EDITORIAL

ENGINEERING FOR THE ENVIRONMENT

I was getting a haircut last week when the person cutting my hair asked the dreaded question: “So, what do you do for a living?” The first part of my response was easy, since I explained I was a professor at the University. (In this town you don’t have to explain which one.) The second part was more difficult: “… in environmental engineering.” This led to the inevitable reply of “Oh really! Um … what’s that?”

It was a few decades ago that my reply would have been “sanitary engineer” making the ensuing explanation would have been somewhat easier. Sanitary engineers had a defined job of protecting human health and preventing the spread of disease by treating wastewater and producing potable water. But environmental problems expanded to encompass more than just clean water, and engineers took up the task of cleaning up the environment. These increased responsibilities resulted in title changes from sanitary to environmental. For example, this journal’s name was changed from the *ASCE Journal of Sanitary Engineering Division* in 1973 to *Journal of Environmental Engineering Division* and then to the *Journal of Environmental Engineering* in 1983. Academic departments around the country have undergone name changes from Civil Engineering to Civil and Environmental Engineering, and many other journal titles and professional organizations have kept pace.

We are now comfortably called environmental engineers—at least in our small engineering circles—and find ourselves dealing with environmental problems that span local to global scales. But have we, as John Ferguson asked, “bitten off more than we can chew” (Ferguson 1996)? “The environment” is now at the top of the priority list of every federal and academic institution. Are we the only engineers that these institutions hope will address these environmental issues? We think that as environmental engineers we can tackle human health issues from microbial-derived diseases to chronic health problems linked to environmental pollutants. We want to continue to clean up air, water, and soil, but also to develop new environmentally friendly materials and help “green engineer” the production of chemicals. But have we bitten off more than we can chew? I don’t think so. In fact, I think what we really need is help and we are reluctant to admit it. Let me explain.

A few years ago, I noticed a trend to slip environment into the title of different science and engineering departments around the campus. I saw the emergence of “soil, water and environmental science” and “geoenvironmental engineering” at universities that already had civil and environmental engineering programs. At first, I felt that these programs were out to steal our title. Many of these programs went on to duplicate courses we already taught in our department, like “environmental chemistry” and “environmental microbiology.” I assumed that since we were the first to change our name that we owned the word “environment.” Then I thought some more. For example, did we similarly own chemistry or microbiology in these course titles?

Stewardship over the environment has expanded to a greater role than just civil and environmental engineers can be expected to fill. There are now several programs in the United States that have the title “Chemical and Environmental Engineering.” These departments are particularly well poised to generate students that will tackle the translation of our process industry to a green-process industry. These green engineers will learn to work side-by-side with graduates of “environmental chemistry” departments. Since new materials must be developed that are environmentally friendly, we may begin to see the emergence of programs that have a title “Materials and Environmental Engineering.” Monitoring global change and deforestation requires satellites and sophisticated image analysis techniques. Maybe there is even a future role for a department with the title “Electrical and Environmental Engineering?”

It is time to think globally. Perhaps at academic institutions it is also time to act locally—to retreat from turf battles and advance to build new types of engineers that will engineer systems that are environmentally friendly. And when that time comes, and someone else is sitting in a chair getting a haircut and they reply “environmental engineer,” maybe the response will be “Oh—in what field?”

REFERENCES

Ferguson, J. (1996). “Have we bitten off more than we can chew, or is environmental engineering more than we thought it was?” *Wat. Environ. Res.*, 68(3), 257.

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