

Summary and recommendations from Spring 2024 Faculty Interviews in the Making AI Generative for Higher Education project

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Executive summary

This is the second report summarizing results and recommendations from the University of Delaware's participation in the "Making AI Generative for Higher Education" project coordinated by Ithaka S+R. Here we summarize results from interviews of 18 UD faculty conducted in the spring of 2024 using an interview protocol constructed by Ithaka S+R for all 19 participating universities. These interviews broadly focused on three topics: (a) the impact of generative AI on teaching and learning, (b) the impact of generative AI on research, and (c) faculty support needs related to generative AI.

Recommendations

1. **Encourage and incentivize faculty** to develop an understanding of how these tools are being used throughout their discipline or profession. This awareness should not only come from employers, alumni, and colleagues but also from academic publishers and scholarly organizations who are also shaping expectations and practices in scholarship and practice. Deans, department chairs, and school directors should be encouraged to provide clear support for faculty engaged in responsible experimentation with these tools in their teaching and research, ensuring that they are included in faculty workload.
2. **Provide multiple kinds of venues and opportunities** to help faculty develop experience and knowledge of how generative AI tools can be used in teaching and research. Multiple venues and opportunities are required to address not only the availability of faculty to engage in professional development but also to acknowledge and incorporate the complexity of the different approaches being taken by researchers, scholars, and practitioners informed by competing priorities and paradigms. Units collaborating in the AI for Teaching and Learning Working Group are well-positioned to continue this work in the teaching arena. There is not a similar group focused on research and it may be valuable to create one.

3. **Make relevant academic integrity policies and practices transparent and visible.** Faculty are understandably anxious about how these tools are impacting not just the assessment of learning but also knowledge generation more generally so it is crucial that relevant administrators and staff provide highly visible and consistent support for faculty wrestling with these issues especially where they impact academic integrity. Community Standards & Conflict Resolution is well-positioned to engage in this work in collaboration with teaching support units such as Academic Technology Services and the Center for Teaching & Assessment of Learning.
4. **Develop or curate a centralized set of resources** of generative AI use cases, recommendations, policies, and available tools. The Library, Museums and Press, in collaboration with faculty and staff across the university, has created templates and infrastructure to house and share generative AI use cases such as assignments and class activities. However, faculty workload and incentives have to be aligned to support the creation, curation, and maintenance of this collection, especially the peer review necessary to make the collection valuable for faculty.

Introduction

In January 2022, two months after the launch of ChatGPT, faculty and staff began collaborating to understand how generative AI tools may impact teaching and learning at the University of Delaware. This collaboration was formalized a few months later as the [University of Delaware AI for Teaching and Learning Working Group](#). This working group has met monthly since mid 2022.

In 2023, the University of Delaware joined a [cohort of 19 research universities](#) in the "Making AI Generative for Higher Education" project coordinated by [Ithaka S+R](#). This two-year initiative is assessing AI applications that will most likely impact teaching, learning and research activities, and explore the needs of institutions, instructors and scholars. This report is the second of two reports detailing the progress of UD's participation in this initiative. The [first report](#) summarized the first phase of this project, which consisted of local research teams conducting a "campus readiness assessment" unique to their own institutional context. This second report summarizes a second round of interviews of a larger group of UD faculty who were asked a broader set of questions about their use of AI in teaching and research.

The interview protocol for this second round of interviews was supplied by Ithaka S+R and was used by all of the universities participating in the project. The complete interview protocol is included in Appendix A and includes 15 questions in five sections: introduction, teaching and learning, research, support needs, and conclusion. Although we did not develop the interview protocol, we developed three research questions aligned with the protocol:

RQ1: What do these UD faculty reveal regarding how generative AI is impacting their teaching and learning?

RQ2: What do these UD faculty reveal regarding how generative AI is impacting research in their discipline?

RQ3: What do these UD faculty reveal as their support needs to use generative AI effectively in these contexts?

Methodology

This project was a collaboration with Ithaka S+R, a non-profit research group, and 19 research universities in the United States and Canada. It employed a common interview protocol for all of the research teams at the different universities (see Appendix A). In this collaborative, multi-institutional project, we sought to collect opinions, perspectives, and experiences about generative AI in teaching and research from instructors. To ensure that our interviews would be fruitful, we created an initial list of University of Delaware faculty, postdocs, and graduate students by merging three different lists: registrants for our 2023–2024 “AI in Teaching and Learning” seminar series, participants in a spring 2024 AI-focused faculty learning community funded by the Center for Teaching & Assessment of Learning (CTAL), and a 3-part spring 2024 CTAL seminar series about AI and computational thinking. After removing duplicate entries (those who participated in or registered for more than one of these activities) and removing those who were ineligible to participate in an interview (i.e., people already interviewed by the research team in the fall of 2023 or those who were not faculty), approximately 145 individuals were eligible to be interviewed.

We sent invitations in three waves throughout the first three weeks of April 2024. Faculty were placed into invitation waves using a stratified randomization strategy. Stratification aimed to balance three identity characteristics: academic discipline (represented by college), faculty rank, and faculty classification (tenure track or continuing track). The identities of respondents who had already completed or committed to an interview were taken into account to create the second and third waves. For all three waves, after the desired characteristics were identified, invitees who had those characteristics were randomly selected from the eligibility pool. To the extent possible, each interviewer sent invitations to those faculty with whom they already had a professional or personal connection.

In total, eighteen interviews were scheduled and completed. Three of the interviewers each interviewed four participants and the fourth interviewer interviewed six participants. Available characteristics of the interviewees are summarized below in Table 1.

