

Teaching Dossier

Elzbieta Cook

Department of Chemistry
Louisiana State University
Baton Rouge, LA 70803

Phone: (225) 578-3574 (bus.)

E-mail: folga@lsu.edu

Baton Rouge, December 2017

An ideal classroom... what is it? A room filled with young minds, who wish to learn about the world that surrounds them and are not afraid to put an effort into learning, and who wish to be shown that through education one can improve oneself and enjoy what the world has to offer.

Table of Contents

1. Courses taught	3
2. A-Z of my teaching philosophy	4 – 5
3. Service to the University and the community at large	6 – 7
4. Development of course material	8
5. Relevant publications	9
6. Relevant conference presentations	9 – 10
7. Additional professional involvements	11
8. Efforts to improve teaching and mentoring skills	11 – 12
9. Representative comments by students	13 – 15
10. Other accomplishments	16
11. Reflections on student feedback and evaluations	17

Courses Taught**Louisiana State University (LSU)**

2013 – present	Honors General Chemistry I & II (CHEM 1421 & 1422) – lectures
2005 – present	General Chemistry I & II (CHEM 1201 & 1202) – lectures
2002 (Spring)	General Chemistry I (CHEM 1201) – lectures Analytical Chemistry (CHEM 2001) – lectures

Southern University at Baton Rouge (SUBR) – subcontract from LSU

2002 – 2005	General Chemistry I & II (CHEM 132 & 133) – lectures
-------------	--

University of Calgary, Canada

2001 – 2001	Analytical Chemistry (CHEM 411) – lectures
1999 – 2001	Introductory Chemistry for Engineers (CHEM 209) – lectures
1997 – 2001	An Introduction to Chemistry (Continuing Education) – lectures
1994 – 2001	General Chemistry I & II (CHEM 201 & 203) – lectures, recitations, laboratories, computer assisted learning sessions (CAL)
1987 – 1993	General Chemistry I & II (CHEM 201 & 203) – laboratories and computer assisted learning sessions (PLATO)
1992 (Winter)	General Chemistry (CHEM 101) – computer assisted learning sessions (PLATO)

University of Silesia, Poland

1986 – 1987	Physical Chemistry – laboratories
-------------	-----------------------------------

Other

1985 (September)	Senior High School chemistry teaching trainee (Wisla, Poland)
1984 (September)	Junior High School chemistry teaching trainee (Ustron, Poland)

A-Z of my teaching philosophy

Analogies: I often find it useful to make real-life analogies for concepts that may otherwise be intangible.

Basics: In my experience, good foundations are essential for students to build upon. Basics need to be reinforced and their application to new material needs to be clearly demonstrated. Good practices, such as attention to units and significant figures, fundamentals of chemical nomenclature and basic math skills, help students move onto more difficult concepts.

Conversation: I constantly converse with my students during lectures. I pose questions and wait for answers, ask for questions from students, provide answers, or... answer with questions. By asking a question, students make the first step toward answering it. Questions inquiring 'How', 'What if', 'Why' or 'Why not' tend to be more important than those inquiring 'What'.

Discipline: It takes discipline to learn science. It is not just about accumulating information. It is about getting prepared to hear the material, paying attention to the lecture, actively participating and constantly forcing oneself to connect the dots. It also takes discipline to teach science; to stay on topic, to stimulate, to show cause-and-effect relationships.

Evaluation: How students perform in class reflects on how well I teach them and how I inspire them to learn. It evaluates me.

Fairness: Students need to believe I am fair. I am not unreasonable in my expectations and I do not offer consideration to any one particular student that I am not prepared to offer to all the others.

Group work: Students benefit from learning how to divide labor and communicate with each other ideas and findings. I encourage collaboration in short group activities in class, but I am cautious about peer tutoring and study groups where misconceptions tend to spread like wildfires.

Humor: By not taking myself too seriously, I feel younger and better connected to my students. Since one cannot have fun with chemistry without some prior knowledge, I walk a fine line between rigors of teaching science and the fun of knowing it.

Individuality: Each student is an individual with his or her emotions and one-of-a-kind history. In large class situations, individuality needs to be nurtured, but within reason. I strive to respect student's individual needs, have compassion for student's life circumstances, and help with student's individual learning style.

Joy: It comes from a variety of sources; from an exam well done by a currently struggling student, to a Christmas card from a student from the past. I believe that the joy in learning comes from overcoming the challenges met while studying. It feels good to figure things out!

Knowledge: "*Information is not knowledge*". Knowledge is constructed as a result of reflection on gathered information, analysis, establishing cause-and-effect relationships, adaptive thinking and hard work. The most important thing one can do with one's knowledge is to pass it on.

