AI IN UNDERGRADUATE RESEARCH

Faculty Learning Community 2026

Elevating — Not Replacing — Critical Thinking Across Disciplines

University of Louisiana at Lafayette

Meet Our Team

FLC BOSS

Dr. Sherry Krayesky-Self

ADVANCE Liaison

Dr. Laura Guichard Latiolais

FLC Facilitator
Accounting

Dr. Lauren Auverset van Gerwen

Communication

Dr. Farzad Ferdowsi

Electrical & Computer
Engineering

James Boffenmyer

Assoc. Director,
Learning Center

Dr. Chee Hyeon Choi

Piano & Piano
Pedagogy

Dr. Pavel Samsonov

Educational Curriculum
& Instruction

Presentation Overview

Six faculty-led projects demonstrating how AI elevates — not replaces — critical thinking, analysis, and scholarly inquiry across disciplines.

Course / Project	Lead	Discipline	AI Tools Used
ACCT 405	Dr. Laura Latiolais	Accounting	Clarity · CoPilot · Claude · Napkin AI · ChatGPT · Figures Lab
CMCN 331	Dr. Lauren Auverset	Communication	Notebook LM · ChatGPT · Copilot · Zotero · Canva
Learning Center SI	James Boffenmyer	Student Support	Claude · ChatGPT · CoPilot · NotebookLM
PS-CARE Lab	Dr. Farzad Ferdowsi	Engineering	Replit + GPT APIs
MUS 272	Dr. Chee Choi	Piano Pedagogy	Copilot · Lumen5 · Canva AI · Gemini · Claude · Napkin AI
IRED 320 & 501	Dr. Pavel Samsonov	Education	ChatGPT · Gemini · Copilot · MagicSchool + 9 tools

What AI Adds Across the Research Process

Enhanced Mentoring Focus

Faculty shift from answering routine questions to deeper guidance on conceptual development

Improved Critical Evaluation

Students practice verifying AI outputs, building research literacy and academic integrity habits

Accelerated Inquiry Depth

Students iterate faster — arriving at meetings with sharper questions and refined ideas

Fostering Creativity

AI-assisted visualization and presentation tools open new creative pathways for scholarly work

Practical Strategies for Integrating AI into Undergraduate Research

01

Start with Simple AI Tasks

Begin AI integration with low-stakes tasks that build student confidence and research literacy before advancing to complex workflows.

02

Model Effective Prompting

Faculty should demonstrate clear, specific input techniques — the R-T-C-F Framework (Role · Task · Context · Format) — to improve AI output quality.

03

Emphasize Verification Practices

Require students to cross-check AI-generated content. Teach them to ask AI to explain its reasoning, then verify that reasoning themselves.

04

Gradual Expansion of AI Use

Progressively introduce more complex AI-supported research tasks as students gain responsible use skills. Draft first, then use AI for revision.

CONTRIBUTOR

Dr. Laura Guichard Latiolais

Assistant Professor of Accounting

Dr. Laura Guichard Latiolais is an Assistant Professor of Accounting at UL Lafayette, where she teaches and researches auditing, accounting education, and judgment and decision-making. She earned her Ph.D. from Louisiana State University (2021), and her research appears in journals such as Accounting, Organizations & Society, The European Accounting Review, and The CPA Journal. She holds three professorships: the Charles & Mona Trahan/BORSF Professorship, the Mr. & Mrs. Tom Galloway/BORSF Endowed Professorship, and the Mr. & Mrs. E.P. Nalley/BORSF Endowed Professorship. Dr. Guichard Latiolais has received numerous honors, including the John T. & Sandra B. Landry Endowed Award for Teaching Excellence, the Outstanding Undergraduate Research Mentor Award, the Outstanding Faculty Advisor Award by UL Students, the MCOBA Service Faculty Award, and the Rising Star Award. Most recently, she has been recognized with UNIV 100 Instructor of the Year (Fall 2025), the MCOBA Best Faculty Mentor Award (2026), and the ADVANCE Challenge Coin. She serves as FLC Facilitator and Accounting ASRE Pathways Coordinator.

