Beyond ChatGPT: Using AI Across the Academic Research Lifecycle[1]

Learning Objectives:

By the end of this workshop, students will be able to:

- Identify AI tools used at different stages of the research process.
- Understand the strengths and limitations of AI applications in research.
- Experiment with AI tools for ideation, literature review, data analysis, and writing.
- Recognize ethical concerns and best practices for the responsible use of AI in academic work.

Agenda:

Part 1: Framing the Role of AI in Research (10 minutes)

- Overview of generative and non-generative AI tools[2] in academic workflows.
- Artificial intelligence offers a wide array of tools and techniques to enhance nearly every stage of the academic research process. AI's transformative role is not limited to generative AI (genAI) tools like ChatGPT; it expands into frameworks and systems that support, automate, or augment research tasks from ideation to dissemination.
- Figure 1 on the next page shows the stages in a typical research workflow.
- Artificial intelligence now augments every major step in this workflow including literature review, research design, data collection and analysis (including survey design), data analysis (including visual/audio interpretation), writing, and dissemination.
- These tools are now mainstream in the life sciences, social sciences, and beyond, enabling researchers to streamline workflows, analyze richer data, and scale research impact.
- *Readings:*
    - Khalifa, M., & Albadawy, M. (2024). Using artificial intelligence in academic writing and research: An essential productivity tool. *Computer Methods and Programs in Biomedicine Update*, *5*, Article 100145.
    - Wang, L., & Wang, T. (2024, May 2). Integrating AI in academic research: Changing the paradigm. *University World News*.

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[1] University of Regina Undergraduate Research Professional Development Program 2025. Justin Longo. July 22.
[2] See the full list of tools in table 1 at the end of this document.

