

INDUSTRIAL ADVISORY BOARD EXECUTIVE COMMITTEE ACTION SUMMARY

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ACTION SUMMARY

Formation and Role of the Executive Committee

The Industrial Advisory Board (IAB) Executive Committee includes key leaders in industry and faculty of the University of Utah Bioengineering Department. The purpose of the Executive Committee is to establish a fully commissioned IAB. This involves establishing the framework, role and mission of the IAB which was accomplished by defining IAB value areas.

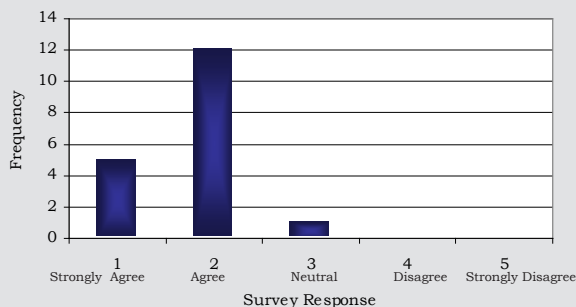
IAB Value Areas

After discussion the Executive Committee proposed the IAB value areas of teaching and community. In the area of teaching the IAB would be involved in development of the overall curriculum of the Bioengineering Department. This would create bioengineers with a skill set better tailored to industry requirements. Involvement in the curriculum would not be limited to design courses, but would also focus on other business skills, presentation skills etc. The value area of teaching would also include the development of professional development courses to provide further education for those working in industry. In the area of community the IAB would facilitate interaction between the University, industry and the clinical community. This would create a network to facilitate the sharing of information and ideas. The collaborative programs in this community would include outreach programs, internships and employment, involvement in the Utah Science Technology and Research (USTAR) economic development initiative and involvement with professional societies. Through this community those in industry and the clinical community could utilize the facilities and researchers at the University for sponsored projects. Communication in this network would provide information about relevant research being conducted at the University through forums and seminars.

Validation

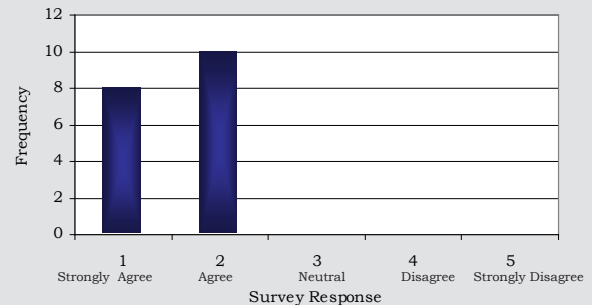
After determining the proposed IAB value areas a survey was administered to a group of thirty six individuals identified as key players in the local life science industry. Nineteen of those surveyed responded yielding a response rate of 53%. The results are illustrated below.

The IAB will work in partnership with the Bioengineering Department to review and continuously assess the overall undergraduate curriculum.



Average Response: 1.78

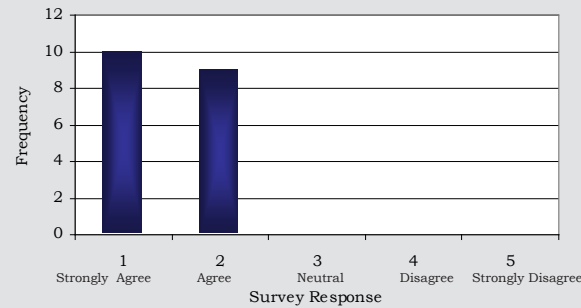
Approximately 1/3 of the Bioengineering undergraduates and 1/2 of graduate students move on to careers in industry. It should be a primary focus of the IAB to assess the Bioengineering curriculum as it relates to professional training and ABET accreditation (ABET is the U.S. accreditor of college and university programs in applied science, computing, engineering, and technology).



Average Response: 1.56

ACTION SUMMARY

As we continue to develop the graduate curriculum in Bioengineering, we want to ensure that the curriculum is well-suited for working professionals. The IAB should guide the department in establishing and developing a curriculum for working professionals.



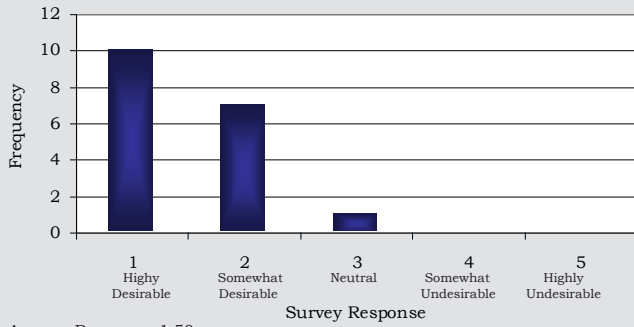
Average Response: 1.47

The next section asked respondents to rate professional courses on a scale from highly desirable to highly undesirable. In the ranked table shown below a lower number corresponds with a more desirable course. Individual course responses are also illustrated graphically. Other professional courses suggested were: Project Management, Project Management Principles, Clinical Operations, Contracts, Liscencing, Confidentiality, Methods Validation and QA/QC, Process Control and SOP, Development, Manufacturing, Scale-Up and Production, Market Review and Product Assessment, Minimally Invasive Therapeutic Procedures, Techniques, Devices, Process Validation, Machining Techniques and Principles, Machine Design, Design of Experiments, Process Control Theory, Six Sigma, LEAN, Manufacturing and Quality Systems, Project Management

