The Future of Healthcare Education with AI

Max Topaz, PhD, RN, FAAN

Columbia University School of Nursing

Columbia DSI

VNS Health

NLN Annual Summit Keynote

What if every student had a coach—and you gained an hour a day?

Design

Learn

Evaluate

Adopt—don't abdicate. Three moves: **Design → Learn → Evaluate** (with guardrails).

Plan for the next 45 minutes

1. Hook & goals
2. Evidence snapshot: what works / promising / not ready
3. AI in action: demos
4. Risks → guardrails that actually work
5. Educator playbook + standards + 30–60–90 day plan
6. Close & Q&A

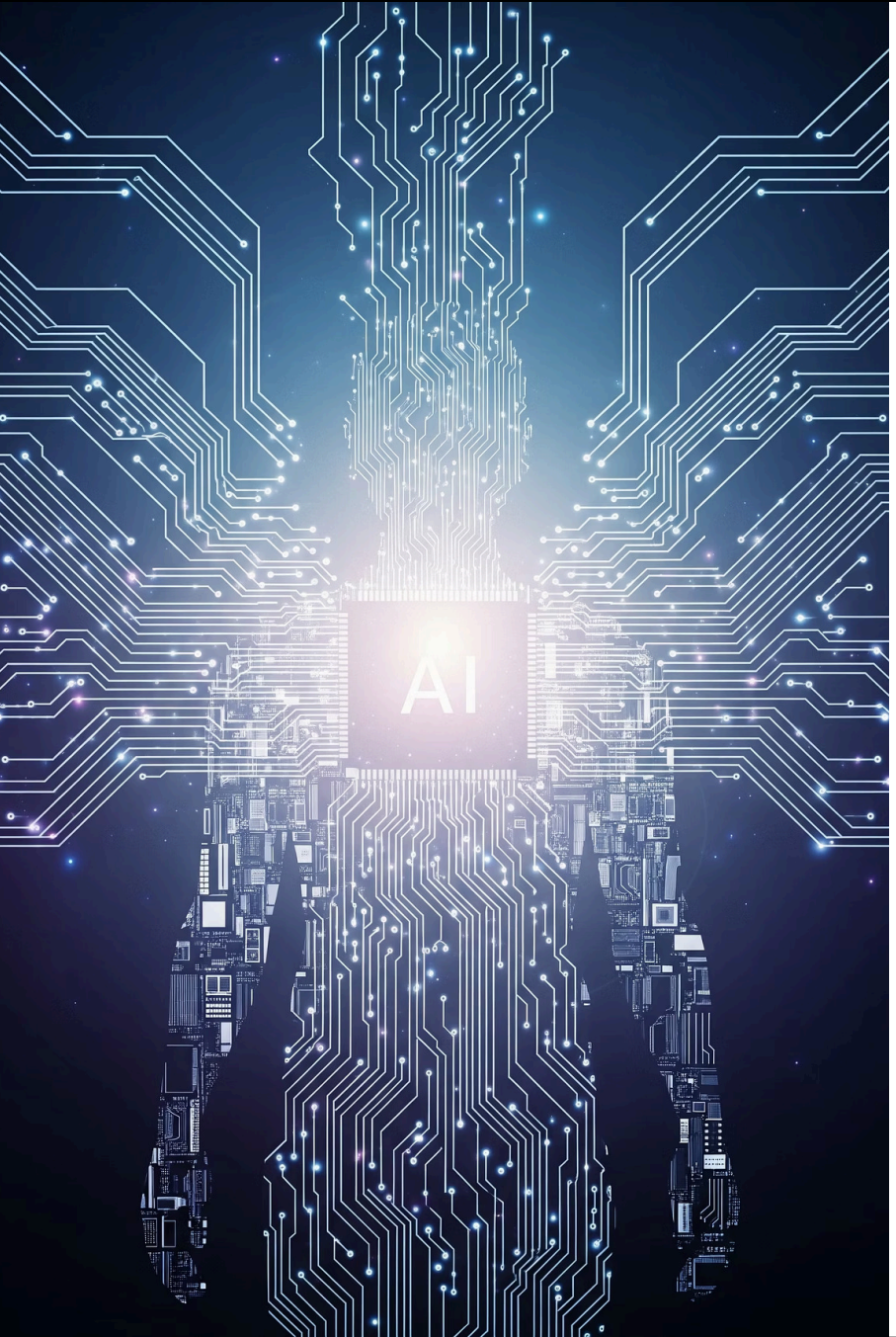
What matters most

Better clinical reasoning and critical thinking

Consistent, timely feedback at scale

Minutes back for mentorship—not busywork

Academic integrity preserved



Your AI Habits

How frequently do you use generative AI tools like ChatGPT, Perplexity, Claude, or Gemini in your daily work or personal life?

