

Using AI to Translate Evidence into Farm Action

Quality Milk Production Services
Wolf Heuwieser

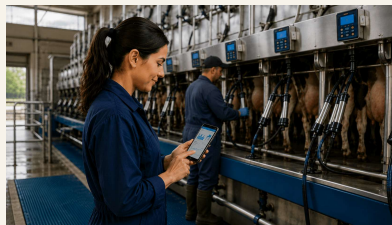


College of
Veterinary Medicine

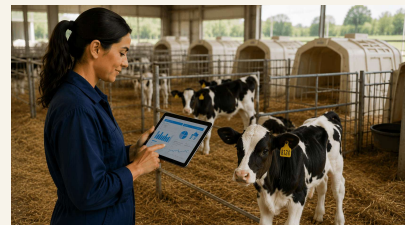
1



Scenario

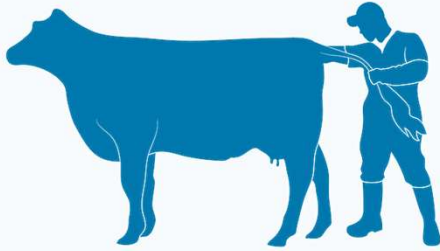


AI Workflow



Use cases

2



Dr. Paul McLoud

Veterinarian in a dairy practice with
4 vets, 45 yrs old

ChatGPT occasionally for emails and
summaries, but not an "AI person"

3

Hi Doc,

"Some producers treat every
mastitis case right away.
Others wait. We are throwing
out milk, spending money on
treatments, and still seeing
repeat cases.

Can you give us something
clearer?"

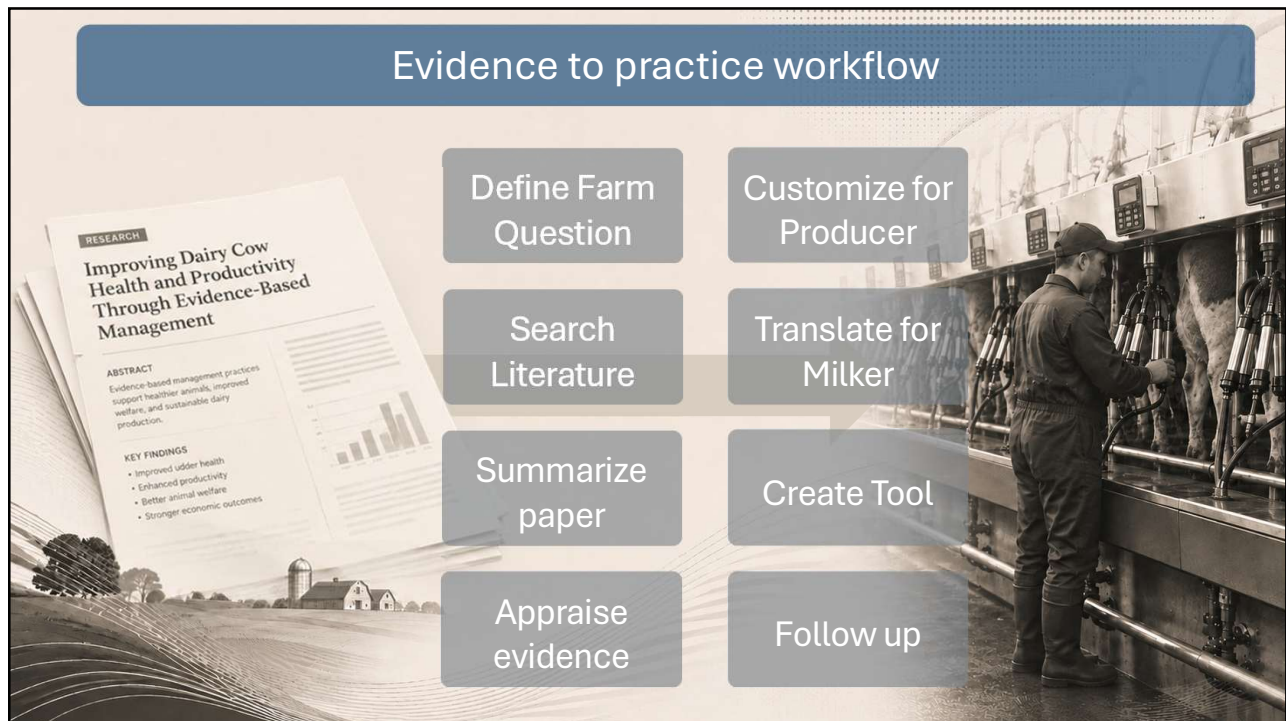
Mike Polan



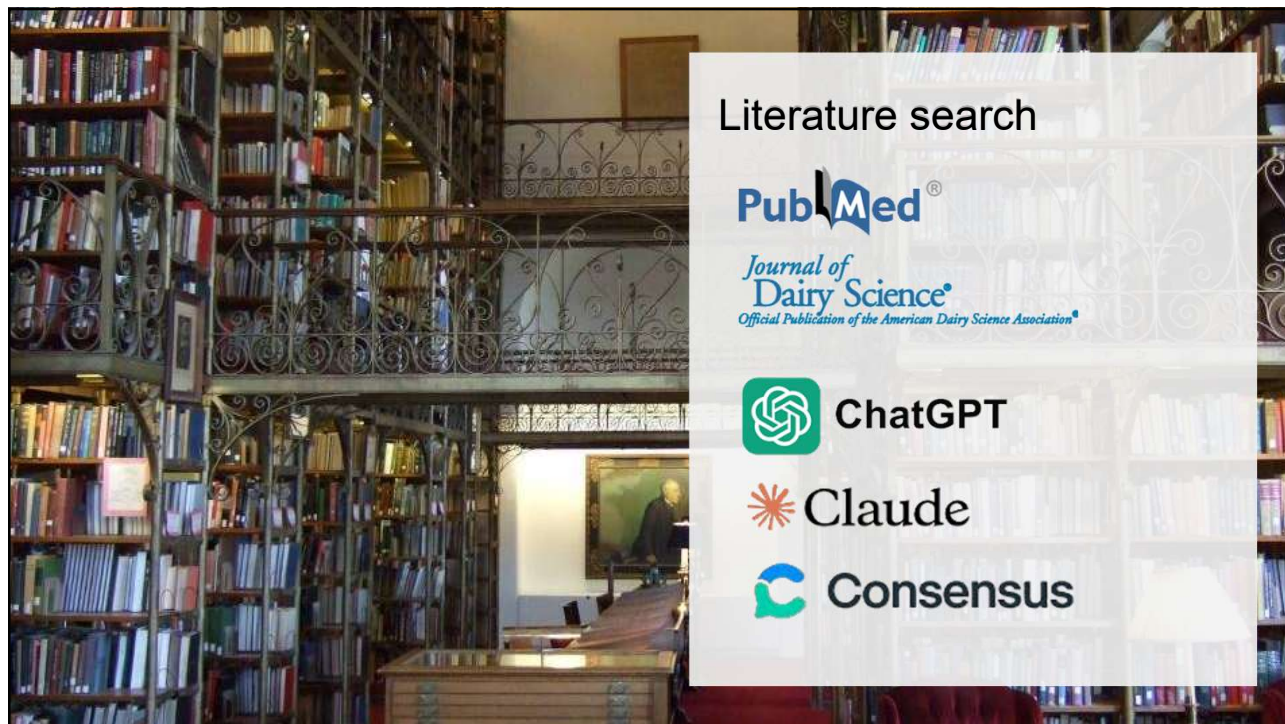
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5