Learning: We learn all the time. We learn through mistakes, both our own and those of others. We test what we believe we have learned by solving problems, both assigned and those that just dawn on us. It is my job as an educator to inspire my students to want to learn how to be great problems solvers, not just how to master solving a particular problem.

Math skills: I really *appreciate* mathematics. I therefore tend to give my students a brief overview of the necessary mathematics so that it does not become an obstacle in learning *and* enjoying chemistry.

Nurturing: I believe that the best compliment a teacher can pay a student is to have faith in that student's ability to learn. I help students set realistic goals and gently motivate them. I try to promptly identify and root out problems and misconceptions, and guide students back onto the right path.

Organization: The effectiveness of lectures is greatly dependent on good organization. Every example, every demo, even a joke, have to serve a purpose in the performance a lecture is. Putting things into perspective, providing lecture outlines, giving a well thought out lecture and staying on subject—all contribute to the organization. As problem solving is a process, a plan for how to approach a problem may be suggested, but not imposed. After all, not everyone processes information the same way.

Passion: Passion for teaching helps in persevering through difficulties of the profession, those being setbacks experienced by failing students or the ineffectiveness of some teaching methods. It helps in communicating ideas and in finding the “whatever works” for a given group of students. It explains why my weekends are spent tinkering with class notes and answering students’ emails. If I am not passionate about what I am teaching, I cannot expect my students to be thrilled to learn it.

Questioning: Science has progressed because people questioned the *status quo*. New ideas constantly replace old ideas. I hope that by teaching some of those old ideas I am giving my students enough information to eventually question them.

Society: I know I am privileged to have received the gift of education. As my students mature, I wish for them to want to give back to the society by sharing their knowledge, mentoring younger generation and respecting the environment.

Trust: It is challenging for me to meet with a new group of students every semester and convince them to trust my ability to deliver my course at the right level. Failure is a real option, and I try to learn from it.

Understanding: Most questions posed during lectures and over 50% of the problems on exams target students’ in-depth understanding of the material. In science—and chemistry in particular—the ability to master a new skill or to learn a new concept depends on how well previously covered material was understood. Learning implies understanding.

Visualization: I incorporate balloons and ball-and-stick models to illustrate concepts related to chemical structure. When a concept is very theoretical, it is important to bring it to life via an animation, a short movie of a chemical reaction, or better yet, an in-class demo.

Work: Never elusive; always there for those who want to do it.

eXcellence: Always elusive; provides a lifetime of goals.

Youth: My students are my fountain of youth. It is my job to harness some of their youthful energy and channel it towards active learning.

Zen: I am in search of it.

Service to the University and the community at large

- 2017 Member of the Undergraduate Honors Thesis Committee (LSU, Ogden Honors College; Ms. Camille Prejean: *Characterizing Two Bestrophin Mutants of Chlamydomonas reinhardtii*)
Participant of the Student Response System (Clicker) Focus Group (LSU, ITS)
- 2015–present Member of the Executive Committee (LSU, Chemistry)
Center for Academic Success Faculty Partner (LSU)
- 2016 Member of the ad-hoc committee on student evaluations of teaching (LSU, College of Science)
- 2015 Member of:
– Recruitment and Retention Committee (LSU, College of Science)
– Outstanding Tutor Award selection panel (LSU, Center for Academic Success)
Presenter at the First-Year Experience: STRIPES program (LSU, Division of Student Life & Enrollment)
- 2014–present Member of the Assessment Committee (LSU, Chemistry)
- 2013 Faculty partner for the Bridges to the Baccalaureate program (between LSU and BRCC, Baton Rouge, LA)
Member of:
– Admissions, Standards and Honors (ASH) Committee (LSU, College of Science)
– Organizing committee “Increasing Student Engagement in Large Classes: Teaching and Learning Strategies that Work!” (LSU, Center for Academic Success)
- 2012 Member of the LA-STEM selection committee (LSU, Office of Strategic Initiatives)
Judge at the Louisiana State Science and Engineering Fair (held at LSU)
Speaker at the Fall 2012 Organic Chemistry review sessions (LSU, Chemistry)
- 2011–present Member of the Undergraduate Advising Committee (LSU, Chemistry)
– Faculty of Science Spring Invitational (2012, 2013, 2014, 2015)
- 2011 Member of:
– Scientific Review Committee and judge at the Louisiana State Science and Engineering Fair (held at LSU)
– LA-STEM selection committee (LSU, Office of Strategic Initiatives)
Presenter at the *MasteringChemistry* Workshop for Science Educators (held at LSU)
Speaker at the CHEMIS – boot camp for incoming freshman (Chemistry, LSU)
Contributor to the Fall 2011 Organic Chemistry review sessions (Chemistry, LSU)
- 2010 Member of:
– Pearson Education *Mastering Development Summit* (Boston, MA)
– Pearson Education General Chemistry discussion forum and focus group for “Chemistry: The Central Science, 12e” (Boston, MA)
– LA-STEM selection committee (LSU, Office of Strategic Initiatives)
Judge at the Louisiana State Science and Engineering Fair (held at LSU)
- 2009 Member of the organizing committee and judge at LSU *Triple EX* Annual Symposium for Undergraduate Research (Baton Rouge, LA)
Judge at the Louisiana State Science and Engineering Fair (held at LSU)