		<u>Invitees</u>	<u>Interviewees</u>
College/school	Associate in Arts Program	3	2
	Biden School of Public Policy & Administration	4	0
	College of Agriculture and Natural Resources	5	0
	College of Arts and Sciences - Arts portfolio	5	1

	College of Arts and Sciences - Humanities portfolio	3	2
	College of Arts and Sciences - Natural Sciences portfolio	2	1
	College of Arts and Sciences - Social Sciences portfolio	3	2
	College of Earth, Ocean, and Environment	6	1
	College of Education and Human Development	7	3
	College of Engineering	2	2
	College of Health Sciences	2	2
	Lerner College of Business and Economics	3	2
	Other	1	0
Status	Continuing Track	11	6
	Tenured/Tenure-track	28	11
	Other	7	1
Rank	Assistant Professor	7	4
	Associate Professor	19	8
	Professor	15	6
	Other	5	0

Table 1. *Characteristics of invited and interviewed faculty members*

We conducted the interviews using Zoom and recorded them, obtaining verbal consent for the recording at the beginning of each interview in accordance with our approved procedures. The recordings were transcribed using Rev.com and the interviewers performed an additional verification/correction step for each transcription to ensure accuracy and remove identifying information. The deidentified transcripts and basic interviewee characteristics (unique identifier, rank, and department/school) were shared with Ithaca S+R for analysis alongside transcripts shared with Ithaca from the other 18 participating universities.

Our own data analysis employed a typical inductive qualitative analysis approach with codes and themes emerging from the transcripts (Thomas, 2006). Logistically, the research team collaboratively developed an initial codebook based on independent initial readings of the transcripts. The codebook was further developed by the research team who collaboratively coded several transcripts. The team collaboratively coded the remaining transcripts in pairs, making further refinements to the codebook as appropriate. Trustworthiness was thus

established and maintained throughout the coding process as every coding decision was made by at least two members of the research team working together. The complete codebook is included as Appendix B.

This project was submitted to the university's Human Subjects Committee who deemed it exempt from review.

Analysis

How generative AI is impacting teaching and learning

Our first research question asked: What do these UD faculty reveal regarding how generative AI is impacting their teaching and learning? The specific interview questions we asked related to this question are:

1. Have generative AI tools made you think differently about how you approach teaching? How?
2. Have you tried to incorporate generative AI tools into your instructional practices?
3. How are you addressing the use of AI technology with your students? Are there tools or resources you have found to be most useful as you navigate your students' uses of AI technology?
4. What is the biggest challenge you've experienced when trying to integrate generative AI into your teaching?

Faculty responses to these questions about how generative AI tools have changed approaches to teaching were complex and nuanced. Plagiarism and cheating were significant concerns. For some interviewees, this has been a primary focus: "My first response in these last two years has been, 'How do I make sure that the papers I'm getting are honest papers?', not about integrating it." This was often tied to concerns about assessment and how well student work reflects student learning, concerns that have led some interviewees to change how they teach or assess learning:

"So certainly I'm concerned about plagiarism or cheating. I value the use of essay questions in order for, in particular, higher level graduate students, or the two different things that are higher, higher level undergrad and also grad students being able to explain more complex concepts. That's a really important way for me to know if they understand the information. And so apart from having them write it out in front of me live, it's hard for me to trust or guarantee that they have not used generative AI because I do think it's good enough in many places to at least get some solid foundation of content. So that's probably my biggest concern."

Faculty also acknowledged how the tools are changing how they teach courses and assess student learning more broadly. These changes were not all negative or defensive, with some

reflecting on how these tools are pushing them to reflect more deeply on what and how they teach:

"...I don't really give assignments that people can just ask a tool anyway for an answer, like write an essay for me because it's always usually from their own experience, but I think pedagogically, I think maybe I've thought a little bit more about that because I think it's incumbent upon the teacher to do that anyway, to think deeply about my pedagogy and make sure that I am assigning things and designing my instructions such a way that students can't just go and ask a tool to answer a question."

Faculty expressed both excitement and concern about how these tools can change how people access and process information. Some hope that these tools will make some parts of the traditional educational experience more accessible to some students, including those who struggle with writing:

"And I wish it become more accessible and spreadable, because for some students, it become like a new path to getting successfully get through the education, and not only get through, but really enjoy it, because some of them become very skillful on prompting and editing, and so it become almost like giving second life, in a way. And I'm so glad that this tool is available now for students like that."

Some responses focused on how faculty and students are trying to figure out how to use these tools in ways to support effective and meaningful learning: "Anyway, so that's a real concern, how do you now make writing assignments that students will still read the material for and write themselves?" Several faculty expressed concerns that, without guidance, students will misuse these tools in ways that undermine their learning: "...I can foresee a very beneficial part to it in providing [a] kind of foundational knowledge and information, not just for research, but for clinical decision-making. But the very next step is to worry about students' over-reliance on that content."

Many faculty who participated in these interviews told us how they were incorporating these tools into their teaching. In many cases, this meant allowing or requiring students to use these tools: "In their student introductions, I actually have them use AI. So, from the first day of class. So, I introduce it from the beginning." In some cases, this was faculty use of the tools such as one interviewee who told us: "I use it a lot for myself in order to plan lessons, come up with examples, come up with quick reading comprehension quizzes."

In many cases, interviewees focused specifically on how generative AI tools are impacting the assessment of learning. One interviewee related how generative AI has "radically changed what I do in the classroom assessment." Another interviewee described part of their process for understanding how generative AI may be impacting assessment in their courses:

"I looked at all of my assignments and looked at how viable they were. I immediately started messing around with ChatGPT to see what happened if you put my assignments in ChatGPT, and what I realized was... and I think it's actually was a good thing, that some of my assignments were very easy to do on ChatGPT, not to get a great grade. They didn't do them well, but they did them at a C level."

