

Embracing the Liberal Arts in an Interdisciplinary Data Analytics Program

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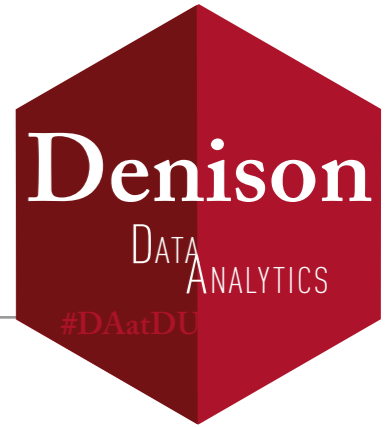


Got data? Got questions?
We will teach you how to get answers!

**DATA ANALYTICS@
DENISON** The Data Analytics major gives our students the ability to thoughtfully acquire, carefully analyze, and wisely interpret one of the world's most abundant resources — data.

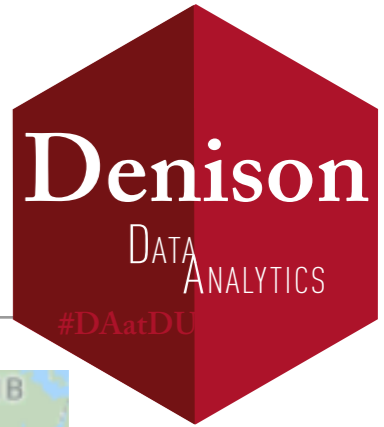
denison.edu/academics/data-analytics/

Outline

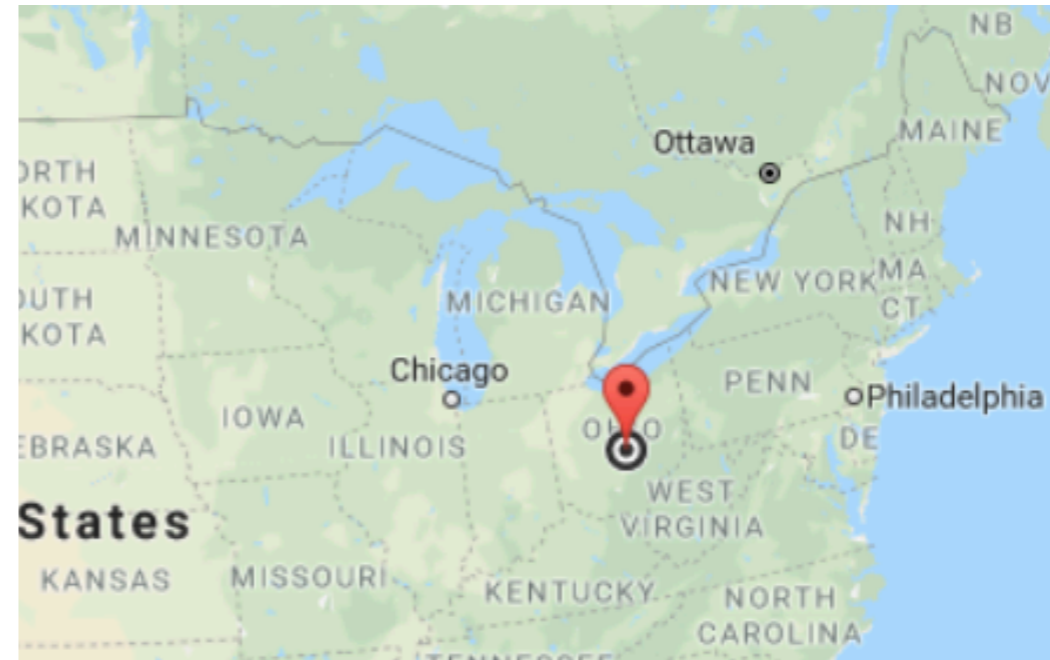


1. Context and Development of the Data Analytics Major
2. Goals and Unique Features
3. Overview of the Major Requirements
4. Current Status
5. Questions?