Professional Development Course Ranking

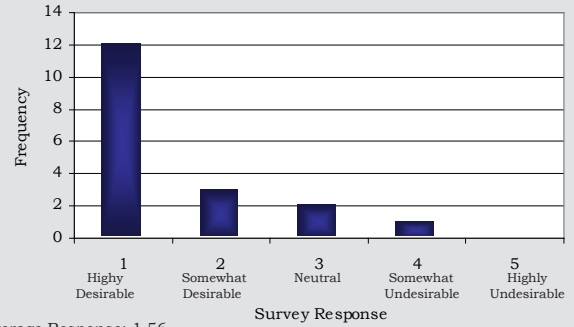
Course	Average Score
Biomaterials	1.50
Design Controls	1.56
Applied Statistics	1.56
Anatomy & Physiology	1.61
Biocompatibility	1.67
Biomechanics	1.78
Risk Management	1.89
Instrumentation	1.94
Intellectual Property	1.94
Regulatory Affairs	2.11
Imaging	2.22
Combination Devices	2.28
Finance and Accounting	2.33
Surgery	2.61
Pharmaceutical Development	2.72
Pathology	2.78
Liability Law	3.00

Biomaterials



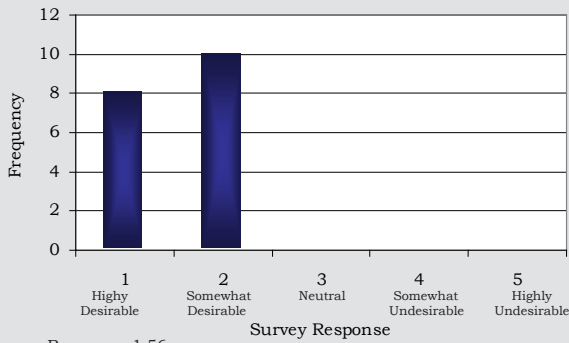
Average Response: 1.50

Design Controls



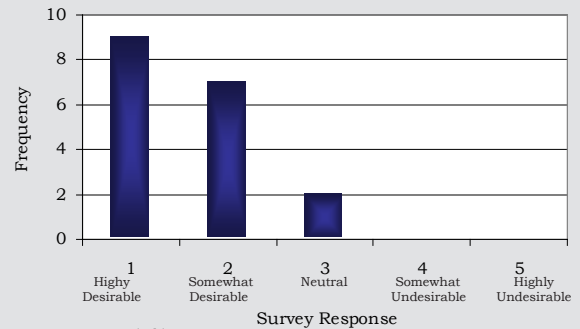
Average Response: 1.56

Applied Statistics



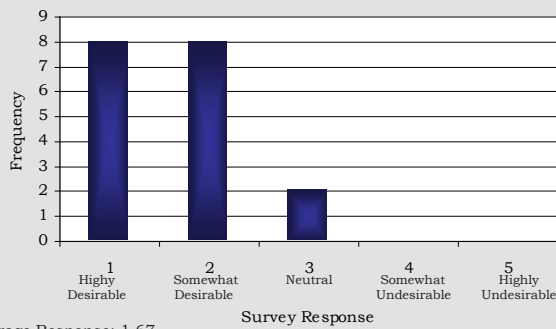
Average Response: 1.56

