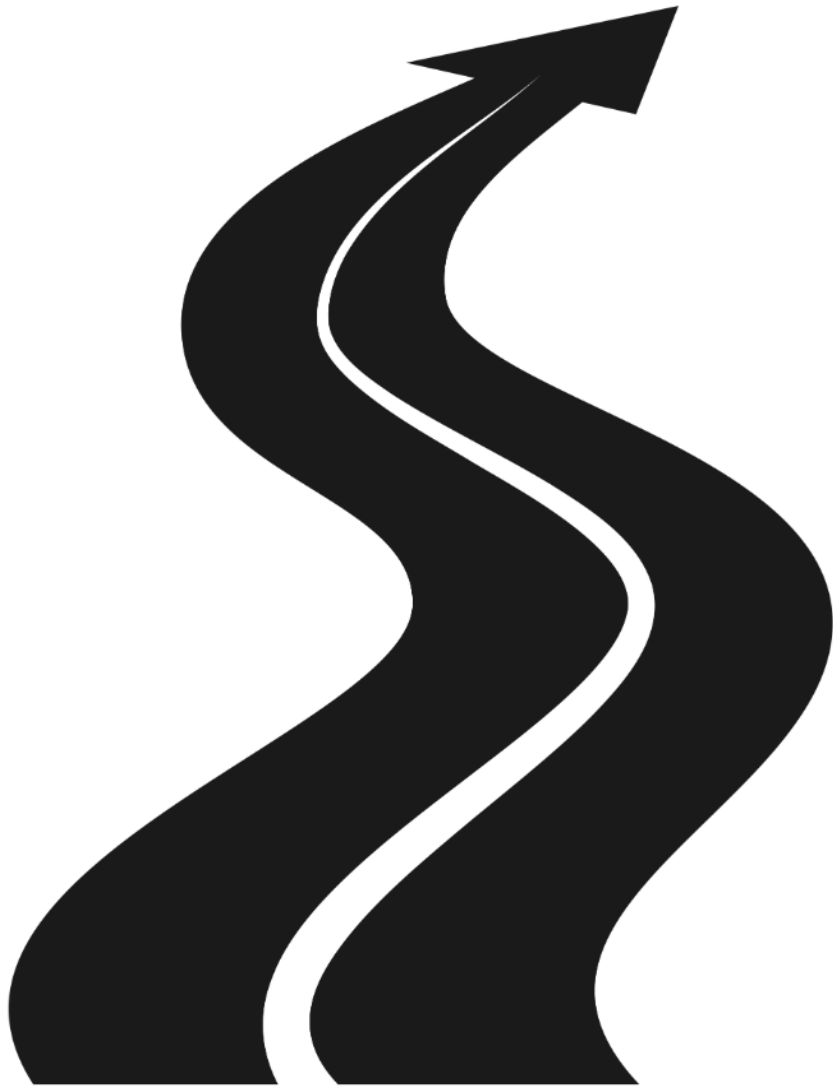


Today's Learning Objectives

- Locate the course syllabus and review objectives, expectations, and policies--**DONE**
- Analyze the significance and objectives of scientific research--**Wednesday**



Roadmap

- What is research?
- How to find a topic?
- Review comments from the icebreaker
- Activity 1



What is research?

- A process for asking and answering important questions
- Involves gathering and analyzing information or data
- Aims to create new knowledge or insight
- Can produce creative works, solutions, or deeper understanding
- Follows a logical, transparent process

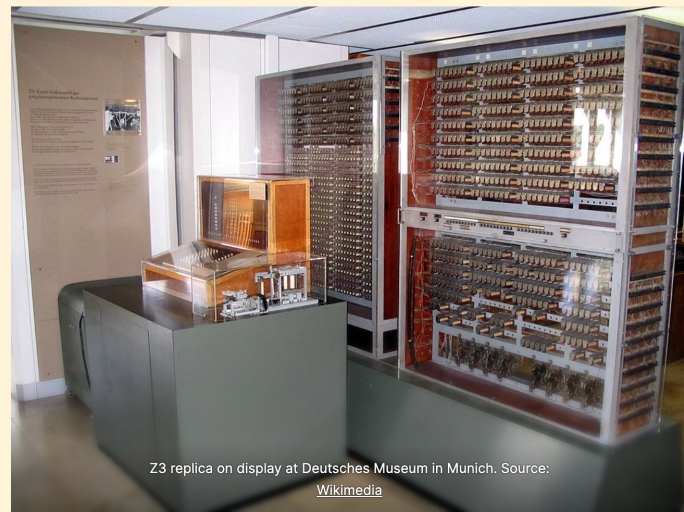


What did research look like in the 1800s?

- Research mostly done by wealthy individuals, scholars, or explorers
- Relied on printed books, letters, and personal observation
- Limited access to information—libraries were rare and exclusive
- Scientific discoveries often shared in salons or published in print journals

Clarita Lefthand-Begay, PhD

Computers have come a long way since Charles Babbage's concepts in the 19th century. In the early 20th century, analog computers dominated the scene, using analog signals for calculations. In 1938, Konrad Zuse created the world's first fully automatic digital computer called, the Z3.



