

Questions for Dr. Timothy Eisele

Visit to CM3120 on 1 April 2019, MEEM 403, 11am

Areas of Expertise:

- particle size reduction (crushing and grinding)
- particulate separations (variety of methods)
- solid/liquid separations (thickening and filtration)
- dissolution (leaching)
- heating (calcination and melting)
- electrolytic deposition
- slurry pumping
- effluent treatment

Welcoming Question (Dr. Morrison)

1. Dr. Eisele, can you tell us a little about your professional pathway to where you are now? Where and what did you study in college/grad school, and how did you get interested in the topics that interest you now?

Student questions to Dr. Eisele

2. What is? (from list above) What is the role of mass transfer in that unit?
3. Repeat #2 with another topic.
4. Are detailed models used in your field? If yes, how? If no, what is used instead of detailed models to determine the size and design of the unit?
5. In my Friday Project my group is studying _____, which does not really have diffusion or molecular “mass transfer” in it but it does involve large solid particles being filtered or moved around (e.g. filtration, centrifugation, batch drying). This seems to be an area of your expertise. Can you help me to understand how such systems are analyzed, compared to the molecular approach that we use for diffusion, for example?
6. How are statistics important in your field?
7. How have the unit operations that you deal with changed over the course of your career?

8. Is there a field you wish you had studied in school that would have helped you in your investigations? What is it and why would it have been good background?
9. What kinds of materials (iron ore? Mine tailings?) have you dealt with in your career? Do you see that changing in the future?
10. Have there been some key inventions in your field since you left school? How did they impact your work?
11. What *technical topics* should we as chemical engineering juniors be focusing on as we finish up our last semesters at Michigan Tech?
12. What *nontechnical skills* should we as chemical engineering juniors be focusing on as we finish up our last semesters at Michigan Tech?

CM advising questions to Dr. Eisele

13. What technical electives do you recommend and why?
14. I know that you teach minerals processing courses, and that these are part of the minor in mineral processing. What is the top reason, do you think, that someone should consider taking the minor?

General career advice

15. How important is the first job that I might take?
16. At Career Services they say that between 70 and 85% of folks get their jobs from personal contacts (<https://blogs.mtu.edu/chem-eng-undergrad/how-can-i-get-a-job-internship-or-co-op-whats-the-method-these-days/>) What can I do to broaden my network to get more professional contacts?

Questions to students from Dr. Eisele

1. What's a "Friday project"?
2. What are you studying in your Friday project? What is the role of mass transfer in your project? Was it hard to figure out how the unit worked?
3. Does anyone have any experience with minerals processing or the units I've been discussing? What is your impression of them?
4. What made you choose to study chemical engineering? What kind of career are you hoping for?