

A Liberal Education Model of Leadership Preparation: The McBride Honors Program in Public Affairs for Engineers

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Abstract

In this paper we will discuss a unique leadership program for engineers which was developed at the Colorado School of Mines (CSM) over 15 years ago. We believe that this program provides a “liberal arts” model for leadership preparation as opposed to the “business school” model. In our program students have the opportunity to study and practice leadership both in the classroom and in authentic contexts over the course of three and one-half years.

Introduction

In 1979 an interdisciplinary group of faculty at the Colorado School of Mines was assembled by Dr. Thomas Philipose to discuss an idea he had for an elective sequence in public affairs. This group of engineers, physical scientists, social scientists, and humanists sketched out and then championed what has become the Guy T. McBride, Jr. Honors Program in Public Affairs for Engineers, named in honor of the president emeritus of CSM. In the years since its founding with a small group of “pioneer” participants, the McBride Honors Program has graduated over 200 students with minors in public affairs who are prepared to appreciate and function effectively within the global context in which their professional careers will be practiced. Over 70 faculty from every department in the School have served on the program’s governing body, the Tutorial Committee, and as seminar moderators. [1] The McBride Program was recognized in 1991 as one of five “Programs of Excellence” in Colorado by the Colorado Commission on Higher Education and was included as a model humanities program for engineers in the 1988 study by the American Association of Colleges, *Unfinished Design* [2]

Overview

The McBride Honors Program consists of a 24-semester-credit sequence of seven seminars and a practicum beginning in the second semester of the

student’s freshman year and continuing through the end of the senior year. Less than 10 percent of each year’s entering class (about 50 students) is chosen for the program based on high school leadership activities and grades, standardized test scores, recommendations, an essay and an interview. All Honors students participate in seminars in “Paradoxes of the Human Condition,” Cultural Anthropology,” and “Comparative Political and Economic Systems” in their first three semesters in the program. In the fall semester of the junior year they choose either “Technology and Socio-Economic Change” or “International Political Economy.” The next semester they take either a seminar focusing on “U. S. Public Policy” (including a week-long public policy seminar in Washington, D. C.) or “Foreign Area Study” (a study of the country or region of the world to which a group of students and faculty will be traveling during the following summer). The summer following the junior year is devoted to a practicum experience, usually either an internship with a corporation or government agency or travel/study abroad. In the senior year students study “Leadership and Power” and conclude their McBride Honors experience with a seminar on “Science, Technology, and Ethics.”

Program Mission and Goals

In 1994, the Tutorial Committee, consisting of approximately 25 faculty members from across campus, adopted a new Mission and Goals statement for the McBride Program. They defined the program’s mission as follows:

“The McBride Honors Program provides a select community of CSM students the enhanced opportunity to explore the interfaces between their areas of technical expertise and the humanities and social sciences; to gain the sensitivity to project and test the moral and social implications of their future professional judgments and activities; and to foster their leadership abilities in preparation for managing change and promoting the general welfare in an evolving technological and global context.”

In preparing to become leaders, students completing the McBride Honors Program should possess the following skills, knowledge, and values:

Skills

- They should be able to communicate effectively, orally and in writing, to a variety of audiences.
- They should be competent in the art of civil discourse.
- They should be able to work effectively both alone and in teams.
- They should have the ability to analyze and critically evaluate both their own ideas and those of others.

Knowledge

- They should possess the knowledge necessary to explore the relationships among economic, political, social and cultural systems, an ability central to the mission of the Program.
- Whenever possible, they should have first-hand experience of the concepts discussed in their seminars through internships, overseas experiences, in-depth research, and community service.

Values

- They should be persons of high principle and character.
- They should develop reflective minds.
- They should accept personal responsibility for their actions as leaders, as professionals, and as citizens.
- They should be aware of and sensitive to diverse languages, cultures, and beliefs, both in this country and abroad, through direct experience whenever possible.
- They should exhibit a love of learning and the promise of continuing it throughout their lives.
- They should appreciate interconnectedness in the changing world.

Program Governance

The Program's policy-making board, the Tutorial Committee, is elected from nominees solicited from the entire CSM faculty to serve four year terms. Approximately 7 members are elected each year. During their final year on the Tutorial Committee, members also serve on the Executive Committee, the group which meets

frequently to set policy and deal with issues affecting the program. The principal tutor is appointed by the president of the university in consultation with the vice president for academic affairs with the advice and consent of the Tutorial Committee and serves an indefinite term.

