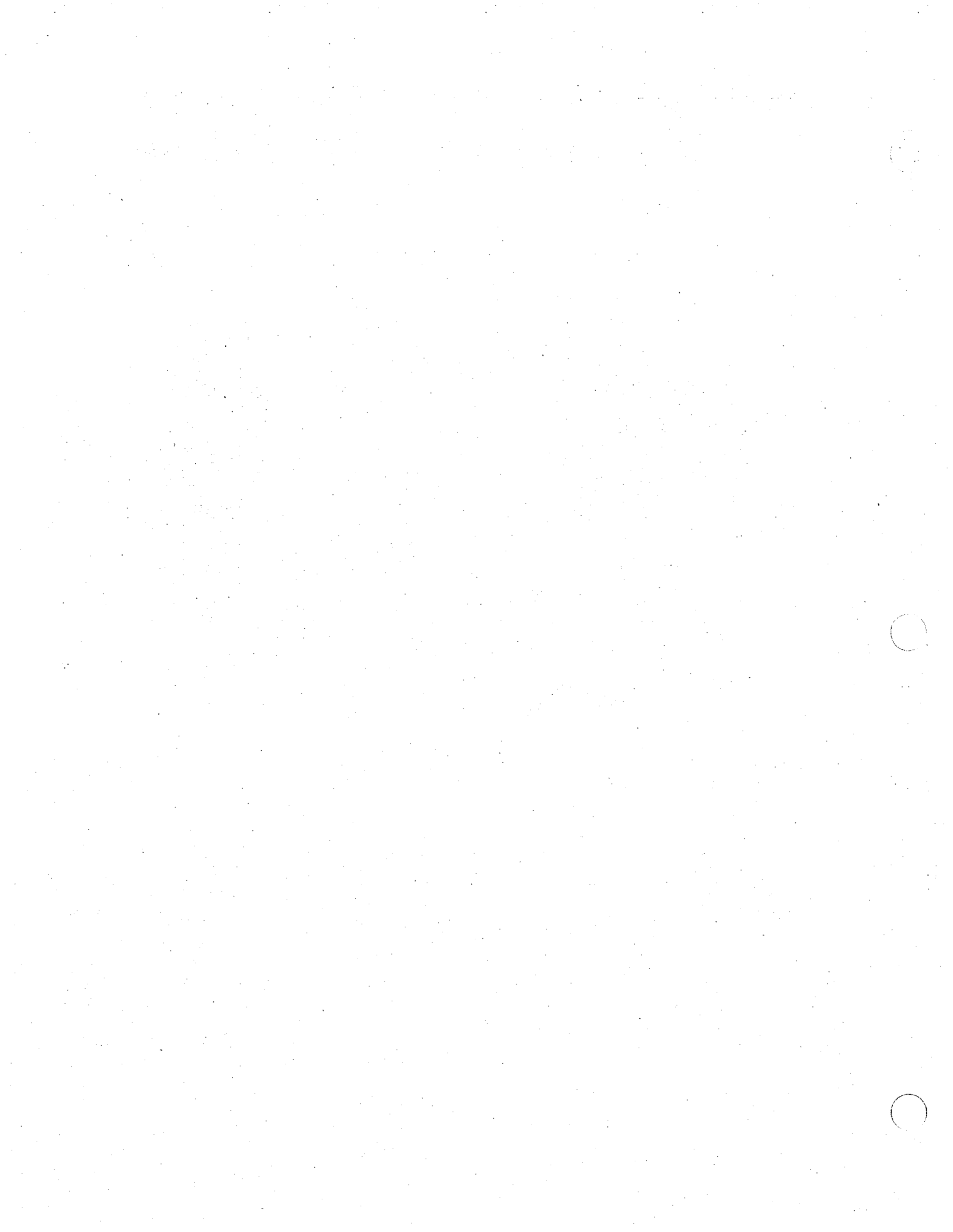


FITCHBURG STATE COLLEGE



REPORT TO THE SECOND STAGE ACADEMIC PLANNING GROUP  
Forecasting Fitchburg State College New Majors and Socio-economic  
Trends Impacting New Majors

APRIL 2008



## Executive Summary

In early 2008, a research team of three graduate students in the Master's of Science in Applied Communications, led by Communications-Media Dept. Chair John Chetro-Szivos, was selected by the Second Stage Planning Committee to collect data and provide a report back to the committee. Following a review of pertinent literature, the research team convened a series of *Delphi panels* to conduct the interviews.

