University of Connecticut

Storrs, CT 06279-3136

Metallurgy and Materials Engineering **Institute of Materials Science**

Industry Sponsored Senior Project Course

We are seeking your support and the support of your company for our undergraduate degree program in Metallurgy and Materials Engineering, specifically for the two-semester senior project. After 40 years of nationally recognized programs of research and graduate education, in association with the Institute of Materials Science, the Faculty of the Department of Metallurgy and Materials Engineering initiated an undergraduate degree program. The BSE program for materials engineering majors was undertaken in direct response to estimates from the Connecticut materials community that there would be job opportunities for 25-50 entry-level materials engineers with the States major employers of scientists and engineers. We are the only materials engineering degree program at a public university in New England. Students from the other five New England states pay only one-half of the normal non-resident tuition; and our graduates will be seeking employment throughout the New England sates.

The first five students to enroll in the program are now entering their senior year. We expect two of the seniors will continue immediately in graduate study. The other three will be seeking employment in the region, with our high recommendation. Ten students are enrolled in the junior class. Your support of the undergraduate program will enable continued growth in enrollment toward our goal of 20 Metallurgy and Materials Engineering majors graduating per year.

The senior project course offers students two options. The primary option is for seniors, usually in teams of 2 or 3, to attack an industry sponsored project with the joint guidance of an industry advisor and a faculty advisor. The second option, for students highly likely to continue directly on for graduate study, is to undertake a research project under the direction of a faculty member. The BSE research project is likely to blend into the student's MS thesis research. The Metallurgy and Materials Engineering BSE curriculum can be found on the web:

http://www.ims.uconn.edu/metal/Undergrad/undergrad.htm.

This year we are seeking two industry-sponsored projects. Next year we will be seeking four industry-sponsored projects.

What we request from industry sponsors.

A project – The Company should propose a project that presents a substantial challenge to a materials engineer. The project should be of sufficient long-term importance to Company management that they will be willing to provide intellectual and financial resources to support the project; they will supply specialized materials and provide access to specialized equipment; they will be willing to wait nine months for an answer; and they will not lose interest if a quick fix is found.

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An industry advisor – The Company will identify an individual to work as the industry advisor to the student project team. The Department will identify a faculty member to work as the faculty advisor to the senior project team. The faculty and industry advisors will meet to define the objectives of the project and the approach, determine what company data need to be made available to the students, and estimate what materials and equipment will be used at the Company and at the University. The students will visit the industry advisor at the Company to learn the contextual setting of the problem and to be introduced to the Company's objectives for the project. During the academic year the industry advisor will continue to encourage and provide answers to questions from the student team and will provide feedback on how the project team's direction and progress are meeting Company objectives.

Specialized materials and equipment – If solution to the project requires the use of specialized facilities not available at the University or specialized or expensive materials, the equipment or the materials will be furnished by the Company. As part of the undergraduate curriculum the seniors have received hands-on experience with materials characterization techniques. The student will have access to the materials characterization equipment in the Department's undergraduate teaching laboratories and, as appropriate, the extensive materials characterization and materials processing facilities of the Institute of Materials Science.

An unrestricted grant – The Department requests an unrestricted donation of $5,000 from industry sponsors. The funds will be used by the Department of Metallurgy and Materials Engineering to bridge the gap between the teaching budget and the resources required to deliver a first class undergraduate education.

What the Company should expect.

Access to students -- The Company will have an opportunity to evaluate the students in the senior project team over a period of several months. If the company has positions open at the academic year, the Company will have an advantage in recruiting well-educated materials engineers. The students will learn about the business of the Company and the working climate. They will share that knowledge with their classmates.

Strengthened ties with the University --- The industry and faculty advisor will develop a strong working relation, including an understanding of each other's work environment. Generally, the collaboration between the industry advisor and the faculty advisor will continue to grow. Industry personnel will become aware of the intellectual resources and facilities available at the University. The faculty will become more aware of the company's segment of the materials industry.

A project report – The students will submit a written project report at the end of the academic year with copies to the Department and the Company. Senior project reports do not have to be submitted for public access in the University library. Proprietary information supplied by the Company so the students can do their work can be deleted from public presentations. The students will present the results of their project orally in a public seminar. A panel of judges will evaluate the student presentations to select cash award winners.

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