



The University of New Mexico

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October 11, 2001

Mr. Daniel M. Hull  
President  
Principal Investigator for STEP II  
CORD  
601 Lake Air Drive  
Waco, TX 76710

Dear Mr. Hull:

As a long time proponent of the need for broad based education and training in optics and photonics, I am delighted to participate in the proposed STEP II effort as a member of the Technical/Industrial Working Group. Extensive surveys and reports have identified photonics as a key driver for the industrial and technological leadership of the US in the coming years and decades. Yet the inertia of the US educational infrastructure and bureaucracies has prevented us from meeting squarely the challenge of supplying the increasing industrial demand for highly skilled workers with adequate education and training.

I bring to this project my extensive experience in heading the Optical Sciences PhD program at the University of New Mexico (UNM) and in leading an effort, over the past three years, to create a new Masters degree in Optical Science and Engineering at UNM. The MS program, like the PhD program, will be administered jointly by the departments of Physics & Astronomy and Electrical and Computer Engineering. Its central emphasis is on creating an industrial career pathway that will address the demand for skilled professionals with broad training at the R&D and managerial levels of optics industries.

A question to ask is the following: Where does STEP II fit into the scheme of graduate programs like the ones I have been involved with, that are a level or two removed from it? The answer lies in a broad and deep vision for optics in which our education and training must articulate well across the different levels. The success of our MS program, for example, will depend crucially on the qualifications of the average student we are able to recruit, qualifications that are achieved at the Bachelor's level and which in turn obviously depend on the skills acquired at lower levels still. In other words, we must create a single pathway with multiple exit points. We have been particularly sensitive to this need for articulation at our MS-PhD levels, and remain committed to

downward articulation with Bachelor and Associate programs of training that are critical to the STEP II project.

The three areas in which I feel I can provide critical support are the following:

1. Providing oversight and technical skill in reviewing the accuracy, content, didacticism, and emphases of course and training documents, particularly where theoretical formulations are involved;
2. Providing my experience in structuring and implementing a major program of study, as it would relate to STEP II; and
3. Promoting the development of teaching and training materials at public forums and technical meetings and conferences.

I look forward to working with other members of the Technical/Industrial Working Group on this most worthwhile project. This project is likely to have a national impact, particularly for central New Mexico where I live and work because of our Next Generation Economic Initiative that has recently identified optics and photonics as one of six most significant regional industrial clusters.

Sincerely,



Sudhakar Prasad  
Director, Center for Advanced Studies and  
Professor of Physics and Astronomy