Eight Delphi panel interviews were held between January and March. Panels included Fitchburg State admissions counselors, two faculty groups, two expert panels, Fitchburg State undergrads, and high school students and guidance counselors from Leominster. The expert panels consisted of elected officials, business leaders and public school education officials. The faculty groups consisted of representatives from departments who have been on staff five years or less. Each group was chosen for its unique perspective on the needs of current and future students, as well as their insight into the educational needs of North Central Massachusetts. With the exception of the Leominster panels, participants met with the research team on campus and were provided with lunch and gifts of appreciation.

The research team completed a review of academic journals and web sites dedicated to higher education to determine trends in the literature. The articles and sources spanned topics such as most popular majors, adult students in higher education, geographic and economic changes, and curricular changes.

The Second Stage Planning Committee suggested that the forecast address the feasibility of twelve possible new majors. Scoring the majors with the highest positive responses from the panelists would indicate the following:

5 Year BS/MS Education  
Entrepreneurship Small Business  
Environmental Science  
Human Resource Management  
New Media  
Robotics  
Broadcast Journalism

Forensic Science  
Brain, Behavior, and Cognition  
Social Responsibility  
Applied Math  
EEC Certification

A number of issues consistently received attention throughout the eight panel discussions. These salient issues cover a mix of academic, social and structural concerns that we recommend be examined in order to improve the campus environment and attract new students to Fitchburg State College. These issues are listed alphabetically and not by level of importance. These include changes in student learning, community offerings, confusion regarding concentrations and majors, faculty attitudes and faculty, Graduate and Continuing Education, campus location and physical structure, marketing, Mount Wachusett Community College, and transfer students.

The research team felt that the information generated through the surveys and the interviews provided a rich discussion and critical data for the Committee to consider as it moves forward in its academic planning.

It appears several of the new majors that were put before the panelists are on target for what the students and the community want. We view the proposed Dean structure as essential in addressing many of the issues raised under the salient issues section. Deans could make connections to the community, community colleges, and high schools to forge stronger relationships and partnerships. Deans could also be involved in the design of innovative programs to attract new student populations and to serve the needs of those stake holders.

The potential change to university status offers a unique opportunity for the College to leverage and promote its strong programs, physical plant improvements, and new majors to improve the community perception and relationships. This could create excitement about FSC as vital educational, cultural, and economic resource for the region.

FSC has long been a recognized leader in professional majors such as nursing, education, communication media, business, industrial technology, and computer sciences. As we saw in the literature, professional programs are in increasing demand among college bound students. Professional programs are a niche that FSC has attained and may want to build upon.

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## Introduction

As Fitchburg State College looks to its future as a comprehensive institution of higher education, it is clear the College's academic potential is tied intrinsically to its role as a valuable community resource and economic driver in North Central Massachusetts.

In the summer of 2007 three committees met to conceptualize academic planning for the future and, more specifically, the creation of new majors. These committees were the Strategic Planning Committee, Academic Department Chairs, and Academic Affairs. Each committee met separately to develop plans and they came together in the fall to share their reports. Following a process of internal review, the Second Stage Planning Committee recognized the need for a survey of community stake-holders to provide external perspectives on academic needs of the region. Engaging these stake-holders in the process of planning for the future of the College has implications beyond key information gathering. Stake-holder involvement establishes a bridge between the community and the campus and a foundation for further marketing, public relations and academic partnerships.