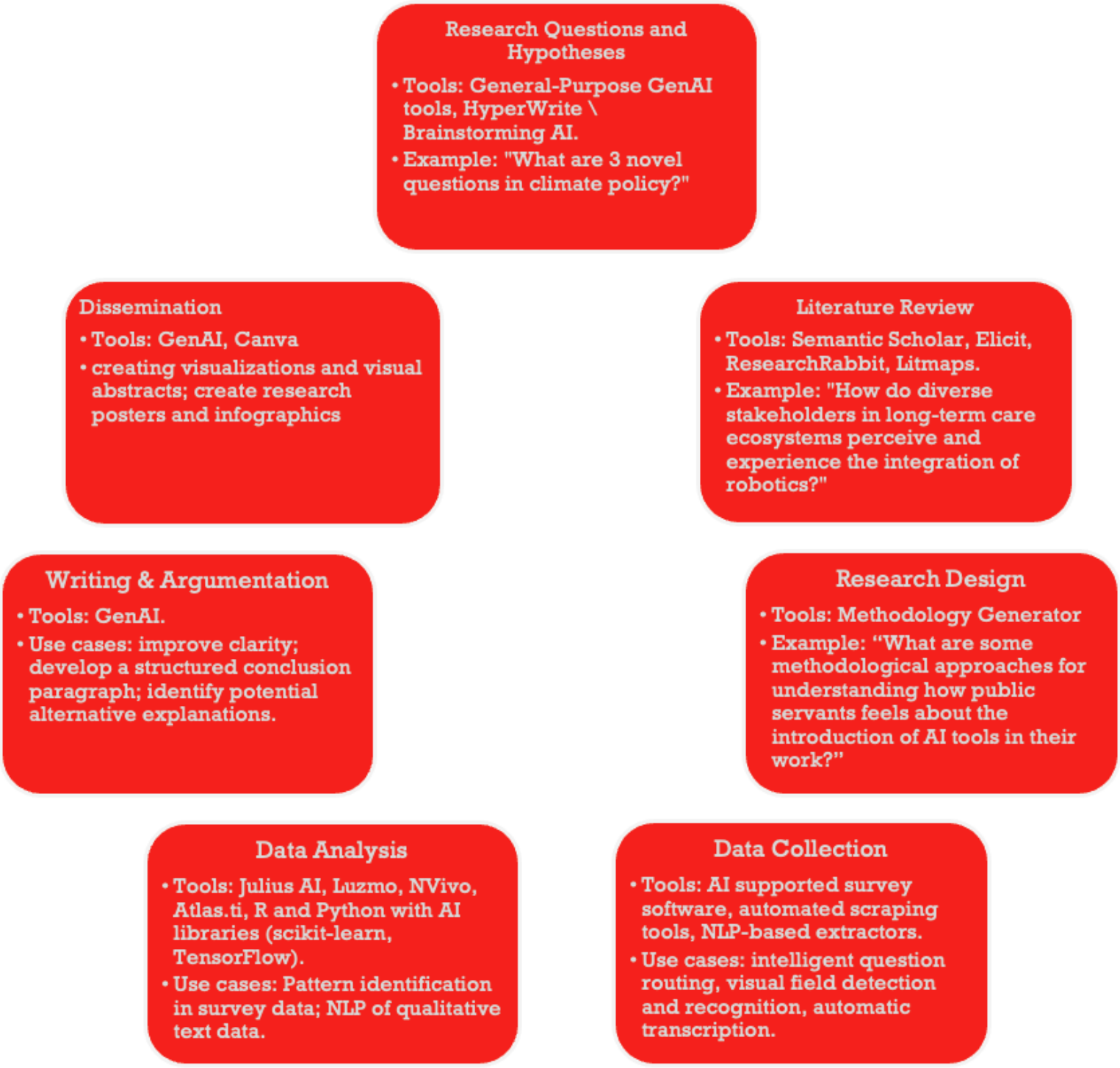

Figure 1: AI in the Research Lifecycle

Part 2: AI Across the Research Workflow (60 minutes)

(Lecture + live demos + short, paired discussions)

1. **Brainstorming Research Questions**

- *AI-supported ideation:*
    - AI systems can generate novel research ideas by analyzing trends in literature, identifying gaps, and connecting disparate domains. AI tools are increasingly valuable for enhancing research brainstorming, research question generation, and hypothesis development.
    - Collaborative Brainstorming Partners: Some platforms simulate interactive ideation sessions, generating prompts, suggesting new angles, and providing creative pathways for researchers across disciplines
- *Tools:*
    - *General-Purpose GenAI tools* (ChatGPT, Claude, Gemini, Perplexity);
    - *Specialized AI brainstorming tools* (e.g., HyperWrite \ Brainstorming AI facilitates a back-and-forth brainstorming session based on a presented problem or question, stimulates creative thinking, asks insightful follow-up questions, and provides ideas).
- *Readings*:
    - Gemini, Altınbüken, D., Maas, M., & Mangpo Phothilimthana, P. (2024). BRAINSTORM: Supercharging innovation with AI-driven ideation. In *Proceedings of the Wild and Crazy Ideas (WACI) session at ASPLOS 2024 (WACI-5).* BRAINSTORM is a concept for using natural language processing and generation techniques, combined with knowledge of existing research and trends, to synthesize novel and unconventional concepts (n.b.: this is a concept, not a real software tool).
- *Breakout Group Exercise*: Brainstorm a research idea using HyperWrite \ Brainstorming AI tool and report back.

2. **Literature Review**

- AI tools are revolutionizing literature reviews by using Natural Language Processing to automatically summarize complex research papers, find related studies, and create initial drafts of key findings and trends.
- These platforms excel at handling massive amounts of information that would be overwhelming for humans to process manually, categorizing documents and highlighting important themes, trends, and research gaps to give you clearer direction.
- AI significantly reduces the risk of missing important studies by systematically scanning vast databases of academic work, ensuring your literature review has comprehensive coverage rather than just the papers you happened to find.
- Finding research gaps becomes much easier with AI assistance since tools like Litmaps use advanced algorithms to identify underexplored areas and potential discoveries that might be hidden in the massive volume of existing research.