- 2008–present Co-organizer of the Undergraduate Research Poster Sessions at the National ACS Meeting and Exhibition.
- 2018 – 255th (New Orleans, LA)
 - 2017 – 254th (Washington, DC) and 253nd (San Francisco, CA)
 - 2016 – 252nd (Philadelphia, PA) and 251st (San Diego, CA)
 - 2015 – 250th (Boston, MA) and 249th (Denver, CO)
 - 2014 – 248th (San Francisco, CA) and 247th (Dallas, TX)
 - 2013 – 246th (Indianapolis, IN) and 245th (New Orleans, LA)
 - 2012 – 244th (Philadelphia, PA) and 243rd (San Diego, CA)
 - 2011 – 242nd (Denver, CO) and 241st (Anaheim, CA)
 - 2010 – 239th (San Francisco, CA)
 - 2009 – 238th (Washington, D.C.)
 - 2008 – 235th (New Orleans, LA)
- 2008 Organizer of:
- Symposium on Forensics for high school students (Pittcon’08, New Orleans, LA)
 - Symposium on Forensics for high school teachers (Pittcon’08, New Orleans, LA)
- 2006–2014 Member of the Undergraduate Affairs and Awards Committee (LSU, Chemistry)
- 2004, 2005 Judge at the High School Science Fair (St. James Parish, LA)
- 2003 Presenter at the Chemistry Curriculum Summit (Lafayette, LA)
- 2001 Moderator of a workshop on demonstrating introductory level laboratories for new Graduate Teaching Assistants (U of C, Calgary, Canada)
- Judge at the Science Fair (Glenmeadows Elementary School, Calgary, Canada)
- 2000–2001 Member of:
- Chemistry Teaching Development Committee (U of C, Chemistry)
 - Webpage Design Committee (U of C, Chemistry)
 - Curriculum Committee (U of C, Chemistry)
- 2000 Volunteer at the Canadian Society for Chemistry conference, Calgary, Canada
- 1999 Co-presenter of a series of showcase lectures on *Chemistry in Medicine*
Participant in *April Advantage Days* organized by the Faculty of Science for prospective science students and their parents (U of C, Calgary)
- 1998 Co-presenter of a series of showcase lectures on *Forensics* (U of C, Calgary)
- 1992, 1994 Presenter of the *Computers in Chemistry* demo for the “Chemistry in the Mall” during the National Science Week (Calgary, Canada)
- 1992–1993 Supervisor of a senior undergraduate student (Tom K. Woo – U of C, Calgary)

Development of course material

I have developed extensive PowerPoint lectures for General Chemistry I & II, which have been integrated – together with other supplemental material – into the Moodle® course management system. I have written my own semester examinations, numerous quiz problems and handouts, clicker questions and surveys, online self-tests with solutions as well as contributed to or coordinated the preparation of the departmental final examinations.

In addition to developing my own course materials and course delivery methods, I have shared some of my ideas of what is important and how to link concepts throughout the General Chemistry curriculum through the *Instructor's Resource Manual*.^{(5), (6), (11)} It is designed to help starting lecturers navigate the textbook and the multimedia resources that accompany it. I am also involved with the new edition of supplements to the *Introductory Chemistry* textbook,^{(9), (10)} and have contributed text to liberal arts chemistry textbook entitled *Chemistry for Changing Times*.

The innovative lecturing approach involves making lecture notes templates available to students prior to the start of the semester and synchronizing those templates to the PowerPoint lecture presentations⁽³⁾

I have brought the cross-proportions – a problem solving method – back to the classroom. I have prepared a student handout as well as published an article on the subject (see publications below).⁽²⁾