Challenges of teaching with or about AI

Faculty were very honest when we asked them about challenges teaching with or about AI. As with the interviewee quoted just above, addressing or exploring the impact of generative AI on teaching requires time and energy. Another interviewee addressed this more directly:

"...how much time or energy does any of us want to spend trying to figure out who's written this essay?...Anyway, so that's a real concern, how do you now make writing assignments that students will still read the material for and write themselves?"

These concerns included the time needed to change their teaching: "So that will cause to me, I think a dramatic amount of effort to rephrase, redesign and reformat the teaching material." It also included the time needed to teach students about AI: "I have to spend extra time in class to teach them how to use AI as a useful tool."

Many interviewees also directly told us that their own lack of familiarity and experience with AI was their biggest challenge. In some cases, their perceived lack of familiarity and experience undermined their own self-confidence: "I also am hesitant to dive too deeply into something that I don't feel I have a solid footing on." In other cases, the hindrance is more practical: "I also don't know how to incorporate the tools into my instruction." And, of course, in many cases these two issues were intertwined: "I...haven't tried to integrate it because I feel too unfamiliar with it and the options to know how to integrate it."

Relationships between teaching and industry

A minority of interviewees went beyond discussing just their own teaching and told us how they and their colleagues are beginning to reflect on how AI should be addressed in broader contexts. This was often informed directly by developments in their broader profession or scholarship such as a faculty member who teaches entrepreneurship courses who told us:

"I would say from a teaching side of things, I do think that especially in entrepreneurship, because of how prevalent it will be in our students' lives, especially if we're preparing future entrepreneurs, a lot of them are solo entrepreneurs or individual actors and own their own business; they're probably going to use this for everything. So, meaning they're going to use it for, again, logos, websites, mission statements, as the basis of a lot of things that they engage with, because AI can do a good job with those kinds of simple tasks and can give someone a baseline of, "Here's an email template." And so getting our students set up with this is really handy."

Several interviewees directly described how the use of AI in industry is impacting their teaching. Several interviewees spoke about their responsibility to prepare students to use these tools both in specific and broad ways in their profession or industry. One interviewee told us about their responsibility to both their students and their profession:

"...I don't see a way to teach our students about AI and how it's used in industry without also including some instruction, some guidance as far as ethical and professional use. I don't see how industry will be able to do one without the other."

How generative AI is impacting research

Our second research question asked: What do these UD faculty reveal regarding how generative AI is impacting research in their discipline? The specific interview questions we asked related to this question are:

1. How have researchers been reacting to the advent of generative AI in your field?
2. Have you experimented with incorporating generative AI or other AI tools into your research methods or workflows?
3. Have you experimented with using generative AI or other AI tools to prepare research outputs, such as articles or presentations?

AI usage in research processes

While most interviewees provided answers related to their individual practices, at least one responded on behalf of their research lab, expanding beyond their direct, personal experience.

Experiences and perceptions related to leveraging AI varied across different aspects of the research lifecycle. With respect to the literature review or ideation portion of the research process, interviewees indicated their interest in utilizing AI tools, seeing the potential time-saving advantages, but they also expressed concern about the current limitations of generative AI tools, largely due to the tools' tendency toward hallucination. For instance, one interviewee shared the following:

“And I think I'm going to try it again, but the first try generated completely misleading information. I don't know, it was just very interesting to see that, I didn't expect that the results would be so far off. So for example, I was looking for names of some women politicians in the year 1960 to 1965, and almost all of them were wrong. I mean, it gave me a bunch of names, and I think that they were real people who lived during that time and did things during that time, but they weren't the ones that I was looking for.”

Another interviewee spoke about how their lack of trust in the AI output increased their own labor during this stage of the research process: “Again, I do way too much work, I don't trust enough. I would track down all the sources that it was saying things were in, and a lot of them were dead ends.”

Notably, numerous interviewees expressed an assumption that the tools would become ever more sophisticated and effective in the execution of literature searches over time. For instance, one interviewee commented that:

“If the technology shows improvements in certain ways such as not fabricating sources, it feels like it'd be a no-brainer to try to help with a literature search. Right now, the sense I get is I would be spending as much time having to scrutinize whether it's making stuff up versus finding the useful stuff from it. But as this technology develops, I presume it's only going to get better.”

Faculty optimistically shared expectations that AI will expedite and simplify the process of reviewing literature:

“What’s the difference between finding some really legitimate information from going to library, checking the physical book versus very quickly entering the word and ChatGPT can give you the answer. So we need to be open-minded about the power of these tools. They are simply becoming more and more powerful and accurate.”

Automatic filtering and organizing were noted as particularly helpful features that are expected in advanced AI tools in the future:

“However, usually the AI general research can form certain filtering facts to help us to synthesize useful information and tease out flaws apart from truth. So in that case, I see a lot of promising utilization of AI in literature organization and also filtering unnecessary information in our field.”

When discussing the potential application of AI to data collection, processing, and analysis, some respondents focused specifically on uses of AI that would replicate current practices or tools with greater efficiency. For instance, two faculty members commented as follows:

“But really it’s about how to learn with AI tools just like 30 or 40 years ago. At that time, there’s no computer, there’s no software to do sophisticated statistical analysis, but these days we use SPSS, ours it’s just like a click, a button, and then can do...these calculations in a very fast way...It’s the same with AI.”