6



7

pubmed.ncbi.nlm.nih.gov/?term=treatment+of+mastitis+in+dairy+cattle&sort=date&filter=datesearch_y_5

An official website of the United States government [Here's how you know](#)

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National Center for Biotechnology Information

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treatment of mastitis in dairy cattle

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RESULTS BY YEAR

2021-2026

703 results

Filters applied: in the last 5 years. [Clear all](#)

☐ Bioinformatics approach to identify potential biomarker and drug target for the clinical and subclinical mastitis disease in dairy cattle.

1

Cite Auwul MR.

PLoS One. 2026 May 13;21(5):e0349172. doi: 10.1371/journal.pone.0349172. eCollection 2026.

PMID: 42127079 [Free PMC article](#).

Mastitis in dairy cattle is a serious issue that affects not just the animals but also has broad social, cultural, economic, and human consequences. ...The findings from this study pave the way for pr

Page 1

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ChatGPT

New chat
Search chats
Codex
More

GPTs

- Dairy Science Editor
- Dairy Sci Summarizer 1.0
- Dairy Sci Editor 2.0
- Key Takeaways
- Dairy Content Editor
- Explore GPTs

Projects

- Wolf Heuwieser
Personal account

I am looking for a peer-reviewed publication on pathogen-based treatment of mastitis in dairy cattle. I remember seeing it in one of those peer-reviewed journals, but I cannot find it anymore. Could you please help me locate it?

I'll search broadly across mastitis, culture-guided/pathogen-based treatment, and selective treatment terms, then narrow to peer-reviewed dairy-cattle papers that match what you likely remember.

Thought for 19s >

I found several likely matches. The strongest match to your wording is probably this **Journal of Dairy Science** paper:

+ Ask anything Extended 🔊

ChatGPT is AI and can make mistakes. Check important info.

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ChatGPT

New chat
Search chats
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3. Lago et al., 2011 — Part II
The selective treatment of clinical mastitis based on on-farm culture results: II. Effects on lactation performance, including clinical mastitis recurrence, somatic cell count, milk production, and cow survival. Journal of Dairy Science, 94(9), 4457–4467. DOI: 10.3168/jds.2010-4047. PubMed +1

4. de Jong et al., 2023 — Review
Invited review: Selective treatment of clinical mastitis in dairy cattle. Journal of Dairy Science, 106(6), 3761–3778. DOI: 10.3168/jds.2022-22826. ScienceDirect +1
This is likely the best recent review if you want the broader evidence base.

My b...
prob...
based treatment," it was
2022.

ScienceDirect
Invited review: Selective treatment of clinical mastitis in dairy cattle - ScienceDirect
May 31, 2023

Extended 🔊

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Reading Assistant

Journal of Dairy Science
Volume 106, Issue 6, June 2023, Pages 3761-3778

Review

Invited review: Selective treatment of clinical mastitis in dairy cattle

Ellen de Jong^{1,2,3}, Kayley D. McCubbin^{1,2,3}, David Speksnijder^{4,5}, Simon Dufour^{3,6}, John R. Middleton⁷, Pamela L. Ruegg⁸, Theo J.G.M. Lam^{9,10}, David F. Kelton^{3,10}, Scott McDougall^{11,12}, Sandra M. Godden¹³, Alfonso Lago¹⁴, Päivi J. Rajala-Schultz¹⁵, Karin Orsel¹, Sarne De Vliegher¹⁶, Volker Krömker¹⁷, Diego B. Nobrega^{1,2}, John P. Kastelic¹, Herman W. Barkema^{1,2,3} 

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Recommended articles

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Applied Animal Science, Volume 37, Issue 5, 202...
Ahmadreza Mirzaei, ..., Ricardo C. Chebel
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Monitoring of antimicrobial susceptibility of udder pathogens...
Veterinary Microbiology, Volume 213, 2018, pp. ...
Anno de Jong, ..., Ed Siegart
[View PDF](#)

The hidden cost of disease: I. Impact of the first incidence of mastitis...
Journal of Dairy Science, Volume ...
[FEEDBACK](#)

Outline

[ABSTRACT](#)

[Key words](#)

[INTRODUCTION](#)

[PRINCIPLES OF SELECTIVE CLINICAL MASTITIS](#)

[OTHER CONSIDERATIONS](#)

[COW AND FARM OUTCOMES](#)

[ADOPTION OF SELECTIVE CLINICAL MASTITIS](#)

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What are you working on?

DeJong-Mastitis-selective-Treatme...
PDF

Just analyze the abstract of the uploaded PDF. Create a 50-word summary in plain language that is easy to understand. Do not access other materials.