Dr. Laura Guichard Latiolais

Three-Phase AI Integration for Undergraduate Research

1. Phase 1 — Clarity AI: Introduced the research idea, topic framing, the what, why, and how.
2. Phase 2 — Microsoft CoPilot: Used for summarizing academic papers in the literature review (not sourcing — students verified credible sources independently).
3. Phase 3 — Presentation & Visuals: Demonstrated Napkin.ai, Claude, ChatGPT, and Figures Lab for creating polished research presentations.
4. AI Monitoring: Used dedicated tools to track and support responsible AI usage in written assignments throughout the semester.

See Full Slides

Dr. Laura Guichard Latiolais

ACCT 405 · Accounting

✓ What Worked

- Clarity AI effectively onboarded students to unfamiliar research topics
- CoPilot summaries helped students comprehend complex academic papers faster
- Visual AI tools made presentation creation accessible for all skill levels
- Students gained multi-tool fluency — knowing which AI to use for each task

✗ Challenges

- Finding credible sources: AI is not reliable — students must locate vetted sources independently
- Monitoring AI usage in writing assignments required deliberate scaffolding and tools
- Some students initially over-relied on AI text rather than developing their own arguments

★ Tips & Recs

- Assign AI tools by stage: different tools for ideation, literature review, and presentation
- Explicitly teach students what AI cannot do (source credibility, original argumentation)
- Pair AI use with a verification requirement — never accept AI output unchecked
- Model AI workflows live in class before expecting students to replicate them

SUCCESS STORIES

Dr. Laura Guichard Latiolais

ACCT 405 · Accounting

STUDENT WINS

- Students published undergraduate research in peer-reviewed accounting journals
- Multiple students presented at the MCOBA Research Showcase Competition — placing competitively
- Students presented at Posters at the Capitol (Baton Rouge, June 2025 & Spring 2026)
- LEAF Award recipients recognized for research mentorship outcomes
- Students gained measurable AI literacy applicable to their future accounting careers

FACULTY WINS

- Named UNIV 100 Instructor of the Year (Fall 2025)
- Received MCOBA Student Research Showcase Best Faculty Mentor Award (2026)
- Awarded the ADVANCE Challenge Coin (2026) for innovation in faculty development
- Published research with undergraduate students

"Their work is now peer-reviewed and published — and AI in Undergraduate Research helped them get there."

CONTRIBUTOR

Dr. Farzad Ferdowsi

Associate Professor, Electrical & Computer Engineering

PS-CARE Lab · University of Louisiana at Lafayette

Dr. Farzad Ferdowsi is an Associate Professor of Electrical and Computer Engineering at UL Lafayette and a nationally recognized researcher in power and energy systems, microgrids, digital twinning, and AI-driven control. He earned his Ph.D. from Florida State University (2017) and has authored 30+ peer-reviewed publications in top IEEE journals and holds multiple U.S. patents. As Principal Investigator or Co-PI on over $60 million in sponsored research from NSF, DOE, and NASA, he leads some of the most externally funded research at UL Lafayette. He is also Founder and CEO of Ferdynamics LLC, translating research into real-world energy solutions.

Dr. Farzad Ferdowsi

Building a Custom AI Chatbot as a 24/7 Research Mentor

1. Jan–Feb: Platform setup and architecture — built on Replit + GPT APIs with curated PS-CARE Lab content (power systems domain).
2. Mar–Apr: Pilot testing with undergraduate researchers — gathered feedback and refined the bot's responses and scope.
3. May: Full deployment and evaluation — students accessed the chatbot at edu-chat-farzadferdowsi.replit.app for real-time mentoring support.
4. Design principles: Curated content only (no generic internet), equal access for all students, faculty remains primary mentor.

Proof that a domain expert — not a software team — can build meaningful AI.