Never
I haven't started exploring it yet.

Once a month
Occasional use for specific tasks.

Once a week
Becoming a regular part of my routine.

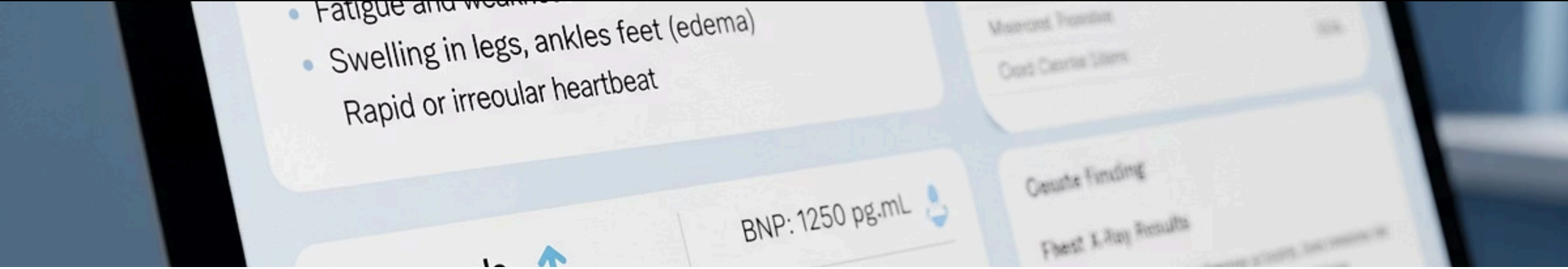
Almost daily
It's integrated into many aspects of my work.

Cannot live without it!
An essential tool for productivity and creativity.

Our running guardrails

- No PHI
- AI disclosure
- Verify facts
- Human-in-the-loop

(Topaz et al., 2025)



One case across the full learning cycle

De-identified Mr. J (acute HF):

- dyspnea, orthopnea, edema
- SpO_2 90% RA
- BNP 1,800
- K^+ 3.3
- CXR congestion

Student deliverable:

SBAR with a single-sentence **Recommendation**.

Rubric grades:

S20 / B20 / A30 / R30.

Demo part 1 — Dany designs

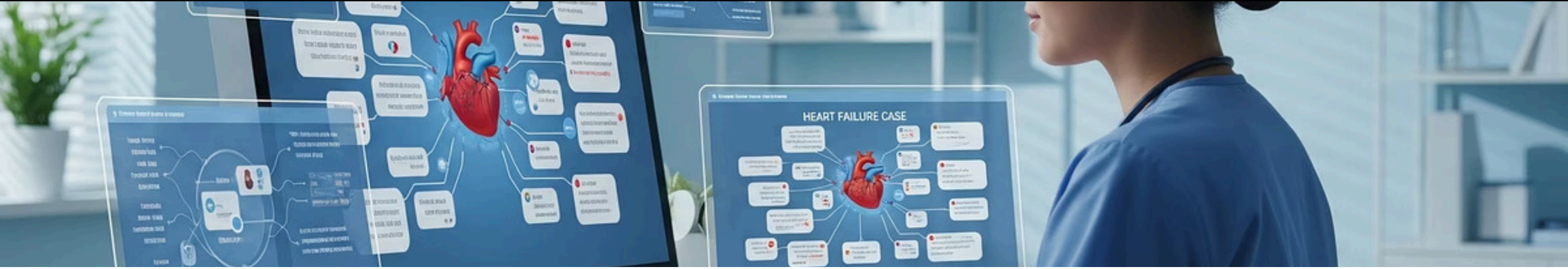
(GPT + Gemini + Gamma)

Watch for:

assignment clarity, verified facts, guardrails.