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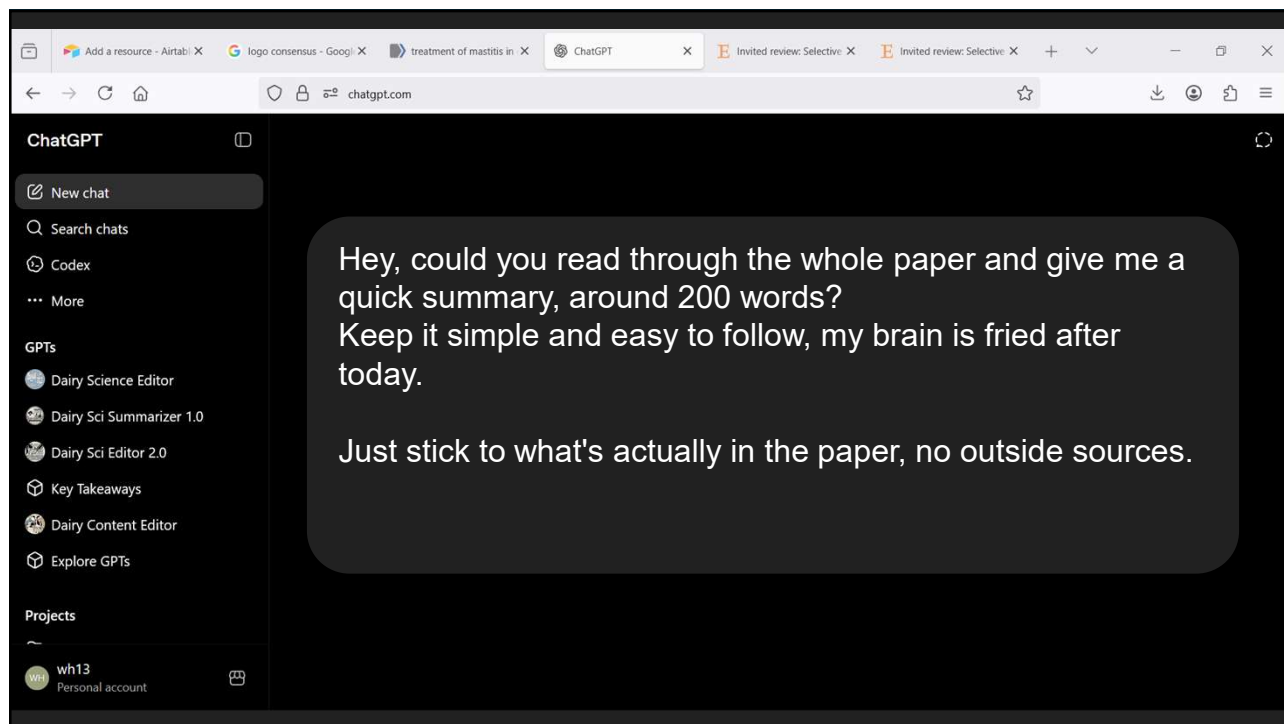
The screenshot shows the ChatGPT web interface. The browser tabs include "Add a resource - Airtab", "logo consensus - Google", "treatment of mastitis in", "Selective Mastitis Treat", and "Invited review: Selective". The address bar shows the URL "chatgpt.com/c/6a08eced-3c3c-83ea-807a-87bb72687820". The left sidebar contains options like "New chat", "Search chats", "Codex", "More", "GPTs" (Dairy Science Editor, Dairy Sci Summarizer 1.0, Dairy Sci Editor 2.0, Key Takeaways, Dairy Content Editor, Explore GPTs), and "Projects" (wh13 Personal account).

The main chat area shows a PDF upload button and a message: "Just analyze the abstract of the uploaded PDF. Create a 50-word summary in plain language that is easy to understand. Do not access other materials." Below this, the AI response is displayed: "Thought for 6s > Selective mastitis treatment uses rapid tests and cow records to decide which nonsevere cases need antibiotics. Many cases can recover without them, especially when no bacteria or gram-negative bacteria are found. Studies suggest this approach reduces antibiotic use without harming udder health, welfare, or farm economics when properly applied carefully." A source link "DeLong-Mastitis-selective-Treat..." is provided. At the bottom, there is an input field "Ask anything" and a status message "ChatGPT is AI and can make mistakes. Check important info."