Relevant publications

- (13) **Cook, E.** “*How to Write an Abstract for the Undergrad Research Poster Session*” in *Chemistry* (the official ACS student member magazine.) 2017. *In press*
- (12) Brunauer, L. and **Cook, E.** “*Instructor’s Resource Manual*” to accompany *CHEMISTRY, The Central Science, 14e*; Pearson Education, Inc. 2017.
- (11) McGuire, S. Y. and **Cook, E.** “*Instructor Teaching Guide and Complete Solutions*” to accompany *Introductory Chemistry, 5e*; Pearson Education, Inc. 2015.
- (10) McGuire, S. Y. and **Cook, E.** “*Student Workbook and Selected Solutions*” to accompany *Introductory Chemistry, 5e*; Pearson Education, Inc. 2015.
- (9) Brunauer, L. and **Cook, E.** “*Instructor’s Resource Manual*” to accompany *CHEMISTRY, The Central Science, 13e*; Pearson Education, Inc. 2015.
- (8) Zhao, N.; Wardeska, J. G.; McGuire, S. Y. and **Cook, E.** “*Metacognition: An Effective Tool to Promote Success in College Science Learning*” *J. Col. Sci. Teach.* 2014, **43(4)**, 48-54.
- (7) **Cook, E.**; Kennedy, E. and McGuire, S. Y. “*Impact of Teaching Metacognitive Learning Strategies on Performance General Chemistry Courses*” *J. Chem. Ed.* 2013, **90(8)**, 961-967; (DOI:10.1021/ed300686h).
- (6) Brunauer, L. and **Cook, E.** “*Instructor’s Resource Manual*” to accompany *CHEMISTRY, The Central Science, 12e*; Pearson Education, Inc. 2012.
- (5) Brunauer, L. and **Cook, E.** “*Instructor’s Resource Manual*” to accompany *CHEMISTRY, The Central Science, 11e*; Pearson Education, Inc. 2008.
- (4) Laurino, J. P.; Cannon, D. J.; Richter, H. and **Cook, E.** “*Test Item File*” to accompany *CHEMISTRY, The Central Science, 10e*; Pearson Education, Inc. 2006.
- (3) **Cook, E.** and Cook, R. “*Lecture Templates: Convenient Partial Lecture Delivery System*” *J. Chem. Ed.* 2006, **83(8)**, 1176-1177.
- (2) **Cook, E.** and Cook, R. “*Cross-Proportions*” *J. Chem. Ed.* 2005, **82(8)**, 1187-1189.
- (1) Richter, H. and **Cook, E.** “*Test Item File*” to accompany *CHEMISTRY, The Central Science, 9e*; Pearson Education, Inc. 2003.

Relevant conference presentations

- 2017 253rd National ACS Meeting – San Francisco, CA, USA
Cook, E.; McGuire, S. “*From failure to success in general chemistry classes: Learning strategies to the rescue*” (poster)
- 2013 245th National ACS Meeting – New Orleans, LA, USA
Cook, E.; McGuire, S.; Kennedy, E. “*Impact of teaching metacognitive learning strategies on performance in general chemistry courses*” (oral)
- 2013 American Society for Engineering Education (ASEE) Gulf-Southwest Annual Conference – Arlington, TX, USA
McGuire, Y. S.; **Cook, E.** “*Putting the focus on learning in the online environment: Metacognition is the key!*” (oral)
- 2011 241st National ACS Meeting – Anaheim, CA, USA
Cook, E.; McGuire, S. “*Is less more? How much, when and how to teach learning strategies in general chemistry courses*” (poster)
- 2010 240th National ACS Meeting – Boston, MA, USA
McGuire, S.; **Cook, E.** “*Implementation and impact of a supplemental course taught in conjunction with General Chemistry*” (oral)

- 2007 234st National ACS Meeting – Boston, MA, USA
Cook, R. L.; **Cook, E.**; Lapin, J. “*Developing an ongoing service-learning program through environmental chemistry*” (poster)
- 2006 231st National ACS Meeting – Atlanta, GA, USA
Cook, E.; Cook, R. L. “*Same city, same course, different universities: a teacher’s perspective*” (poster)
- 2005 T.H.E. Forum – Baton Rouge, LA, USA
Cook, E.; Cook, R. L. “*‘See all, hear all’ – Partial lecture templates*” (oral)
- 2005 230th National ACS Meeting – Washington, DC, USA
Cook, E.; Cook, R. L. “*‘See all, hear all’ – Partial lecture templates*” (poster)
- 2004 227th National ACS Meeting – Anaheim, CA, USA
Cook, E.; Cook, R. L. “*Cross-proportions: a conceptual method for developing quantitative problem solving skills*” (poster)

In addition to the above presentations, the results of my classroom research have been presented at the following conferences and/or universities as invited talks:

- 2017 253rd ACS Meeting, San Francisco, CA, USA – McGuire, S. “*Metacognition: The key ingredient for academic success for underrepresented (and all) students!*”
- 2015 Wesleyan University, Middletown, CT, USA – McGuire, S. “*Teach students HOW to learn: Metacognition is the key!*”
Grambling State University, Grambling, LA, USA – McGuire, S. “*Increasing student motivation: strategies that work*”
- 2014 Xavier University of New Orleans, New Orleans, LA, USA – McGuire, S. “*Teach students HOW to learn: Metacognition is the key!*”
SACS Annual Meeting, Nashville, TN, USA – McGuire, S. “*Metacognition, mindset, and motivation: A major triad for student success!*”
Broward College, Ft. Lauderdale, FL, USA – McGuire, S. “*Metacognition and motivation: The keys to cultivating critical thinking!*”
- 2013 University of Cape Town, South Africa – McGuire, S. “*Teaching science students how to learn: Metacognition is the key*” and “*Achieving a 100% pass rate in the sciences through effective learning strategies*”
AAC&U Transforming STEM Education, San Diego, CA, USA – McGuire, S. “*Metacognition and motivation: Advancing STEM learning for all students*”
NSF EPSCoR Conference, Nashville, TN, USA – McGuire, S. “*Prepare Students for the Challenges of Research: Teach Them How to Learn!*”
- 2012 Western Michigan University, MI, USA – McGuire, S. and **Cook, E.** “*Teach STEM students how to learn: Metacognition is the key!*”
International Lilly Conference on College Teaching – Miami University, Oxford, Ohio, USA
McGuire, S. “*Metacognition: The key to improving brain-based learning*”
Gordon Research Conference – Davidson College, Davidson, NC, USA
McGuire, S. “*Get chemistry students to focus on learning instead of grades: Metacognition is the key*”

Additional professional involvements

- 2017 Participated in the “Active Learning in Introductory Chemistry” focus group, Macmillan Learning, San Francisco, CA
Co-presented a talk entitled “*Presenting metacognitive learning strategies in large classes to increase engagement and turn failure into success*” at the Faculty Focus workshop “Strategies to Increase Student Motivation and Engagement” (LSU, Center for Academic Success)
- 2016 Participated in the “Chemistry Performance Expectation Workshop”, American Chemical Society, Washington, DC
- 2015–present Served as a reviewer of articles submitted to: *Journal of Food Science Education*(1), *Journal of Chemical Education*(3), and *Chemistry Education Research and Practice*(4)
- 2013 Presented a talk entitled “*Successfully implementing clicker use in large classes*” at the Center for Academic Success Faculty Focus workshop “Increasing Student Engagement in Large Classes: Teaching and Learning Strategies that Work!”, LSU. YouTube video of the presentation: <https://www.youtube.com/watch?v=SvX8z8vhkdo>
- 2012–present Designated to teach General Chemistry I and II courses to cohorts from the Agriculture Residential College and Engineering Residential College, LSU
- 2012–2013 Facilitated the *Students and the Local Environment* surveys, in partnership with Manship School of Mass Communication, LSU

Efforts to improve teaching and mentoring skills

My efforts to improve the effectiveness of teaching have been made in collaboration with Dr. Sandra Y. McGuire – the past director of the Center for Academic Success and a Professor Emerita of Chemistry at LSU. Together, we worked on ensuring that incoming freshmen who lacked credit in College Algebra (math prerequisite for Chem 1201) had an opportunity to succeed in Chem 1201 given guidance, additional instruction time and encouragement. Each fall semester of this 2-year long project, I taught three sections of Chem 1201 lectures, that were partially “shadowed” by Chemistry Supplement (Chem 1200) course taught by Dr. McGuire. Students in the Chem 1200 were provided with: (i) preview/review of the class material, (ii) study techniques and metacognitive learning strategies, (iii) any necessary math skills, and (iv) ample motivation to succeed. Chem 1200 was focused on the conceptual understanding of the material, critical thinking and universal problem solving skills. Both courses were highly synchronized in terms of the course material and consistency of the pedagogical message. As a result of the project, each year ~65% of students enrolled in Chem 1200 had an opportunity to stay on track with their majors by receiving grades of A, B or C in Chem 1201. Many students who were part of this project felt that it gave them the much-needed support and armed them with confidence in their ability to do well in college. Ever since the termination of the two-year project at the end of 2009, I have invited Dr. McGuire during the fall semesters to give 50-minute presentations on learning strategies and study habits. To increase students’ motivation to pay attention, these presentations always take place shortly after the results of the first CHEM 1201 semester exam are known. Our results show a full letter grade increase for students who attended the presentation compared to those who did not. Two manuscripts describing the motivation behind, and results of, this classroom research, with strong focus on the role of metacognition have been recently published – see the list of publications (7-8). In addition, the motivation and ideas for self-improvement and for staying current with teaching methodologies are often a result of comments and evaluations provided by the students. To-date, I have presented my classroom research at several American Chemical Society (ACS) Meetings (April 2017, April 2013, March 2011, August 2010, August 2007, March 2006, August 2005, and March 2004).