Anatomy and Physiology



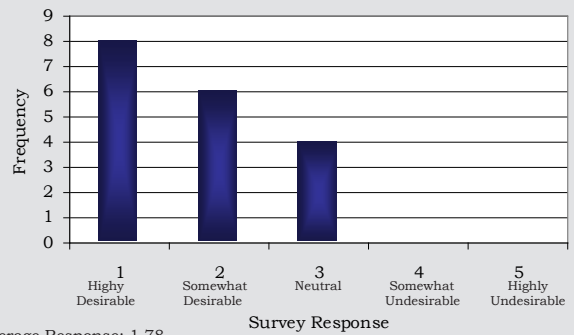
Average Response: 1.61

Biocompatibility



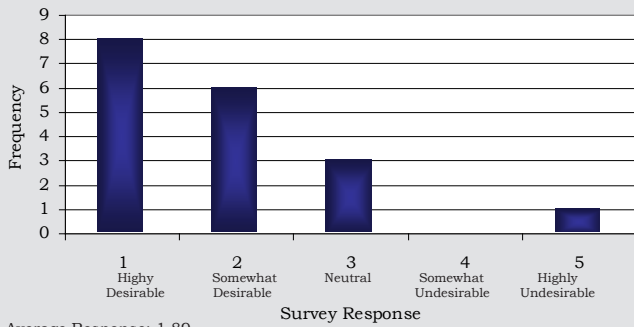
Average Response: 1.67

Biomechanics



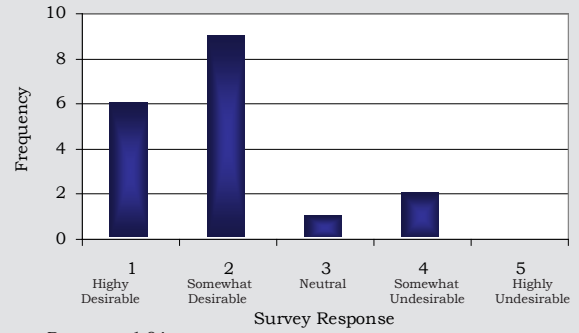
Average Response: 1.78

Risk Management



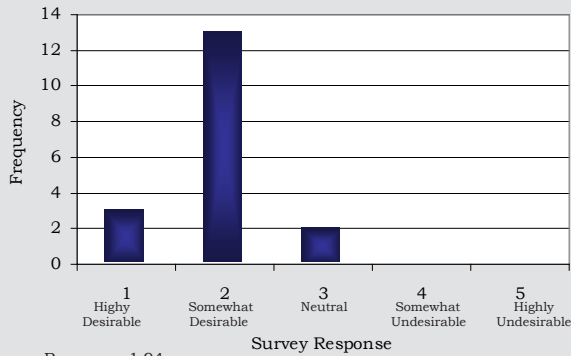
Average Response: 1.89

Instrumentation



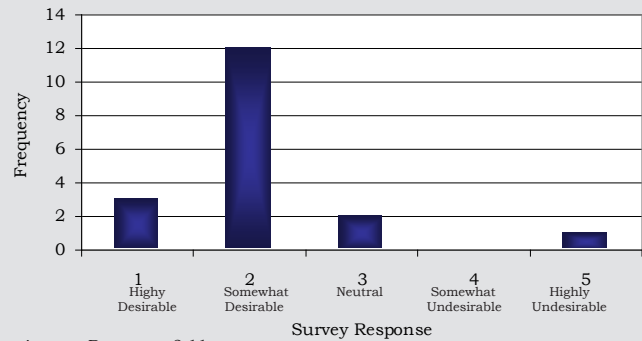
Average Response: 1.94

Intellectual Property



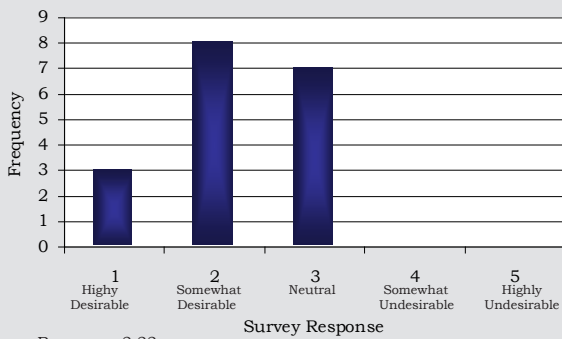
Average Response: 1.94

Regulatory Affairs



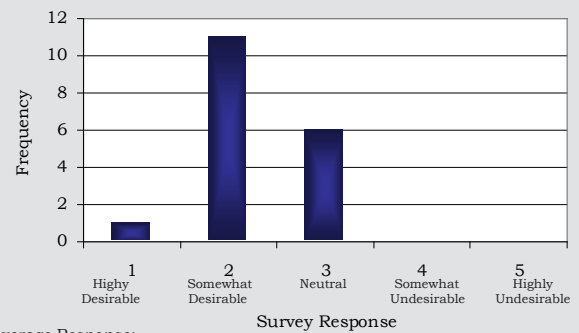
Average Response: 2.11

Imaging



Average Response: 2.22

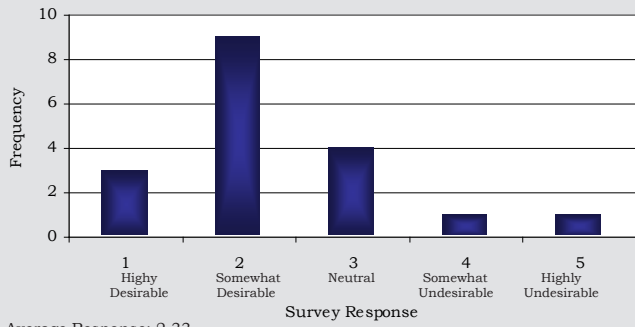
Combination Devices



Average Response:

