POLS3316 - Statistics for Political Science
Course Introduction: Introductions, Course Policies, Brief Overview
Fall 2023

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Overview

1 Welcome to Statistics for Political Science
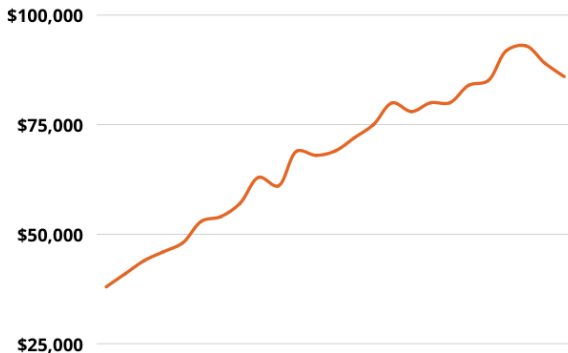
2 Introductions
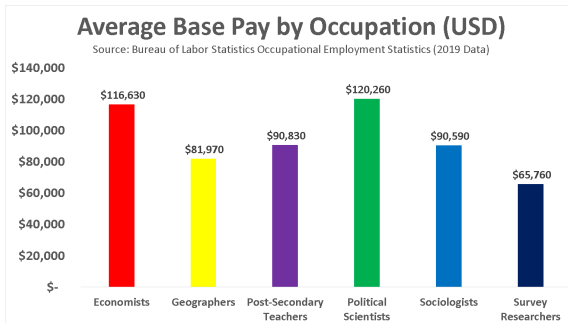
3 Course Policies
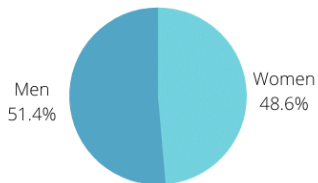   ▪ Syllabus

4 Brief Overview

Welcome to Statistics for Political Science

**Median salary for political science majors
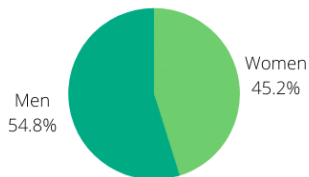in the United States over time**

Political Scientists - PhD; Survey Researcher - BS/MS
Both require statistics!

Welcome to Statistics for Political Science
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Introductions
○

Course Policies
○

Brief Overview
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Men
51.4%

Women
48.6%

Bachelor's degrees
Political Science

Men
54.8%

Women
45.2%

Master's degrees
Political Science

Women
37.6%
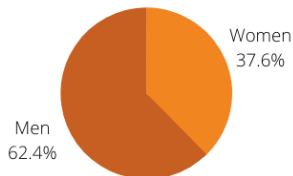
Doctoral degrees
Political Science

Men
62.4%

Introductions!

- Name
- Major/minor
- Why you're taking the class
- A hobby or something that interests you
- Note: When I call on you for the first couple of weeks, please remind me of your name

- Course objectives
- Email - Courtesy!
- Course Policies - Professionalism!
- Grading - Total Points vs Required Points
- Problem Sets, Quizzes, Tests, Project
- Software and Tools
- Lectures and Labs
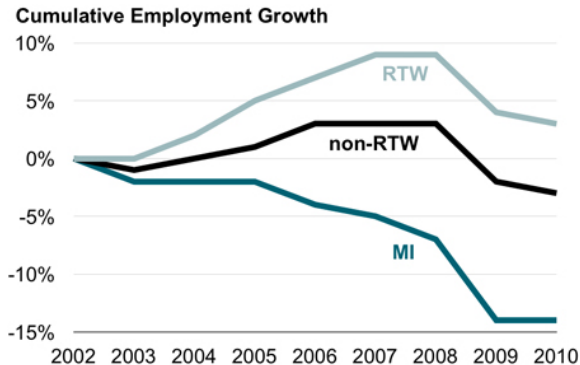- Course Resources

Why do we need statistical tools?

Better than a crystal ball for prediction!

Why do we need statistical tools?

- Prediction

Why do we need statistical tools?

Cumulative Employment Growth
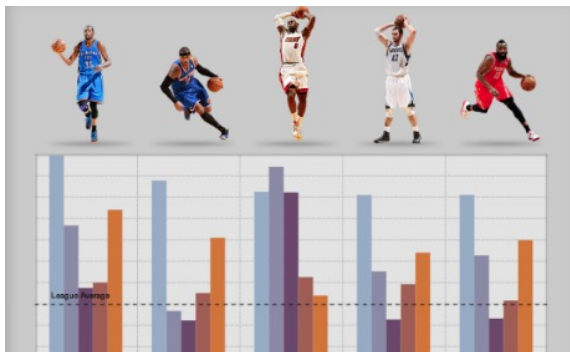
Source: Bureau of Labor Statistics   MACKINAC CENTER FOR PUBLIC POLICY

Evaluating and formulating public policy!
https://www.mackinac.org/10515

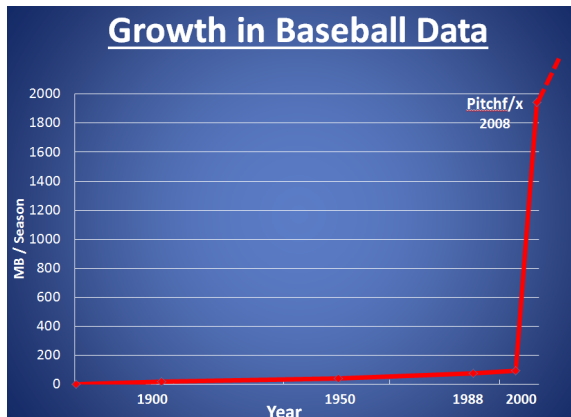# Why do we need statistical tools?