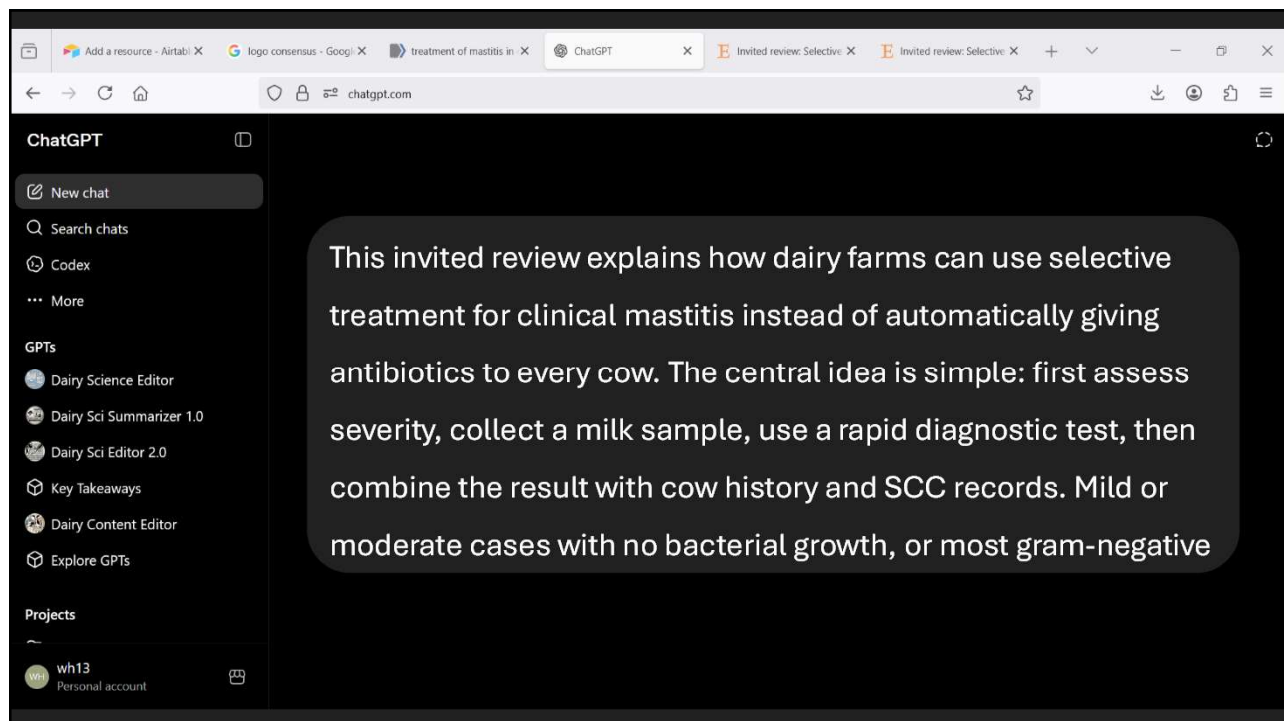
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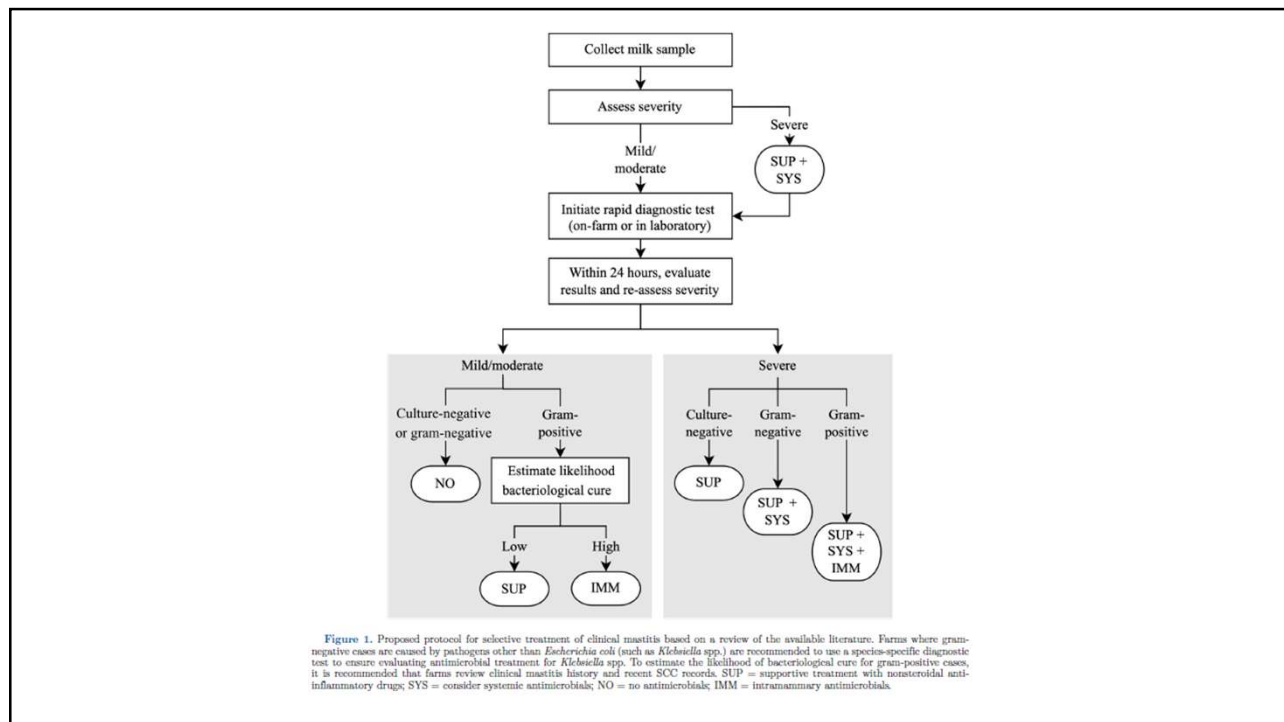
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Dairy Sci Editor 2.0

Key Takeaways

Dairy Content Editor

Explore GPTs

Projects

Wolf Heuwieser

Personal account

Analyze figure 1 of this publication. Do not access outside source. Create an easy-to-understand and visually appealing flow chart for a dairy producer. Do not use acronyms. Utilize the same sepia monochrome style with blue (Hex: #2D5983) and grey (Hex: #80868C), composition, lighting, and professional academic tone of the uploaded PNG. When more information is needed ask me.

Thought for 4m 25s >

I simplified Figure 1 into a producer-facing decision flow: sample first, assess severity, use rapid testing, then match treatment to test result and cow history. I expanded the figure's abbreviations into plain terms such as supportive care, injectable antibiotics, no antibiotics, and udder tube antibiotics.

Download the flow chart here: [Selective mastitis treatment flow chart](#)

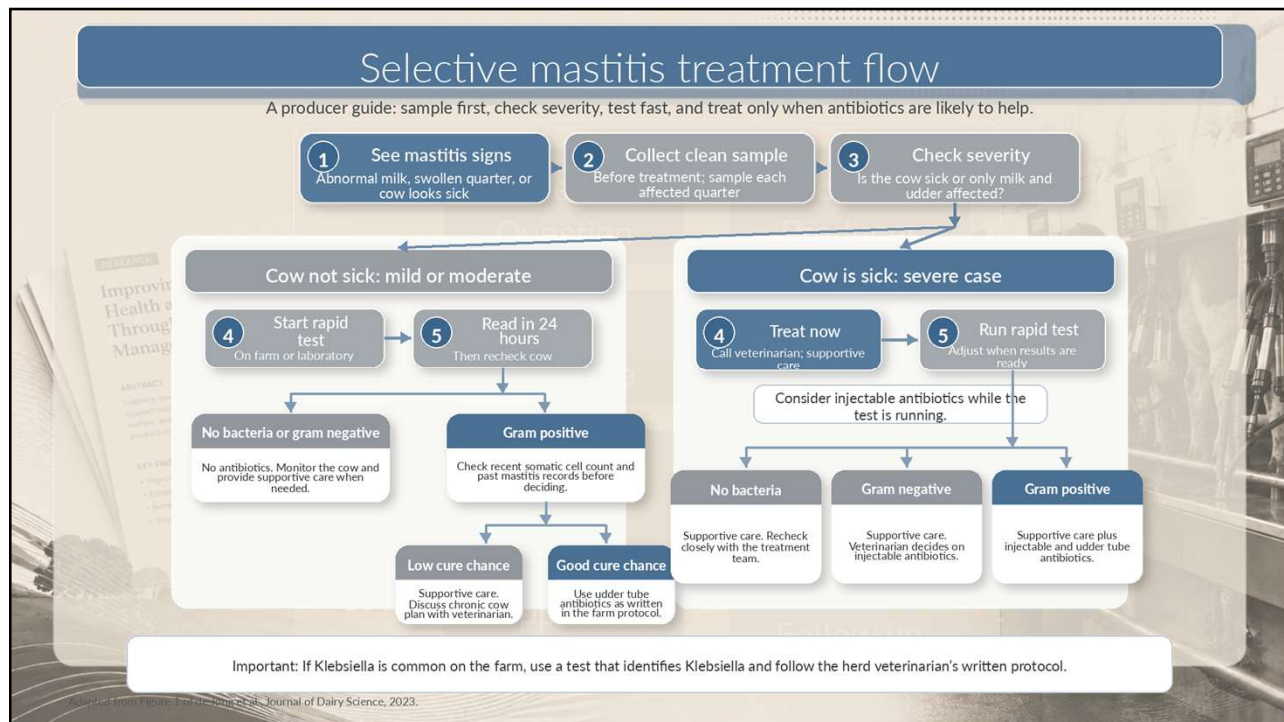
+ Ask anything

Extended

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What is evidence-based?

