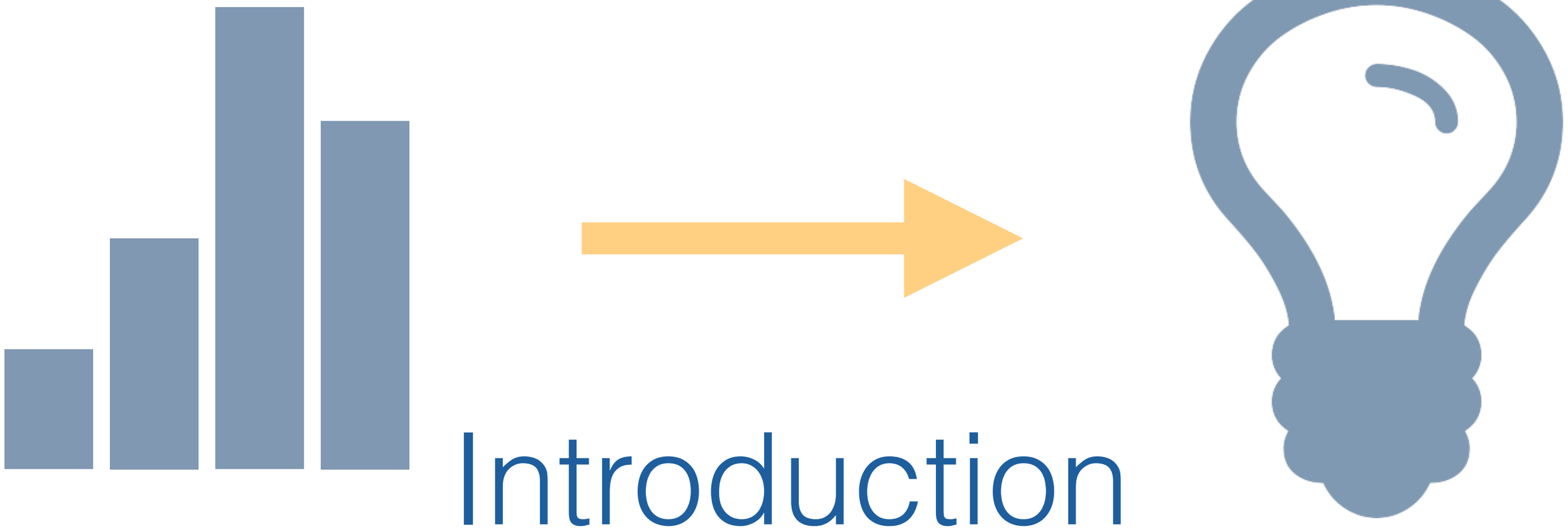


Introduction

From Data to Insight

Dr. Çetinkaya-Rundel & Dr. Morgan

July 5, 2016

Overview

- Discuss, analyze, and write about complex issues in public health, including smoking, breast cancer screening, physical activity, vaccination, and health disparities through the lens of statistical and scientific reasoning.

- Use the scientific literature as a basis for discussion of these issues and to illustrate academic writing and statistical concepts.

- Through writing and statistics assignments, consider multiple hypotheses about the causes and prevention of health problems and show that the path between data and inference is not as clear-cut as it often appears to be in the popular media.

- Lead class discussions and collaborate with peers on the major projects of the course that integrate statistical analysis and academic writing.

Teaching team

Mine Çetinkaya-Rundel
Assistant Professor of the Practice
Statistical Science

Adrienne Aiken Morgan
Research Scientist & Lecturing Fellow
SSRI & Thompson Writing Program

Stephanie Brown
PhD Student
Statistical Science

Katie Payne
Embedded Writing Consultant
Writing Studio

Goals

- The objective of this class is not to teach students how live healthy, even though students may find valuable information in the articles and books that we will be reading.

- Instead, we will focus on critical reading of scientific articles and understanding the statistical reasoning that leads to the conclusions made in these papers.