I have participated in the Macmillan Learning Focus Group on Active Learning in Introductory Chemistry (2017, San Francisco, CA); ACS-facilitated workshop on the General Chemistry Performance Expectations (2016, Washington, DC); Pearson's Chemistry Webinars on *Active Learning in General Chemistry* and *Applying the Science of Learning to Your Classroom* (2016, online); Wiley EdTech Focus Group for General Chemistry & Physics (2015, Orlando, FL); McGraw-Hill Chemistry Digital Symposium (2014, Amelia Island, FL); the Communication Across the Curriculum (CxC) Faculty Summer Institute devoted to deepening students' learning of course content and advancing their communication skills (2013, LSU); the Faculty Colloquium on cognition – a campus-wide discussion on enhancing instruction to increase student learning, engagement and retention (2012, LSU); the symposium on adaptive learning (ALEKS, 2011, Washington, DC); Faculty Development Workshop: ENG²: Engineering Engagement for Student Success (2010, LSU) and became a member of the ENG² Faculty Learning Community (FLC) that focused on active learning. Previously, I attended the Chancellor's Symposium on Mentoring, Education and Research: The Pathway to Students Success (2005, LSU) and Academic Advising Workshop (2004, SUBR). I participated in Faculty Development Workshops (LSU, SUBR) and stayed current with innovations in instruction (Multi-Initiative Dissemination Project Workshop, 2004; the T.H.E. Forum, 2005 and 2003) focusing on technology in higher education as well as on the computer modeling in university courses (2003, LSU). I also attended workshops: "Teaching Tips" and "Teaching Large Classes" (1995-2001, University of Calgary). I also participated in several 1-day workshops with scope ranging from teaching methods to solving difficult situations in the classroom, including one on PTSD for war veterans returning to college.

Representative comments by students***Louisiana State University:***

2017 (Spring) Thank you for (...) teaching me to understand better that life is rough and hard work will pull you through that.

It is refreshing to have a professor that cares so much for students as you do. It was nice to have confidence on the final exam, and I owe that confidence to you.

Your instruction, encouragement to work with the textbook, and challenging exams all prepared me well for both finals and for the next couple of years of higher level chemistry to come. Thank you for challenging me and encouraging me to understand chemistry, instead of just memorizing the material for each exam.

Thanks to the solid grasp on general chemistry I have gained due to your class, I am now helping my former high school prepare for the National Science Olympiad Tournament!

2016 (Fall) I probably would have dropped to an easier professor (...) (but) when I saw Dr. Cook cares, it made me inspired to go though it (the course).

You challenged me and forced me to work hard for my grade - I appreciate that. You are very dedicated to the success of your students and I see that in every lecture!

(Dr. Cook) challenges you to go further ...

The class (Chem 1421) was very engaging, and I really loved how the instructor taught us to think critically...

I like that Dr. Cook cares about each student and will push you to think.

2015 (Fall) Thank you for being the teacher that you are. This semester you have really taught me not only chemistry but how to study better and how to fight for my grades. I really do appreciate it.

If it weren't for your class (Chem 1421), I don't think I would have ever kicked it into high-gear at LSU and put forth greater effort into my classes. You really pushed me beyond the limits I had imposed on myself. I believe that I owe my present and future academic success to you! (shared on 11/12/17)

(...) I am happy I took Chem 1201 with you, it was a blessing because I am learning to think critically.

2015 (Spring) Best teacher I've had. Enthusiastic about teaching, explains information well, and tests are very fair.

I wouldn't want anyone else teaching me chemistry. Dr. Cook is amazing!!

2014 (Fall) I really enjoyed this class (Chem 1201)! The teacher was always engaging and available for questions.

I (...) was dreading this class, but now I actually enjoy learning and I understand it. I like how Dr. Cook focuses on understanding everything and not memorization and connects lessons to real life.

Honestly, I could not have survived chemistry without her.

Dr. Cook makes it (a) point to address and emphasize having good study skills. She really cares for her students and wants to help us succeed.