The Seminar Format

Because of the mission and goals of the program, the Tutorial Committee strongly emphasizes the seminar format for McBride Honors classes. Each seminar is led by a Principal Moderator, usually a content specialist, and one or more Associate Moderators, usually faculty from the engineering and science departments on campus. From the beginning, the participation of engineering and science faculty has been a key to the success of the program. Their interest in the humanities and social sciences and their experiences as leaders in industry and academia are invaluable to the students who see them as excellent role models. Faculty members who serve as Associate Moderators receive a small stipend for their service, but they are involved in the program because they appreciate working with bright young people on a one-on-one basis, they enjoy learning about subjects outside their areas of expertise, and they believe in the program's mission and goals. Since its founding, nearly one-third of the CSM faculty have served on the McBride Honors Program Tutorial Committee.

Seminars typically meet on Wednesday nights for three hours. Students are largely responsible for their own learning, though lectures are occasionally delivered. Moderators use a variety of pedagogical approaches in the seminars including Socratic questioning, formal debates, small-group discussion, class projects, research papers, tutorials, and symposia to help students analyze, synthesize, and evaluate the material they are studying. Communication skills are emphasized in each seminar. Once each semester all of the McBride students and faculty meet for a common session featuring a guest speaker, student presentations, or an interactive workshop.

Preparation for Leadership--The Practicum

We believe that leadership is developed through a solid combination of theory and practice and therefore we have developed our sequence of seminars to provide adequate background in theory followed by a "hands-on" experience and then a seminar which focuses specifically on questions of leadership and power.

Every McBride student must complete a practicum, usually either an internship with a corporation or government agency (domestic or foreign) or overseas

study (either individually or as part of a McBride group). We believe that students learn most effectively when they have an opportunity to practice what they have learned in authentic contexts.

Engineering educators are also increasingly recognizing the value of international experiences for their students. As Russel C. Jones, executive director of the National Society of Professional Engineers, says: "In an era of international markets and free-trade groupings, engineers often have the opportunity to practice directly in countries other than their own. Joint ventures across national boundaries, major technical corporations with international operations, and contracts for technical projects in foreign venues are typical in today's engineering practice." [3]

Jones recommends several ideas which mesh well with McBride Program goals, including:

- Development of foreign language proficiency, cultural background understanding, international business concepts, and international technical practices in an integrated and comprehensive manner.
- Opportunities for intensive foreign language/culture study abroad in countries using the particular language studied, encouraged by advisors.
- Work internship periods abroad utilizing language and cultural understanding already developed through academic programs.

Internships

Students choosing the internship option study US Public Policy in the semester before their internship. Students examine public policy using a case study approach to understand the various aspects of policy making and the participants in the process. This seminar usually focuses on a particular issue, e.g. the Contract with America in 1995 or the budget deadlock in 1996, as a way of understanding how public policy is formed. After studying issues, the students spend a week in Washington, D. C., meeting policy makers and attending briefings on a number of topics. Among the activities completed in Washington by the students in 1996 were briefings and presentations at the Congressional Research Service (by an energy policy analyst), the Supreme Court, the House Committee on Science, the Senate Budget Committee, the Office of Management and Budget, the Department of the Interior (Office of Water and Science), and the National Research Council. In addition, students met with a variety of politicians from Colorado.

As an outcome of this seminar, students have the ability to engage in informed, critical analysis of public policy and understand the process and how they may

become involved in it. Thus the Public Policy seminar lays the groundwork for McBride Honors Program internships. Students completing internships must become familiar with the organizational structure, culture, and complexity of the company or agency they work for; become aware of how the organization interacts with other elements of society; learn how decisions are made in the organization; observe and analyze the behavior of professional role models in a variety of contexts; work on substantive projects within the organization; make presentations and write reports on projects; and reflect critically on the internship experience and its relationship to the McBride Honors Program goals.

After completing an internship, the student prepares a comprehensive internship report addressing these issues. In addition s/he is expected to keep a journal throughout the internship which is also evaluated for thoroughness and insight. The final factor in the internship evaluation is the supervisor's assessment of the intern's performance in a variety of areas, including technical competence, quality of work, attitude, interpersonal skills, self-confidence and initiative, social sensitivity, and personal attitude and conduct. In addition to internships with nearly 100 US-based companies over the past decade, McBride students have completed internships in South Africa, Venezuela, and Indonesia.