Goals

Statistics Goals

- Understand how the public opinion and public policy have changed over the years with regard to public health topics.
- Develop a critical understanding of statistical concepts that can be applied to better understand controversies around these and other issues.
- Use data summaries and visualizations to explore public health data.

Writing Goals

- Engage with the work of others.
- Articulate a position.
- Situate writing for specific audiences.
- Transfer writing knowledge to situations beyond ARTSCI 101.

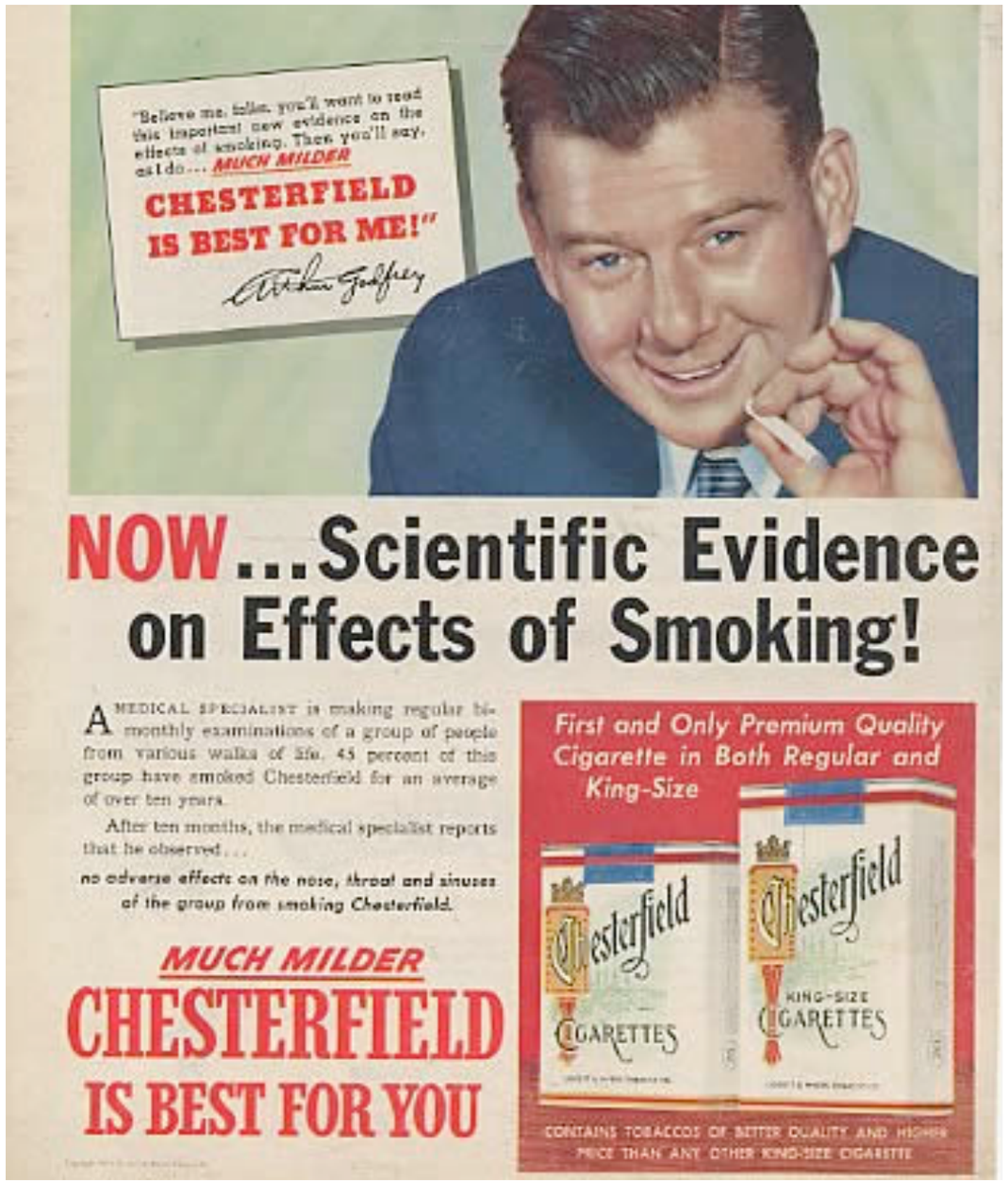
Statistics as a tool

- We will also consider statistics as a tool that can influence health policy development.