- Visual mapping features help you see the big picture by creating interactive knowledge maps and graphs that show connections between different studies, revealing relationships and patterns that aren't obvious when reading papers individually.
- This bird's-eye view of research landscapes can spark new insights by helping you trace how ideas and theories have evolved over time, potentially revealing promising new directions for investigation that weren't apparent before.
- AI-supported literature review and discovery support:
    - *Smart Search and Synthesis*: AI tools rapidly scan massive databases, recommend relevant sources, and synthesize key findings, saving significant time and reducing oversight.
    - *Thematic Analysis*: Advanced natural language processing algorithms extract themes, trends, and contradictions from literature, providing structured overviews that aid depth and coverage.
    - *Interactive Visualizations*: AI-driven visual tools map relationships among works to illustrate research networks and topic evolution
- *Tools*:
    - Semantic Scholar (uses NLP for enhanced search and concept extraction. Semantic Scholar supplies underlying data for many of the other lit review tools; it provides brief summaries ('TLDR's) of the main objectives and results of paper),
    - Elicit (uses LLMs to find papers relevant to your topic by searching through papers and citations and extracting and synthesizing key information; provides feedback on your research question),
    - Research Rabbit (a citation-based mapping tool that focuses on the relationships between research works; it uses visualizations to help researchers find similar papers and other researchers in their field),
    - Litmaps: discover, visualize, organize, and monitor academic literature for a research topic by leveraging citation networks.
    - Connected Papers (focuses on the relationships between research papers to find similar research; get a visual overview of an academic field),
    - Consensus (uses LLMs to help researchers find and synthesize answers to research questions, focusing on the scholarly authors' findings and claims),
    - Keenious (a recommendation tool for academic articles and topics based on papers you upload),
    - scite (has a suite of products that help researchers develop their topics, find papers, and search citations in context, describing whether the article provides supporting or contrasting evidence),
    - Scholarcy (summarizes key points and claims of articles into 'summary cards' that researchers can read, share, and annotate when compiling research on a given topic),
    - Undermind (an AI research assistant that works with you to refine your research question and find relevant papers).
- *Readings:*
    - Chetwynd E. (2024). Ethical Use of Artificial Intelligence for Scientific Writing: Current Trends. *J Hum Lact.*, *40*(2):211-215. doi: 10.1177/08903344241235160.

- *Breakout Group Exercise*: Use one of the tools above to search for literature on a research question and report back

3. Designing Methodology

- Research Design Ideation: AI can generate and refine research questions, suggest appropriate methodologies, and identify gaps in existing literature. Tools powered by generative AI provide brainstorming capabilities and can even propose innovative research designs based on your aims.
- Methodology Selection and Advice: Specialized AI systems recommend methodologies that best fit your research objectives, domains, and data types. This includes guidance on experimental, survey, case study, mixed-methods, and other designs, tailored to your topic and questions.
- Experimental Design Automation: Machine learning algorithms help optimize experimental parameters, suggest study designs, and simulate possible outcomes, particularly in the natural and life sciences
- Design Research Methods: AI assists in choosing appropriate research methods based on project aims and existing evidence, improving rigor and reproducibility
- Bias Detection: AI can help identify methodological blind spots or confounding factors by cross-referencing with large datasets and prior studies
- Quality Control and Ethics: AI can uncover potential methodological flaws, biases, or issues with research design, promoting more robust and ethical practices.
- By leveraging these AI-powered tools and practices, you can accelerate robust methodology development, explore new research avenues, and enhance the creativity and validity of your academic work.
- *Tools*:
    - Methodology Generator: designed to assist researchers in selecting the most suitable research methodologies for their specific projects.
- *Readings:*
    - Resnik, D. B., & Hosseini, M. (2024). The ethics of using artificial intelligence in scientific research: new guidance needed for a new tool. *AI and Ethics*, 1-23.
- *Breakout Group Exercise*: Use one of the tools above to sketch a research design for your research question and report back.

4. Data Collection

- AI can support the data collection stage by automating processes, improving quality, and optimizing data collection strategies.
- AI-Enhanced Survey Design
    - **Question Generation**: GenAI tools like ChatGPT help generate initial survey questions, minimizing biases and improving clarity. Researchers can iteratively refine these through interactive AI-human collaboration.