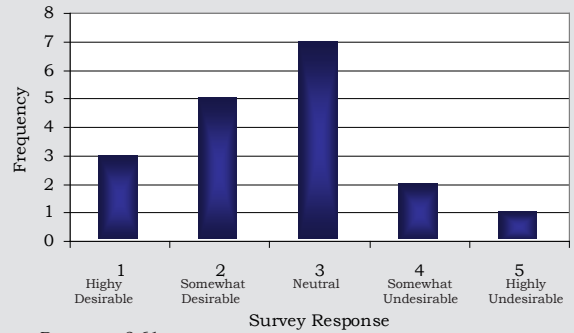
ACTION SUMMARY

Finance and Accounting



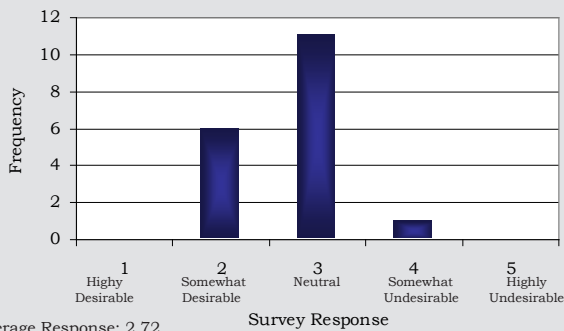
Average Response: 2.33

Surgery



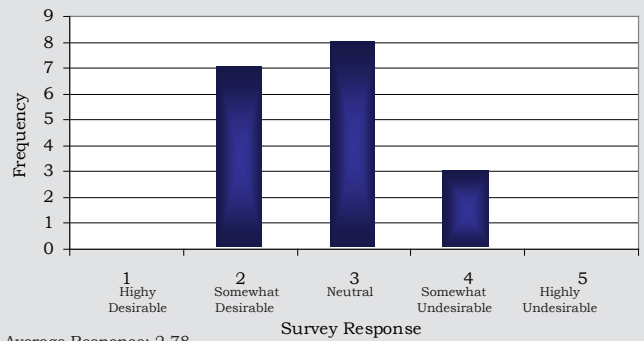
Average Response: 2.61

Pharmaceutical Development



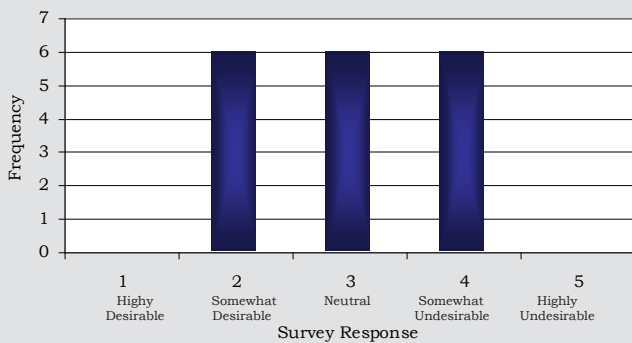
Average Response: 2.72

Pathology



Average Response: 2.78

Liability Law



Average Response: 3.00

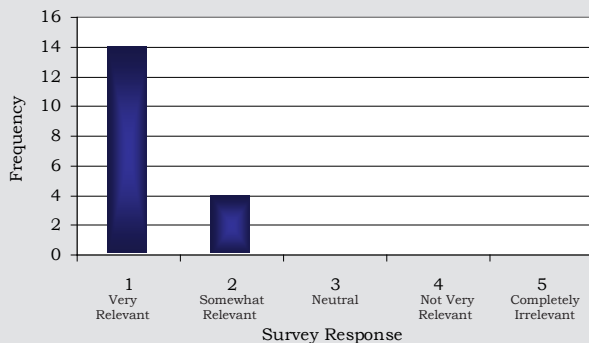
ACTION SUMMARY

The next section stated that, “The IAB may catalyze a greater sense of community between academia and industry” and asked respondents to indicate whether they felt the following topics were relevant or not relevant for IAB involvement. Responses were on a scale from very relevant to completely irrelevant. In the ranked table shown below a lower number corresponds with a more relevant topic. Individual topic responses are also illustrated graphically.

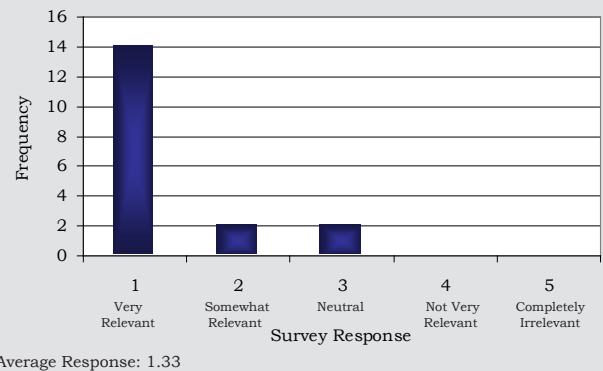
Topics for Potential IAB Involvement

Topic	Average Score
Undergraduate internships	1.22
Employment opportunities	1.33
Other Internships	1.39
Networking opportunities	1.50
Guest speakers for Industrial seminars	1.61
Scholarships	1.67
Guest speakers for University courses and seminars	1.78
Biomedical recruitment fair	1.89
K-12 science and engineering mentoring	2.00
Judges for Sr. projects.	2.06
Promoting the annual Mt. West Biomedical Engineering Meeting	2.11
Biomedical product fair	2.17
Local chapters of professional societies	2.22
Consulting database	2.28