- We will look at cases where improper use of statistics has led to poor policies, and where sound use of statistics has contributed to the development of policies to improve health and well-being.

Smoking

- Even though the debate is settled with regard to the health hazards of smoking, this was not always the case.
- We will explore the medical history of smoking and some of the early research investigating its health hazards.



Smoking (cont.)

- We will also look at how public opinion and policy have changed over time, and how bad statistics and bad science were used to promote smoking in the 1950s.

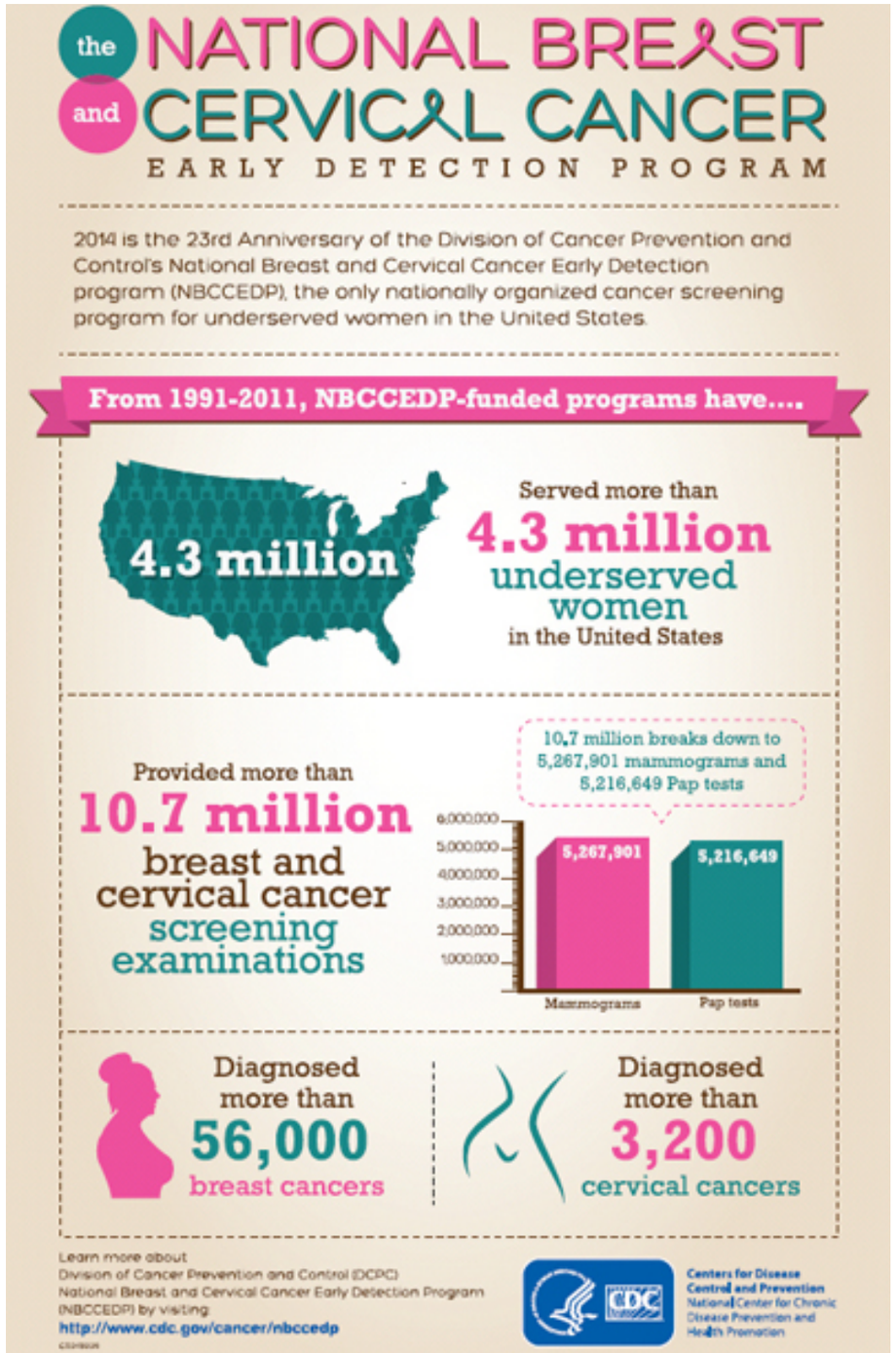
- Lastly we will discuss the evidence behind smoking bans as a public health policy.