    - **Instrument Validation**: AI-driven platforms analyze and test survey instruments to detect ambiguities, leading to clearer, more effective questions.[3]
    - **Sampling Strategies**: AI algorithms optimize sampling methodologies, ensuring representative data collection and reducing resource requirements.
- Automated Data Gathering
    - **Textual Data Extraction**: Natural Language Processing (NLP) systems automatically gather and analyze textual data from sources such as social media, news websites, and digital archives.
    - **Visual and Audio Data Collection**: Computer vision and audio processing algorithms systematically collect and classify multimedia data (images, videos, audio recordings), enabling richer analysis.
- Real-Time and Sensor-Based Data Collection
    - **Sensor Management**: AI-controlled sensors and robotic systems collect high-frequency, high-volume data in lab and field settings, capturing nuances humans might miss.
    - **IoT Integration**: Internet-of-Things (IoT) devices integrated with AI provide real-time data streams, useful in ecological studies, public health monitoring, and engineering research.
- Data Quality Assurance
    - **Automated Filtering**: AI rapidly identifies and removes duplicates, incomplete responses, and irrelevant data, significantly improving dataset reliability.
    - **Data Validation and Cleaning**: AI tools continuously monitor data streams to flag anomalies and inconsistencies, ensuring high-quality data throughout the research process.[4]
- Predictive Modeling and Simulation
    - **Experimental Simulations**: Machine learning models predict outcomes of experiments, allowing researchers to refine their data collection strategy before initiating costly or resource-intensive studies.
    - **Resource Optimization**: AI helps estimate necessary sample sizes, balancing rigor with feasibility in complex research contexts.
- Automated Data Gathering: Natural language processing and computer vision systems collect data from diverse sources (e.g., social media, news archives, video, images)
- Real-Time Monitoring: In lab or field research, AI manages sensors or robots to gather high-frequency or large-volume data that would be untenable by humans alone.
- Quality Assurance: AI filters duplicates, incomplete records, and irrelevant input, ensuring the dataset remains reliable
- Sample and Instrument Generation: AI can draft survey questions, screening tools, or interview guides automatically, helping design unbiased and valid research instruments. These drafts can then be iteratively improved through conversational interaction.

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[3] Villarino, R. T., & Villarino, M. L. (2024). Advancing instrument validation in social sciences: An AI-powered chatbot and interactive website based on a Research Instrument Validation Framework (RIVF). Available at SSRN 4910804.

[4] Hartung, T., Maertens, A., & Luechtefeld, T. (2024). E-validation - Unleashing AI for validation. *ALTEX*, *41*(4), 567–587. https://doi.org/10.14573/altex.2409211

- Predictive and Simulation Modeling: Machine learning models can simulate experimental outcomes, guide data collection strategies, or estimate sample sizes, especially helpful in complex or resource-constrained research environments.
- *Tools*:
    - *Survey Design:* SurveyMonkey Build with AI
    - *Sampling Strategies*: https://www.hyperwriteai.com/aitools/data-collection-sampling-techniques-tutor
    - *Automated Scraping and NLP*: Scrapy (a Python-based web scraping and crawling framework designed for high-performance, large-scale data extraction from websites), BeautifulSoup (a lightweight Python library focused on parsing HTML and XML documents and extracting data), Hugging Face (an open-source ecosystem centered around state-of-the-art natural language processing)
    - *Real-time Data Collection*: SensorFlow (an ecosystem that enables real-time sensor data streaming, monitoring, and analytics, often in smart building, environmental monitoring, or research contexts), Arduino AI-enabled sensors (an open-source electronics platform built around programmable microcontroller boards; when paired with AI-enabled sensors or edge AI models, Arduino systems allow for cost-effective, customizable real-time data collection and intelligent analysis).
    - *Simulation modelling*: AnyLogic allows for agent-based, discrete-event, and system dynamics simulation in one platform, supporting the creation of agents endowed with AI or machine learning behaviors.
    - *Predictive Simulations*: TensorFlow (an open-source framework developed by Google for building, training, and deploying machine learning and deep learning models—including predictive simulation models).
- *Readings:*
    - Akintola, A. F., & Akanji, A. R. (2025). Revolutionizing Survey Data Collection with AI Powered Automation in Sample Selection and Response Quality. *International Journal of Advanced Statistics and Probability*, *12*(1), 40-51.
- *Breakout Group Exercise*:
    1. Brainstorm three survey questions to investigate undergraduate student attitudes toward AI use in higher education.
    2. Use a GenAI tool (e.g., ChatGPT) to refine these questions.

5. Data Analysis

- AI tools like Julius and GPT-4's Advanced Data Analysis are transforming how researchers handle complex datasets by automatically identifying patterns and relationships that would be impossible or extremely time-consuming to find using traditional manual methods.
- These AI systems can process massive amounts of data quickly and efficiency, allowing researchers to analyze datasets on scales that were previously unimaginable or completely unfeasible for human analysts.
- AI excels at screening and prediction across different fields:

    - in materials science it can sift through millions of material combinations,
    - in drug discovery it screens compound libraries for promising candidates,
    - in social sciences it can analyze vast amounts of text from social media or historical documents.
- Natural Language Processing (NLP) capabilities allow AI to mine textual data for insights, helping researchers discover thematic trends in everything from historical documents to social media posts and literary works that would take humans years to analyze.
- AI-generated visualizations serve as a common language for interdisciplinary collaboration, making complex research findings accessible to researchers from different fields and enabling more effective teamwork across disciplines. These visualization tools democratize research by making findings accessible to broader audiences, including stakeholders and policymakers who may not have technical expertise, thereby fostering better understanding and support for research projects.
- Automated Coding and Thematic Analysis: For qualitative studies, AI tools can suggest coding schemas, automate initial data coding, identify essential themes, and even highlight new research directions based on corpus analysis.
- Examples of AI-supported data analysis:
    - *Pattern Recognition*: Machine learning and deep learning can uncover complex patterns, subtle relationships, or anomalies across quantitative or qualitative data.
    - *Prediction and Forecasting*: AI models predict future trends or outcomes, widely used in disciplines ranging from finance and climate science to health.
    - *Democratizing Analytics*: User-friendly AI platforms enable non-specialists to perform sophisticated analyses, broadening participation and innovation.
- *Tools*: Julius AI
- *Readings*:
    - Rahmani, A. M., Azhir, E., Ali, S., Mohammadi, M., Ahmed, O. H., Yassin Ghafour, M., Hasan Ahmed, S., & Hosseinzadeh, M. (2021). Artificial intelligence approaches and mechanisms for big data analytics: a systematic study. *PeerJ. Computer science, 7*, e488.
    - Cook, D. A., Ginsburg, S., Sawatsky, A. P., Kuper, A., & D'Angelo, J. D. (2025). Artificial Intelligence to Support Qualitative Data Analysis: Promises, Approaches, Pitfalls. *Academic Medicine (Journal of the Association of American Medical Colleges),*
- *Breakout Group Exercise*: AI-supported Exploratory Analysis - practice how AI can aid in generating preliminary insights and exploratory questions from a simple dataset.
    - Examine this fictional dataset together, noting initial impressions.

Age Group	Number of Respondents	Average Satisfaction (1-5)	Prefer Online Services (%)	Weekly Internet Use (hrs)
18-24	45	3.8	80	20
25-34	60	4.1	75	18
35-44	40	3.6	65	15
45-54	30	3.4	50	12
55+	25	3.2	40	10

- Craft a short prompt to enter into ChatGPT, asking it to suggest exploratory questions, possible trends, and areas for deeper investigation based on the given dataset.
- Compare AI-generated suggestions with your initial observations.
  - Did the AI suggest questions or ideas you hadn't considered? How helpful were these insights?
  - What are the limitations of relying solely on AI to interpret data?
  - How might the AI's suggestions influence your next steps in data analysis?

6. Writing and Argumentation

- Drafting and Structure Guidance: AI text generators assist in organizing content, drafting sections, and maintaining coherence, even beyond simple grammar checking.
- Evidence-based Argumentation: AI synthesizes study results, compares them with existing knowledge, and suggests possible interpretations or implications.
- Language and Clarity Enhancement: Tools powered by AI provide feedback on grammar, tone, terminology, and readability, helping to ensure research findings are accessible to a wider audience
- *Tools*: General purpose GenAI tools, Jenni, Paperpal
- *Readings:*
  - Chanpradit, T. (2025). Generative artificial intelligence in academic writing in higher education: A systematic review.
- *Breakout Group Exercise*:
  1. Scenario You're preparing a brief concluding paragraph for a paper on the social impacts of artificial intelligence.
  2. Working together, write a short initial draft paragraph (3–5 sentences) for the selected scenario without any AI assistance.
  3. Ask ChatGPT: "Prepare a brief concluding paragraph (3–5 sentences) for a paper on the social impacts of artificial intelligence.
  4. Compare your initial draft to the AI-generated paragraph.
  5. Discuss the following questions together:
     a. What differences do you notice between your own draft and the AI-generated paragraph?
     b. In what ways did the AI-generated text improve on original writing or argument? In what ways did it not?
     c. Did using AI change your understanding of the topic or your learning process? If so, how?

