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Evaluating Course Materials, Platforms, and Tools for Introductory Statistics

STATS 2020: Revisioning Introductory Statistics for a New Generation

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The Very, Very Highly Respected:

Fred Mosteller **Ph.D. in Mathematics**
https://magazine.amstat.org/blog/2006/12/20/sih-mosteller/
"one of the towering figures in twentieth-century statistics"

Grace Hopper **Ph.D. in Mathematics**
https://www.britannica.com/biography/Grace-Hopper
"a pioneer in developing computer technology"

DJ Patil **Ph.D. in Mathematics** *University of Maryland, College Park*
https://en.wikipedia.org/wiki/DJ_Patil
Chief Data Scientist of the United States *"and I got my start in community college"*

New disciplines from mathematics…

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Introductory Statistics: *General Education! (and more)*

Authenticity and Applicability and Accessibility

…if done well!

https://www.gardeningchannel.com/guide-to-growing-beefsteak-tomatoes/

"…up to 2 pounds"   *Normal Distribution*

The population of beefsteak tomatoes in a farmer's garden has a mean μ = 85 ounces… ???

The population of beefsteak tomatoes in a farmer's garden has a mean μ = [randset(10,120)] ounces…

A disservice where there was an opportunity...

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Today….

Kaplan: Holding us to our "prospectus"…

Rumsey: Consumers, producers, communicators, decision makers

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Ask Good Questions…

"**Five 'W's**" of Journalism:

"Who," "What," "When," "Where," and "Why."

"How" and "How much."

Guidelines for Assessment and Instruction in Statistics Education (GAISE)

https://www.amstat.org/asa/education/Guidelines-for-Assessment-and-Instruction-in-Statistics-Education-Reports.aspx

(Excerpts on next page)

Recommendation 1: Teach statistical thinking.
An introductory course is also a terminal course for many students. As such, it is important that we think carefully about what our focus should be in this course: what do we want to teach, what skills do we want our students to have when they leave the course? Will they use statistics in follow-up courses and careers, and will they be consumers of statistical information presented in the news and abounding in everyday life?

Recommendation 2: Focus on conceptual understanding.

Recommendation 3: Integrate real data with a context and a purpose.

Recommendation 4: Foster active learning.
Active learning has been described as a set of approaches that involve students in *doing* things and *thinking* about the things they are doing.

Recommendation 5: Use technology to explore concepts and analyze data.

Recommendation 6: Use assessments to improve and evaluate student learning.

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Questions with a purpose…

for evaluating course materials, platforms, and tools for introductory statistics…

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Questions with a purpose…

STATS 2020: Revisioning Introductory Statistics for a New Generation

	Students	Teachers	Institution	Author/Publisher
Who?	Who will be taking this class?	Who wants to lead this revisioning effort?		
What?	What are the essential concepts the students should be exposed to? What is the student's expected background?			What text best fits our students' needs?
Where?		Where will we find instructors familiar with current introductory statistics education practices?	Where will we send instructors for training?	
When?			When will we meet to discuss this?	
Why?	Why is this important to our general student population?			
How?			How will the administration support these new efforts?	
How many?	How many students might enroll?			How much does their product cost?

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