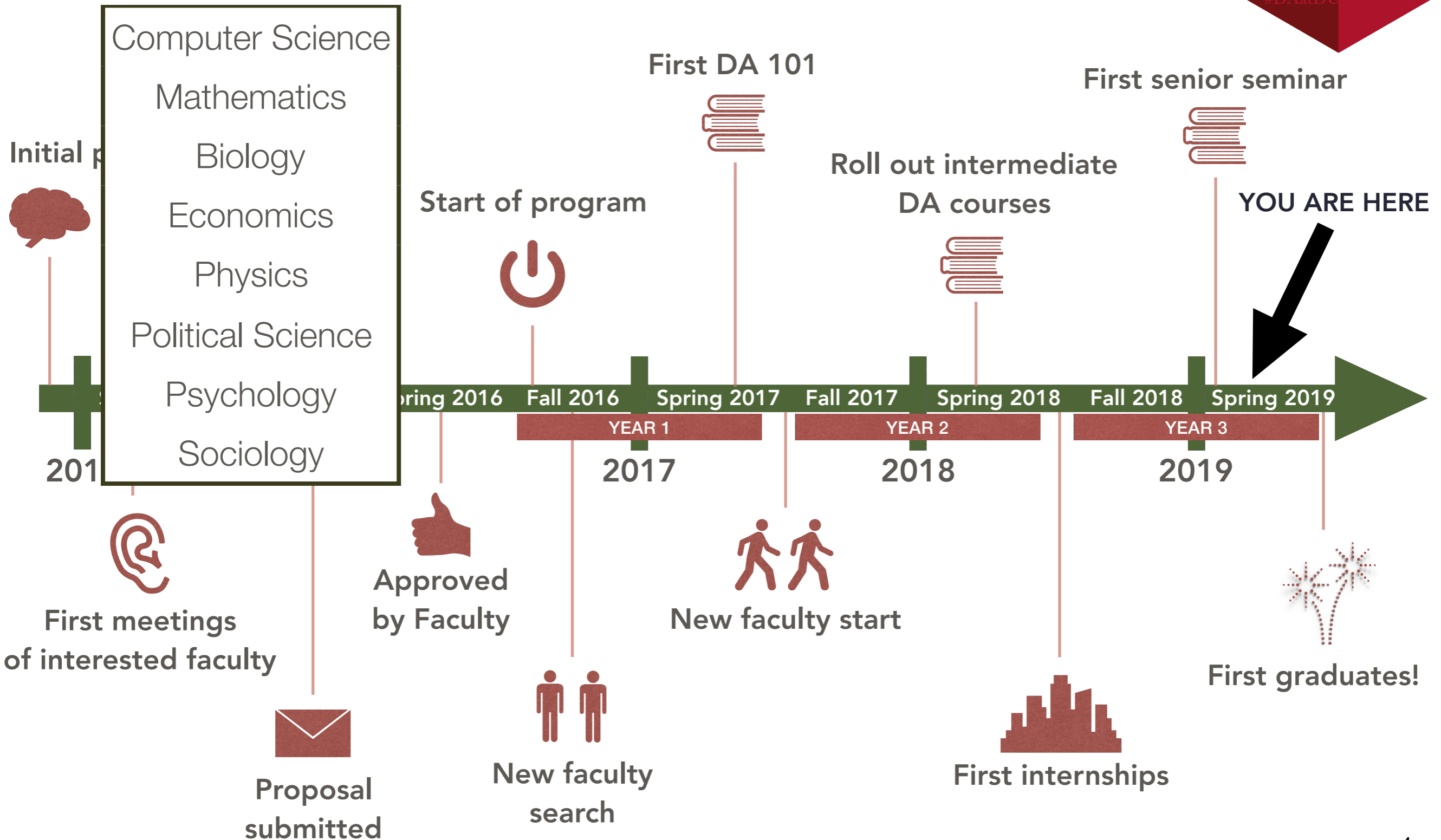
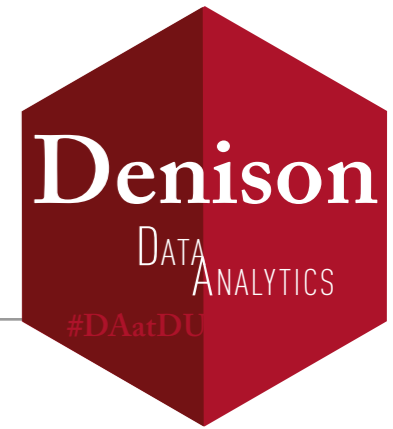
Denison University