Outcome:

Evidence brief, exemplar SBAR, clean class presentation deck.



Demo part 2 — Sara learns

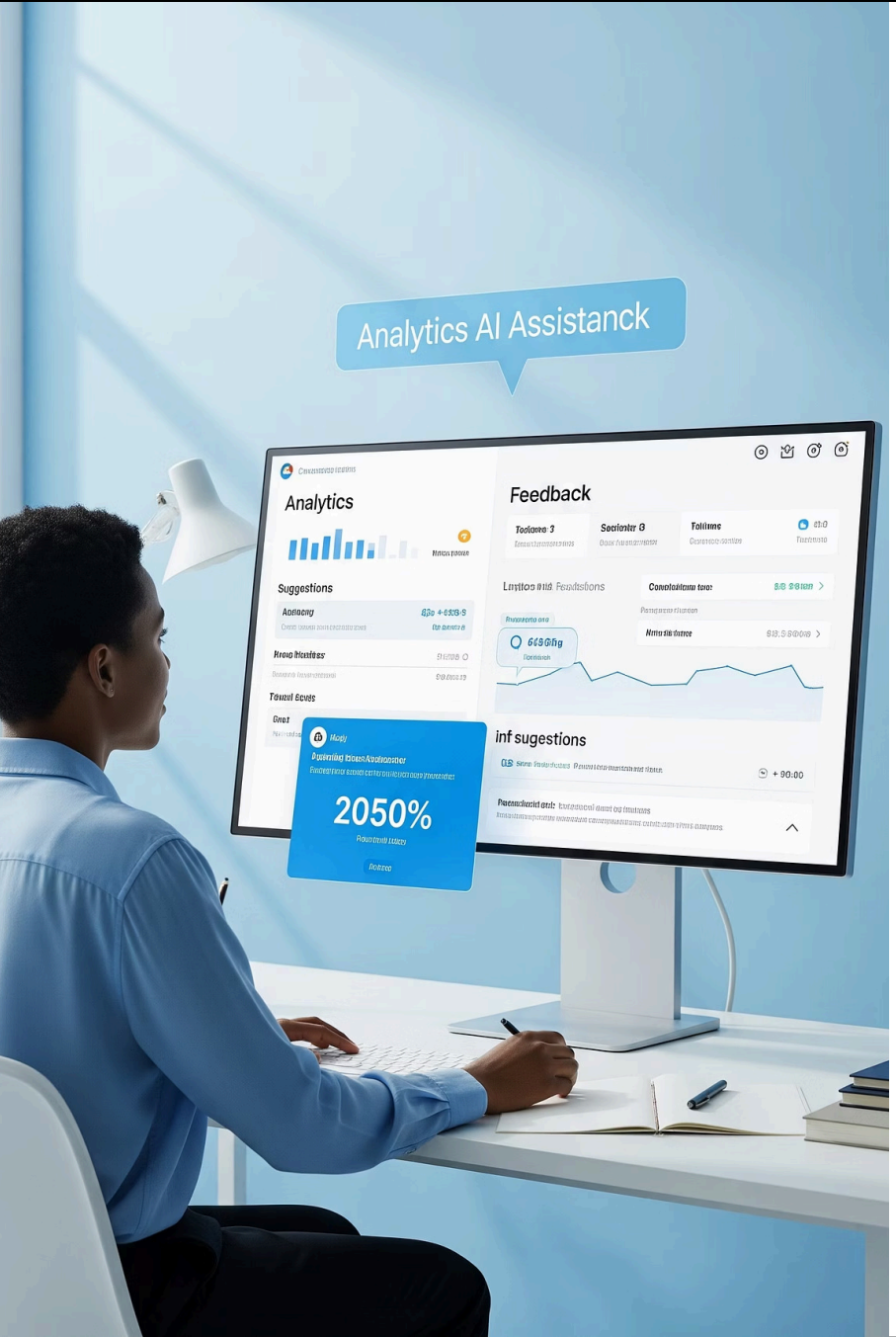
(Perplexity + GPT Study + NotebookLM)

Watch for:

quoted sources, rubric-guided coaching, mind map & podcast.

Outcome:

more personalized learning; student disclosure + verification.