Part 3: Ethical and Responsible Use (10 minutes)

- **Considerations:**
  - Plagiarism and academic integrity when using AI

    - Authorship and transparency (e.g., citing AI contributions)
    - Bias in data and model outputs
- **Ethical use of AI in the research lifecycle:**
    - Use AI as an assistant, not a replacement for your expertise. Do not let AI perform core interpretive or evaluative work.
    - Always verify and critically evaluate AI outputs. AI-generated ideas or references can be outdated, inaccurate, biased, or even fabricated. Cross-check all suggestions and citations with peer-reviewed sources and academic databases before using them in your review.
    - Keep detailed records of your AI usage. Note the tools used, dates of use, and the prompts or queries entered. This documentation demonstrates transparency and academic integrity, allowing you to account for any AI contributions in your process.
    - Properly attribute all sources and ideas. Cite both the original scholarly sources and, if required, the AI tool itself if it shaped your work in meaningful ways. Do not present AI-generated text as solely your own words or ideas without acknowledgment.
    - Check for plagiarism and maintain originality. Use plagiarism detection tools to ensure your work does not inadvertently replicate published content. Avoid copying and pasting AI-generated summaries or text directly—paraphrase, synthesize, and add your own interpretation.
    - Be aware of and actively mitigate bias. AI tools may reproduce existing biases in academic literature or introduce their own. Carefully review AI-assisted summaries and recommendations to ensure inclusiveness and representativeness.
    - Use AI to enhance efficiency, not as a shortcut for learning. Let AI help you locate sources or draft preliminary questions but always engage deeply with the relevant literature yourself. True understanding can only emerge from engaging deeply with the literature.
- *Readings*:
    - Chubb, J., Cowling, P., & Reed, D. (2022). Speeding up to keep up: exploring the use of AI in the research process. *AI & Society*, *37*(4), 1439-1457.
    - Messeri, L., Crockett, M.J. (2024). Artificial intelligence and illusions of understanding in scientific research. *Nature 627*, 49-58.

Part 4: Wrap-Up and Q&A (10 minutes)

- Summary of key takeaways: AI is reshaping the research workflow across fields, from the social sciences and humanities to the natural sciences, not as a replacement for scholarly judgment, but as a powerful augmentation that unlocks new efficiencies, insights, and collaborative opportunities

Key Considerations

- Ethics and Privacy: Responsible use of AI demands robust ethical frameworks and strong privacy controls, especially when handling sensitive data or biases

- Interdisciplinary Communication: AI-driven visualizations and analytic tools can bridge disciplinary divides, aiding collaboration and public engagement
- Limitations: Many AI systems are partially autonomous, and full automation in experimental design or analysis remains an active research area
- Democratization: AI makes advanced techniques accessible to a wider pool of researchers, including those in resource-constrained settings

- Discussion: “Where do you see AI helping or complicating your research?”

Table 1: AI Tools Across the Academic Research Workflow

Research Stage	Example Applications	Tools

General Tools	Integrated tools across every stage of the research lifecycle	• 5 Unbelievably Useful AI Tools For Research in 2025 - a video review of:
		  ○ Scispace
		  ○ Avidnote
		  ○ Jenni
		  ○ Paperpal
		  ○ Research Rabbit

Brainstorming	Idea generation, hypothesis suggestion, interactive brainstorming tools	• HyperWrite \ Brainstorming AI: a tool that facilitates a back-and-forth brainstorming session based on a presented problem or question, stimulates creative thinking, asks insightful follow-up questions, and provides ideas. • See other tools at this list of AI brainstorming tools.
Literature Discovery & Review	Smart search, thematic extraction, visual mapping, synthesis, NLP search, citation mapping, synthesis	• Semantic Scholar: Uses NLP for enhanced search and concept extraction. Semantic Scholar supplies underlying data for many of the other lit review tools; it provides brief summaries ('TLDR's) of the main objectives and results of papers. • Elicit: Automates literature discovery, synthesizes findings, and supports systematic reviews. • Litmaps: Visualize citation networks, recommend papers, and reveal research trends. • Research Rabbit: Visualize citation networks, recommend papers, and reveal research trends. • See other tools at https://guides.library.georgetown.edu/ai/tools
Methodology Design	Experimental optimization, bias detection, method selection support	• Methodology Generator: recommends methodologies tailored to your research question, provides detailed advice on study design.
Data Collection	Automated data scraping	•
	Visual: Image/video analysis, OCR	• Google Vision AI: Analyzes images and videos, offering features like image labeling, object detection, text recognition (OCR), and face detection for research datasets or archival materials. • Document AI: Automates extraction of structured data from scanned documents, useful for content analysis in public policy, law, and historical research.
	Audio: Transcription, diarization, sound analysis	• RTI QUINTET: supports the analysis, transcription, searching, and quality checking of audio data, specifically designed to help researchers efficiently process and analyze large volumes of recorded content. Useful for interview and focus group analysis and rapid data search through audio archives. • Audio Toolbox: designed specifically for audio, speech, and acoustic signal processing, analysis, and machine learning