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Dr. Farzad Ferdowsi

PS-CARE Lab · Engineering

✓ What Worked

- 24/7 availability removed a key bottleneck — students stopped waiting days for answers
- Tailored responses to each student's specific project kept mentoring contextual
- Faculty time shifted to deeper mentoring: research design, publication, and proposal strategy
- Students iterated faster with real-time feedback, arriving at meetings with sharper ideas

✗ Challenges

- Curation requires heavy upfront faculty effort — content must be manually selected and organized
- Some students over-relied on the bot and skipped independent verification
- Out-of-scope questions produced weak or unhelpful responses
- Token costs come out of pocket — every student question has a real financial cost

★ Tips & Recs

- Start narrow: deploy for one lab or one course first before scaling
- Model good prompting — teach students to ask precise, well-framed questions
- Require verification, not blind acceptance of chatbot responses
- Any faculty domain expert can build this — coding background not required

SUCCESS STORIES

Dr. Farzad Ferdowsi

PS-CARE Lab · Engineering

STUDENT WINS

- Grant-funded researchers investigated complex technical questions overnight, arriving at meetings with sharper ideas
- URAP and senior design students used the chatbot to self-onboard onto power systems concepts independently
- S-STEM students gained hands-on experience with an AI-driven research workflow — a career-ready skill
- Students developed a culture of iteration rather than waiting for validation at every step

FACULTY WINS

- Built a production AI tool as a non-CS faculty member — proving domain experts can lead AI innovation
- Freed up mentoring bandwidth for higher-level research design, publication strategy, and grant proposals
- Contributed a replicable STEM lab model shareable across UL Lafayette disciplines
- Demonstrated ethical AI leadership: faculty as guide, not replaced by technology

"I built a mentor that never sleeps, so I could be a better one when I am awake."

CONTRIBUTOR

Dr. Lauren Auverset van Gerwen

Assistant Professor, Communication

CMCN 331 Strategic Communication Research Methods

Dr. Lauren Auverset van Gerwen is an Assistant Professor of Strategic Communication at UL Lafayette, holding a Ph.D. from The University of Alabama, and is the 2024 – 2027 Larry Sides BORSF Endowed Assistant Professor and ADVANCE Student Research Experience Pathways Coordinator. Her research sits at the intersection of media effects and social psychology, focusing on social media, parasocial relationships, and self-presentation, and she directs the Cypress Communication and Connective Media Lab (CCL). She is a co-author of the forthcoming book Parasocial Media: A New Era of Parasocial Interaction and Media Evolution (2026), a recipient of UL Lafayette's Outstanding Master's Mentor Award, and College of Liberal Arts Rising Star Research Award (2024). Her AI in ASREs project reflects her commitment to equipping students with rigorous, ethical research skills before introducing AI as a strategic support tool.

Dr. Lauren Auverset van Gerwen

AI as a Research Support Tool — Scaffolded and Strategic

1. Students learned core research skills offline first — defined RQs, initiated topic exploration, and built literature review frameworks before any AI was introduced.

2. In-class workshops: NotebookLM organized and summarized pre-approved academic articles; ChatGPT and Copilot helped brainstorm and refine research topics conversationally.

3. Skill building: Guided prompt writing, verification practice, documenting AI's role in the process, and adhering to strict academic integrity standards.

4. Faculty-student iteration: Each group received individual mentorship on conceptual refinement, analytical reasoning, and methodological fit using AI as a check tool.

Students drafted hypotheses first — then compared their wording to AI-edited versions.

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Dr. Lauren Auverset van Gerwen

CMCN 331 · Communication

✓ What Worked

- NotebookLM especially effective for literature review summaries — source hallucination risk eliminated because students uploaded only pre-approved journals
- ChatGPT worked well for narrowing topics and developing literature review outlines
- AI feedback on hypotheses helped students see where their own wording was already strong
- NotebookLM created a safer, bounded pathway for literature support grounded in uploaded sources

✗ Challenges

- Students still needed instructor guidance to evaluate whether AI suggestions were methodologically appropriate
- AI improved wording without always understanding the logic of the study — strong prompting was essential
- Biggest risk: students accepting polished phrasing before verifying whether the research logic fit

