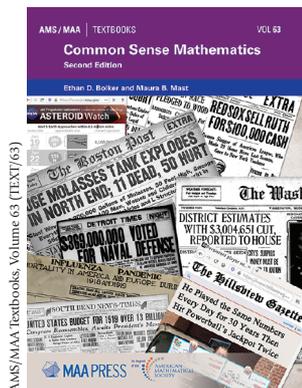




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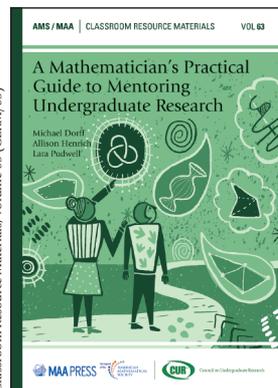


## *Common Sense Mathematics, Second Edition* by Ethan Bolker and Maura Mast

A headline in *The Boston Globe* on May 1, 2018, claimed, “There were nearly 100,000 Uber and Lyft rides in Boston last year.” Should you believe that? The question comes from the first chapter of the new second edition of *Common Sense Mathematics* where the newspaper story is carefully analyzed, so carefully that the analysis unearths and explains an error in the article. Ethan Bolker and Maura Mast asked themselves several years ago what they expected their students to remember a decade or so after completing their Quantitative Literacy course. They describe their subsequent reflections as “sobering.” So they scrapped the whole thing, recast their goals, and redesigned the course. The first edition of this text was the result. They, modestly, claimed that with it they were trying to “change the way our students’ minds work.” That’s all.

Numeracy, Lynn Steen explained in *Mathematics and Democracy*, is not about deep mathematical abstractions, it is about applying relatively elementary mathematical ideas in “subtle and sophisticated contexts.” Bolker and Mast decided to meet his challenge by arming their students with habits of mind, and less importantly tools, to confront everyday quantitative information. The book contains literally hundreds of news stories from the mass media invoking numbers or graphs or statistics and it requires the students to dive into those numbers and figure out if they are sensible and believable. The new edition was motivated by a need to update the examples to be more recent. The stories are organized into themes: estimation, averaging, graphical presentation of data, linear functions and models, exponential growth, etc. The presentation via news stories means your students will never ask, “Why do I need to know this?” The answer will be obvious: you don’t, unless you want to be able to read the newspaper and to function as a citizen.

The AMS Bookshelf is prepared bimonthly by AMS Acquisitions Specialist for MAA Press titles Stephen Kennedy. His email address is [skennedy@amsbooks.org](mailto:skennedy@amsbooks.org).



## *A Mathematician's Practical Guide to Mentoring Undergraduate Research* by Michael Dorff, Allison Henrich, and Lara Pudwell

Undergraduate research in the sciences got a big boost in 1959 when the NSF dedicated funding to its Undergraduate Research Participation (URP) program. It’s safe to say that most mathematicians at that time imagined that undergraduate research in

mathematics was simply infeasible, the frontiers of research were impossibly far from the undergraduate curriculum. Nevertheless a few dozen visionaries created URP programs in mathematics. When the NSF instituted the REU program in the late 1980s mathematics did participate, but our conception hadn’t really shifted. We still imagined that research was out of reach of most undergraduates but we recognized that it would be beneficial to a few, elite, super-advanced undergraduates. Over the intervening thirty years we have gradually come to recognize that there are opportunities for undergraduate participation in research and there are real benefits both for the students and the mathematicians involved. It is now not at all remarkable and, indeed, many colleges have incorporated it into their curriculum for all students.

Even with our community’s increasing recognition of its value, it can still be daunting to imagine getting started. How do you formulate an accessible, interesting question? Often such programs involve small groups of students; how do you manage the inevitable complicated dynamics of the group? How much is it training and how much is it really research? Do I have to teach them to write a paper, too? How do I find support, financial and departmental?

*A Mathematician's Practical Guide to Mentoring Undergraduate Research* answers all these questions and more. The authors, collectively, have decades of experience and have mentored scores of students. Their guide is packed with nuts-and-bolts implementation advice and inspiring anecdotal evidence of the value of undergraduate research in mathematics.