- 2013 (Spring) (...) you've made me a better critical thinker and overall contributed to my dream of becoming a researcher.
- I have truly enjoyed your Chem 1201 and 1202 class, and I've learned so much from you! In fact, these were the only few classes I actually enjoyed taking my freshman year at LSU. So thank you for that!
- (...) thank you for your attention and concern for me, my family, and my success at LSU and beyond. I am grateful for your sincerity and compassion and for the help that you graciously offered. (...) It is good to watch someone do something well, especially when she has passion for it.
- 2012 (Spring) (...) a big THANK YOU for all of the help not only in but outside of class for my whole Freshman year of Chemistry! You always knew the right thing to say to answer my questions and if I still did not understand, you'd never fail to find another way to explain your answer. The way you taught Chemistry was definitely awe-inspiring and made me want to go to class everyday--and now, I am even considering taking up chemistry as a minor (something I never would have thought about!)
- 2011 (Fall) You are truly an exceptional teacher!! I have taken MANY college courses, (I am currently working on my 4th degree) so I feel as though I have lots of experience in this area. In addition to that, I am a school teacher myself. I have come across many amazing teachers that can inspire students to learn, but you are in a class all by yourself. You are so passionate about your students learning Chemistry and in the process, you end up teaching them so much more. You have inspired me to be a better teacher as well as making an A in Chemistry.
- 2011 (Spring) I was excited to attend each class and I truly enjoyed learning from you. Attending your lectures and office hours, I have observed that you are very consistent, patient, and dedicated toward inspiring new and developing chemist. Thank you again for being an amazing Instructor.
- 2009 (Fall) You did a terrific job in teaching us the material in an easily understood way. You definitely were my favorite professor this semester. I can't wait for the spring: see you in (Chem) 1202!
- I went to your class and you taught very thoroughly and it gave me great confidence: the knowledge that something seemingly impossible can be eventually mastered with great hard work and diligence.... in short, I just wanted to say thank you for a great semester. It was a privilege.
- I love the fact that you can dedicate your time and effort towards your students. Your replies to emails are quick and you have a lot of patience when working with us one-on-one.
- 2009 (Spring) ... You are the main reason I stayed focused enough to even pull out this past semester. I will never forget that or you.
- Lots of background information is needed for this class (Analytical Chemistry). So, thank you Dr. Cook for giving me a good start on college level chemistry!
- 2007 (Spring) I have learned very much from you in my first year in college. I respect you very much.
- 2006 (Fall) I wanted to say thank you for teaching everything I learned over this semester! I think you are a really good teacher and you should keep on doing exactly what you are doing.

2006 (Spring) ...I thoroughly enjoyed your class this semester. You teach very well! (...) you exceeded my expectations as professors of chemistry. I graduated with a B.S. from Middle Tennessee State University and never had the caliber of teachers as I have here. I just wanted to give you credit you deserve! Thank you making the subject matter interesting!

2002 (Spring) I really appreciate your caring nature towards your students...

Thanks for teaching me, I really learned a lot in this course and feel prepared for CHEM 1202.

I am proud to say that I've learned a lot of things and not memorized a lot of things this semester and it really feels good to have actually learned. You are a wonderful instructor.

Southern University at Baton Rouge:

2005 (Spring) You are a challenging teacher but fair. You expected and almost demanded that we know the information and not memorize it. Thank you. Don't ever change, you are a great teacher.

2004 (Summer) ...I greatly thank and appreciate my teacher, Dr. Cook, for creating templates to facilitate instructing my classmates and me. Templates are successful, brilliant, and helpful material that I believe helped mold me into a more productive yet studious student.

2003 (Spring) For me as a student, my teacher's attitude plays an integral role in how I learn. You always give us a positive perspective on things and you put your whole effort into your lectures. Your style is in such a way that everyone can comprehend, and you are quite entertaining at times.

Thank you for caring enough to make sure that we learned.

The University of Calgary:

2001 (Dr. Cook) did a remarkable job in class

She made me work extremely hard, which is part of the reason why I feel I understand the material we have learned and can apply it to other courses...

1999 She teaches to us not at us.

1998 It has been an honor to be one of your students.

1996 Thanks for being the best prof ever... Great notes!

1995 You are our favorite chemistry teacher, ... we appreciate your enthusiastic and considerate nature. This opinion is shared by our entire row!

1994 Good instruction – always readily available for questions – this is important!

... willing to show how to improve, innovative.

... she even learned all our names!

A great person. Tough but fair. She should definitely get a raise and acknowledgement throughout the department.