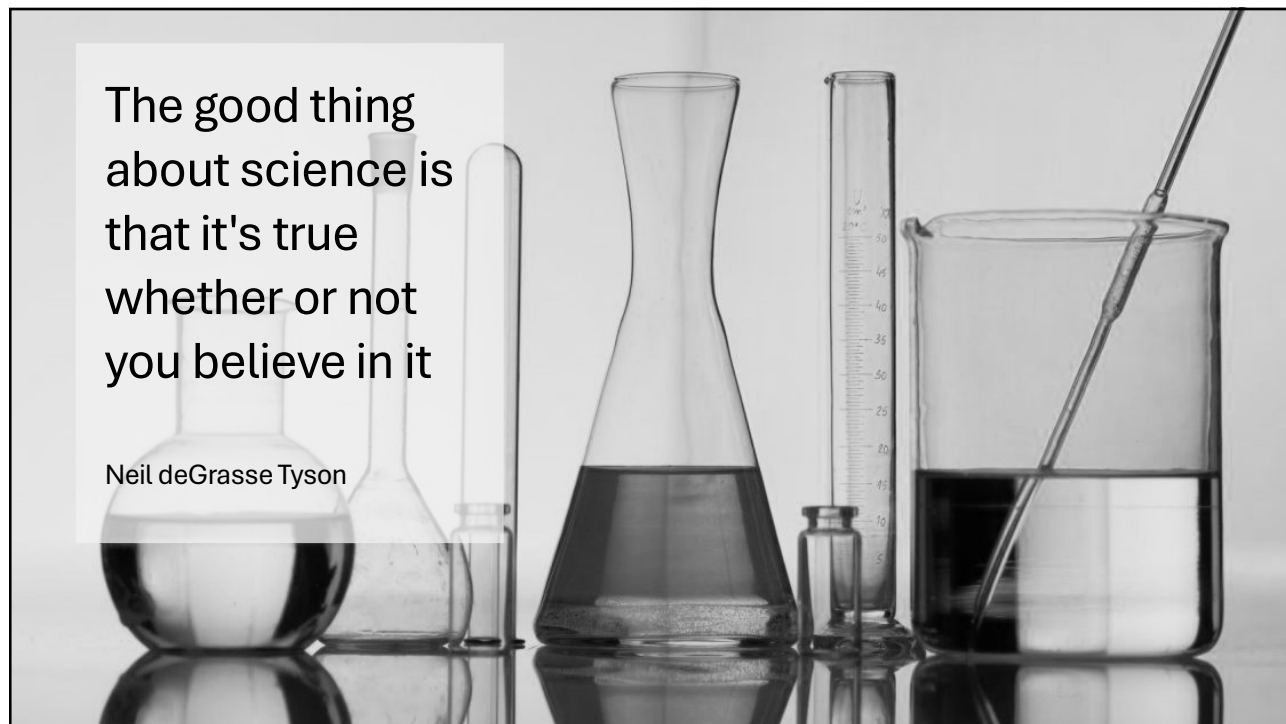
You make medical decisions based on the **current best scientific knowledge**.

You base your decisions on **data from sound studies**.

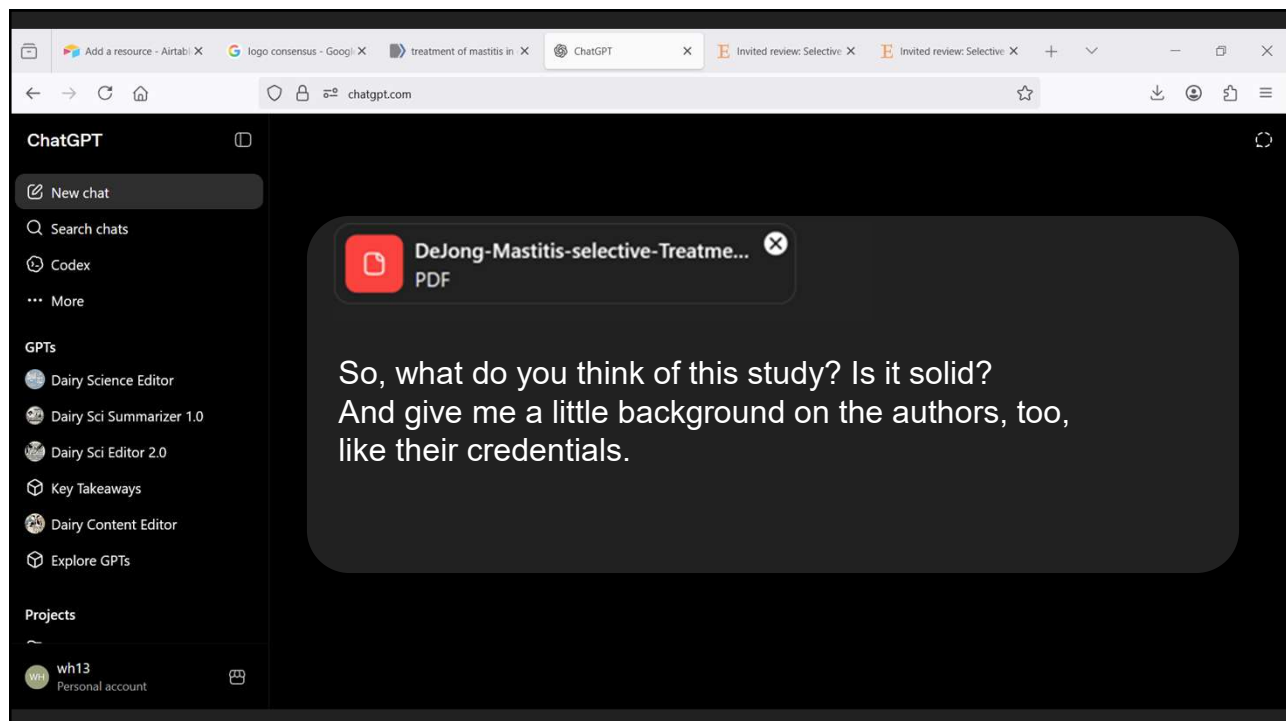
Not (solely) on tradition, experience, or expert opinions.