★ Tips & Recs

- Require students to draft first, then use AI for revision and comparison
- Use AI outputs as discussion material: What improved? What got worse? What changed meaning?
- Pair AI with bounded source tools like NotebookLM to control hallucination risk
- Teach students to ask AI to explain its reasoning — then verify that reasoning themselves

SUCCESS STORIES

Dr. Lauren Auverset van Gerwen

CMCN 331 · Communication

STUDENT WINS

- Students became more confident evaluating their own hypotheses and research questions
- One group that had all the right pieces but struggled with structure made a major breakthrough using ChatGPT support
- Students used AI to clarify and organize ideas without losing ownership of the research process
- Workshops created teachable moments about accuracy, authorship, and methodological fit

FACULTY WINS

- Workshops made AI literacy visible and teachable in real time — a model for responsible integration
- Demonstrated that structured, scaffolded AI use strengthens rather than shortens student thinking
- NotebookLM proved bounded AI tools can support academic rigor without sacrificing source integrity
- Created a replicable workshop model applicable across communication and social science disciplines

"AI integration helped students build confidence, not just efficiency."

CONTRIBUTOR

James Boffenmyer

Associate Director, The Learning Center

SI Leader Program · University of Louisiana at Lafayette

James Boffenmyer holds a Doctor of Education from UL Lafayette and serves as Associate Director of The Learning Center, leading the university's Tutoring, Supplemental Instruction, and Academic Coaching programs. His background spans instructional design, mathematics education, and higher education administration, with prior experience at Florida International University, South Louisiana Community College, and several other institutions. He brings expertise in learning experience design and LMS administration to his student support work at UL Lafayette. His AI in ASREs project makes a concrete, data-driven case for how AI tools can reclaim student-facing time by eliminating administrative bottlenecks in peer-led academic support programs.

James Boffenmyer

AI Tools Reducing Administrative Burden for Student Leaders

1. Context: The Learning Center's SI program places student leaders in courses to lead supplemental sessions — each leader attends class, meets with professors, runs 4 hours of sessions, and completes planning documentation weekly.

2. Challenge: To maintain SI certification, all activities within each session must be documented — historically requiring 2 hours per week per SI Leader.

3. Solution: SI Leaders now use Claude, ChatGPT, CoPilot, and NotebookLM for documentation and planning, reducing weekly time to 30 minutes.

4. Impact: 1.5 hours per week saved per SI Leader — for Spring 2026, this amounts to $75/week per leader, or $1,200 per 16-week semester.

Time saved on documentation = more time for actual student support.

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James Boffenmyer

✓ What Worked

- Documentation time reduced from 2 hours to 30 minutes per week per SI Leader — a 75% reduction
- Real cost savings: $1,200 per SI Leader per semester allows The Learning Center to hire additional tutoring support
- SI Leaders reported higher satisfaction with their role, spending more time on actual student interaction
- AI handled the structured, formulaic parts of documentation freeing cognitive energy for teaching

✗ Challenges

- Initial setup required training SI Leaders on appropriate AI use for documentation
- Documentation quality requires supervisory review; AI drafts still need human verification
- Tool access and consistency across different student workers varied at first

★ Tips & Recs

- Identify the most formulaic, time-consuming parts of student worker roles — those are ideal for AI assistance
- Use a combination of tools: Claude and ChatGPT for writing, NotebookLM for organizing session notes
- Train student workers on AI documentation skills — it prepares them for workforce expectations
- Track the time and cost savings — concrete data builds institutional buy-in for AI adoption

SUCCESS STORIES

James Boffenmyer

Learning Center · SI Program

STUDENT WINS

- Students supported by the SI Program show improved retention and course performance in high-DFW courses
- SI Leaders gained practical AI workflow skills directly applicable to their future careers
- Students in supported courses received more personalized attention — leaders freed from paperwork had more energy for teaching
- The documented cost savings made a financial case for AI adoption that supported broader program investment

FACULTY WINS

- Demonstrated a concrete, measurable ROI for AI adoption — $1,200+ saved per semester per leader
- Created a scalable model: every additional SI Leader hired benefits immediately from the AI documentation workflow
- Established The Learning Center as a leader in responsible, practical AI integration for student support
- Freed administrative bandwidth to focus on program quality, not paperwork management

"The hours we saved on documentation went directly back to students — that's the whole point."

