

FROM “RANDOM THOUGHTS” TO “DRAWN TO ENGINEERING”

PHIL WANKAT

To use a sports analogy, when the team’s star quarterback retires, there is a big hole that needs to be filled. Unfortunately, the new quarterback usually has a very difficult time measuring up to the play of the retiring star. After 29 years and more than 100 columns, *CEE*’s star columnists Rich Felder and Rebecca Brent are retiring. Although the Random Thoughts column was only two pages per issue, those two pages were the most popular item in *CEE* for many years. *CEE* readers will miss the wise, witty, and sometimes provocative columns. The retirement of Rich and Rebecca creates a very large hole for the journal.

The Publication Board and *CEE* editors realized that finding a new columnist to write a column that would immediately

measure up to the quality of Random Thoughts would be very difficult. Instead of trying to replace Random Thoughts with a column we thought something else such as a crossword puzzle, Sudoku, or poetry would probably be better. Nothing clicked. Fortunately, whilst attending an education session at the AIChE Annual Meeting in San Francisco, I attended a talk by Lucas Landherr on using cartoons to present complex chemical engineering topics. I invited Lucas to step out in the hallway with the intention of inviting him to write an article for *CEE*; however, in the 15 seconds it took to exit the room I had an epiphany that a cartoon feature in *CEE* would probably draw readers to *CEE* who either rarely read *CEE* or who came to read Random Thoughts. Fortunately, Lucas agreed to produce cartoons for *CEE*. Please check out the new feature “Drawn To Engineering.” □

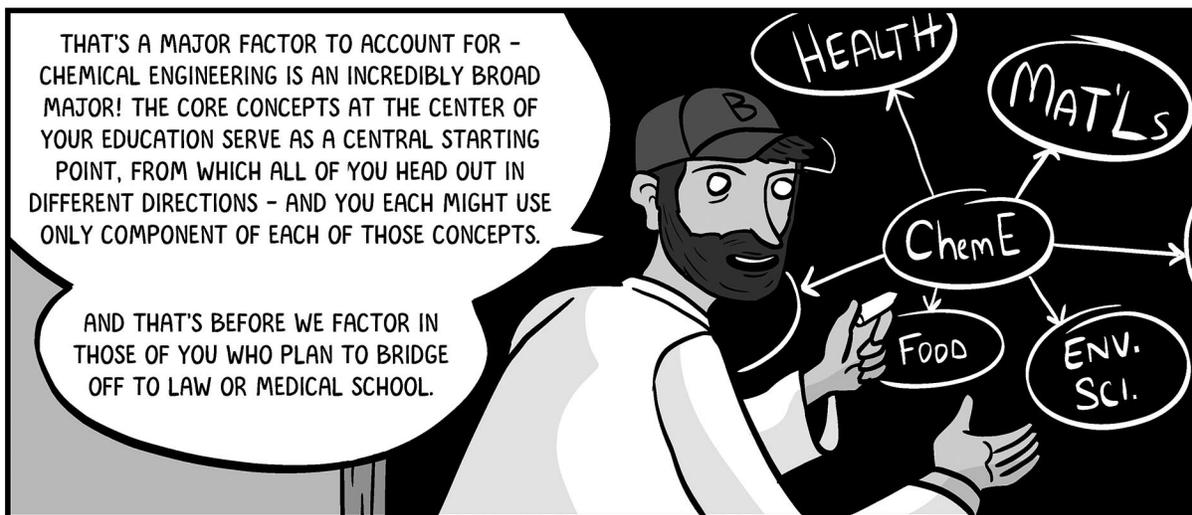
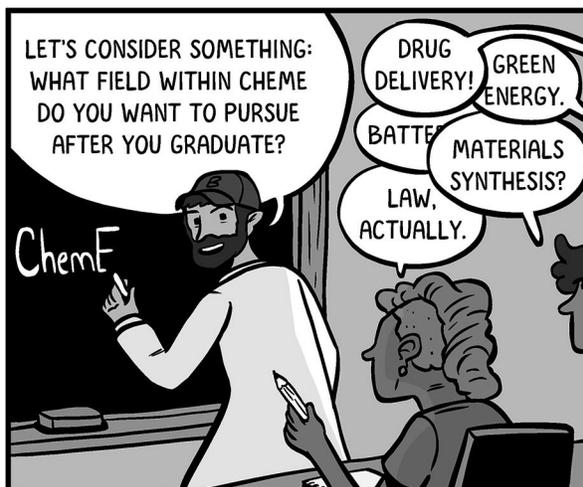
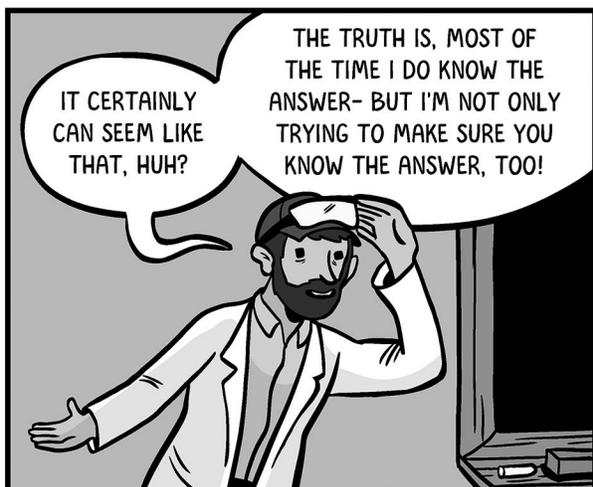
Lucas Landherr is an Associate Teaching Professor in the Chemical Engineering Department at Northeastern University, where he has been on the faculty since 2012. Prior to joining Northeastern, he was an NRC Postdoctoral Research Fellow in the Polymers Division at NIST in Gaithersburg from 2010 to 2012. He received his B.S. degree in chemical engineering from Lafayette College in 2005, and his Ph.D. in chemical engineering from Cornell University in 2010. He has received several teaching awards during his time at Northeastern. His engineering education research group has worked to produce new experimental STEM modules for K-12 students and innovative teaching tools for K-12 and college classrooms. While at Cornell in 2008, he began producing a daily photocomic, “Surviving the World”; and in 2013 began writing the comic “PhD Unknown” with artist Joan Cooke. Lucas’s work in comics for nearly nine years (often under the pseudonym Dante Shepherd) has led to his comics being published in Wired, the books “I Love Charts” and “Hustle Economy”; and other publications.