“And I also sometimes use AI to test possible potential answers to different questions, which I treat AI more like a human or student to test a certain research or teaching approach. Because usually, if we go through real students to do the experiment and then wait for the data to come back, take up a couple of iterations. We can simulate that process on an AI platform to shorten the feedback process so that we can reach a better effect of our approach more efficiently.”

Other responses related to applying generative AI to research data collection and analysis reflected a more transformative expectation, focusing on how AI’s predictive and machine learning capabilities will change the process of human-led research. AI was noted as being a powerful assistant for new discoveries: “We’re already seeing applications of it being used in predicting new material structures, in being able to again, kind of assist with coding since it can generate its own codes and things like that.” As well as solving persistent disciplinary problems:

“So, the protein folding problem, I was going to work on my PhD thesis, and a professor patted me on the back, and says, ‘Young man, too many people, bright people, have wasted a career on that problem,’ kind of thing. And it probably was right at that time, but much later a graduate student of mine went on to get third prize in the competition called CASP, building a neural network to predict three-dimensional structures. So, I couldn’t do it, but my kind of third generation student had.”

AI’s ability to expedite this discovery process and offer labor-saving affordances was particularly salient among interviewees, such as this faculty member: “...the entire field has a desire to

incorporate AI in our research routine, including replacing the labor-intensive process of parameter selection for models or improvement of numerical simulations.” Another faculty member offered this example:

“So, if you were to replace a certain atom with another atom, or if you were to change the configuration, AI has gotten to a point where it can start doing elements of that itself without having to be prompted specifically, okay, do this and now do this, and now do this.”

Of interest, although many interviewees commented positively on AI’s potential to support the research process, most interviewees indicated that they have not used generative AI in the creation of research outputs such as conference presentations and manuscripts and do not express plans to do so. The minority of interviewees who shared that they use AI to create research outputs focused solely on the use of AI as an editorial assistant, helping with word choice or editing tasks, an application they appreciated. “I personally use AI to polish some of the language, like asking ChatGPT to see if there’s any grammar problems in the sentences I write. And I find this tool actually can be helpful,” said one interviewee. Interviewees also spoke positively about AI’s ability to assist with design and layout, likening AI’s assistance with such tasks as akin to the use of PowerPoint templates.

Authorship and authenticity

The disconnect between positive views of AI’s potential and interviewees’ own use of AI to produce research outputs appeared connected to another major theme that emerged at numerous points in the interviews: Long established norms around ideas of authorship and authenticity in the research enterprise are challenged with the advent of this technology.

For instance, one interviewee stated, “I actually disallow members in my lab to use AI to generate writing. So this is a rule I still reinforce even for myself and for presentation, we disallow it because our field relies on more intellectual work.” Interviewees appeared to be sensitive to the perception that using AI may shortcut or undermine the integrity of their own research process. Another interviewee succinctly summarized the issue as: “having a text that something else writes for you really does have to be an issue.” Another interviewee shared the following anecdote for illustration:

“And I know for example... I can’t remember the author’s name. He published an essay about the death of his sister completely generated by AI and then said, ‘I did this right, and you took it and you liked it.’ And so kind of calling people out on you can’t tell the difference, which I get is true. So the ethical implications of that and the human implications of that are vast.”

Perhaps in response to their recognition of the challenges that AI poses to authorship and authenticity in research, many interviewees commented on the urgent need for the scholarly community and publishers to establish well-understood guardrails and expectations around AI use in the production of scholarship. One interviewee expressed this as follows:

“And now I think there's a little bit more understanding of, "Okay, can we allow some of it and not all of it? Can we have rules and that everybody plays by the rules? Is there any way to figure out whether or not people are playing by the rules?"”

Interviewees placed the responsibility for establishing these expectations on the shoulders of publishers, editors and scholarly communities. Several respondents shared that they are aware of the guidelines being set by those journals that they regularly submit to, but expressed a need for additional guidance and for general consensus regarding the proper ways to leverage and disclose use of generative AI in final research outputs.

“So, we need more guidelines and they're gradually coming, like whether you can use AI to generate review content. And also I see some journals, they have different views. Some journals say as long as you cite appropriately and you may include some content generated by AI. But some other journals totally prohibit submitting anything that comes from or was created by AI. So, I think we are still learning. It's a gradual process. It's a journey.”

Interviewees expressed concerns about the dilution of research quality as a natural consequence of lacking such norms and guardrails. One interviewee shared that in their role as a poetry editor for a regional journal “AI has been kind of a nightmare because it means that people can send us text that's not really theirs with their name on it.” In response, that interviewee has:

“Incorporated into my research just trying to discover what other reviews have done to make sure that they are getting work that is really the original work of the author who says it's their work. In my research, I've also been trying to figure out both as an editor and as a creative writer, ‘What do we do now with this new landscape?’ ”

A final consideration voiced by some interviewees was a concern that publishers' own use of AI could itself become problematic throughout the manuscript screening or editing process.

“What I find is that more, and more of the publications have implicitly developed AI tools for screening your manuscript, inputting your manuscript, et cetera, exploring possibilities of plagiarism, of a submission, et cetera. I mean, certain things you are glad that they are doing. On the other hand when they're intrusive, and remove the authenticity of your voice, I have a real problem with it.”

A minority of respondents indicated that they had no plans to incorporate AI into any stage of the research process. Common reasons for this appear to be that these respondents did not have a substantial research workload, or that they had not had time to educate themselves regarding how the tools could be used.

Support needs

As AI technologies become increasingly integrated into classroom instruction and research activities, there is a growing need for faculty to understand and effectively utilize these tools. Our third research question asked: What do these UD faculty reveal as their support needs to

use generative AI effectively in these contexts? The specific interview questions we asked related to this question are:

1. Have you made use of any training, tools, collaborations, or other resources in order to incorporate generative AI into your teaching and/or research?
2. Looking toward the future and considering evolving trends in your field, what types of training or support will be most beneficial to researchers and/or teachers in your field?