CONTRIBUTOR

Dr. Chee Hyeon Choi

Assistant Professor, Piano and Piano Pedagogy

MUS 272 Piano Pedagogy II · University of Louisiana at Lafayette

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Dr. Chee Hyeon Choi is an Assistant Professor of Piano and Piano Pedagogy at UL Lafayette and an internationally active performer and scholar. She is the Founder and Director of the UL Piano Institute and UL Summer Piano Camp and serves as 2026 Keynote Speaker at the Korean Piano Pedagogy Symposium. She has presented and performed at Carnegie Concert Hall, the Heartland Festival Orchestra, and national conferences including Music Teachers National Association and the National Conference on Keyboard Pedagogy. Her AI in ASREs project is one of the first to rigorously examine AI integration in music performance and arts pedagogy.

Dr. Chee Hyeon Choi

Multi-Tool AI Integration Across Pedagogy and Performance

1. Research & Writing: Copilot and NotebookLM used for journal assignments, literature reviews, research proposals, and poster development.
2. Presentation & Creative: Canva AI, Lumen5, and Napkin AI used for creating presentations, Piano Workshop materials, and promotional/instructional content.
3. Resource Management: Claude AI converted the UL Piano Pedagogy Resource Catalog (1,600+ entries) from a paid .csv system to open-source Zotero (BibTeX format).
4. Performance Feedback: Gemini used to generate AI-based performance feedback — analyzing real-life recordings and comparing with typical human teacher lesson feedback.

Converting 1,600 pedagogy resources from paid to open-source: a real infrastructure win.

See Full Slides

Dr. Chee Hyeon Choi

✓ What Worked

- Clear research direction and stronger thesis statements emerged from AI-assisted literature reviews
- Increased productivity: students produced higher scholarly output with AI handling organizational scaffolding
- Student independence grew significantly — developing autonomy in research and academic writing
- AI assisted in organizing recitals, student schedules, and creative projects — expediting administrative tasks

✗ Challenges

- Terminologies were inadvertently modified during diagram conversion (required manual correction)
- Irrelevant or incorrect visuals appeared in AI-generated content — needed expert oversight
- Gemini-generated video feedback on Baroque keyboard music displayed a digital keyboard instead of period-appropriate instruments
- AI feedback was extensive but generalized — lacked the nuance and empathy of human teaching

★ Tips & Recs

- Use AI for scaffolding and drafts, not final judgment — especially in art and performance fields
- A comprehensive study of AI capabilities AND limitations leads to more selective, empowered student use
- Human teachers provide real-time nuances, empathy, and personal growth that AI cannot replicate
- Document AI limitations openly with students — it builds critical thinking, not distrust

SUCCESS STORIES

Dr. Chee Hyeon Choi

MUS 272 · Piano Pedagogy

STUDENT WINS

- Emily J. (Pedagogy student) presented research at Posters at the Capitol, March 2026 — supported by Copilot for scholarship development
- Students presented at the UL Piano Institute Piano Workshop using AI-generated supporting materials
- Claude AI successfully converted 1,600+ pedagogy resources to open-source Zotero — making the catalog free and accessible
- Students developed entrepreneurial mindsets through creative AI-assisted projects, preparing for careers in music education

FACULTY WINS

- 2026 Keynote Speaker at the Korean Piano Pedagogy Symposium — internationally recognized expertise
- Founder/Director of the UL Piano Institute and UL Summer Piano Camp — building educational infrastructure
- Louisiana Music Teachers Association College Faculty Forum Chair and State Competition Chair
- Demonstrated that AI has a place even in the arts — with appropriate scaffolding and human oversight

"Through AI, students better understand its limitations — leading to more selective use and greater autonomy."

