

# Iowa State University

## *Department of Civil and Construction Engineering*

### *Interoffice Communication*

DATE: April 23, 2001

TO: James Melsa, Dean  
College of Engineering

FROM: Lowell F. Greimann, DEO  
T. Al Austin, Division Leader of Environmental Engineering

RE: Proposal to rename the department The Department of Civil, Construction and Environmental Engineering

On behalf of the Civil & Construction Engineering Faculty, we are requesting the name for the department be changed to the **Department of Civil, Construction and Environmental Engineering**. This request results from a year long study of the undergraduate and graduate program in environmental engineering by the faculty of environmental engineering and water resources. The study concluded some changes are needed to increase the visibility and effectiveness of the environmental engineering program. The name change has been evaluated by the CCE Faculty Council, presented to the CCE Faculty, and has received a very strong approval vote (15 Yes, 3 No, 2 Abstain). We believe this change will benefit the department as whole and it will establish CCE as a leader in educating the engineers of the future with a strong environmental engineering understanding. Our paramount goal is to make this department better and to expand the educational and research programs of the department for the future. Our reasoning for the recommendation is outlined below.

There were about 52,000 practicing environmental engineers in local, state and federal government, consulting engineering and industry in 2000. Over the past 10 years there has been steady growth in the environmental engineering discipline. Projections for employment of environmental engineers show an expected increase faster than the average for all occupations through 2010. Increased government environmental regulations will continue to increase the demand for environmental engineers. An aging infrastructure will require new environmental engineers trained for reconstruction and innovative ways of improving to meet new standards.

As an academic discipline, environmental engineering is rapidly evolving and is now being established as a discipline unto itself. In the past most environmental engineering

programs originated in civil engineering or chemical engineering departments, but there is now a move to break away from these historical roots and establish environmental engineering as a stand-alone discipline. In response to these pressures, some universities have developed new departments of environmental engineering, other universities have developed undergraduate degree programs in environmental engineering and some universities have developed an undergraduate emphasis in environmental engineering within a traditional engineering department. The CCE Department has had an undergraduate program with an emphasis in environmental engineering for almost 10 years and we have been offering an environmental engineering graduate program for more than 40 years. We want to have a strong viable undergraduate emphasis program and a strong graduate program in environmental engineering. We believe both of these programs will strengthen the Civil & Construction Engineering Department. They will increase visibility not only for environmental engineering but for the department as a whole.

ISU has had some strong leaders in the environmental engineering profession as members of our faculty. People like E. Robert Baumann, John (Jack) Cleasby, and Richard Dague are recognized as pioneers in the emerging field of environmental engineering. These faculty raised the national and international reputation of ISU and provided a foundation upon which to build. These people have moved on and we now have an excellent young faculty coming up to replace these leaders. Our graduate program has been strong at the Master of Science level and has averaged some 35 students over the past 30 years. Today we have about 30 graduate students and 5 post-doctoral staff working along side of our 7 faculty members and 4 P&S staff members. Our teaching responsibilities include courses in air pollution, water supply, hydrology, open channel flow, wastewater treatment, groundwater remediation and hazardous and solid waste management. However, we need to move the program to the next level in terms of increases in research funding and degree production. It is becoming more competitive in attracting and retaining top quality students to the program, so some changes are needed.

We are competing with other schools in Iowa and the nation for quality high school students. When they are looking for a school to attend they will visit our web site, look at our University Bulletin, talk to their guidance counselors and seek advice. If the prospective student looks for environmental engineering at ISU, they will not find much unless they look very hard; however, if they look at the University of Iowa Bulletin, they will quickly see SUI has a department that is involved in environmental engineering. We believe we have a difficult time competing. The changing of the name of the department will help with recruiting students to our program.

Beyond undergraduate student recruitment, having the word “environmental” in the department name is consistent with the university and college strategic plans. One of the roles of ISU as listed in the Strategic Plan is:

- Iowa State University assumes responsibility for helping to protect, maintain and improve Iowa's natural resources through the discovery and diffusion of knowledge and technology.

The College of Engineering has identified core research competencies and areas of emerging competencies. Environmental engineering is one of the College's emerging competencies. By adding "environmental" to the department name we are establishing a role in building the educational and research emerging programs within the college.

Many of the "best" schools in the U. S. in civil engineering have "Environmental" as part of their department name. A review of the ABET accredited departments of civil engineering in the U.S. shows that out of the 211 departments, 92 have the word "environmental" as part of the civil engineering department name. There are 40 accredited environmental engineering BS degree programs in the U.S and most of these are found in civil engineering departments. For comparison with our peer institutions, we collected data from the civil engineering departmental web pages of several universities. Six of ISU's "Peer 11" has the word "Environmental" in the civil engineering department name. In addition, 6 of the 11 schools in the Big-12 that have engineering programs have the word "Environmental" in their civil engineering department name. Our competitor for students in the state of Iowa (University of Iowa) has the word "Environmental" in the civil and environmental engineering department. Other schools where the word "environmental" appears in the civil engineering department name include: MIT, Stanford, Georgia Tech, University of Michigan, California Berkeley, Rutgers, Cornell, Carnegie Mellon, Penn State, Duke, Princeton and at least 40 others. Many of those we are competing with for graduate students and research funding have a stronger identification with environmental engineering. It is clear that many of the civil engineering departments around the country have much stronger affinity with the environment. We want the same approach here at ISU.

The faculty in environmental engineering has a plan for the next few years to move this program forward and to establish national prominence. This plan includes the following items:

1. Renaming the department to **Department of Civil, Construction and Environmental Engineering**.
2. Developing new graduate degree programs (M, S. and Ph.D.) in Environmental Engineering. At this time the graduate students receive their degree in Civil Engineering with a specialization in Environmental Engineering. We propose to re-name the existing degree to be a MS or PhD in Environmental Engineering. A proposal for a new degree, even though this is largely a renaming, requires a lengthy self-study that must be submitted to the Board of Regents. It is also our intention to seek ABET advanced accreditation for the MS degree in Environmental Engineering. We feel that having an advanced ABET accredited degree at ISU would be useful in moving our program to the next level, it would position us to be responsive to the ASCE Policy 465 (ASCE policy requiring a

- masters or equivalent for licensure), and it will allow us to better meeting the needs of our students. A draft self-study has been prepared and is currently being reviewed. This initiative will be brought forward in fall, 2002.
3. Develop, jointly with Environmental Sciences, a new interdepartmental graduate degree program called Master of Science in Environmental Sciences. Students without an undergraduate degree in engineering would take the MS in environmental science. This interdepartmental degree program will follow the models of the MS in water resources and the MS in Transportation Logistics degrees. Meetings are already being held with the environmental science faculty and a self-study is being developed.
  4. Develop an aggressive public relations campaign on and off campus to get out the word about the environmental engineering program within the civil engineering department. This would include new materials to be sent out to incoming freshmen. We also want to be involved in freshman orientation next summer.
  5. Make sure future ISU bulletins have environmental engineering in the index and it is referred to within the CCEE department. A new statement was approved by the faculty for inclusion in the new bulletin.

We feel the changing of the department name is a first critical step. We see positive impacts on the entire department and the College of Engineering, especially those doing work related to the environment.

We request your approval of this name change for the department