Lucas’s creative work in comics became connected with his research in education after receiving a Northeastern Provost Grant for Advancing Undergraduate Teaching and Learning in 2015, at which point he began collaborating with professional and student artists to make science comics as teaching materials for chemical engineering courses. The science comics have focused on concepts including assumptions, fugacity, PID controllers, and heat exchangers, and are available for use by all STEM educators (at www.sciencetheworld.com). To date, the science comics have been implemented in classrooms at over 30 universities and high schools.



PROBLEM-SOLVERS

WRITTEN BY: LUCAS LANDHERR / DRAWN BY: MATT LUBCHANSKY



THAT DOESN'T MEAN CORE CONCEPTS ARE LESS IMPORTANT! KINETICS AND TRANSPORT AND THERMO CAN BE USEFUL IN ALL OF THESE FIELDS- AND YOU MIGHT USE UNEXPECTED COMBINATIONS TO LEAD YOU TO SUCCESS. BUT TO MAKE SURE YOU CAN SUCCEED IN ALL OF THESE FIELDS, THERE IS ONE CENTRAL SKILL YOU MUST MASTER.

WHAT'S THAT?

TO PUT IT BROADLY? PROBLEM-SOLVING.

GIVEN THAT YOU WILL CERTAINLY BE CONFRONTED BY SCENARIOS YOU'VE NEVER SEEN BEFORE, YOU NEED TO BE ABLE TO LEARN NEW MATERIAL; PULL FROM YOUR PAST EXPERIENCES IN CLASSES, LABS, WORK, AND LIFE; AND DRAW CONNECTIONS TO FAMILIAR IDEAS SO THAT YOU CAN CRAFT A SUCCESSFUL APPROACH TO SOLVE THE NEW PROBLEMS.

THIS IS WHAT CHEME IS FULLY PREPARING YOU FOR. WE CAN'T PERFECTLY PREDICT WHAT EACH OF YOU WILL DO OR WHAT THE PROBLEMS YOU'LL FACE ARE. SO WE'RE NOT JUST TRYING TO MAKE YOU SUCCESSFUL ENGINEERS - WE'RE TRYING TO PRODUCE PROBLEM-SOLVERS. SO BACK TO YOUR QUESTION - I TWIST THE QUESTION BACK AROUND ON YOU TO FORCE YOU TO LEARN, DEVELOP NEW APPROACHES AND GET BETTER AT PROBLEM-SOLVING.

AS FOR WHY YOU'RE GETTING THIS RESULT... I THINK THE PUMP IS BROKEN.

SO... GO GET A WRENCH!

END