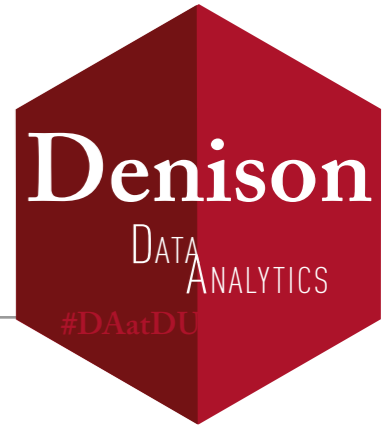
- Granville, Ohio
- liberal arts, highly selective
 - ~50 majors
 - top 4 — economics, communication, biology, psychology
- ~2300 undergraduates
 - 20% first generation
 - 23% domestic students of color
 - 16% international



Program development timeline



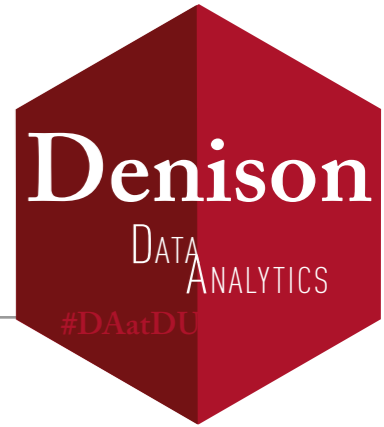
Goal: Broaden participation in computing and quantitative methods



- naming matters
 - Data Analytics vs. Data Science
- lower barrier to entry
 - introductory course with no prerequisites
 - shorter Math & CS sequence
 - additional content in DA courses and optional electives
- interdisciplinary vision
 - academic program outside Math & CS
 - interdisciplinary program committee
 - DA faculty: ecology, operations research, statistics (future: + quantitative social scientist, digital humanist)
 - welcoming to students with a variety of interests

Biology
Computer Science
Economics
Mathematics
Philosophy
Physics
Political Science
Psychology
Sociology

