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REPLY TO: 719 2nd Avenue, Suite 700, Seattle, WA 98104 USA

Sheryl Sorby
Associate Dean of Engineering
Michigan Technological University
1400 Townsend Dr.
Houghton, MI 49931

March 3, 2005

I am delighted to support Michigan Tech's development of a Service Sector Engineering program. This is the dominant sector of the economy, with close to 80% of jobs. But, it is a very inefficient sector and if the economy is to grow, we need to apply to it the same engineering talent that has made our manufacturing plants the envy of the planet. While the Service Sector is on the periphery of many traditional engineering disciplines it is not the central focus of any. I see this as an opportunity to create a new program with a single focus, the improvement of the largest segment of the economy.

I am glad to see Michigan Tech take a leadership role in developing the discipline. Starting from a clean slate allows the program to be tailored to the specific needs of this industry. Graduates of this program will be in high demand and I look forward to the time when I can work with them.

I have supported this effort from the start. I was one of the participants that meet in Houghton, MI in February 2004 for the original brainstorming session that developed the curricular characteristics for the Delphi study. I was also able to participate in the Delphi study and I'm pleased to see the progress that you have made so far.

I thank you for the privilege of working on the development so far and I am eagerly looking forward to the program's implementation. If I can be of any assistance as you move forward, please do not hesitate to contact me.

Sincerely,

Patricia D. Galloway
CEO
American Society of Civil Engineers Past President



February 17, 2005

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Michigan Technological University
1400 Townsend Dr., 703 M&M
Houghton, MI 49931

Attn: Sheryl A. Sorby
Associate Dean of Engineering

Re: Service Sector Engineering Curriculum

Dear Sheryl:

Thank you for allowing me to participate in the development of a curriculum for a Service Sector Engineering program at Michigan Tech. The service sector will be the fastest growing business segment for the next several years. The growth of this segment of business creates some new engineering challenges that are only being partially addressed by the traditional engineering disciplines. The business models for the service sector are substantially different than that of traditional industry, which has been the focus of most engineering curriculums.

I firmly believe that Michigan Tech is taking a very proactive approach in addressing a definite business need by developing a Service Sector Engineering program. I wish you success in this endeavor. You can be assured that organizations like FM Global will be interested in offering career opportunities for graduates from this program.

Thank you again for the opportunity to be on the front end of the development of a curriculum that I feel confident will prove to be very beneficial to the service sector. Please feel free to call on me again if you feel that my input would be of value.

Sincerely,

A handwritten signature in black ink that reads "Bob Turnquist". The signature is written in a cursive, flowing style.

Bob Turnquist, P.E.
Assistant Vice President
Group Manager Field Engineering
Chicago Operation
Phone: 262-251-3089
Fax: 262-251-0273
Email: robert.turnquist@fmglobal.com

January 18, 2006

Dr. Daniel Litynski, Acting Division Director
Division of Undergraduate Education
National Science Foundation
4201 Wilson Blvd
Arlington, VA 22230

Dear Dr. Litynski:

I enthusiastically endorse the proposal prepared by Michigan Tech PIs to implement a curriculum for a Service Systems Engineering discipline. I believe that providing the service sector of the economy with the problem-solving expertise of engineers will vastly improve that sector's processes and productivity. As an increasingly larger proportion of our economy is based in the service sector, the need for engineers who can effectively work in this area will become more acute. We have been discussing the possibility of an engineering degree program such as this for several years and the funding provided by NSF for improvement of undergraduate education will enable us to embark on this pioneering project.

There are several factors that I believe make Michigan Tech uniquely poised to be able to successfully implement an innovative program such as Service Systems Engineering. We currently have an ABET-accredited Bachelor of Science in Engineering program that enables us to incubate programs such as this one with ease. The BSE program at Michigan Tech consists of coursework in an emphasis area as well as directed electives in areas either inside or outside of engineering. Michigan Tech has also developed an innovative program called the Enterprise. In the Enterprise, sophomores through seniors work on projects supplied by industry in a quasi-real-world setting. Students manage their enterprises, with minimal guidance from a faculty advisor, much like a consulting or design firm. We think that an Enterprise in Service Systems Engineering would be attractive to industrial sponsors as well as students, particularly students who wish to have a positive impact on society. At Michigan Tech we have a long history of working across departmental and college boundaries for research and educational programs. In fact, the Enterprise program was developed through a partnership between Engineering, Business, and Humanities. Because we are a large engineering program (~3800 students) in a relatively small university (~6300 students), we are able to easily work between units in ways that many other engineering colleges can not.