Foreign Study

Students who choose to study abroad, either as part of a McBride Program group or individually, must also prepare thoroughly for their experience. The program has included an optional month-long trip abroad as a practicum possibility for the past eight years. Overseas trips are currently planned in a three-year rotation (Asia, Middle East/Africa, and Latin America) and have been in place for nearly a decade with past trips to the People's Republic of China, the former Soviet Union, the former Czechoslovakia, Sweden, Brazil, Turkey, and Southeast Asia. In preparation for the overseas trip students spend a semester learning about the history, culture, economic system, technology, and public policy of a country they will be visiting as well as receiving a small amount of language instruction. They then travel to the country they have studied for approximately one month with two CSM faculty sponsors and visit the educational, political, cultural, and technological institutions which they have learned about. For example, the group which traveled to Southeast Asia (Singapore, Malaysia, Indonesia) in the summer of 1996 visited several universities and interacted with students, visited industry sites such as a waste disposal project and

a mine, stayed with CSM alumni in Jakarta, and visited a number of cultural sites.

Individual study abroad is also encouraged. For example, two McBride students spent the 1994-95 academic year studying in Mexico and several have studied in Sweden, Turkey, and the United Kingdom. Two other students spent the summer of 1996 in Argentina following a previously-approved practicum itinerary. All students are required to keep an extensive journal during their practicum and to write a report about their experience abroad. In the report, they must give a critical evaluation of the trip and then discuss in depth some aspect of the cultural, economic, technical, or political scene in the country they visited. The report requires a synthesis of their classroom learning with their first-hand experience of the culture.

The Leadership Class

Once they have sufficient preparation, both theoretical and practical, McBride Honors students complete a senior-level, interdisciplinary course in Leadership and Power. In this course we employ a deliberate "liberal arts" slant. The seminar focuses on understanding and interpreting the leadership role, both its potential and its limitations, in various historical, literary, political, socio-economic, and cultural contexts. Exemplary leaders and their antitypes are analyzed as are questions regarding the morality of power and its uses. Additionally, power, empowerment, and the complication of becoming or of confronting a leader are scrutinized.

The most recent version of this seminar was moderated by Randal Ford, a communications and drama expert, and Philippe Dunoyer, the former CEO of Total Petroleum. They focused on leadership and power in four contexts: democratic politics and government, business and industry, literature, and technology. Each section included a variety of reading and writing assignments. For example, in the section on leadership and power in literature, the class read Martin Luther King, Jr.'s "Letter from the Birmingham Jail," Sophocles' *Antigone*, Machiavelli's *The Prince*, and Shakespeare's *King Lear*. They also watched the film *Lion in Winter* and attended a theater production followed by a discussion with the director about power and leadership in a theatrical company.

Class discussions focused on synthesizing the various leadership principles illustrated by these texts. For example, the students were asked to consider whether civil disobedience as used by Antigone is the same as that used by King. Are their justifications the same? What strategies do they share? What power do they represent in their respective power struggle? What parallels can be

drawn between King's situation in the South and Antigone's in Thebes? Through discussions such as these students were encouraged to examine their own leadership qualities--both those they already possess and those they wish to develop.

Conclusion

What are the results of a program such as the McBride Honors Program? Since our oldest graduates have been in the workplace only about a decade, the jury is still out on whether they will become captains of industry. However, they continue to keep in touch with us and to share their experiences in the workplace from the Peace Corps to the boardroom and the courtroom. We will conclude with a few quotations from our alumni themselves.

"The Honors Program curriculum illuminates the interdependence of our work as engineers with the political, social, and economic environments. . . I gained the confidence and practice needed to become a meaningful contributor at my place of work."

---Fran Vallejo

"I personally feel that the McBride Honors Program has helped develop in me the tools and the insights that will allow me to be more than simply a good scientist. I recognize that first and foremost I am a citizen of society, and that I have a responsibility and the capability to function within the framework of this ever-changing world."

--Gary Womack

"Because of the Honors Program, I attended the Northwestern University School of Law with confidence in my thinking, writing, and speaking abilities, and I utilize those skills daily in my law practice."

--Dominic Ricotta

References

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