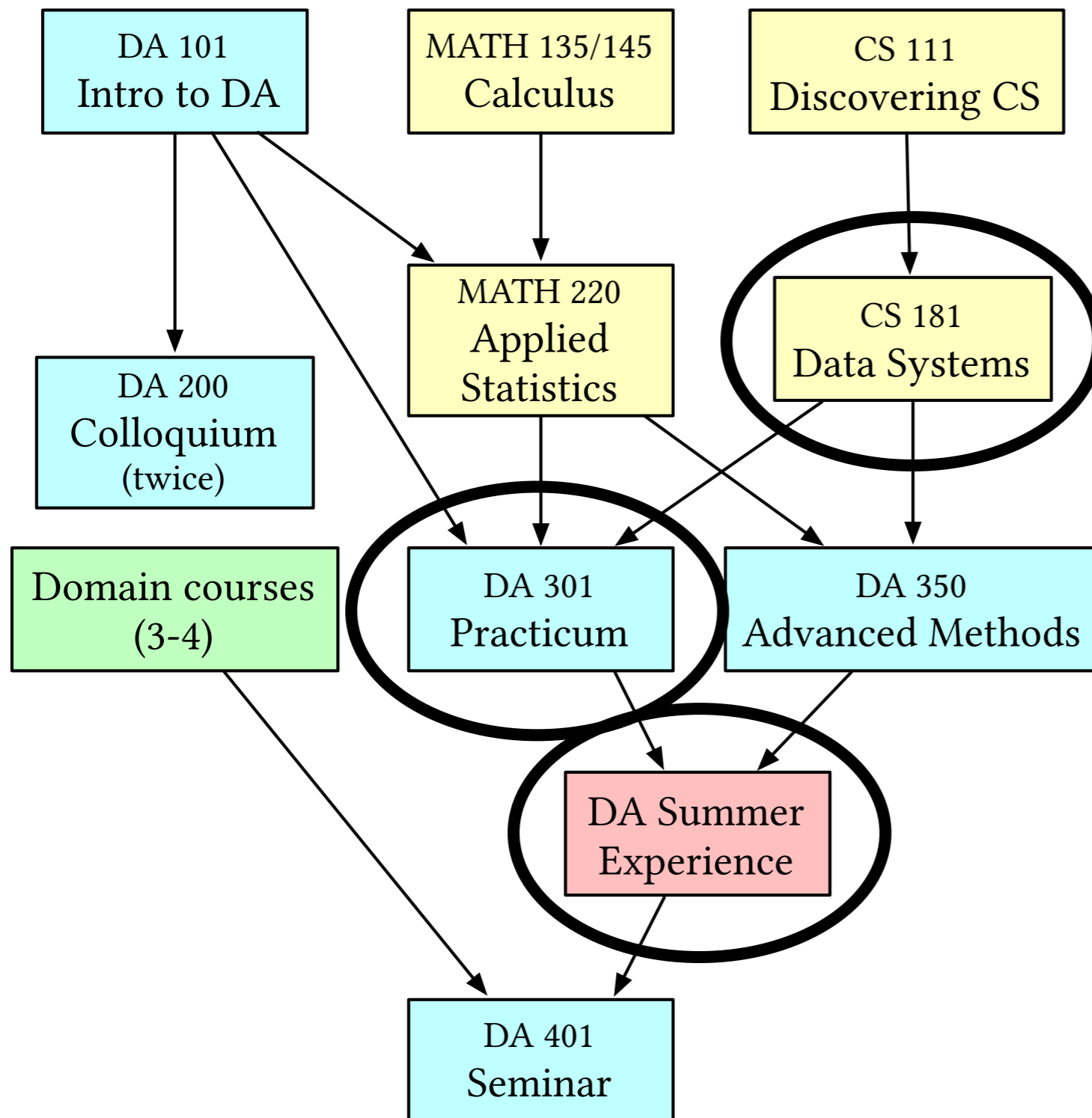
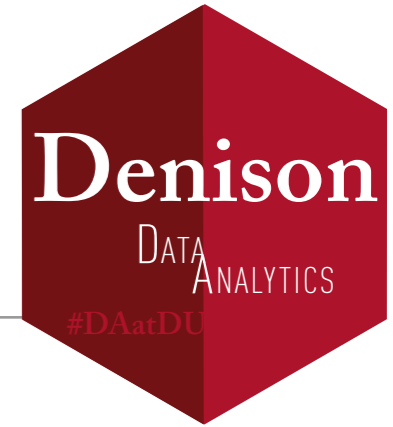
Goal: Embrace and leverage the liberal arts



- data science should not be reduced to a set of competencies
- in course content
 - projects drawn from diverse set of disciplines with varied concerns
 - comfort with uncertainty and ambiguity
 - creativity and growth mindset
 - communication with various audiences — visual, written, oral
 - ethical and social implications of data collection and presentation
- in major structure
 - domain connections, integrated via internship and senior project
 - opportunities for two-way communication with quantitative methodologists
 - size of major allows broad exploration, study abroad, etc.