Research Stage	Example Applications	Tools
		applications. Useful for sound event detection and classification in complex environments (e.g., hospitals, wildlife habitats), speech-to-text & synthesis, source separation, and quality assessment. • OpenAI Whisper: an open-source automatic speech recognition (ASR) system developed by OpenAI. It is designed to convert spoken language from audio files into written text, with notable strengths in multilingual transcription, speech-to-text conversion, and direct speech translation to English. • Boostlingo AI Pro: an AI-powered platform for real-time language translation, speech interpretation, captioning, and transcription. • DeepL: an AI-powered translation platform renowned for its high-quality, context-aware translations across more than 30 languages. Useful for literature reviews, collaborative research, survey and fieldwork support, and knowledge mobilization.
	Survey Design & Generation: Automated survey building, question design	• QuestionPro AI: an embedded genAI tool within the QuestionPro survey platform, designed to streamline and enhance survey creation and design for researchers. It leverages a conversational AI interface which allows users to build surveys on any research topic quickly, easily, and intuitively. • SurveyMonkey Build with AI: supports the design, fielding, and analysis of surveys with professional quality and speed, aided by AI-driven recommendations, automated question and answer crafting, data quality tools, and instant analysis. ○ n.b.: SurveyMonkey is the supported survey software at the University of Saskatchewan. At the University of Regina, we use Qualtrics which is developing an AI strategy, but it is currently targeted at commercial clients with features like Adaptive Follow-up (though which could have research applications) • Conjointly: an online platform that automates the design, fielding, and analysis of conjoint studies and similar choice-based experiments. It leverages built-in AI to help researchers generate survey questions and design discrete choice experiments quickly, create, randomize, and present conjoint tasks to participants in a visually engaging way, analyze results in real time, automatically calculating preference utilities and quantifying the relative importance of each attribute or feature. Researchers can use Conjointly to gauge how individuals or groups (e.g., patients, students, citizens) prioritize various aspects of a product, policy, service, or experience, especially where trade-offs are involved. • AI Survey Maker (by Fillout): an AI survey creation platform designed to streamline every phase of building, distributing, and analyzing surveys. It harnesses generative AI to automate and improve question generation, survey design, and response analysis.

Research Stage	Example Applications	Tools
		• General purpose GenAI (e.g., ChatGPT, Claude, Gemini) can be used to generate, critique, and refine survey questions, and help analyze responses.
Data Analysis & Visualization	Pattern recognition, predictions, user-friendly analytics, customized insight discovery, automated analytics, categorization, charts	• Julius AI: an AI-powered data analysis platform designed to make sophisticated data analytics, visualization, and reporting accessible through a conversational interface. Turns spreadsheets or survey data into visuals and insights with no coding. Can handle categorization, statistical analysis, and visualization. • IBM Cognos: an AI-powered, integrated business intelligence (BI) and analytics platform for dashboards, pattern detection, and natural language inquiries. • Insight7: an AI-powered platform designed to automate and accelerate the analysis of qualitative data (e.g., interviews, focus groups, surveys, respondent feedback) • Mokkup.ai: a dashboard wireframing tool for creating visualization dashboards • Luzmo: an AI-powered analytics platform designed to make data insights accessible and interactive by embedding analytics directly into applications and workflows. • NVivo: version 15 includes the Lumivero AI Assistant which helps identify themes, supports analysis, and suggest patterns and codes. Additional AI features include automatic coding, sentiment analysis, and pattern recognition. • ATLAS.ti: AI-powered qualitative analysis, AI coding, thematic identification, query support, and pattern discovery. • RapidMiner: an AI-powered data science and analytics platform designed to facilitate the entire data analysis workflow, from data preparation and exploration to machine learning, predictive modeling, deployment, and visualization. • MonkeyLearn: Analyze interview transcripts, classify qualitative data, and extract themes using machine learning and NLP.
Writing & Synthesis	Drafting content, argument mapping, summarization, enhancement of clarity	• GenAI chatbots (e.g., ChatGPT, Claude, Gemini) can be used to generate, critique, and refine writing. • See also tools like Jenni and Paperpal.