CONTRIBUTOR

Dr. Pavel Samsonov

Associate Professor, Curriculum & Instruction

IRED 320-005 & IRED 501 · College of Education

Dr. Pavel Samsonov is an Associate Professor of Curriculum and Instruction in the College of Education at UL Lafayette, specializing in educational technology, instructional video, and online learning design. He earned his Ph.D. from Texas A&M University and is a current Fulbright Specialist (2025–present), conducting faculty development and teaching innovation seminars internationally. His honors include the University Online Course Designer Award, Online Teacher Award, and multiple endowed professorships supported by the Louisiana Board of Regents. His AI in ASREs project — a comparative study of 9 tools across 80+ students — is the most data-rich contribution in this FLC.

Dr. Pavel Samsonov

Comparative Study of 9 AI Tools Across 80+ Students

1. Scope: 80+ undergraduate and graduate students (IRED 320-005 & IRED 501, Spring 2026) were offered various AI tools to assist in designing instructional projects across 8+ subject areas.

2. 9 AI Tools evaluated: ChatGPT, Gemini, Copilot, Claude, Perplexity, NotebookLM, MagicSchool, H5P/Lumi, and PopAI — across 6 major assignments.

3. Assignments included: Interactive Video design, NotebookLM synthesis, MagicSchool lesson planning, Quiz Design, Comparative Prompting, and Research Synthesis.

4. Data collected: Student reflection responses after completing projects — comparing tool performance, usability, accuracy, and pedagogical fit.

Based on analysis of 9 AI tools across 6 major assignments — 80+ student responses.

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Dr. Pavel Samsonov

IRED 320 & 501 · Education

✓ What Worked

- 100% of students used AI as a starting point, not a final answer — AI solved the blank page problem
- ChatGPT ranked highest for question depth and classroom-readiness across both undergrad and graduate groups
- Students independently discovered the optimal multi-tool workflow: Gemini → ChatGPT → MagicSchool → Teacher review
- MagicSchool was chosen by 14 of 16 undergrads for lesson planning — highest consensus of any tool

✗ Challenges

- Gemini silently produced content for completely wrong videos in 3 cases — one student submitted wrong-video content without noticing
- AI-generated wrong answers for quizzes were too obviously wrong — lacking student-specific misconception knowledge
- AI cannot build functional hyperlinks, branching logic, or interactive H5P elements — technical execution requires human hands
- Local cultural context (Louisiana civil rights figures, regional standards) consistently absent from AI outputs

★ Tips & Recs

- Use the R-T-C-F Framework: Role · Task · Context · Format — specific prompts yield dramatically better outputs
- Let AI draft; reserve professional judgment for alignment with your students, standards, and community
- Always verify AI outputs — silent hallucinations (like Gemini) are more dangerous than error messages
- Teach students to orchestrate multiple tools — the skill is knowing when and which

SUCCESS STORIES

Dr. Pavel Samsonov

IRED 320 & 501 · Education

STUDENT WINS

- Graduate students developed metacognitive awareness of AI — asking 'How do I steer AI toward my goals?' rather than just accepting outputs
- Undergraduate students saved 7+ hours per week using MagicSchool for lesson planning tasks
- Students independently arrived at the same optimal multi-tool workflow — an emergent, data-backed finding
- Future teachers graduated with practical, critical AI literacy — ready to use and evaluate AI tools in their own classrooms

FACULTY WINS

- Cross-program synthesis of 80+ student responses produced seven distinct research findings — publishable data
- Fulbright Specialist appointment (2025–present) positions this work for international impact
- Demonstrated that education-specific AI tools (MagicSchool) outperform general tools for teaching tasks
- AI is a powerful accelerator — teachers are still the engine. This research proves it with data.

"The skill is not 'using AI' — it is knowing when, which, and how to verify. That judgment is what teacher education develops."

Thank You

Questions & Discussion

Dr. Laura Guichard Latiolais | Accounting
Dr. Lauren Auverset van Gerwen | Communication
Dr. Farzad Ferdowsi | Electrical & Computer Engineering
James Boffenmyer | The Learning Center
Dr. Chee Hyeon Choi | Piano & Piano Pedagogy
Dr. Pavel Samsonov | Curriculum & Instruction