“If you want to be great, make sure you have a good dose of liberal arts in your training. That is fundamental.”
- DJ Patil, former Chief US Data Scientist

The Data Analytics Major



Domain choices

Anthropology & Sociology

Biology

Next talk: Bressoud and Thomas

Philosophy

Physics

Political Science

Psychology

or design your own

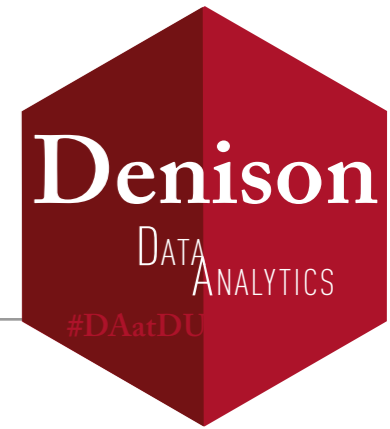
Future possibilities

Narrative Journalism

Sports Analytics

Geosciences

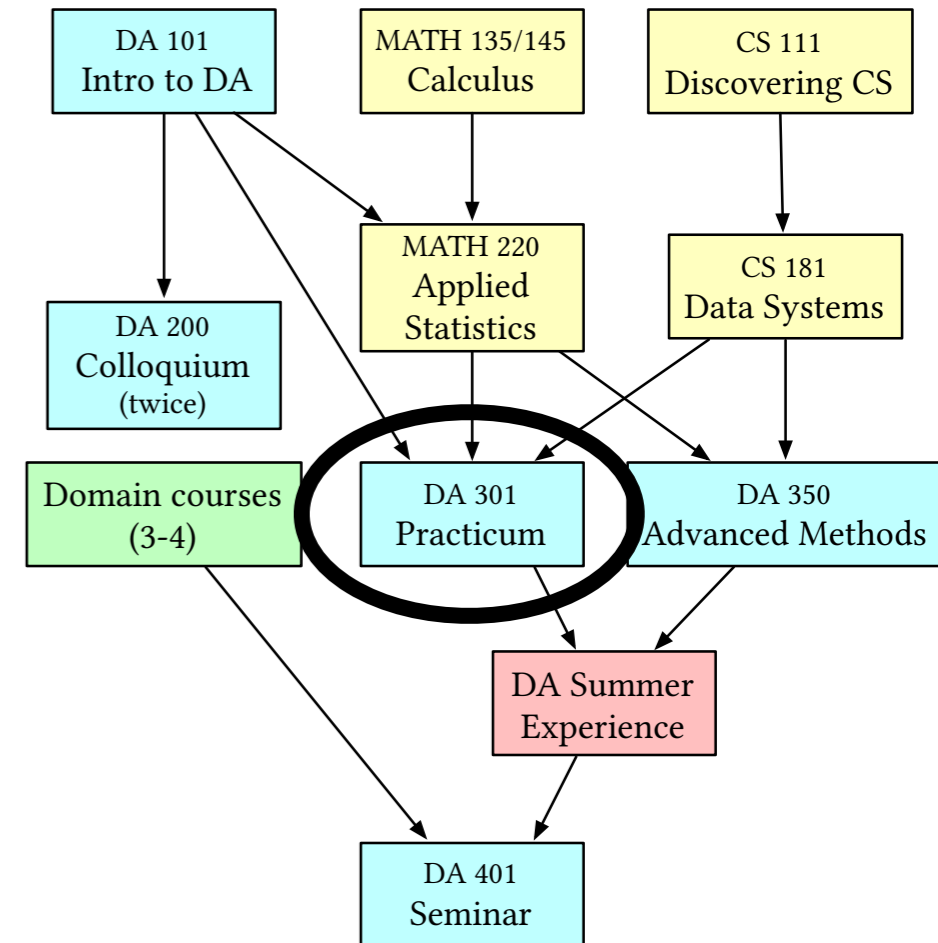
DA 301: Junior Practicum



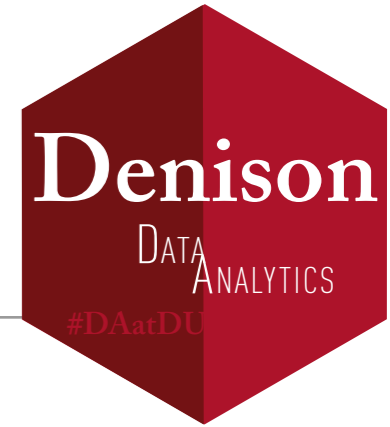