This ensures that treatments are **effective and safe** for your clients and their animals.

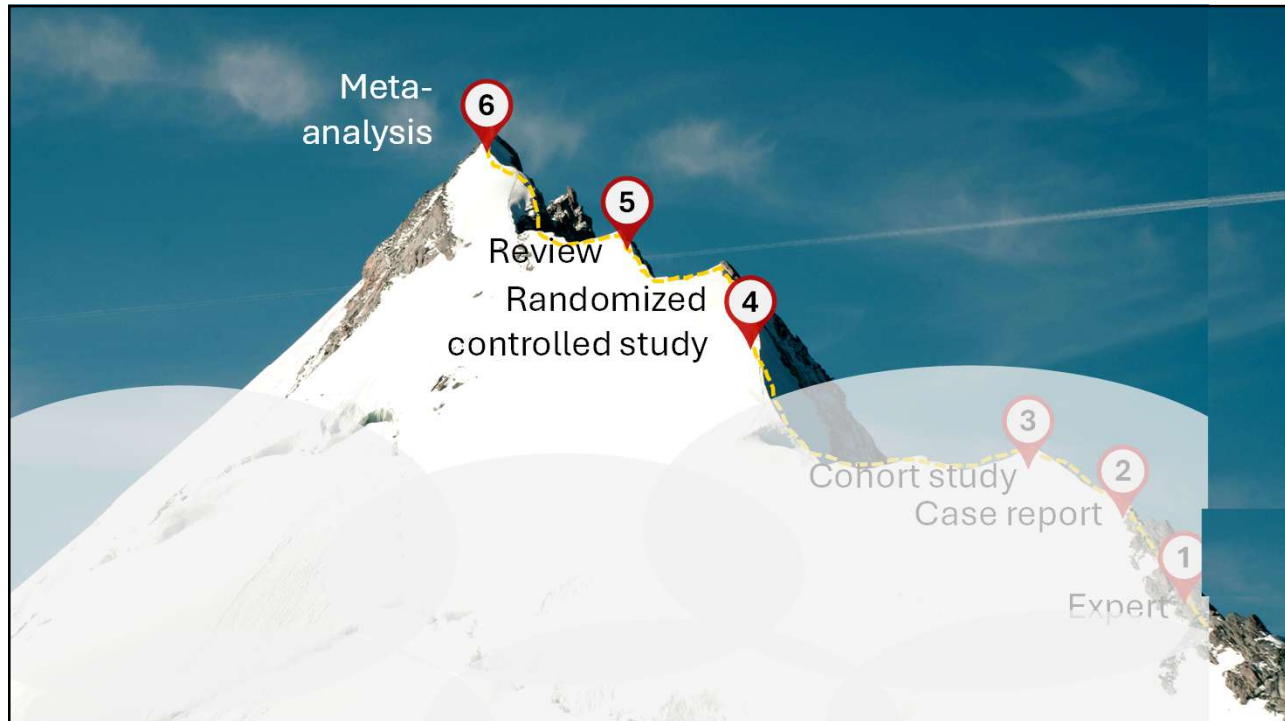
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One Useful Thing

Ethan Mollick 
@oneusefulting



I am a professor at the Wharton School of the University of Pennsylvania. I study entrepreneurship & innovation and AI. I am trying to understand what our new AI-haunted era means for work and education.

 One Useful Thing  2

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“

AI can produce plausible-sounding outputs that are deeply flawed.

Without expertise, users cannot distinguish between the two.

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Expertise still matters with AI



1. Recognize errors



2. Ask better questions



3. Integrate into context



4. Exercise judgment

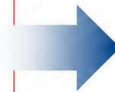
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How expertise is shifting