In early 2008, a research team of three graduate students in the Master's of Science in Applied Communications, led by Communications-Media Dept. Chair John Chetro-Szivos, was selected by the Second Stage Planning Committee to collect data and provide a report back to the committee. Following a review of pertinent literature from scholarly journals, general news sources, and higher education publications, the research team convened a series of *Delphi panels* to be interviewed. Based on the work of Adler and Ziglio (1996) the Delphi Method gathers information from a group through the distribution of questionnaires and controlled feedback. The research team used a modified Delphi approach, along with the application of Circular Questioning (CQ) to facilitate the interviews. Briefly, we presented a series of prepared questions asking panelists to consider possible new majors, and to reflect on social and economic trends

that affect students and graduates. Other questions were asked as discussion evolved. Panelists were presented with a survey to rank the twelve possible majors defined by the Second Stage Planning Committee. The research team collected, assimilated and analyzed the data for presentation in this report.

Eight Delphi panel interviews were held between January and March. Panels included Fitchburg State admissions counselors, two faculty groups, two expert panels, Fitchburg State undergrads, and high school students and guidance counselors from Leominster. The expert panels consisted of elected officials, business leaders and public school education officials. The faculty groups consisted of representatives from departments who have been on staff five years or less. Each group was chosen for its unique perspective on the needs of current and future students, as well as their insight into the educational needs of North Central Massachusetts. With the exception of the Leominster panels, participants met with the research team on campus and were provided with lunch and gifts of appreciation.

The data in this report is the culmination of that research process. We include with our report a review of the literature, our findings and a series of recommendations. We hope the findings will inform the Second Stage Planning Committee as it prepares to initiate new or revised majors. We also hope the report will help position and inform the public face of Fitchburg State College as it enters its next phase of higher education.



## Trends in Literature

The research team completed a review of academic journals and web sites dedicated to higher education. The articles and sources spanned topics such as most popular majors, adult students in higher education, geographic and economic changes, and curricular changes. The literature search focused on these topics and by no means is offered as a comprehensive literature review (see appendix).

### *Example of Trends in Higher Education*

Demographic changes, technology changes, and competition for students are some of the challenges that higher education institutions currently face. Many of these readings emphasized that academic programs need to be strengthened in terms of relevance and currency to societal and institutional needs. As demographics change, institutions should encourage cultural diversity so students can compete in a global society. Campuses have begun to reach out into the community and beyond. Institutional initiatives such as making libraries, museums, and laboratories available to the public are some of the newer ideas to engage the community. Establishing relationships with corporate partners to offer internships and to enhance employee training and development. Distance learning offers many possibilities to engage the community. As reductions in funding occur, programs will have to become entrepreneurial to garner new resources that many come from these community relationships.

Collaboration and cooperation is indicated as a must between academic departments, other institutions, and the community to ensure survival of all programs.

### *Geographic Shifts in Higher Education*

Consideration of geographic trends are relevant in academic planning. For example, New England's college graduates exceed the share of the general U.S. population. There is a high percentage of college-educated workers in New England, yet the supply does

not meet the region's demands for graduates in engineering, computer science, nursing, and technology-based careers. Colleges and universities influence their market share of students through tuition and fee. The cost of attending college matters to prospective students, and listing true net costs, including room, board and fees are the most important considerations. The numbers of high school graduates started declining nationally in 1978 and continues to do so. In recent years students from Massachusetts and other northern states have sought colleges in warmer climates.

### *LA&S Versus Vocationalism*

American colleges and universities did not begin as vocational institutions. Instead, colleges were designed to teach the liberal arts that would prepare moral, civic and intellectual public leaders who followed professional careers. Interest in using colleges for vocational purposes became evident in the early-to mid-nineteenth century. By the beginning of the twenty first century, two-thirds of college undergraduates were enrolled in professional majors such as business, health professions, bio-technology, and computer science.

Student choice plays a factor in what majors many colleges offer. At the same time, students are keenly aware of what the labor market holds for college graduates. Students aim to attend colleges with the hope that their degree will lead to professional status.

Some critics fault the professional schools for providing students the wrong kind of skills. In addition, critics also attack the non-professional schools for elevating research over practice, and for the emphasis on academic courses that ignore the demands of jobs.

