

# Research Issues in Databases

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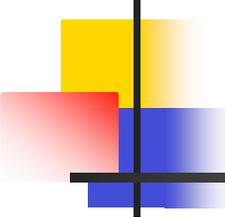
*DB Me Workshop*

*June 11, 2010*

# Fun Facts

- Grew up in Massachusetts and Minnesota
- Avid swimmer and skier
- Big fan of HGTV and coffee
- Sister Katie recently moved to Ann Arbor for pediatrics residency



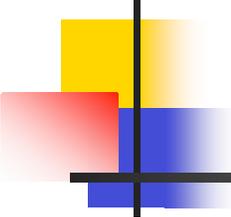


# I am NOT going to tell you...

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- A review of current “hot” topics in DB research
- Why data privacy is awesome 😊
- How to do research
- What research topic is best for you
- Doom and gloom

Question: *How to choose a research project?*

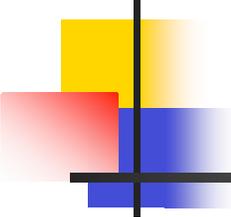


# Why Databases?

*(OK, I lied a little...)*

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- Data management and analysis emerging as themes in all of computer science (+ other fields)
- This is a tremendous opportunity!
- DB Research accommodates very diverse topical interests (as they relate to data)
  - Systems, PL, Storage, “Cloud computing,” Hardware
  - Web search, Machine learning, Statistics
  - Algorithms, Theory
  - Security, Privacy
  - HCI, Social media, and More!

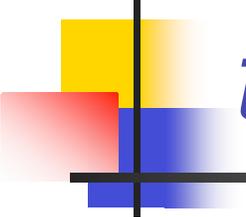


# Why Databases?

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- Also distinct approaches to inquiry, methods
  - Theory
    - Mathematical proof
  - Science / Social Science
    - Controlled experiments, user studies
  - Engineering
    - System design and implementation
- Great opportunity for people with diverse interests, those who like to synthesize ideas from multiple fields
  - Also some tough challenges (Bettina)



# *How to choose a research topic / project?*

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- Hard question!
  - Continuous process, not a one-time choice
- Somewhat dependant on advisor
  - “Vote with your feet”
  - Often flexibility to craft a project within advisor’s area of expertise
- Some practical advice and personal experience



## If everyone else jumped?

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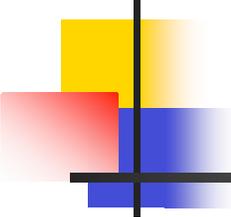
- Don't pick a research project because everyone else is doing it!
- Pick a project because
  - You are passionate about the topic, and believe it is interesting and/or important
    - Helps if you keep track of the big picture
  - You enjoy the research style
    - E.g., system-building, theory, experimentation, design, etc.



# Play Up Your Strengths

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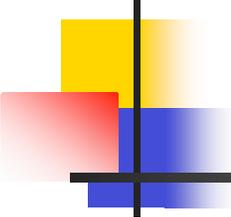
- Many aspects of research
  - Vision / problem definition
  - Design / engineering / implementation
  - Theory
  - Synthesizing ideas, explaining, motivating
- Everyone has strengths / weaknesses
- Find a topic / project that maximizes your strengths
- Work hard to improve in weaker areas



# Not All Puppies and Kittens

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- *Hard-work*, *persistence*, and *focus* are a big part of research success
  - Why it is important to choose something you enjoy!
- Be *flexible*
  - Research evolves over time
  - Enjoy the *process* of learning new things, refining ideas
  - Be open to projects, topics, career paths you never considered
  - Criticism as an opportunity for growth



# Conclusions

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- Future is bright for data management researchers
- Good career prospects for CS Ph.D.s
- Research is a long-term process, not a destination
  - Important to choose something you love, and enjoy the process!