In our general concluding questions, we also asked about UD's response and their satisfaction. These questions helped us understand the nature of support needs.

1. What has the university done (that you are aware of) in response to the rise of generative AI technologies?
2. Are you satisfied with that response? What do you think the university could do to better support instructors and researchers moving forward?

Several key themes regarding faculty support needs for effectively implementing generative AI in teaching and research context emerged from our interviews. The responses aligned around the broad contexts of the training resources used, desired future support, and satisfaction with the university's current response.

Current training and resource utilization

Faculty reported accessing support and training through multiple channels, with UD's Center for Teaching and Assessment of Learning (CTAL) emerging as a primary resource. Many respondents mentioned attending CTAL workshops and accessing their materials, particularly appreciating CTAL's early guidance on syllabus language and AI policies.

"I really appreciate that CTAL came up with language of how to embed things in our syllabi. That has been something that, regardless of how comfortable people are using AI, that has been a really good band-aid for things, that people can choose one of four statements based on their own comfort."

The AI for Teaching and Learning Working Group seminars that were held in the Morris Library were another frequently cited resource, although some faculty noted that scheduling conflicts prevented their attendance: "I wish the times were a little bit more conducive. They're always right in the middle of teaching times, but I know they've done a lot of research and they've been putting those out."

Informal peer networks and relationships, both internally at UD and with external colleagues, played a significant role in faculty learning about AI.

"I have a partner and a co-author up in <distant state> who I work closely with. She is a high school social studies teacher. She's co-authoring my book with me, and she runs a PLC in her high school. So, she shares a lot of practical stuff, tools with me, as well as my two co-authors from my second book who are both... They both work in <state>. They're both instructional coaches here in <state>. So, if you can see the theme here is

working with practitioners. I'm very much in the K-12 space. So, those are the people that are really helping me.”

Some faculty accessed discipline-specific resources through professional organizations or academic publishers, while others relied on online resources such as newsletters and blogs focused on AI in education. For instance, one faculty member said, “I've attended a couple of workshops that were put on by a publishing company that publishes a lot of language textbooks and had educators from other institutions demoing how they were using it in their courses.”

Desired future support

Several patterns emerged in faculty responses about desired future support. Faculty expressed strong interest in hands-on, ongoing training opportunities, such as the following individual who said, “That is, I would say, pretty hands-on, where you can actually experiment with using these tools and discuss with colleagues in your disciplines and related disciplines.”

Another respondent emphasized the importance of recursive training.

“It has to be opportunities, and it has to be recursive, meaning that you don't just have one-shot seminars, things that you do all the time, right? Like you go, you try it out. You model it. You have time to practice. You have time to come back and discuss.”

Many faculty expressed the need for access to resources, particularly institutional support for premium, licensed generative AI tools. One faculty member shared that “If we could get institutional licenses to some of these, like the 4.0, I would say ChatGPT 4.0 would be great.”

Another faculty member said:

“And of course, besides workshops, there should be many resources will be available, as I said, like special ed office will help students, ChatGPT become institutionally free, things like that. And creating plugins, eventually, for Canvas, for Moodle, that will be integrated and easy to use.”

When faculty were asked about specific support needs, they expressed clear desires for discipline-specific training and interdisciplinary exchange as evidenced by one faculty member who responded: “I guess I would, with limited time, I really want to find out how are people using it with teaching writing, to be that specific.” Another faculty member responded similarly: “Everyone's affected. Really make sure that we have a mixed group of people. People who are computer scientists, people who focus on natural language processing and machine learning and these fields in the conversation but not dominate the conversation.”

A final main theme that stemmed from questions related to desired future support is the clear need for access to financial resources to incentivize faculty experimentation and professional learning. For example, “We need new voices, new talent, new funding to really address it in a fresh way.” Yet another example was, “So some additional small incentives, small grants, I think can really help us to do more or really encourage additional devotion to this idea to work with AI in a current academic setting.”

University of Delaware's current response

Our concluding set of interview questions revealed a mix of appreciation and concern related to faculty perspectives on the university's current response to generative AI's ubiquity. While many interviewees acknowledged the institution's proactive stance in addressing generative AI, they also identified several significant gaps that UD should address for more effective implementation.

Faculty consistently emphasized that meaningful integration of generative AI requires a significant time investment, yet many expressed that they lacked the bandwidth to engage deeply with these new tools while maintaining their existing responsibilities.

"Faculty working on these initiatives need either a course load exemption or something so that they can focus on this... I don't know anyone who doesn't think it's important, but everyone... I'm overloaded, most of my colleagues are overloaded, and it's a future concern that's not my class tomorrow."

Another primary concern centered around the need for more standardized policies and guidelines across the institution. Faculty expressed particular frustration with the inconsistent approaches to generative AI use across different courses and departments, indicating that this created confusion for both students and instructors. One faculty member articulated this concern directly:

"Students need a standardized guidelines out there to tell them what behavior is accepted, not accepted... It's not a good idea for the university to simply leave it as a vacuum or leave our faculty to decide case by case."

Distribution of resources emerged as another significant concern, particularly regarding equity across different faculty positions. Several respondents commented on the disparity between the support available to full-time faculty versus part-time or adjunct instructors. This inequity was seen as especially problematic given that generative AI integration often requires substantial course redesign.

"One of the things that's really a problem on our campus is that while full-time faculty members have a lot of access to resources and to discussions, our adjunct faculty members... they're not paid enough to have to entirely fix their syllabus."