We found strong recommendations for finding a balance between the traditional liberal arts and the growing vocational/professional trends. This may include finding ways to equitably distribute resources already available. For example, institutions can consider how best to prepare students rather than trying to attract the students they would like to have. Institutions may also consider developing faculty who are enthusiastic about their teaching roles and public service. It may then be possible to strengthen both occupational preparation and liberal learning, particularly by developing programs that in-

tegrate academic and professional learning and that connect classrooms to the workplace.

### *Non-Traditional Students*

With a possible decrease in college-aged students, some institutions have begun to refocus recruitment efforts on non-traditional students. Adult learners have specific challenges such as balancing the demands of family and career, cost of tuition and fees, and time management. They have strong study skills, and their investment in their education and learning is much stronger than younger learners. Woodley (1984) presented evidence that institutions of higher education should have few reservations about increasing the rates of adult students. Adult learners may offer a new market for higher education institutions as many adult learners may be seeking new careers or develop new competencies to meet their goals.

### *Socioeconomic Perspectives*

An important change over the last thirty years is the growth of occupational and professional programs and the shrinking of traditional arts and sciences. The fields of protective services, computer and information systems, fitness, recreation and leisure studies, communication, and business have experienced fast growth since the early 1970s. Business has grown the most with one-fifth of all undergraduate degrees.

Social class is strongly associated with students who major in arts and sciences. Those among middle-and upper-middle classes are more likely to pursue arts and sciences. Periods of economic prosperity are often associated with preferences for arts and sciences study. Economic declines and the creation of college-level credential requirements influence interest in professional degrees. Another trend shows that among elite sectors of higher education, students pursue liberal arts as undergraduates and pursue occupational training later after enrolling in graduate school or pursuing a career.

Historical traditions also have an impact on college offerings. Older colleges, denominational colleges associated to liberal arts, women's colleges, and historically black colleges are expected to focus on arts and sciences. State institutions are influenced by the economy and are more likely to offer professional degrees in order to serve the state.

Nonselective campuses, master's granting institutions, and colleges with weaker academic profiles lean toward occupational education.

### ***Most Popular Majors***

The following articles were taken from various sources to show trends on the current, most popular majors.

**"Ten Hottest Careers for College Graduates: Experts Predict Where the Jobs Will Be in 2004"** [www.collegeboard.com/student/csearch/majors\\_careers](http://www.collegeboard.com/student/csearch/majors_careers).

Government economists predict the following occupations will grow the fastest (increases of 36 to 55 percent) now through 2014:

- Network systems / data communication analysts
- Physician's assistants
- Computer systems / software engineers / applications
- Physical therapists and assistants
- Dental hygienists
- Network administration
- Database administration
- Forensic science technicians

### **"Today's Hottest College Majors"**

[www.fastweb.com/fastweb/resources/articles/index/110291](http://www.fastweb.com/fastweb/resources/articles/index/110291)

"The hottest majors for today's college students reflect traditional high-paying careers as well as trendy programs in fast-growing industries.

According to the national Association of Colleges and Employers 2006 report analyzing demand the top 10 majors are:

- Mechanical engineering
- Electrical engineering
- Accounting
- Business administration / management

- Economics/finance
- Computer science
- Information sciences and systems
- Marketing/marketing management
- Computer engineering
- Chemical engineering

"Today's economy requires that college graduates be savvy in technology, engineering and computer science and those jobs are always in demand." Liberal arts majors are in demand in the hospitality/tourism industry, counseling and culinary arts. Creative majors find careers in niche markets in jobs such as marketing, design, fundraising, media relations. Internships are important to employers as are strong presentation and analytical skills. Teaching and government is still popular; some schools are moving toward educational technology.

#### **"Most Popular Majors"**

<http://most-popular.net/majors-college>

This report cites the *Princeton Review* as the major source. Business Administration and Management is the most popular college major based on a yearly study (2006) culled from self-reporting from colleges. Other top majors include:

- Psychology
- Elementary education
- Biology
- Nursing
- Education
- English
- Communication
- Computer science
- Political science

#### ***Summary of Trends in Literature***

From this review of the literature we recommend that the Committee consider these following points:

- The New England region's supply of highly educated workers is not meeting the demands of employers, which can afford our graduates opportunities in several fields. Bio-technology may be one of the emerging fields that the Committee considers.
- As the literature indicated there is a significant number of students enrolled in professional majors and students are seeking a degree for professional status. FSC has a long history of offering professional programs and this is a strength of the institution. The Committee may want to consider building upon its history and this growing trend.
- It is widely recognized that a decrease in traditional college aged students is on the horizon and the Committee may want to consider recruitment efforts focused on non-traditional learners.
- As noted in the literature review, public institutions are influenced by the economy and fulfill the demand for professional degrees. In light of the recent downturn in the economy this point is relevant to academic planning.