Z3 replica on display at Deutsches Museum in Munich. Source: Wikimedia



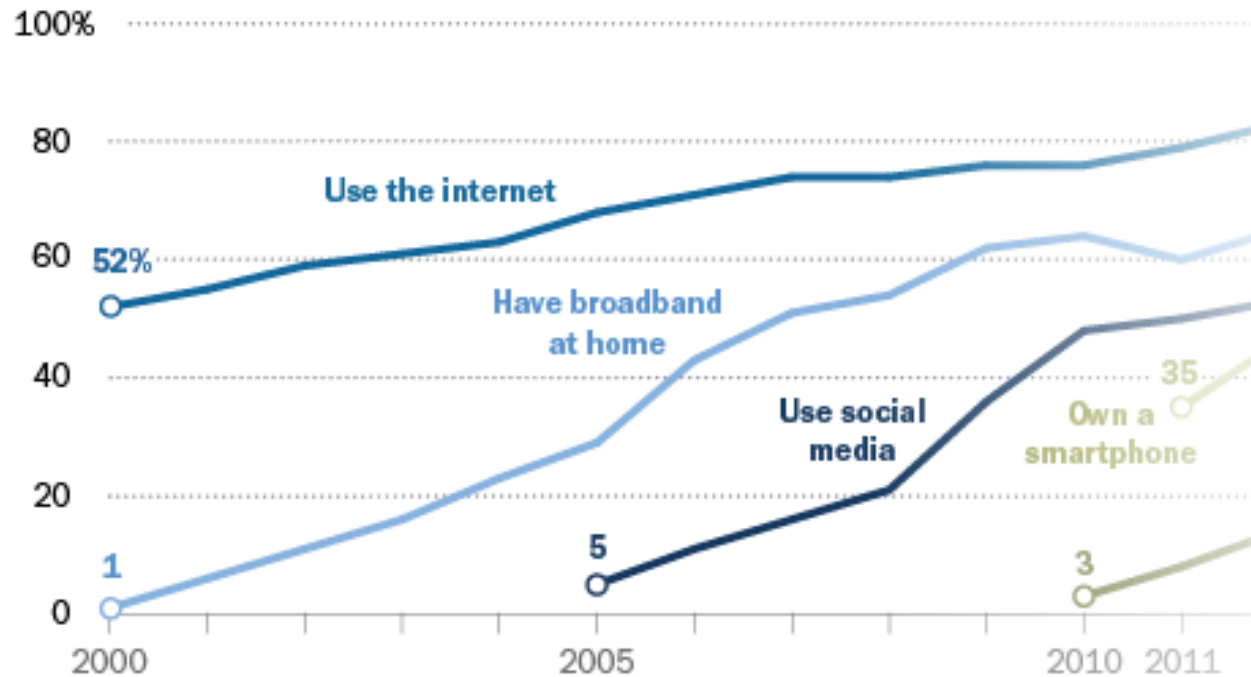
What did research look like in the 1900s?

- Rise of public libraries and greater access to books and journals
- Growth of universities and formal research institutions
- Development of research methods and peer review
- Introduction of computers in late 20th century
- Increasing collaboration and global communication

Clarita Lefthand-Begay, PhD

The evolution of technology adoption and usage

% of U.S. adults who ...



What did research look like in the early 2000s?

- Internet and digital databases revolutionize access
- Online journals, preprints, and open access publishing
- Big data, advanced analytics, and new digital tools
- Collaboration through email, video calls, and shared documents
- Growing focus on ethics, inclusion, and diverse perspectives

Source: Surveys conducted 2000–2016. Internet use figures based on pooled analysis of all surveys conducted each calendar year.

PEW RESEARCH CENTER

Clarita Lefthand-Begay, PhD



What might research look like in the future?

- AI-driven analysis and discovery
- Instant real-time global collaboration
- More open, participatory, and community-led research
- Greater focus on ethics, privacy, and responsible innovation
- Inclusion of nontraditional voices

Clarita Lefthand-Begay, PhD

**WE RAISE OUR
HANDS
to share our
ideas!**



**Let's take 2-3 mins... to
share**

- From your view, what role do informatics professional play in the research process today?
- For instance,
 - How do informatics professional support modern research?
 - Why are their skills valuable?

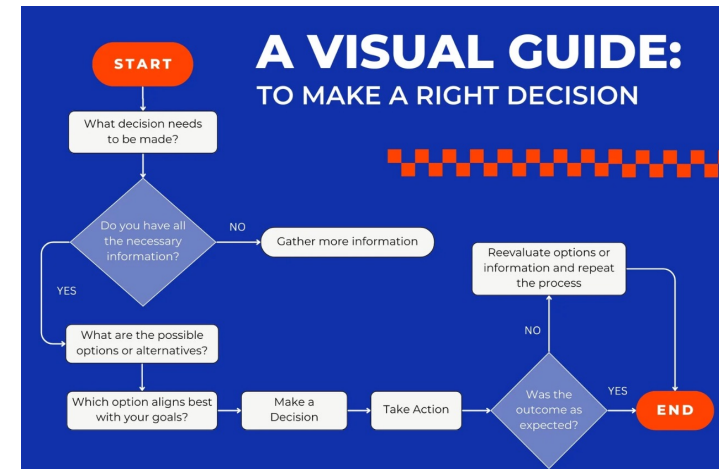
Raise your hand to share your ideas!

Clarita Lefthand-Begay, PhD

Why does research matter?

- Drives innovation
- Informs better decisions
- Empowers individuals and organizations

Clarita Lefthand-Begay, PhD





Thank you and see you next week!

Clarita Lefthand-Begay, PhD