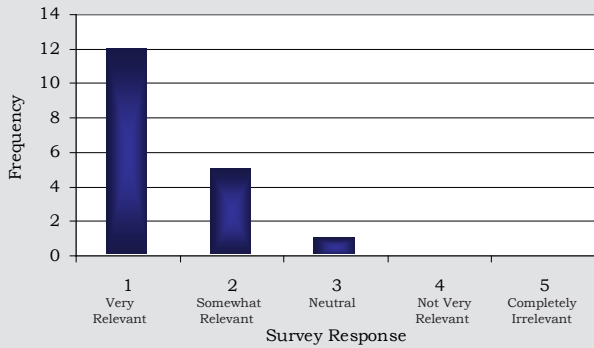
Undergraduate Internships



Employment Opportunities

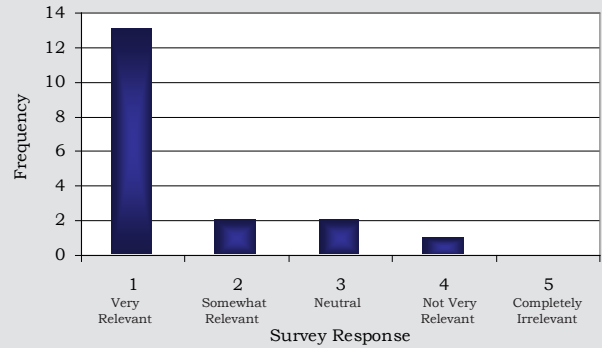


Other Internships



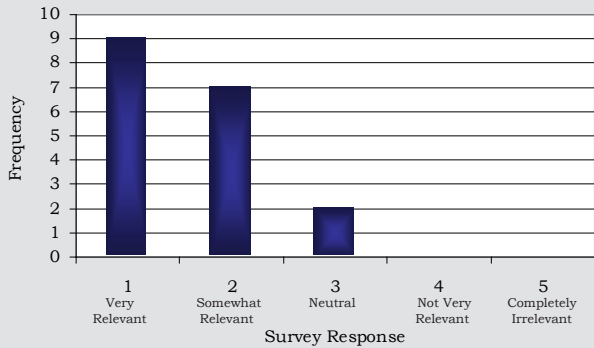
Average Response: 1.39

Networking Opportunities



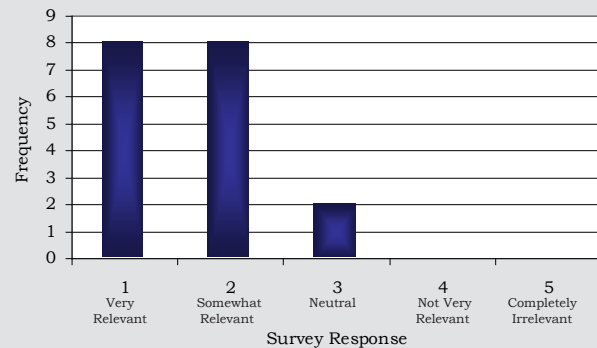
Average Response: 1.50

Guest Speakers for Industrial Seminars



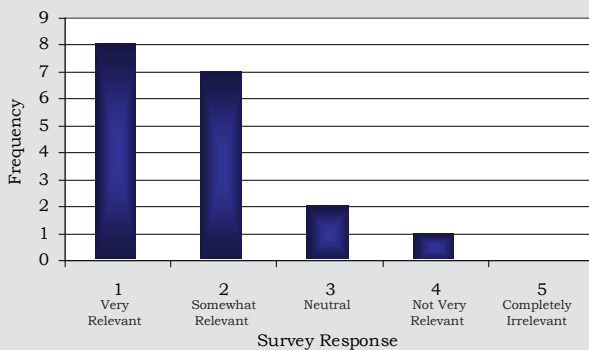
Average Response: 1.61

Scholarships



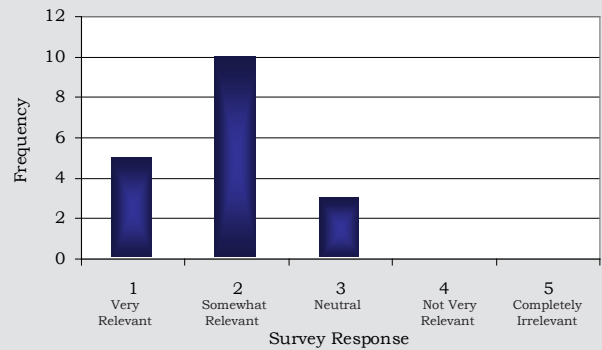
Average Response: 1.67

Guest Speakers for University Courses and Seminars



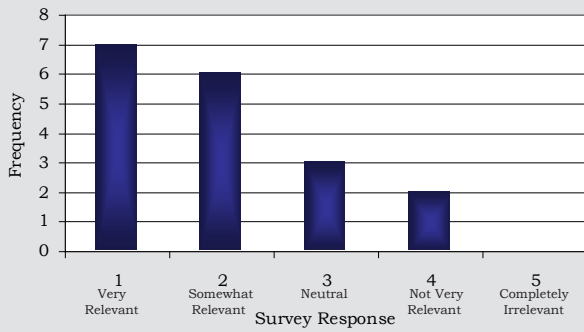
Average Response: 1.78

Biomedical Recruitment Fair



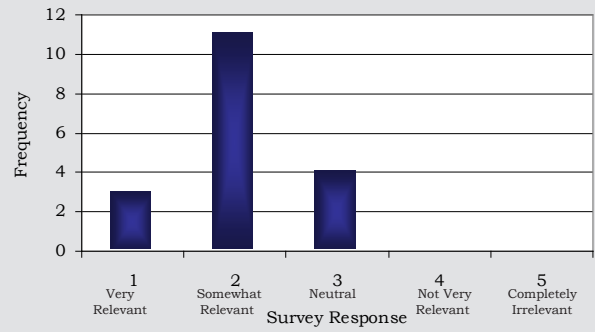
Average Response: 1.89

K-12 Science and Engineering Mentoring



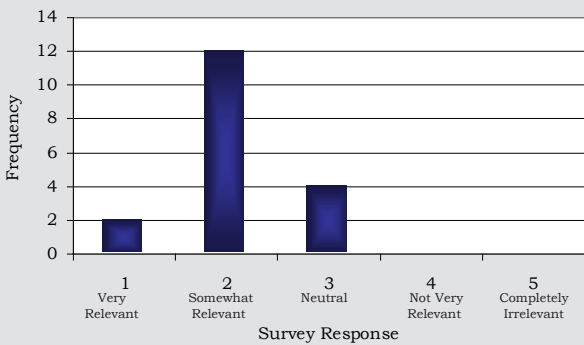
Average Response: 2.00

Judges for Sr. Projects



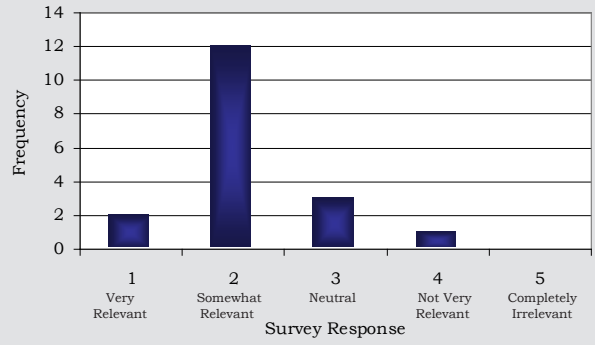
Average Response: 2.06

Promoting the annual Mt. West Biomedical Engineering Meeting



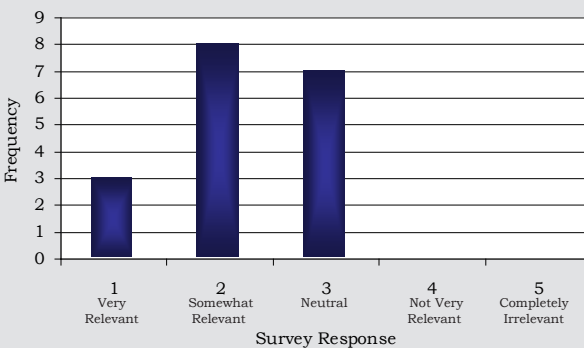
Average Response: 2.11

Biomedical Product Fair



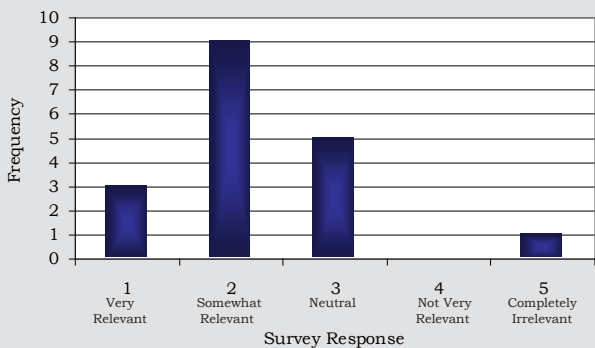
Average Response: 2.17

Local Chapters of Professional Societies



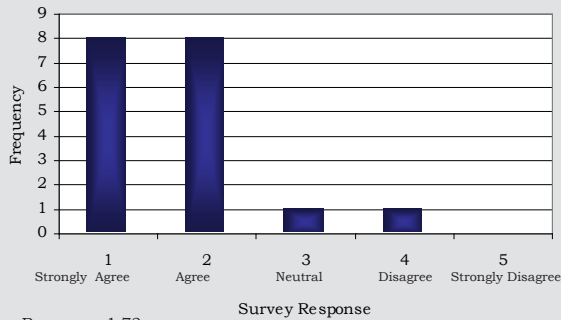
Average Response: 2.22

Consulting Database



Average Response: 2.28

The IAB should work with the department and the Technology Commercialization Office to develop model agreements for industry sponsored research.

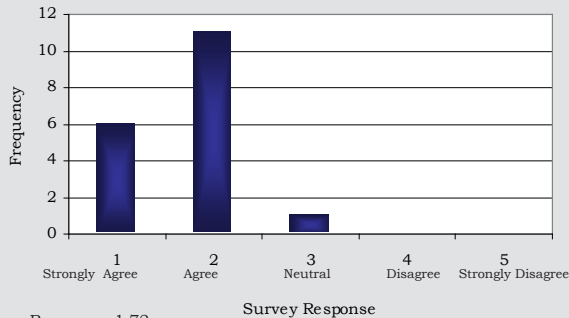


Average Response: 1.72

Comments:

Simple is key. Very difficult to write without a specific product. This is an area that needs work. We are often left to work with other Universities, because it is so difficult to work through the U. The university should work with industry to establish licensing practices that are consistent and consider the needs of businesses (i.e.: fund raising, merger and acquisition activities, etc.) IP ownership is a significant issue and has been a hurdle in working with the U

