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TO: Dr. James Coffman, Provost

FROM: Dr. Stephen M. Welch, Professor
Department of Agronomy

RE: CIS Panel Testimony

Some of you may wonder why I have elected to come here today. I may be the only person speaking who is not obviously from an affected unit or discipline. I am here because I have an undergraduate degree in Computer Science from Michigan State University. The department I got my degree from is housed in the College of Engineering. This has given me a particular perspective that I would like to share.

To set the stage for that I would like first to quote from a 1991 report by Peter Denning, a highly prominent computer scientist. Professor Denning currently chairs the Department of Computer Science at George Mason University, is editor-in-chief of the Communications of the Association of Computing Machinery, and is a past-president of that organization. He has written extensively on the subject of computer science education.

He states in this article "Right now, most computer scientists understand computer science as a discipline that studies the phenomena surrounding computers." Then, to build a case against this definition he discusses how the legal and medical professions relate to society and how they assist people with problems in those respective areas. He continues, "The computing profession, by analogy with other professions, is the set of people and institutions who take care of other people's concerns in the domain of information processing, computation, and coordination over networks of computers. These concerns are bigger than the phrase 'phenomena surrounding computers' implies." After listing specific examples says "In other words, the concerns are not phenomena that surround computers. It is the other way around. The computers surround the concerns."

Professor Denning then states the central point of his report. "We of the ACM are concerned that if computer scientists continue to talk in a language focused on 'phenomena surrounding computers' they will find themselves increasingly disconnected from the concerns people have about information processing and communications." In other words, he fears that there is some danger of computer science becoming a sterile, abstract exercise and, in the worst sense of the word, academic.

This brings me to the central point that I wish to make today. Helping society solve practical problems through the development and application of technology has always been the special province of the engineers. Others help society in many ways but, put simply, the engineers go out into the world and they build things. The value of that, in my view, was the single most important thing that I learned as a college of engineering undergraduate.

What I hear Peter Denning say, and what I believe, is that the field of computer science needs to strengthen its connection with real world concerns. Computer science students, both graduate and undergraduate, will benefit by emersion in a cultural atmosphere which has this orientation. Judging from my own experiences this will happen independently of any particular curriculum changes which might or might not occur. What I am saying is that the greatest benefit is simply from being there.

For these reasons I strongly support the movement of Computer and Information Science to the College of Engineering. Thank you.

Citation: Denning, P. (1991). *Comm. Assoc. Comp. Mach.* 34(10):129-31.