While acknowledging that the university has taken some important initial steps in supporting faculty with generative AI integration (e.g., CTAL and AI for Teaching and Learning Working Group resources), respondents emphasized the need for a more comprehensive, systematic support system. Their responses suggested that effective support needs to be practical, ongoing, and responsive to discipline-specific needs, while at the same time maintaining consistency across the institution.

When examining responses through the lens of faculty members' self-reported AI familiarity, there are distinct patterns that emerged. For those who identified as having lower familiarity with generative AI tools, responses illustrated a need for basic training and support. One faculty member stated simply and succinctly: "I would actually need training."

In contrast, faculty members who reported higher familiarity with AI tools often focused on more sophisticated support needs, emphasizing the importance of funding for innovation and infrastructure development to support a more comprehensive integration of AI into their teaching and research.

The interviews revealed a broader understanding that AI integration requires more than just technical support. Faculty emphasized the need for resources that enable thoughtful consideration of pedagogical and ethical implications. Here are two responses that capture this revelation:

“And I think the more training that we have and the more focus on how this can allow teachers to focus on getting deeper with some of these concepts and getting into more of the human aspects of learning and away from the sort of rote memorization pieces and just standard lecture type things.”

“We need more incentive to discourage this easy solution to AI... Some faculty feel it's really the best way. I just turned all exams into paper-based in-person classroom... But this is really very pessimistic... So I think we need to offer more incentive for faculty to more proactively think about the AI tools.”

The concern about oversimplified responses to AI implementation suggests that the university needs to balance practical implementation guidance with opportunities for deeper engagement with pedagogy and ethics of integrating these technologies in higher education.

Noteworthy differences among respondents and responses

This group of 18 respondents is too small to conduct significant exploration into differences between all the different subgroups of respondents. However, meaningful exploration of two subgroups was possible. First, we used each respondent's primary academic affiliation to create a “STEM” or “non-STEM” classification, using the Department of Homeland Security's Designated Degree Program List to unambiguously identify STEM disciplines. Using this method, 6 of the 18 respondents were classified as STEM with the remaining 12 classified as non-STEM. Second, we classified respondents as having a “higher” or “lower” familiarity and expertise with AI based on the codes we assigned to their responses to our questions. In particular, we based that classification on our application of the four *familiarity* codes that were primarily applied to the responses to the first interview question that explicitly asked respondents to describe their level of familiarity and expertise (see Appendix A). Using that method, 6 respondents were classified as having “high” familiarity and expertise and the remaining 12 were classified as having “low” familiarity and expertise.

Although we cannot responsibly perform multivariate analysis with a sample this small, we can observe that STEM faculty may be more likely to report higher levels of familiarity and expertise with AI. In this non-random sample of 18 faculty members, half of the STEM faculty reported

higher levels of familiarity and expertise whereas one-sixth of the non-STEM faculty reported the same.

Finally, we report differences here for codes we applied in more than half of one of the two groups we compared (i.e., 4 or more of the STEM or higher familiarity faculty, 7 or more of the non-STEM faculty or lower familiarity faculty) and the code was applied to at least 30% more of one group than the other. These are admittedly arbitrary cutoffs but they keep our analysis and discussion focused on issues that (a) were raised by many of our interviewees and (b) meaningfully differed between the two groups being compared.

STEM and non-STEM

STEM faculty tended to more frequently:

- Express excitement about the use of AI tools to address complex discipline-specific challenges.
- Report not using AI tools to prepare research outputs and having no future plans to do so.

Faculty outside of the STEM disciplines tended to more frequently:

- Encourage their students to use or experiment with AI tools.
- Express concerns about authorship and authenticity.
- Express concerns about the impact of AI on faculty workload.
- Report learning about AI from their colleagues or CTAL.

Higher and lower familiarity and expertise

Faculty who self-reported higher familiarity and expertise with AI tended to more frequently:

- Share that their own lack of knowledge and experience about how AI can be effectively used in teaching was a significant challenge for them when considering the use of AI in their teaching.
- Self-report a strong awareness of what the university is doing with respect to AI in teaching and research.
- Express excitement about the use of AI tools to address complex discipline-specific challenges and excitement about AI's potential to increase access to knowledge and intellectual labor.
- Use AI in lesson planning and course development.
- Report that new funding is required if faculty at UD are to make effective use of AI in teaching and research.

Faculty who self-reported lower familiarity and expertise with AI tended to more frequently:

- Share that their own lack of knowledge and experience with AI were significant challenges for them when considering the use of AI in their teaching.
- Recommend or request workshops to improve their AI skills and knowledge.

Discussion

In broad terms, the 18 faculty we interviewed reported a sustained concern about how generative AI is impacting their teaching and research. The time and energy needed to develop enough familiarity to become confident using these new tools is a significant, ongoing challenge, a challenge that is layered on top of the challenge of preserving and enforcing expectations of authentic learning and academic integrity. Respondents requested and recommended many different strategies for both individual faculty members to develop experience and expertise and for the university to provide training and support.

Many faculty expressed concerns about how these tools are challenging traditional understandings of how knowledge is generated or expressed. This was most concretely seen in the anxiety and challenges related to academic integrity. However, it extended well beyond concerns about student misuse of the tools to encompass broader questions about practices of scholarship, including how some kinds of research are conducted and how research products are created and shared.

In general, non-STEM faculty seem to have expressed more concerns and anxiety during our interviews. However, they also appeared to be engaged in more experimentation and to be more encouraging of AI use among their students. Non-STEM faculty also appeared to report lower familiarity and knowledge related to AI. They identified their lower familiarity and expertise clearly as a barrier to them using AI tools. They also expressed a strong desire for professional development opportunities to improve their AI skills and knowledge.