Breast cancer screening

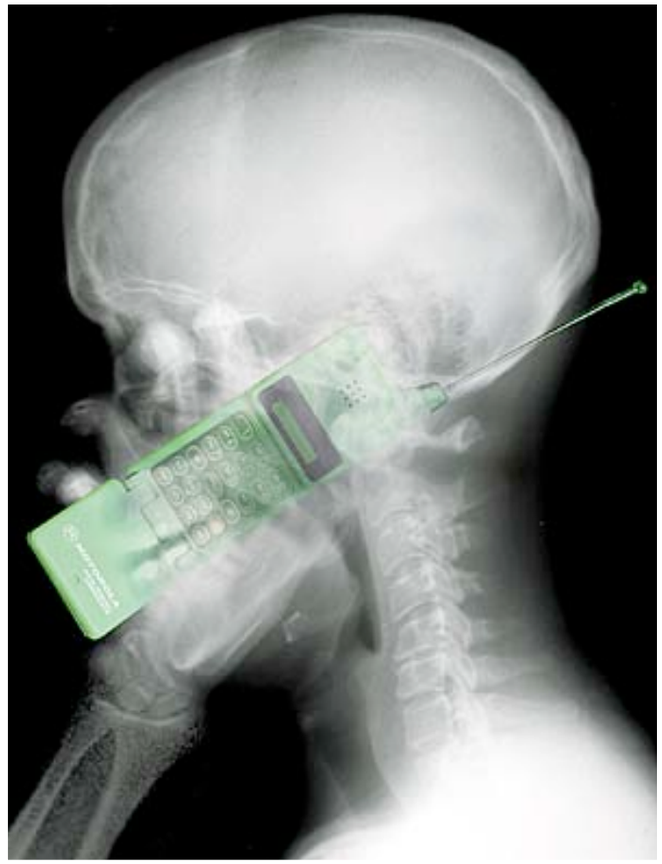
- The U.S. Preventative Services Task Force updated their recommendation statement on breast cancer screening in 2009 and again in 2016.

- They recommend against routine screening mammography in women aged 40-49 years.

- We will review the reasons behind this recommendation and in doing so we will learn topics such as conditional probability as well as importance of effective communication of scientific findings.



Topic of your choice!



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Course outline

- Weekly focus on public health topics such as smoking, smoking, breast cancer screening, physical activity, vaccination, and health disparities.
- Interspersed with topics from statistics and academic writing to help you better understand the readings and prepare for your project.
- Weekly statistic sassignments and quizzes.
- Short and long writing assignments with opportunities to draft, review, workshop, revise.
- Final project completed in teams and presented in a poster session on the last day of class.

Course website

bit.ly/artsci101

(working) schedule
readings
assignments
due dates
…

Tips for success

- Complete the reading before class, and then review again after the class is over.
- Be an active participant during class.
- Ask questions - during class or office hours, or by email. Ask the professors, your TAs, and your classmates.
- Do the assignments - start early and make sure you attempt and understand all questions and components.
- Start your project early and and allow adequate time to complete it.
- Do not procrastinate - don’t let more than 3 days go by with unanswered questions as it will just make the following material even more difficult to follow.

TO DO by tomorrow

All linked from the course website at bit.ly/artsci101:

(1) Read the syllabus!

(2) Getting to know you survey

(3) Stats pre-test

(4) Reading: Wheelan - Naked Statistics (Chp 2)