Demo part 3 — Dany evaluates

(Claude + Perplexity)

Watch for:

section scores **and** process checks; cohort heatmap.

Outcome:

humane feedback; at-risk outreach; 2-week teaching plan.

YouTube

V2 NLN AI in education keynote

What just happened?

Dany Designs

Educator used AI to create clear assignments, develop exemplars, and streamline course material preparation.

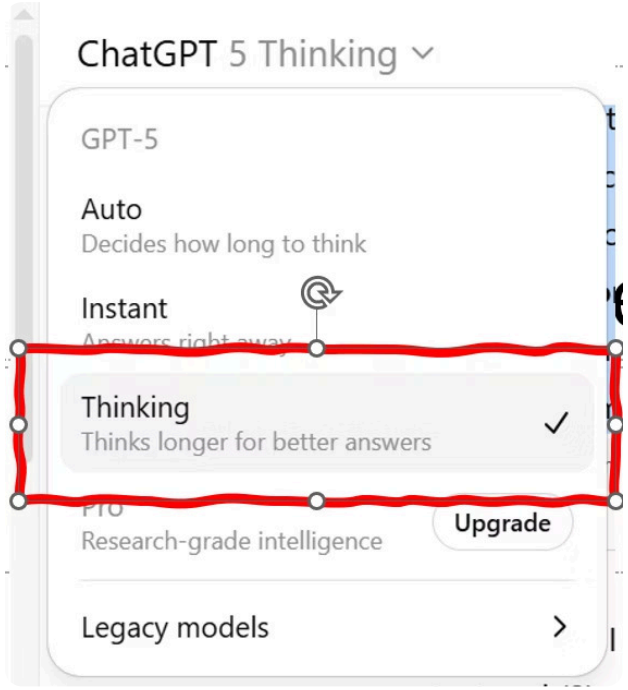
Sara Learns

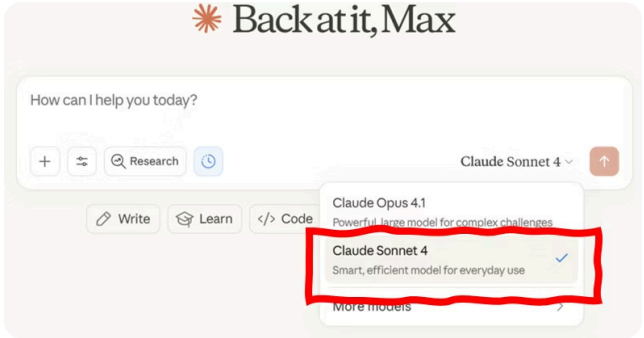
Student leveraged AI for personalized coaching, accessed verified sources, and engaged in safe practice repetitions.

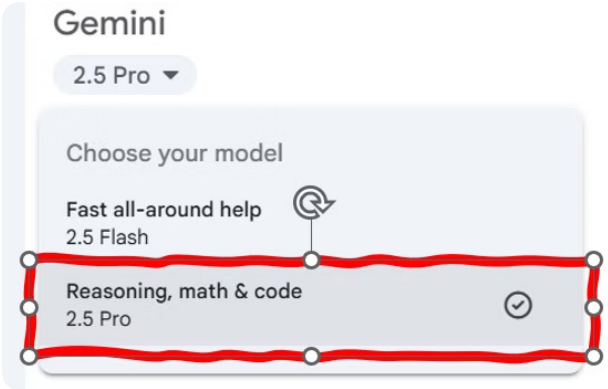
Dany Evaluates

Educator used AI to provide humane, data-driven feedback and inform future teaching strategies.

USE SMART AI—not baseline!







Evidence snapshot: what's working now

What's working now: AI-supported Simulation

- Safe, adaptive practice for clinical judgment and decision-making
- Strong signals for gains in critical thinking and problem-solving (quasi-experimental)
- Scales diverse cases/voices; zero risk to patients

Reference: Benfatah, D., et al. (2024). AI-assisted debriefing for improved critical reflection in simulation-based learning. *Nurse Education Today, 129*, 105916. https://doi.org/10.1016/j.nedt.2023.105916

What's working now: Assessment aids

Faster, more consistent comments, with human-in-the-loop grading.

AI-assisted scoring for select formats; faculty review edge cases.