- semester-long, end-to-end consultancy
 - real clients and data, prospectus through final report
 - on campus: Provost/Registrar, Sustainability, Men's Basketball, Library, Annual Fund
 - off campus: insurance company, housing coalition

- objectives

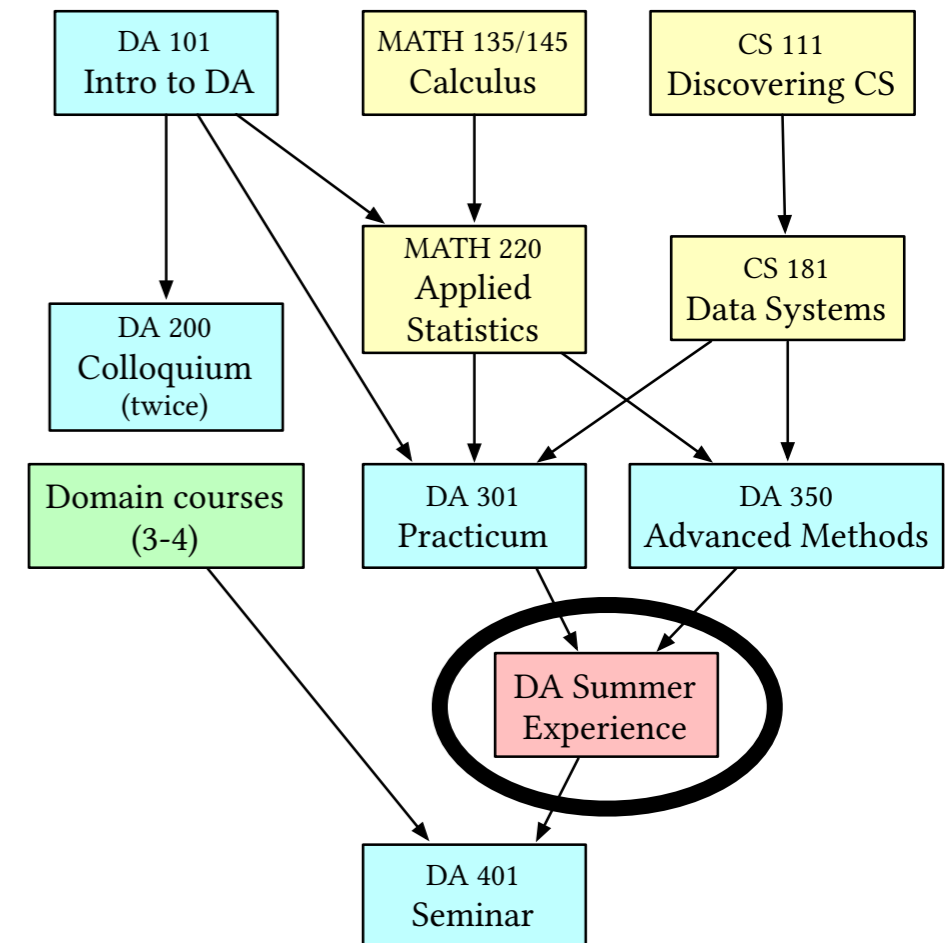
- synthesize and hone skills/knowledge from foundational courses
- improve oral, written, and visual communication
- project management
- collaborative team building
- creative and critical thinking
- react to the unforeseen, ambiguous, unknown => growth mindset