Other accomplishments

- 2017 Received the Outstanding Instructor Award from the LSU Chapter of Phi Kappa Phi Honor Society
Received a Certificate of Appreciation and Recognition from the Louisiana Beta Chapter of Sigma Phi Epsilon Fraternity (LSU)
- 2016-2017 Received travel grants from the Division of Chemical Education (DivCHED) of the American Chemical Society (ACS) and from the Teaching Enhancement Fund (LSU) to attend the Chemical Education programming at the 253rd ACS National Meeting (San Francisco, CA)
- 2015 Received the University College Tiger Athletic Foundation Teaching Award (LSU)
- 2011 Received travel grant from the Teaching Enhancement Fund (LSU) to attend the 241st ACS National Meeting (Anaheim, CA)
- 2010 Received the College of Basic Sciences Tiger Athletic Foundation Undergraduate Teaching Award (LSU)
- 2008 Received the Tiger Athletic Foundation Undergraduate Teaching Award (LSU)
- 2008 Received the PITTCOON Science Week Appreciation Award (New Orleans, LA)
- 2007-2011 Recognized by the Alpha Lambda Delta Freshman Honor Society for dedication to instruction (LSU)
- 2006, 2007, 2010 Invited to attend Favorite Teacher Dinner at the Delta Zeta as well as Zeta Tau Alpha sorority houses (LSU)
- 2005 Invited to contribute to the Electronic Proceedings from T.H.E. Forum 2005
- 2004 Awarded a travel grant (from Title III Faculty Development Resources) to attend the 227th ACS National Meeting (Anaheim, CA; SUBR)
- 2003 Nominated by a student to “*Who is Who Among America’s Teachers*”
- 2002 Mentioned in the “*The Maclean’s* Guide to Canadian Universities 2002*” as a popular prof!**
* Maclean’s Weekly is the most prestigious magazine in Canada, similar to *Newsweek* or *Times* magazines in the subjects it deals with and the national exposure it receives.
- 2001 Featured on the *Great Teachers* website (U of C)
- 2000/2001 Received Students’ Union Teaching Excellence Award (Honorable Mention) for General Chemistry I (U of C)
- 1999 Nominated for Students’ Union Teaching Excellence Award for General Chemistry II
- 1997, 1999 Nominated for Students’ Union Teaching Excellence Award for General Chemistry I

Fact: While not officially acknowledged, *all* Supplemental Instruction (SI) leaders working with General Chemistry lecturers during the Fall 2011, Spring 2012, Fall 2013, and Fall 2014 semesters as well as a large number of SI leaders during other semesters, originated from General Chemistry classes I taught in the past. While 100% of credit goes to these amazing students, I feel gratified that my teaching methods and enthusiasm for teaching chemistry helped to inspire them to pursue this worthy activity.

Reflections on student feedback and evaluations

Based on student evaluations of my teaching, I know I am being tough on students; this is generally fine with them, as long as I am fair. As this is part of my teaching philosophy, I do believe I am “tough but fair”. Students who choose me as their teacher—and they normally have 4-6 other lecturers to choose from—tend to be those who want to learn and do not mind the hard work.

Students who do not appreciate my teaching often complain about exams not being fair (meaning hard or not directly from “the notes”). Since lowering the standards or omitting more challenging concepts is not an option, I spend a considerable amount of time promoting the understanding of the material and frequent practice, instead of memorizing solutions. Since students’ dissatisfaction often stems from misalignment of expectations and reality, I work hard on making sure my intentions are well known and that students develop realistic expectations from the course and the exams. I try to focus on “long term” goals and the need of the chemistry material to “gel”, which can only happen with time. I will continue to search for the right words to motivate students.

There are students who complain that the pace of my lectures is either too fast or too slow. While I know that I cannot possibly be a “perfect” teacher for every student’s aptitude for chemistry and temperament, I constantly change the amount of the lecture material by adjusting the number of practice exercises or adding or removing ad-hoc commentary. What I do each term depends on the “feel” of each class, the amount of interaction while in class, and exam results from past semesters. Students, however, need to be aware that if some material is covered in more detail in class, it is at the expense of other required material they need to supplement by reading the textbook. In response to students’ concerns about the class pace, I prepared extensive lecture notes templates which allow students to keep up with the pace of the class, listen to my commentary, and fill in only the most important parts of the lecture by hand while in class. I continue to improve on this “living” document. This approach has been peer-reviewed and published (2006). In order to keep the students engaged while in class, I have implemented the use of clickers. While I use clicker questions as a teaching tool, they also serve as a welcome break between lecture modules.

I also continue to search for better ways to encourage struggling students, as I am not (yet) known as a nurturer (I tend to say things the way they are, which is not always appreciated). I seek advice from those who can, in an objective way, assess the pros and cons of my teaching methods and provide constructive criticism. Fall 2009 saw the end of a two-year project, in which I collaborated with Dr. Saundra McGuire on providing additional instruction and support to students who, due to the lack of a math prerequisite, would otherwise had to wait at least one full semester before being allowed to take General Chemistry I (see *“Efforts to improve teaching and mentoring skills”* section for a short summary of this project). This project has now been replaced with a less formal exposure of all students in my General Chemistry I classes to learning strategies shortly after their first college chemistry exam. This work has been statistically analyzed and described in two studies published in 2013 and 2014. My current research involves focus groups with students who significantly improved their performance between General Chemistry I exam 1 and exam 2 and whether a correlation can be made between this performance improvement and the exposure to the effective learning strategies. The results of the Fall 2016 research were presented at an American Chemical Society meeting in San Francisco in April 2017 and are under further analysis prior to publishing.

The chemistry I teach may be “written in stone” but my delivery of it continues to evolve in an effort to keep pace with the changing attitudes of the student population and new developments in learning theories, teaching methodologies, and technology.