Most useful for low-stakes or formative tasks. Ensure clear policy documentation.

Reference: University of Miami. (2024). Gradescope program evaluation: Efficiency and consistency in grading. (Institutional report/webpage).

What's working now: Course design/curation

AI tools are significantly streamlining the administrative burden of course design and content management, freeing up valuable faculty time.

Hours Saved

Drastically reduce time spent drafting decks, quizzes, and curriculum maps.

Content Alignment

Efficiently summarize narrative evaluations and align course content with desired learning outcomes.

Shift to Mentorship

Faculty time shifts from administrative tasks to high-value mentorship and debriefing with students.

Reference: Association of American Medical Colleges. (2024). AI in medical education: 5 ways schools are employing new tools. AAMC News.

What's working now: LLM tutoring/feedback

Personalized Coaching & Feedback

AI provides individualized support through adaptive quizzes, strategic hints, and rubric-guided feedback on student drafts.

Enhanced Learning Outcomes

Early data indicates improved understanding, critical thinking skills, and fostering of self-directed learning.

Responsible Implementation

AI tools should be leveraged as a "coach," with mandatory student disclosure and verification of AI-generated content.

Khlaif, Z. N., et al. (2025). Using generative AI in nursing education: Students' perceptions. BMC Medical Education, 25(1), 926. https://doi.org/10.1186/s12909-025-07416-z

Promising—and not ready (use with caution)

Promising:

- competency analytics
- adaptive cases

(Michalowski et al., 2025)

Not ready:

- black-box auto-grading
- careful with unvetted references
- "AI detectors" as policy

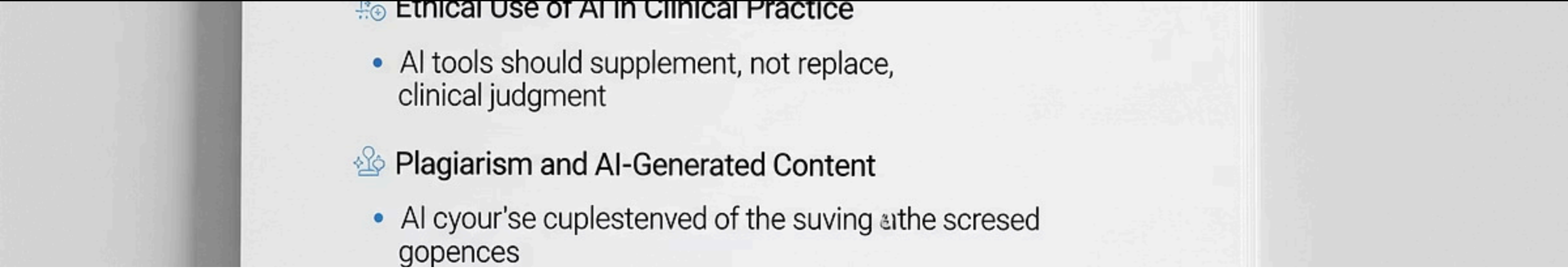
(Topaz et al., 2025)

Principle: pilot low-risk tasks first; keep faculty in control.

The overlooked dark side (why guardrails matter)

- Hallucinations and false citations
- Bias and inequities in feedback and cases
- Privacy/IP and professional boundaries
- Overreliance and deskilling without verification

Action: design for **disclosure, verification, bias checks, and privacy** (Topaz et al., 2025)



Policy you can drop in tomorrow (100 words)

> "AI tools may be used for **drafting and feedback**. Students must **disclose** AI use and **verify at least 3 factual claims** outside AI (textbook/guideline). Do **not** enter real patient information (no PHI). Final work must reflect your understanding; you are responsible for accuracy, citations, and professional judgment. AI outputs can contain errors or bias. **Prohibited:** undisclosed AI, caution with fabricated facts/references. Violations follow school academic integrity policy."

