

Organic Chemistry: An Integrated Spectroscopic Approach, Volume 1

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(2) Cooper, Melanie; Klymkowsky, Michael, "[Organic Chemistry, Life, The Universe & Everything](#)" (2018). This book is made available under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. <https://creativecommons.org/licenses/by-nc-sa/4.0/>

ABOUT THE AUTHORS

Arthur Cammers earned the B.S. in chemistry at the University of Wisconsin-Eau Claire (Aug. 1988) and a Ph.D. at the University of Wisconsin-Madison in synthetic organic chemistry (Dec. 1993). After doing postdoctoral studies at MIT focused on solvent-sensitive protein conformation, he joined the faculty at the University of Kentucky (Aug 1995). Throughout his time at UK he has primarily taught advanced organic chemistry (535 Synthesis, 532 Spectroscopy, 538 Physical Organic). His research interests include weak intermolecular forces and molecular conformation.

Susan A. Odom earned a B.S. in chemistry at the University of Kentucky and her Ph.D. at Georgia Institute of Technology. After serving as a postdoctoral scholar at the University of Illinois Urbana-Champaign with a joint appointment at Argonne National Laboratory, she joined the faculty at the University of Kentucky in 2011. She primarily teaches Organic Chemistry I and II and also Advanced Organic Chemistry Laboratory. Prof. Odom's research focuses on the design, synthesis, and characterization of organic materials for electrochemical energy storage systems – mainly battery technologies for large-scale stationary storage.

Ashley Jolly Steelman earned a B.S. in chemistry at Western Kentucky University and her Ph.D. in chemistry at The University of Alabama. Her field of study was organic focusing on supramolecular chemistry. Her research focused on using PAMAM dendrimers as drug delivery vectors. She joined the faculty at the University of Kentucky in 2015. She is a lecturer at UK, holds the role of Faculty Tutor Coordinator for the Organic Chemistry Learning Center, and primarily teaches Organic Chemistry I and II. Her main interests are in the area of Chemical Education relating to the issues of facilitating student engagement and the effective use of active learning strategies in large lecture courses.



Image: Your textbook's authors Susan Odom, Ashley Steelman, and Arthur Cammers. Photo credit: Stephen Testa, University of Kentucky, 2019.

ABOUT THE BOOK

(Ashley Jolly Steelman, Susan Odom, and Arthur Cammers)

In previous semesters students paid for textbooks (\$150-200), and there was always a level of dissatisfaction with the texts with instructors and students. Recently textbooks that unreasonably dumb-

down the subject paired with online homework riddled with errors and unresponsive vendors have made the situation worse.

In the summer of 2019, Susan Odom, Ashley Steelman, and Arthur Cammers – with help from a grant from the University of Kentucky Library – endeavored to provide a textbook free-of-charge to UKY organic chemistry students. This textbook is a work in progress that will evolve with time and evolve with contributions from other UKY chemistry faculty. Currently parts of the text are authored by UKY faculty, and other parts have external authorship. In keeping with copyright restrictions, the sections transferred from other digital textbooks have been clearly attributed.

We value your criticism as users, if you catch errors or have questions regarding the textbook, please communicate these to your instructors by email. They will forward the message to make the corrections. Together we'll build it and we will learn more chemistry in the process.

HOW TO STUDY WITH THE TEXT

One of your superpowers is your curiosity and enthusiasm to learn new things and to develop yourself intellectually. The power of digital media is searchable text and text linked to other information. The authors link keywords to key information to avoid breaking stride and to afford the reader the opportunity to go deeper or to perhaps address a question that lingers after consideration of the text.

We are humans, and this means that we often forget what we read. We study to put it all back in and to organize information. You should use searchable text to quickly take you back to what you read and where you read it. You can also abbreviate note taking by making annotations directly on your digital copy.

HOW TO STUDY ORGANIC CHEMISTRY

You all have the potential to succeed at organic chemistry, but you must know how to learn and how to study in order to do so. It is improbable and certainly not optimum to memorize your way through organic.

Your instructor will assemble a few problems a couple times this semester and use these to test you, so it makes no sense to just read and believe that a sound conceptual understanding will imbue you with the skill necessary to work problems in organic chemistry. Everybody learns by doing, by making mistakes and by iteratively correcting their concepts from their mistakes ... in doing. The KEY to success is working practice problems and learning how they work so you can figure out the answer to similar problems that you will see on exams.

The exercises in the chapters are part of the text. If you skip them, you skip parts of the chapter. They are often placed to teach you while you read, instead of placed as self-evaluation. The authors assume that you did these problems as an active learner when you read the text.

You must become an active-learner and to motivate yourself to work problems outside of the classroom. This course takes a lot of devoted time due to the numerous concepts that are being presented in each Chapter. Don't read only, then do the problems as the very last step. Do the problems when you encounter them in the text. If you wait until after you read the whole chapter, some of the in-chapter problems may seem like a foreign language. It may seem more comfortable to get the reading done then do problems, but that is a longer more tortuous journey than to establish an immediate interactive relationship with the text.

Go back and read the learning objectives again. Some of them may not have made much sense when you read them the first time. They should all make sense now and you should feel comfortable with each. If you don't it's time to get help.

LECTURE & OFFICE HOURS

Attend class! In lectures, your instructor presents material and novel approaches to topics that do not appear elsewhere. There is often a strong correlation seen between students that miss class sessions and poor performance. Absence from your lecture hours sums to progressive disengagement from the learning process. Make a list of questions generated from your study of the text and your class time. If you don't have the opportunity to ask these questions in class, bring the questions to office hours. If you can't make it to the official office hours posted in the syllabus, make special arrangements with your instructor to address your questions.

STUDYING & RESOURCES

Some people would rather work alone in the silence afforded by solitude. One can focus and Spotify through the text at one's own pace. Many other people find company in the learning process very beneficial. I don't have much advice other than the preceding for the loner in the fortress of solitude. To other more gregarious individuals, I say, find a study partner or three. Connection to your instructor will have you feeling less alone in your battle with Organic Chemistry. Being able to discuss the material with someone else who is learning is also a rewarding and beneficial learning experience. Explaining something cool that you just learned to someone else makes you feel good and in doing so you may discover a new detail about the material that you did not truly understand. You will certainly be helping someone else, and that someone else will almost certainly return the favor if you found a good study partner. Make a schedule and keep each other honest regarding keeping up as the class progress through the material.

Several resources on campus are available for you to utilize to get additional help.

Organic Learning Center (JSB 331): The Organic Learning Center provides a quiet place for studying and assisted help by chemistry graduate students. <https://chem.as.uky.edu/organic-chemistry-learning-center>

Tutor Matching Service: The University of Kentucky partners with Tutor Matching Service (TMS) to provide UK students a simple and easy way to find a private tutor. <https://chem.as.uky.edu/tutors>

The Study: You can receive free, drop-in, peer tutoring for many core courses in mathematics, science, and business at The Study - the University of Kentucky's centralized peer tutoring center. <http://www.uky.edu/thestudy/>