USTAR is a state-funded initiative that invests in growing UoU core strengths by attracting additional world class faculty. Biomedical Device Innovation is one of the innovation areas that UoU selected for USTAR funding. Our vision is to establish a partnership between the state, university and industry to create a world-class epicenter of Biomedical Device Innovation and to promote Utah economic development through the commercialization of biomedical products and related technologies. The Bioengineering IAB will play a key role in advancing the vision and goals of USTAR and helping us to focus our USTAR program initiatives in ways that increase relevance to Utah biomedical industry.

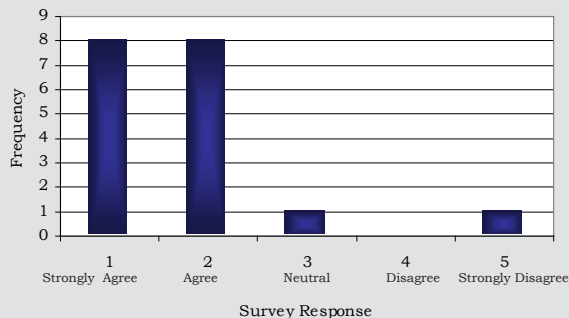


Average Response: 1.72

Comments:

The challenge is in attracting ANY outside talent to Utah. The U of U is not the problem. Given an equal opportunity some where else, talent is attracted to the OTHER place first. Try to use more mainline bioengineers and product managers as well as some of the marketing people from companies on the IAB and not just CEO's for input as to who would be good faculty and companies to attract into Utah. I would like to mark strongly agree but to happen both sides must buy-in. Success will more likely be determined by the willingness of University and industry to compromise. Very excited about the implications. A transparent mechanism for commercializing U of U innovations is key to creating a strong biomedical base in Utah. Programs in GA could be a model.

The IAB should work with the Bioengineering Department to identify clinical expertise, develop relationships and promote interaction with the U's med school.



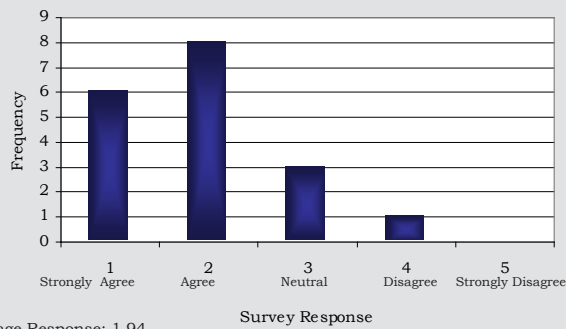
Average Response: 1.78

Comments:

Product development & identification also requires nursing and other paramedicals not just physician faculty your use of Med school staff should be broad base. Doctors are typically not researchers. The efforts of the IAB should be focused on getting the best education possible. The interaction with clinicians is 5-10 years away for new graduates. In this time they will have many opportunities to foster these relationships. They will likely not be in Utah, the selection of clinicians and sites is dependent on specialties not location. The medical school is one of greatest assets the program should leverage.

