesized death adds urgency and focus to the lecture. The idea is borrowed from the University of Michigan's "Last Lecture."

The Final Word Lecture is given on the evening of Wilkes University's Faculty Recognition Day, at which faculty are lauded for their achievements as teachers and scholars. A number of awards, including the Carpenter Award for teaching, are announced at this annual event.

The Final Word lecturer is chosen by a committee of Wilkes professors and receives a \$1,000 award through the generosity of an anonymous donor. At a subsequent time, and at the donor's discretion, the title of the award and lecture series will be changed to include the donor's name.

Previous winners were:

- 1993 James L. Merryman
Reinventing Humanity for Survival in the Twenty-first Century: Salvaging Our Best through Prehistory and Multiculturalism
- 1994 Dennis P. Hupchick
Nation or Millet? Contrasting Western European and Islamic Political Cultures in the Balkans
- 1995 Donald R. Brand
Multiculturalism Revisited
- 1996 No lecture given
- 1997 Jane M. Elmes-Crahall
Rhetorical Savvy and Political Civility
- 1998 Patricia Siplon
Scholar, Witness or Activist: The Lessons and Dilemmas of an AIDS Research Agenda
- 1999 William Terzaghi
Cornucopia or Pandora's box? The promise and perils of cloning, genetic engineering, and bioinformatics