Educator Playbook—Step 1: Form a small AI working group

2–3 faculty across courses, 1 student, IT/security (maybe librarian, legal/ethics)

60-day charter: pick one course + use case; draft policy; define metrics

Outputs: syllabus policy, prompt pack, rubric + process checks, evaluation plan

(Sockolow et al., 2025)

Educator Playbook—Step 2: Publish a clear policy + syllabus statement

Allow:

drafting, practice, formative feedback—**with disclosure**

Require:

verify facts outside AI; **no PHI** in public tools

Prohibit:

fabricated references; undisclosed AI; AI assigning grades

Grade:

the **work + process**, not "detector" scores

(Topaz et al., 2025)

Educator Playbook—Step 3: Convert one assignment (process-graded)

Example:

SBAR on acute HF; **R = one sentence**; 45–60 minutes

Rubric:

S20/B20/A30/R30 + process checks (disclosure, verify evidence, bias check)

(Topaz et al., 2025)

Feedback:

4 section scores, **two concrete edits**, refined "R"

Keep artifacts:

AI note, verification list, references

Educator Playbook—Step 4: Teach a verification workflow

"Verify" targets: thresholds, first-line actions, dosing/monitoring

Acceptable sources: guidelines, textbooks, systematic reviews

Add a 1-line **bias check** (assumptions, access, language)

(Topaz et al., 2025)

Educator Playbook—Step 5: Run a low-stakes pilot; measure signal

One section; 4–6 weeks; collect rubric data automatically

Metrics: minutes saved/faculty; "A/R" gains; verification compliance; reference accuracy

Oversight: privacy review; tool vetting; quick faculty calibration

(Michalowski et al., 2025)

Educator Playbook—Step 6: Share results; expand thoughtfully

Close the loop: grade analytics → top 3 error patterns → **2-week teaching plan**

Scale to a second assignment/course; keep guardrails consistent

Build capability: workshops, prompts bank, vetted tool list

(Sockolow et al., 2025)

Standards alignment

AACN Essentials:

informatics/tech; quality & safety; clinical judgment

INACSL Standards:

simulation design, facilitation, integrity

NLN priorities:

innovation, data science, rigorous methods

AI supports – not replaces – professional judgment.

Summary: 30–60–90 day adoption plan

30 days:

choose one course + one assignment; publish policy; faculty calibration

1

2

60 days:

run pilot; collect rubric data; track minutes saved

90 days:

3

cohort analytics→ micro-teaching plan; share outcomes; scale to a second use case

What to stop / what to start

Don't do:

- black-box auto-grading
- chasing AI detectors
- assignments AI can do alone

Do:

- process-graded tasks
- quoted evidence
- disclosure + verify
- personalized feedback

NLN Vision on AI in Nursing Education — Key Recommendations (Published TODAY)

Establish AI Standards

Develop national AI literacy and competency standards, ranging from foundational to advanced and role-specific.

Build Faculty Capacity

Scale faculty development through short courses, micro-credentials, and interdisciplinary partnerships.

Integrate AI in Curricula

Weave AI into nursing curricula with hands-on, experiential learning, and agile updates to content.

Invest in Infrastructure

Ensure equitable access to AI-enabled platforms, advanced simulation technologies, and robust data analytics tools.

Strengthen Governance

Reinforce school oversight, align with accreditation bodies, and uphold quality standards for AI integration.

AI Strategic Group Members

Co-Chairs:

Jing Wang, PhD, MPH, RN, FAAN
Dean and Professor, Florida State University College of Nursing

Amar Patel, DHSc, MBA, MS, NRP, CHSE, FSSH
Co-Founder and Principal, Power One Consulting

Members:

Maxim (Max) Topaz, PhD, RN, MA, FAAN, FIAHSI, FACMI
Associate Professor, Columbia University

Michael Ackerman, PhD, RN, FCCM, FNAP, FAAN
Clinical Professor, Director of Master of Healthcare Innovation Program and Center for Healthcare Innovation and Leadership, Ohio State University

Michael Cary, PhD, RN, FAAN
Associate Professor and Elizabeth C. Clipp Term Chair of Nursing, Duke University

Daniel Salcedo, MD, MHPE
Executive Director, Belmont University Center for Interprofessional Engagement and Simulation

Lucas Huang BSEE, BSAE
Executive, Laerdal Labs DC

Linda Christensen, EdD, JD, MSN, RN, CNE, FAAN
Chief Administrator Officer, National League for Nursing

David Marshall, JD, DNP, RN, FAONL, FAAN
Senior Vice President and Chief Nursing Executive, Cedars-Sinai

Kathleen McGrow, DNP, MS, RN, PMP, FHIMSS, FAAN
Chief Nursing Innovation Officer, Microsoft

Rebecca Love, RN, BS, MSN, FIEL
Chief Clinical Officer, Quadrivia AI

NLN Staff:

Kellie Bryant, DNP, WHNP, CHSE, FSSH, FADLN, FAAN
Director of the Center for Innovation in Education Excellence

Closing thought

Adopt—don't replace.