## Findings

The findings were generated from the eight Delphi groups that were conducted between January 22 to March 11. These groups included forty-four individuals representing both people who are a part of the College community and people external to the College. The following groups made up the eight panels:

- FSC Admissions Counselors
- Faculty Panel 1
- Faculty Panel 2
- Expert Panel 1
- Expert Panel 2
- FSC Students
- High School Students
- High School Guidance Counselors

The composition of the panels are described in detail in the summary of the interviews. A written account of the discussion among the panel members follows.

A survey was given to the participants to rate the potential majors identified by the Department Chairs and the Strategic Planning Committee. The survey asked the respondents to rank the twelve majors identified in three categories; likely to attract students, career opportunities, and benefit to the community. The respondents were asked to rate these dimensions on a five-point Likert scale with the responses of Strongly Disagree, Disagree, Not Sure, Agree, and Strongly Agree.

### *Survey Results*

The panels identified the following majors as "likely to attract students".

Major	Positive Responses	Percentage of Respondents
5 Year BS/MS Education	43	97.72
Forensic Sciences	43	97.72

Major	Positive Responses	Percentage of Respondents
New Media (Web & Game)	39	88.63
Broadcast Journalism	38	86.36
Entrepreneurship Small Business	36	81.81
Human Resource Management	36	81.81
Robotics	36	81.81
Environmental Science	36	81.81
Brain, Behavior, and Cognition	31	70.45
Social Responsibility	23	52.27
Applied Math	17	38.63
EEC Certification	7	15.9

Positive responses include indications of "agree" and "strongly agree" that the major would be of interest to students. When the scores of "agree" and "strongly agree" are broken out there is a significant shift in the distribution of scores and the ranking of the majors. It can be assumed a score of "strongly agree" indicates a more definite opinion. Listed below is the distribution of "strongly agree" scores for the question of likely to attract students:

Major	Strongly Agree	Percentage of Respondents
5 Year BS/MS Education	34	77.27
Forensic Sciences	28	63.63
Environmental Sciences	21	47.73



Major	Strongly Agree	Percentage of Respondents
Entrepreneurship Small Business	18	40.9
New Media (Web & Game)	17	38.63
Broadcast Journalism	15	34.09
Robotics	14	31.81
Human Resource Management	9	20.45
Social Responsibility	8	18.18
Brain, Behavior, and Cognition	7	15.9
Applied Math	3	6.81
EEC Certification	3	6.81

The group identified the following majors as providing the strongest career opportunities:

Major	Positive Responses	Percentage of Respondents
5 Year BS/MS Education	43	97.72
Entrepreneurship Small Business	39	88.63
New Media (Web & Game)	37	84.09
Human Resource Management	36	81.81
Environmental Science	35	79.54
Broadcast Journalism	35	79.54

Major	Positive Responses	Percentage of Respondents
Robotics	33	75
Brain, Behavior, and Cognition	32	72.72
Applied Math	24	54.54
Forensic Science	22	50
Social Responsibility	16	36.36
EEC Certification	9	20.45

Ranking of the strongly agree scores only are listed below:

Major	Strongly Agree	Percentage of Respondents
5 Year BS/MS Education	34	77.27
Environmental Sciences	18	40.09
Entrepreneurship Small Business	16	36.36
Human Resource Management	12	27.27
New Media (Web & Game)	12	27.27
Broadcast Journalism	11	25
Robotics	10	22.72
Forensic Science	10	22.72
Applied Math	10	22.72
Brain, Behavior, and Cognition	7	15.9
Social Responsibility	5	11.36