Thank you for your consideration of this proposal. We are excited at the prospect of developing and implementing this innovative new curriculum at Michigan Tech.

Sincerely,



David D. Reed
Provost and Vice President for Academic Affairs



January 20, 2006

Dr. Daniel Litynski
Acting Division Director
Division of Undergraduate Education
4201 Wilson Blvd
Arlington, VA 22230

Dear Dr. Litynski:

The proposed Service Systems Engineering curriculum will enable a significant interdisciplinary effort between the School of Business and Economics (SBE) and the College of Engineering. As the service sector grows while opportunities diminish in manufacturing, future graduates need to be academically prepared to understand the challenges of the service sector as they enter the workforce.

The SBE welcomes opportunities to engage in interdisciplinary activities that produce MTU graduates who are aligned with industry expectations. The Service Systems Engineering curriculum would further integrate and complement existing interdisciplinary activities such as SBE involvement in MTU's Enterprise program and the Center for Technological Innovation, Leadership and Entrepreneurship (CenTILE), an interdisciplinary endeavor between Business, Engineering and Sciences & Arts.

A recent article in Business Week emphasized the growing importance of dual degrees in technical studies and business to prepare students for the 21st century job market. A Service Systems Engineering program will not only provide an interdisciplinary undergraduate degree, it will prepare students for a fifth-year masters degree in Business Administration at MTU which will give them a competitive edge in the marketplace.

Because of the interdisciplinary nature of the program and employment opportunities in industries such as health care, hospitality, finance and insurance, the Service Systems Engineering program will appeal to prospective women and minority students. These industries typically have a higher percentage of women and minority employees and have been recognized for their diversity efforts by Fortune as some of best companies to work for.

The proposed curriculum has been the subject of internal research. An initial Delphi study provided a wealth of information from participants in a wide variety of industries. A follow-up workshop in March 2006 will provide additional input from industry experts. NSF funding would enable development and implementation of the program, which will allow Michigan Tech to be recognized as a leader in the area of Service Systems Engineering.

Thank you for your considering our proposal.

Sincerely,

A handwritten signature in blue ink that reads "Christa L. Walck".

Christa L. Walck
Dean, School of Business and Economics

January 17, 2006

Dr. Daniel Lytinski
Division of Undergraduate Education
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230

Dear Dr. Lytinski:

Michigan Tech is a leader in undergraduate engineering education as well as cutting edge research. It is Michigan Tech's goal to continuously improve the quality of the undergraduate engineering curricula as well as to increase the diversity of the student body within the College of Engineering. In order to achieve these goals, we believe that providing innovative programs that have broad appeal will be one of the keys to our success.

I have had many interactions with industry and academic leaders around the country and more than 20 years experience as a leader in both ABET and ASME. I strongly believe in the need for a service systems curriculum that is separate from the traditional IE and Engineering Management programs. Reducing spiraling healthcare costs is only one small area where engineering talent and problem-solving could be used to make our manufacturing segment more competitive in our global marketplace.

The College has demonstrated its commitment to educational reform through several ongoing and proposed projects. The project outlined in this proposal will enable us to continue to lead the way, especially in meeting the engineering needs of the Service Sector of the economy. Furthermore, the results of this project will serve as a national model to our engineering colleagues at other universities to achieve change on an even broader scale.

I pledge the support of the Dean's office in the completion of this project and the impact of this project will continue long after the NSF funding is complete. In fact, the dean's office has pledged ~\$5K already to this effort by sponsorship of a workshop on our campus in March of 2006. The results from this workshop will guide our development of this unique program.

Thank you for your consideration of this proposal.

Sincerely,



Robert O. Warrington
Dean of Engineering