AI should **coach** students and **amplify** educators, never replace either.

Your Patients Are Already Using AI for Health

230M

Weekly AI Health Questions

Patients worldwide are using AI to ask health questions on platforms like ChatGPT every week.

40M+

Daily Engagements

Over 40 million individuals interact with AI for health-related queries every single day.

60%

U.S. Adult Adoption

Three in five U.S. adults have used AI for health in the past three months.

70%

Off-Hours Consults

The majority of health conversations powered by AI occur outside traditional clinic hours.

Bottom line: This is already happening — with or without us.

(Source: OpenAI, "AI as a Healthcare Ally" Report, January 2026)

The New Frontier: AI Meets Your Health Records

ChatGPT Health (Jan 2026)

Connect medical records, labs, Apple Health, and wellness apps directly for personalized insights.

Anthropic's Claude Integration

Now also integrates with health records via connected services like HealthEx, expanding AI-driven health support.

Interpretive & Preparatory Tools

These platforms interpret lab results, prep users for appointments, compare insurance plans, and track health patterns.

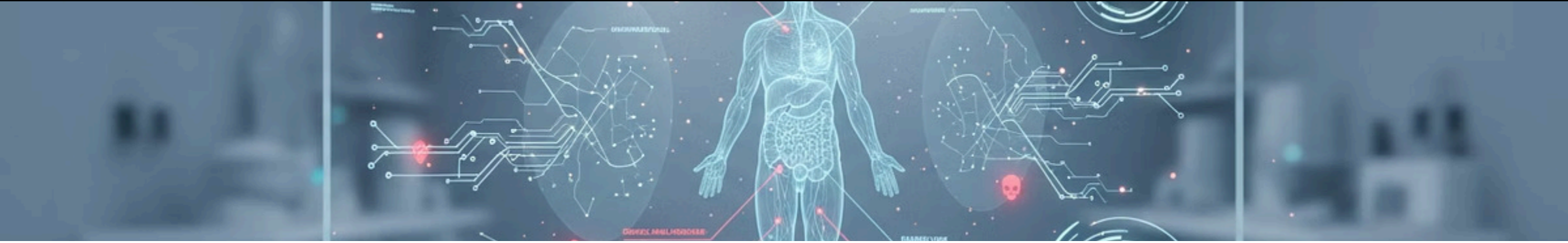
Siloed & Encrypted Conversations

All interactions are private, encrypted, and explicitly not used to train models, ensuring patient confidentiality.

"I personally connected my health records — labs, conditions, medications — to Claude."

Raise your hand: would you do this?

(Sources: OpenAI, January 7, 2026; Anthropic/Claude connected tools)



The Largest Uncontrolled Experiment in Healthcare History

The Problem: Unreliable AI

- Healthcare AI hallucination rates: ~4% for top models, up to 16% overall
- When fed incorrect information, chatbots endorsed fictional medical terms 50–83% of the time
- AI uses MORE confident language when hallucinating — 34% more likely to say "definitely" or "certainly" when wrong
- Not HIPAA-regulated in consumer settings — OpenAI confirmed this explicitly
- No FDA oversight for consumer health AI chatbots

For Educators: Teach Verification

- Our students and patients are using these tools NOW
- They cannot tell when the AI is wrong
- We must teach verification, not avoidance
- "Adopt — don't abdicate" applies to health AI too

(Sources: Mount Sinai/Communications Medicine, 2025; AllAboutAI Hallucination Report, 2025; MIT, 2025)

Let's Connect!