- Prediction
- Public policy

Money! Hedge funds! Stocks! Business!
https://www.institutionalinvestor.com/article/b14zbbks457k6t/hedge-fund-moneyball-big-data-sports-and-finance

Why do we need statistical tools?

- Prediction
- Public policy
- Business and money!

What about sports?!

https://www.datanami.com/2014/10/24/todays-baseball-
analytics-make-moneyball-look-like-childs-play/

Why do we need statistical tools?

- Prediction
- Public policy
- Business and money!
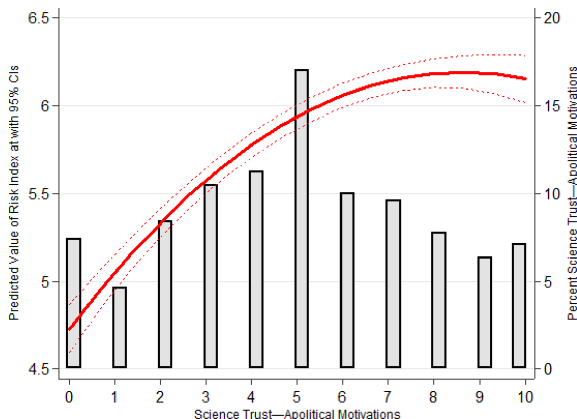- Sports!

PROBABILITY OF WINNING (ACCORDING TO BET POSITION)

Bet Position	Probability of Winning	Odds (a.k.a Pay Off)	House Edge
Singe Number	2.70%	35:1	2.70%
Split	5.41%	17:1	2.70%
Street	8.11%	11:1	2.70%
Square	10.81%	8:1	2.70%
Line	16.22%	5:1	2.70%
Column	32.43%	2:1	2.70%
Dozen	32.43%	2:1	2.70%
Even Money	48.65%	1:1	2.70%

loanstreet

Roulette anyone? Blackjack? Poker?

Why do we need statistical tools?

- Prediction
- Public policy
- Business and money!
- Sports!
- Gambling!

RESEARCH!

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.024993

Why do we need statistical tools?

- Prediction
- Public policy
- Business and money!
- Sports!
- Gambling!
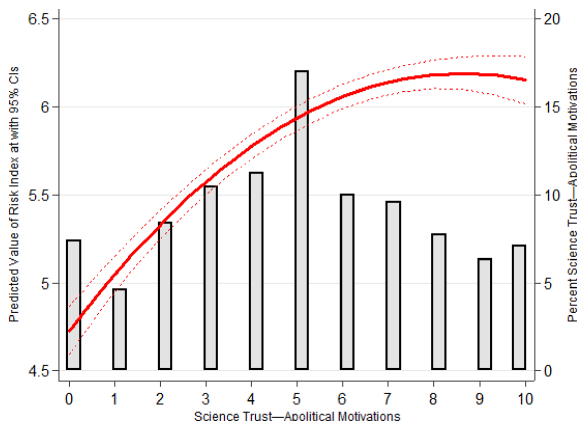- Cause and effect - RESEARCH!

Research!

Figure:
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0249937

First two weeks

Tomorrow: Course Topics Intro

- Survey and pre-quiz
  - Extra credit
  - 10-15 minutes
  - For your benefit!

- Basic probability

- Simple descriptive statistics

- Graphical look at correlation

- Graphical look at OLS regression

- Role of statistics in proving causation

- Your questions about issues with lab prep for Monday!

First Two Weeks

Monday the 28th: R programming introduction - come prepared!

- Look over https://happygitwithr.com/index.html (Parts 4, 5, 6, 7 and 12 are most important.)
- Sign up for a Github account *
- Sign up for a free R Studio Cloud account *
- Install & configure Git on your computer *
- Install R on your computer *
- Install R Studio on your computer *
- Create a project in R Studio using the class Github repo *
    - https://github.com/tomhanna-uh/pols3316-summer2022
- * = potential EC

First Two Weeks

Wednesday the 30th: NO CLASS! Work at home on:
Project, Project Data, Syllabus Quiz, and Problem Set 1

- The Project is step-by-step
- Work in steps all semester
- You pick your data (discuss more Wednesday and Monday)
- Pick simple data!
- Produce something you can share
- Syllabus Quiz
- Problem set 1 - Sums, means, medians, modes, variance, standard deviation, questions about your project data, copy and paste R results

The End