Faculty who self-reported higher familiarity and expertise provided nuanced responses to our questions. They expressed an understanding that AI must be used in educationally effective ways but were frustrated that those ways have not yet been discovered and promulgated. They are excited about future development in AI and how it can help address complex issues in teaching and scholarship. However, they also clearly told us that UD faculty need sufficient funding to fully embrace the possibilities of using AI in teaching and research (a view also shared by some respondents who reported lower levels of familiarity and expertise).

Recommendations

1. **Encourage and incentivize faculty** to develop an understanding of how these tools are being used throughout their discipline or profession. This can inform their teaching both in individual classes and across program curricula. It can also shape how they perform their research, including how they teach and mentor students and others. This awareness should not only come from employers, alumni, and colleagues but also from academic publishers and scholarly organizations who are also shaping expectations and practices in scholarship and practice. **Deans, department chairs, and school directors should be encouraged to provide clear support for faculty engaged in responsible**

experimentation with these tools in their teaching and research, ensuring that they are included in faculty workload.

Additional support should be considered, including specific awards or inclusion of generative AI or teaching and research innovations in the criteria of existing awards. In some cases, temporary release from other duties may be appropriate to support extensive work at the program, department, school, college, or university level e.g., developing a new certificate or minor. Ensuring that faculty understand how this work aligns with the university's new definition of teaching excellence in the Teaching Quality Framework would also be helpful and productive.

2. **Provide multiple kinds of venues and opportunities** to help faculty develop experience and knowledge of how generative AI tools can be used in teaching and research. This should include both one-off and continuing opportunities. Some should be focused on particular disciplines or groups of disciplines and others intentionally focused on encouraging dialogue and collaboration between and across disciplines. These should also acknowledge and incorporate the complexity of the different approaches being taken by researchers, scholars, and practitioners informed by competing priorities and paradigms. **Units collaborating in the AI for Teaching and Learning Working Group are well-positioned to continue this work in the teaching arena. There is not a similar group focused on research and it may be valuable to create one.**

The working group is a loose confederation of faculty and staff at UD who meet monthly to share news and coordinate work around generative AI. *It has no resources of its own, however, and unclear support from senior leaders at the university.* It also focuses only on teaching and learning so it is unclear if there is any university-level discussion and coordination of similar support for research. And the future of this collaboration is unclear as it has a 2-year charge that will expire soon.

3. **Make relevant academic integrity policies and practices transparent and visible.** Faculty are understandably anxious about how these tools are impacting not just the assessment of learning but also knowledge generation more generally so it is crucial that relevant administrators and staff provide highly visible and consistent support for faculty wrestling with these issues especially where they impact academic integrity. **Community Standards & Conflict Resolution is well-positioned to engage in this work in collaboration with teaching support units such as Academic Technology Services and the Center for Teaching & Assessment of Learning.**

University staff have already updated Appendix A of The University of Delaware Code of Conduct to explicitly mention generative AI. Faculty anxiety may be reduced if the Division of Student Life collaborated further with academic units, the Provost's Office, and teaching support units to ensure that faculty understand their options and common outcomes from academic integrity issues raised by student use of generative AI.

4. **Develop or curate a centralized set of resources** of generative AI use cases, recommendations, policies, and available tools. In conjunction with the requests and recommendations for professional development, interviewees also called for a centralized set of resources that are kept up-to-date and accessible. The Library, Museums and Press, in collaboration with faculty and staff across the university, has created templates and infrastructure to house and share generative AI use cases such as assignments and class activities. However, **faculty workload and incentives have to be aligned to support the creation, curation, and maintenance of this collection, especially the peer review necessary to make the collection valuable for faculty.**

References

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Appendix A: Interview protocol

Pre-Interview Introduction

Generative AI refers to technologies that can create original content such as text, code, and images based on patterns identified in training datasets.¹ Popular consumer tools such as ChatGPT have made this technology widely accessible and the use of generative AI technology is rapidly transforming workplaces across sectors, including in higher education. As AI use becomes ubiquitous, universities need to understand how the technology is being adopted by faculty and students in order to assess how it can be harnessed effectively in support of teaching, learning, and research.

Within this context, UD is participating in a multi-institutional study to better understand instructional and research practices that make use of generative AI. The following interview questions aim to help us get a better picture of how these technologies are impacting teaching, learning, and research, as well as what kinds of support and policies should be put in place moving forward. We will also share an anonymized transcript of this interview (and all other interviews conducted for this project) with Ithaka S+R, a not-for-profit research organization, who will use them to develop national findings and recommendations. We anticipate that the interview will take just under an hour.

Do you have any questions about the study and/or your participation before we get started?

Do you consent to this interview and to it being recorded?

» If no, thank them for their time and end the interview.

Do you consent to the anonymized transcript of this interview being shared with Ithaka S+R?

» If no, thank them for their time and end the interview.

Introduction

1. How would you describe your level of familiarity and expertise with AI in general and with generative AI tools specifically?
2. In general, how have researchers in your field reacted to the advent of generative AI?

¹ Adam Pasick, "Artificial Intelligence Glossary: Neural Networks and Other Terms Explained," *New York Times*, March 27, 2023, <https://www.nytimes.com/article/ai-artificial-intelligence-glossary.html>.