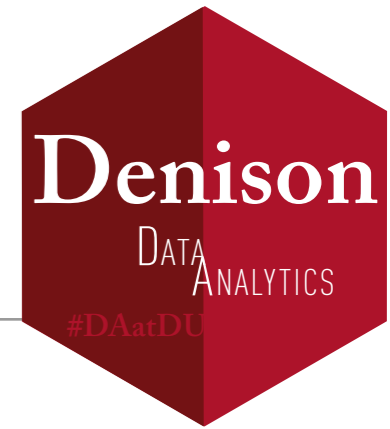
DA Junior Summer Experience



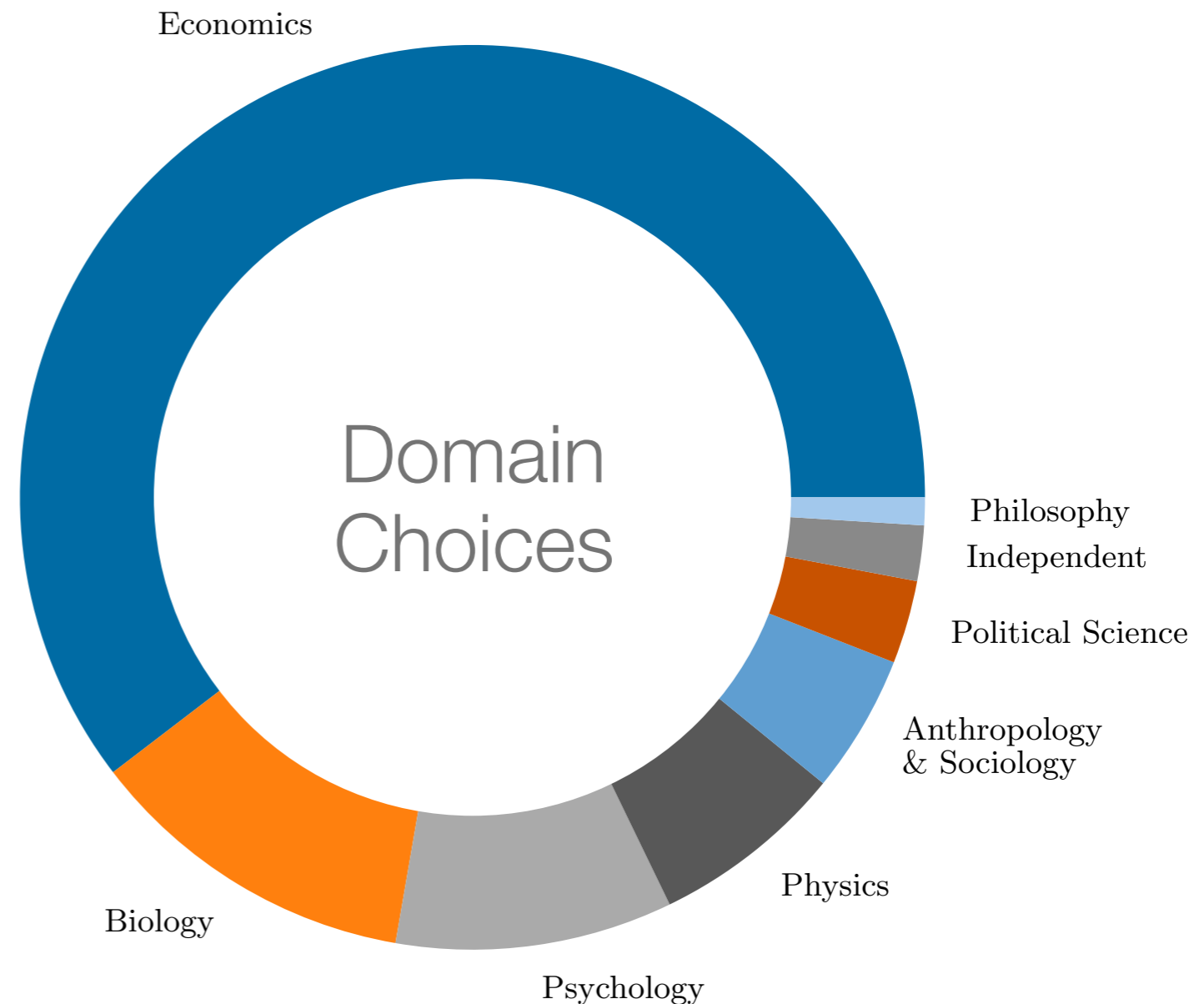
- required internship or research experience
 - between 301 & 350 and senior capstone
- hone and extend skills out of classroom
 - applied to real problems in domain area
- blog reflections after the experience
- students drive the process
 - collaboration with career development
 - leverage alumni, community, and professional partners