ACTION SUMMARY

The IAB should work with the Bioengineering Department to identify clinical expertise, develop relationships and promote interaction with the U hospital.



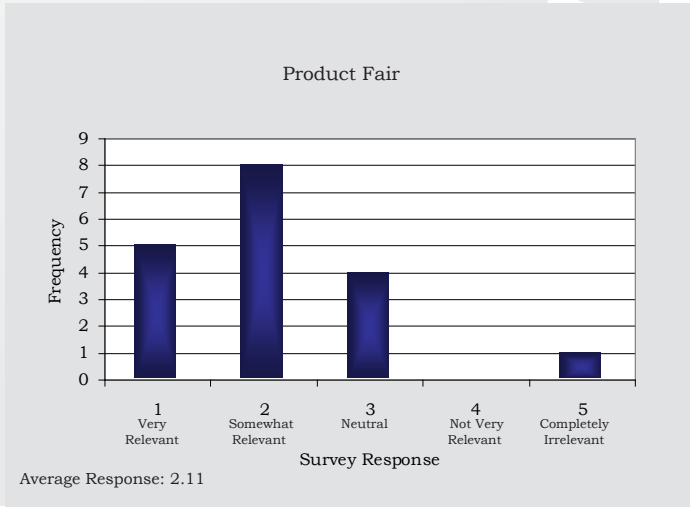
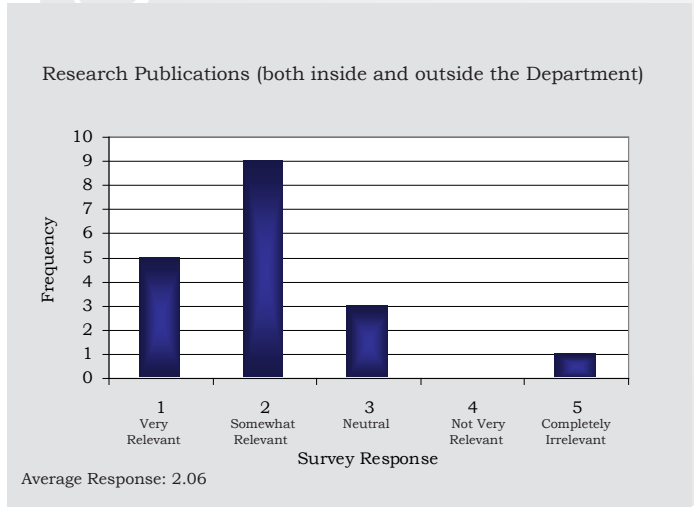
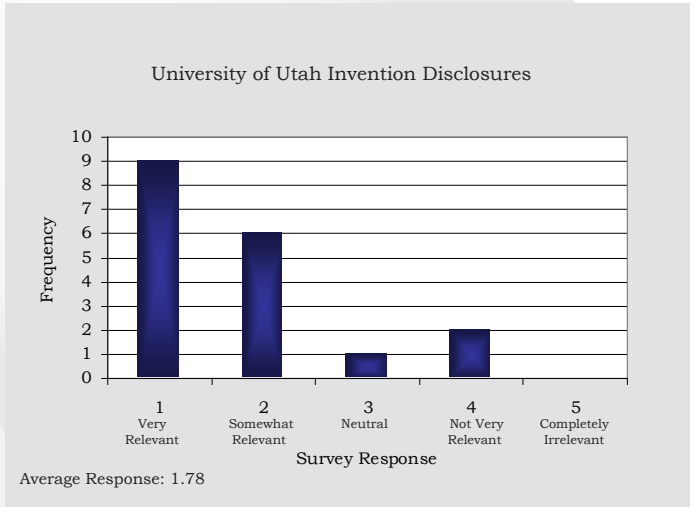
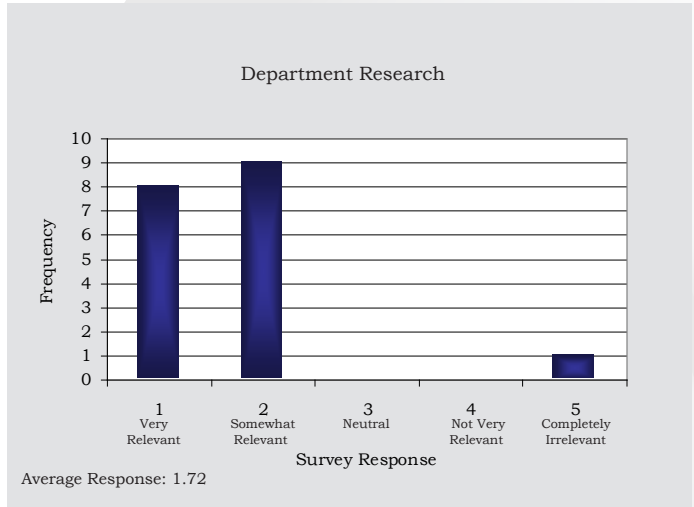
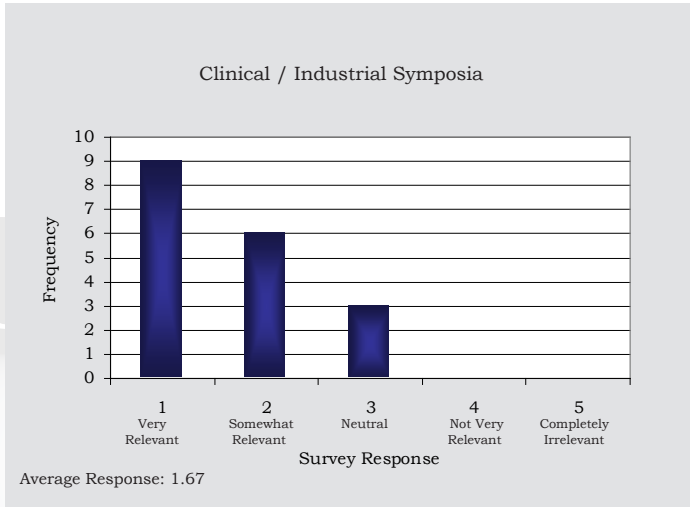
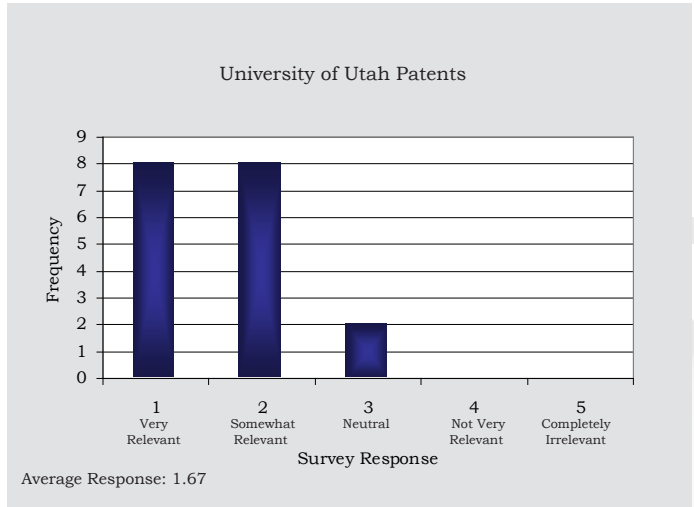
Comments:

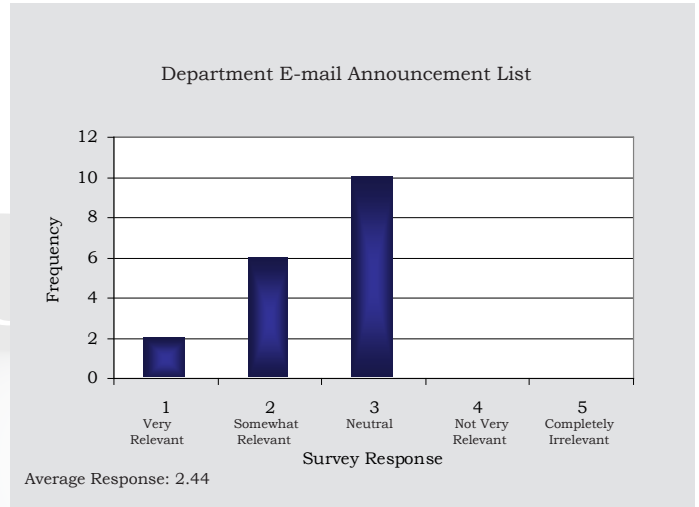
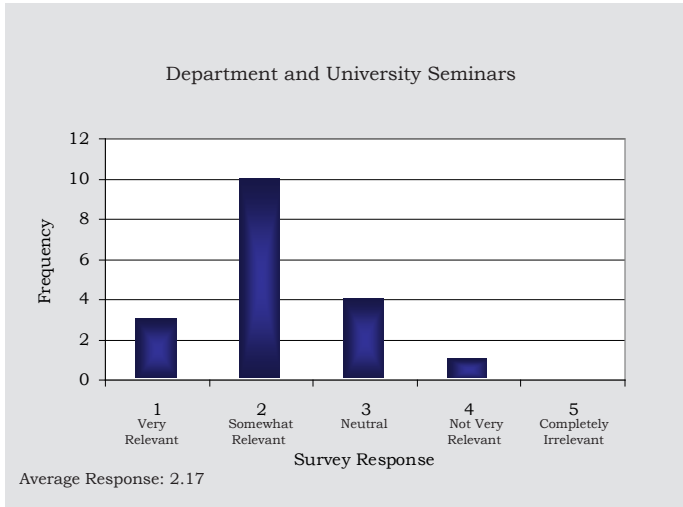
Yes, Utah bio med companies send money out of state regularly to fund studies because others advertise, reach, and make it easy to work with them. It would be MUCH easier and rewarding to conduct the work at local hospitals. Also include other hospitals. I would also look at IHC hospitals.

The next section stated that, “Our community’s ability to share information can lead to work efficiencies, a greater sense of community and can strengthen the partnership between industry and academia.” and asked respondents to indicate whether they felt the following areas of information transfer were relevant or not relevant for IAB involvement. Responses were on a scale from very relevant to completely irrelevant. In the ranked table shown below a lower number corresponds with a more relevant area. Individual area responses are also illustrated graphically.

Areas of Information Transfer

Area	Average Score
University of Utah patents	1.67
Clinical / industrial symposia	1.67
Department research	1.72
University of Utah invention disclosures	1.78
Research publications (both inside and outside the department)	2.06
Product fair	2.11
Department and University seminars	2.17
Department email announcement list	2.44





Future Executive Committee Plans

The results of the survey validate the proposed value areas which will be integrated into the role and mission of the IAB. The fully commissioned IAB will consist of nine industrial members and two university members. Industrial members will be selected from individuals in engineering and management positions. Once the IAB is established the Executive committee will continue to serve as a resource to IAB members and will be updated about actions of the IAB.