Traditional emphasis

- Production
- Creation
- Drafting from scratch



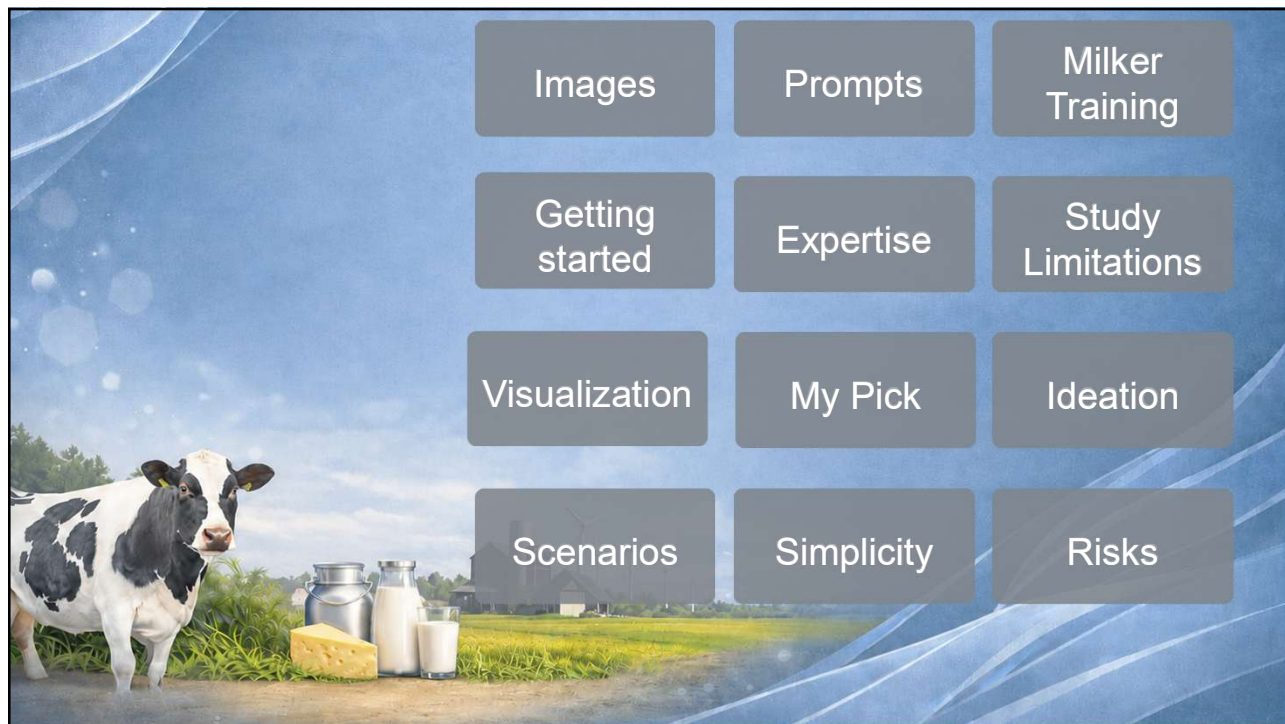
AI-era emphasis

- Evaluation
- Curation and critique
- Quality control and strategic decisions

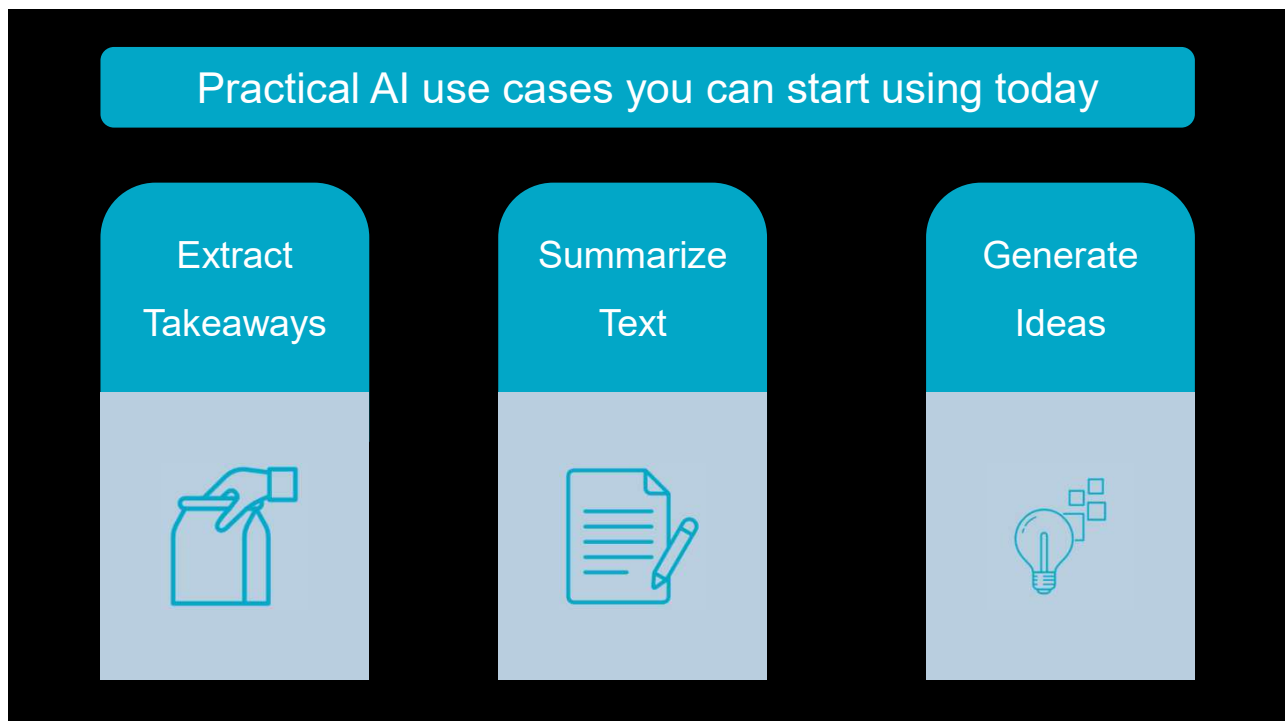


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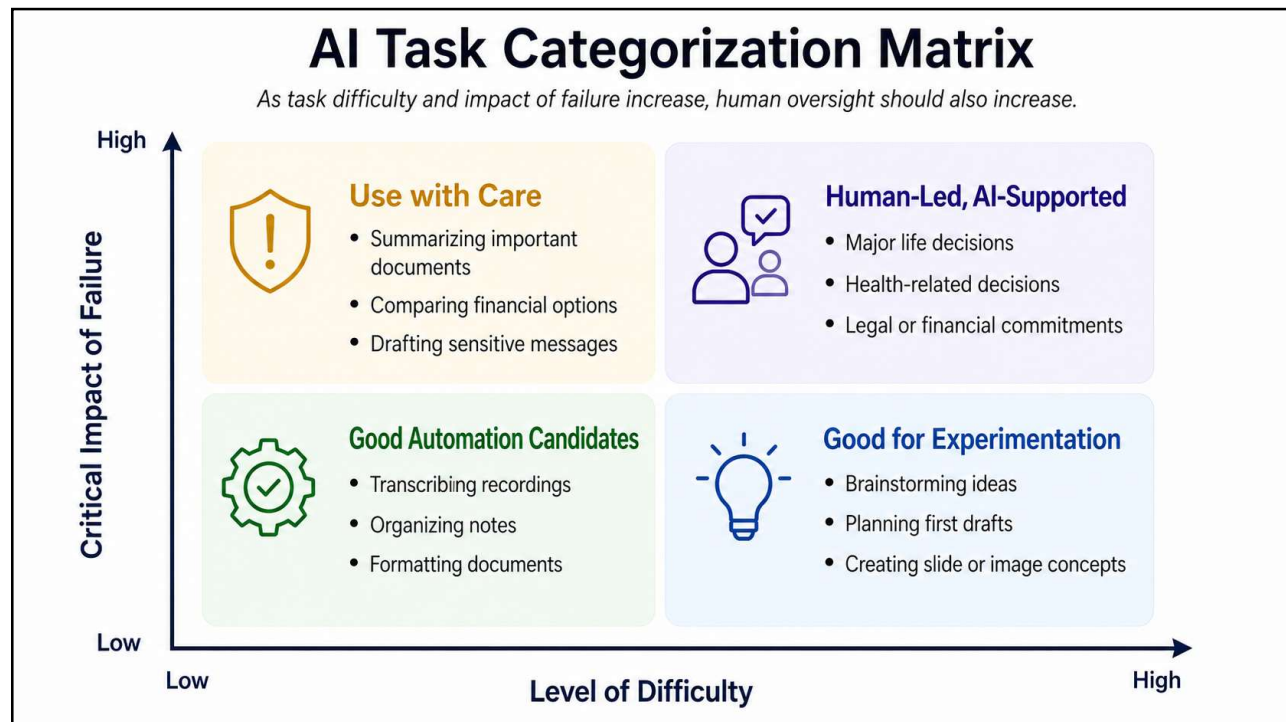
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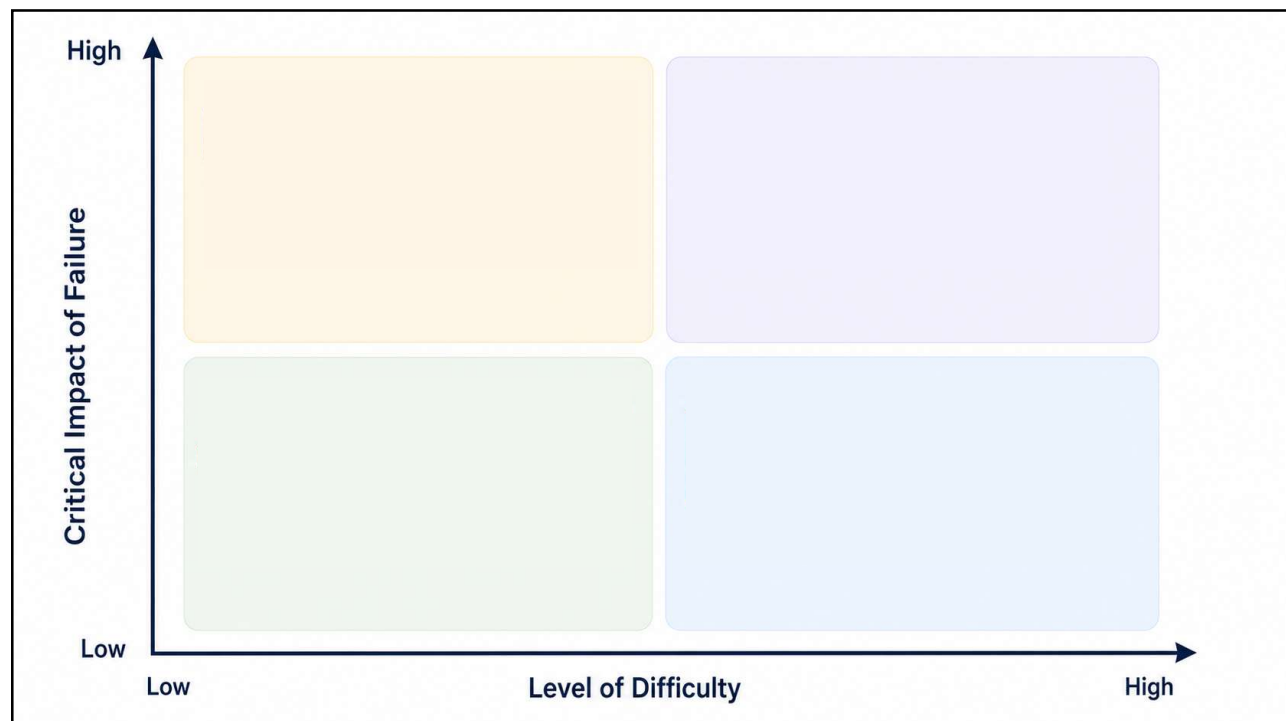