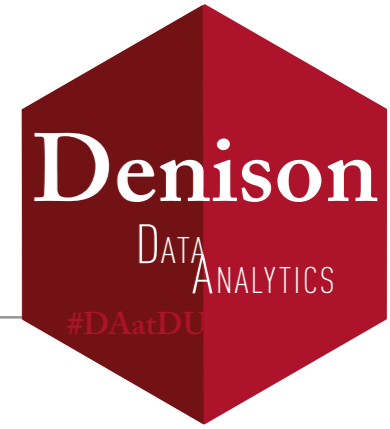
Current snapshot (year 3)



- DA 101
 - 16 sections over 5 semesters
 - ~300 students
- 115 majors (37.4% female)
 - 26 seniors (23%)
 - 28 juniors (36%)
 - 42 sophomores (43%)
 - 19 first years so far (47%)
 - projected: ~130 by June 2019
- reasons for choosing DA
 - integration with other interests (45%)
 - broad career opportunities (40%)
 - interest in computing and/or stats (15%)

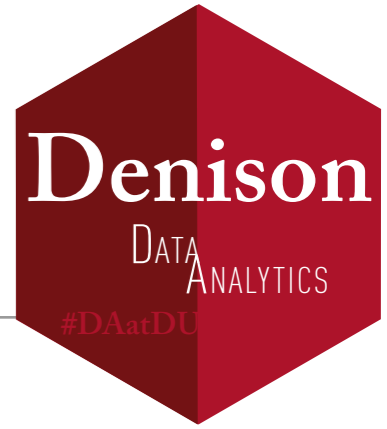


2018 Junior Summer Experiences



- **Business:** NextEra Energy, American Logistics, Abbvie, SHARE, L Brands
- **Financial services:** Europe Economics, RBC Wealth Management
- **Health care:** University of Pittsburgh Medical Center
- **Insurance:** Nationwide, State Auto
- **Marketing/Consulting:** RevSpring, KPMG, Acxiom, ICC Analytics
- **Technology:** doLoop Technologies India, Denison ITS, HUNGRY
- **Research:** Cambridge Institute of Criminology, Denison Physics
- **Other:** Pittsburgh Pirates, Columbus Zoo, Denison Athletics, Combined Jewish Philanthropies

Sample senior plans



- committed:
 - KPMG (CIO advisory group)
 - CSpring (IT consulting)
 - NextEra Energy (Ignite Leadership Program)
 - Central Bank of Bhutan
 - Information Security Analyst Intern, Federal Reserve
- in job search currently:
 - medical / pharmaceutical analyst
 - Institute for Health Metrics & Evaluation (U. Wash.) / bioinformatics
 - public health / political consulting / technology
 - graphic design / social media / media analytics / visualization
 - actuarial analyst / graduate school



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Dubai, India