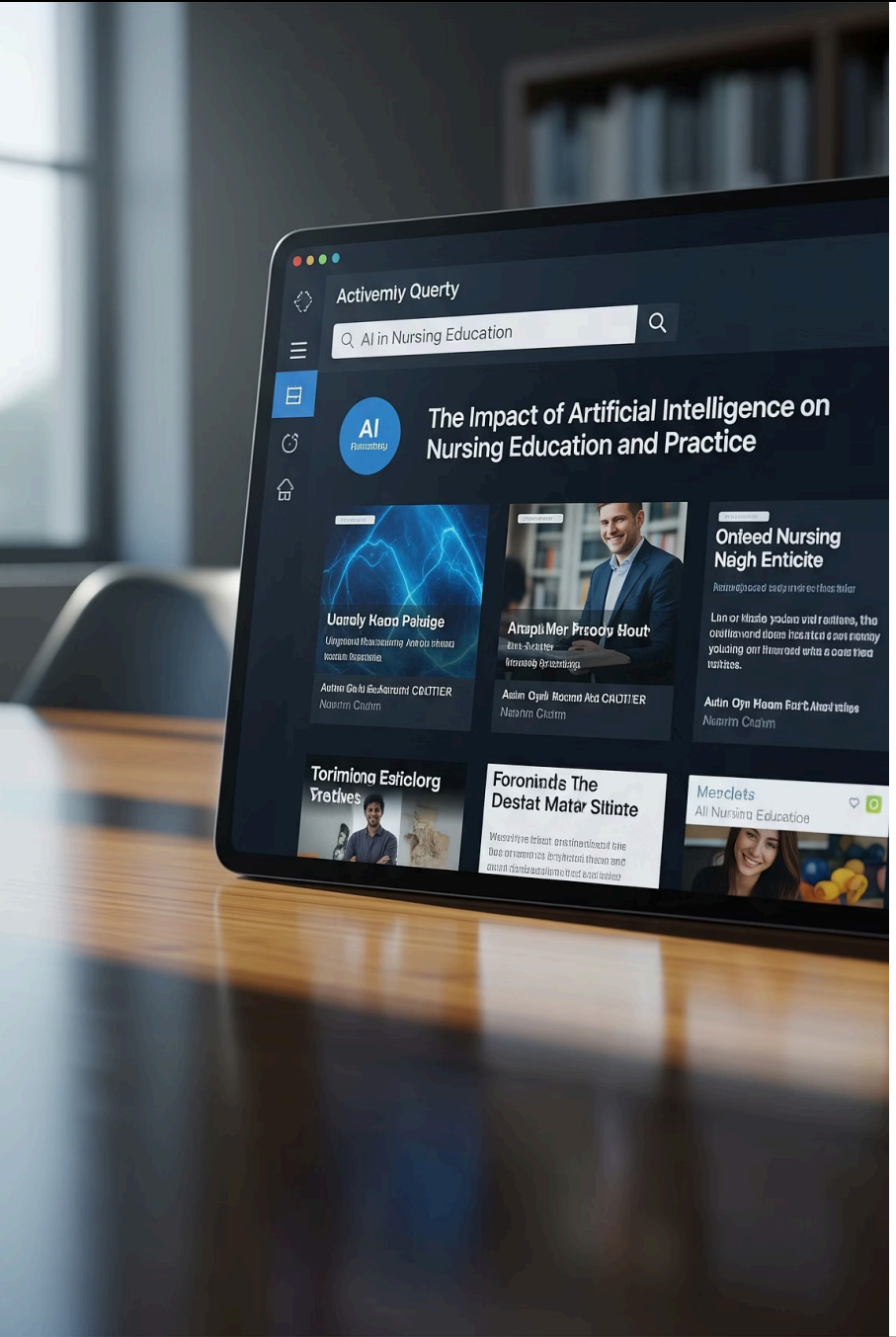
www.linkedin.com/maxtopaz

Maxim (Max) Topaz PhD, RN, MA, FAAN, FIAHSI, FACMI

AI & Nursing/Health Informatics

Q&A

What would make this doable in your course next month?



Selected references (APA)

- Topaz, M., et al. (2025). *The overlooked dark side of generative AI in nursing: An international think tank.* Journal of Nursing Scholarship.
- Michalowski, M., et al. (2025). *An AI-enabled nursing future with no documentation burden: A vision for practice.* Journal of Advanced Nursing.
- Sockolow, P., et al. (2025). *[AI governance in nursing/education—position and implementation guidance].* Nursing Outlook.