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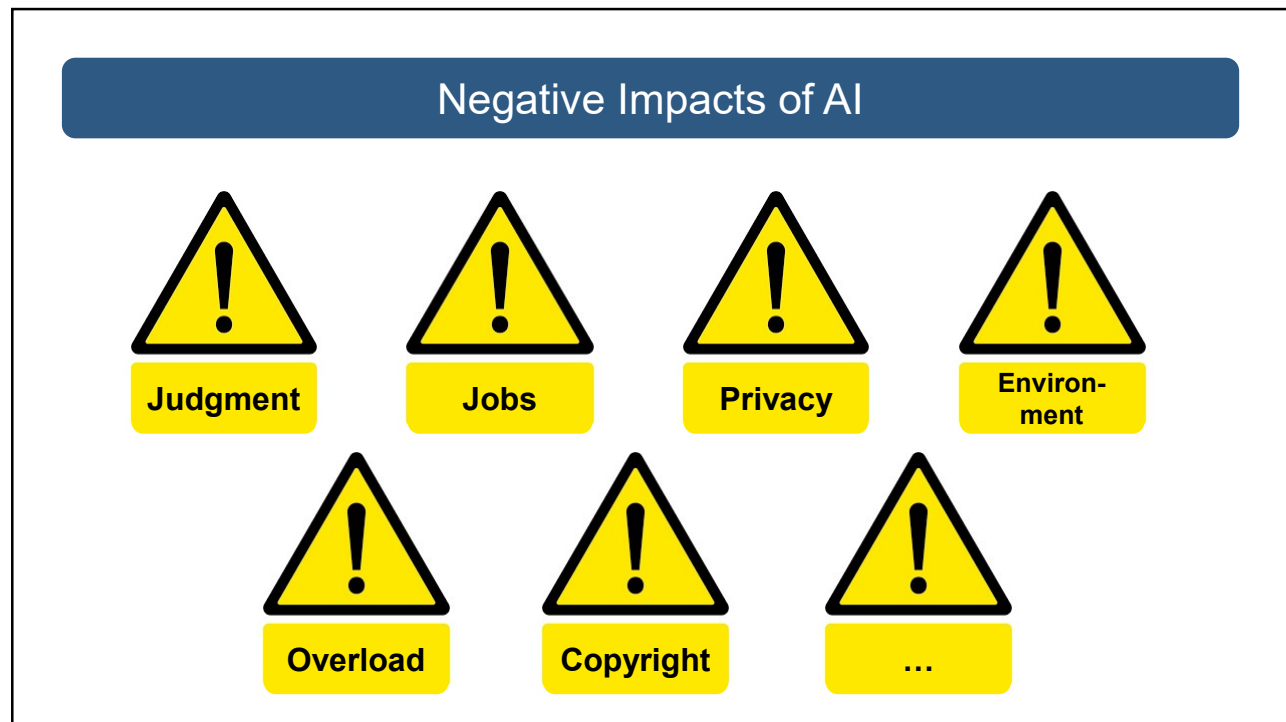
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Contributions by

Alejandra Zapata, Mike Zurakowski
Kaitlyn Lutz, Anay Ravelo,

Tips and resources used in the presentation

<https://bit.ly/m/WolfsAI>

live on June 2nd
wh13@cornell.edu



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