Teaching and learning

1. Have generative AI tools made you think differently about how you approach teaching? How?
2. Have you tried to incorporate generative AI tools into your instructional practices?
Examples: course development, assignment design, assessment, lectures.
 - » *If yes*, can you give me specific examples of how you've done so?
 - Do you think your attempts were successful or not? Why?
 - » *If no*, do you anticipate doing so in the future? Why or why not?
3. How are you addressing the use of AI technology with your students? Are there tools or resources you have found to be most useful as you navigate your students' uses of AI technology?
4. What is the biggest challenge you've experienced when trying to integrate generative AI into your teaching?

Thanks for these responses. I'm going to switch gears now and ask a few questions about your research practices.

Research

1. Have you experimented with incorporating generative AI or other AI tools into your research methods and workflow? *Examples: using generative AI to discover new primary or secondary sources, to synthesize scholarly literature, to brainstorm or outline, and to draft text.*
 - » *If yes*, can you give me specific examples of how you've done so.
 - Do you consider those experiments successful or not? Why?
 - » *If no*, do you anticipate doing so in the future? Why or why not?
2. Have you experimented with using generative AI or other AI tools to prepare research outputs such as articles or presentations?
 - » *If yes*, can you give me specific examples of how you've done so.
 - Do you consider those experiments successful or not? Why?
 - » *If no*, do you anticipate doing so in the future? Why or why not?

3. How is your field navigating the ethical implications of the technology? Are there any resources that you have found to be especially helpful within your discipline to navigate this issue?
4. Are there any especially exciting or interesting uses of the technology that you've seen (or seen discussed) in your field?

Thanks for these responses. I'm going to switch gears now and ask a few questions about support needs.

Support needs

1. Have you made use of any training, tools, collaborations, or other resources in order to incorporate generative AI into your teaching and/or research?
 - » Where did you find those resources? *Examples: workshops offered by the CTAL, Academic Technology Services, or Library; resources provided by scholarly societies; online tutorials.*
 - » Where would you prefer these resources be made available to you moving forward?
2. Looking toward the future and considering evolving trends in your field, what types of training or support will be most beneficial to researchers and/or teachers in your field?

I have just a few more general questions before we wrap things up.

Conclusion

1. What has the university done (that you are aware of) in response to the rise of generative AI technologies?
 - » Are you satisfied with that response? What do you think the university could do to better support instructors and researchers moving forward?
2. *If additional interviewees need to be recruited*, We are still looking for other UD instructors and researchers to interview about generative AI. Do you have any recommendations for specific people whom we should invite?
3. Is there anything else you would like to share with us about generative AI in relation to teaching, research, and learning, that we have not already addressed?

Thank you for your time today. Our next step is to finish conducting interviews at UD so that we can develop better capacities to support researchers and teachers at UD. As I mentioned earlier, an anonymized transcript of this interview (and all other interviews conducted for this

project) will be shared with Ithaka S+R, a not-for-profit research organization, who will use them to develop national findings and recommendations.

Do you have any final questions or concerns?

Appendix B: Codebook

Code	Description	Example(s)
Accuracy of AI-generated information	Response describes specific concerns or challenges related to the relative accuracy of information that is generated by generative AI tools. This may include information or AI literacy, explicitly. This may also include biased content generated by the tools.	<p>"I wouldn't trust it to help me find sources. "</p> <p>"Because I have to say there are a lot of potential issue, the hidden issue not fully recognized by all faculty say how AI and ChatGPT actually work and what the potential, biased content that can be generated by AI or some potential issue."</p>
Addressing with students: ChatGPT allowed	Respondent explicitly mentions ChatGPT as a tool they allow students to use.	
Addressing with students: Copilot allowed	Respondent explicitly mentions Microsoft Copilot (in Bing) as a tool they allow students to use.	
Addressing with students: Discourage use	Response describes courses where students are discouraged or forbidden from using the tools.	<p>"...cautioning them that I will also use it in order to, in some cases if they have an assignment that is written out, that we'll evaluate it."</p> <p>"...I have to make it very specific that they cannot submit their assignments that are generated by AI."</p>
Addressing with students: Encouraged use or experimentation	Response describes courses where students are encouraged to use the tools, perhaps as an experiment, but their use is not required.	<p>"...they can ask it for help understanding some of the concepts that we talk about in class..."</p> <p>"...AI is one of those things that they should be working with..."</p> <p>"...this is going to be in a part of the course."</p>
Addressing with students: Grammatical help	Response describes courses where students are encouraged or allowed to use generative AI tools to help with grammar in written assignments.	

Addressing with students: Include explicit syllabus language	Respondents explicitly describes including language in their course syllabus or assignment description(s) about the use of generative AI tools.	<p>"...I put some languages in the assignment."</p> <p>"...having a statement in the syllabus so that it's not just left completely up for them to decide or interpret."</p>
Addressing with students: Relevance to students	Response describes courses or activities in course that use generative AI to make course content and skills more relevant to students.	"So to maybe make this Hispanic literary studies a little bit more relevant and interesting to students in the context of today and things that they will find more interesting and useful in the workforce."
Addressing with students: Unsure what to do	Respondent explicitly says that they are unsure how to address the use of these tools with students.	<p>"...I haven't really addressed it...I'd love to know what some good practices are."</p> <p>"...I don't know how to answer this..."</p> <p>"I just haven't made the effort to do it because I haven't been overloaded with my own grading."</p>
AI impact on future careers and workforce	Response describes an uncertainty about future careers or the workforce based on current and future developments with AI. This may include concerns for students' future jobs or faculty jobs.	"So, I think that the amount of effects jobs will really depend on how well we train new people or how well new people, new, I should say, people seeking a job familiarize themselves with the tool in order for it to improve their efficiency or what have you."
Assessment of learning	Response describes concerns about AI's impact on assessment. It may include new instructional practices explicitly focused on the instructor using or explicitly taking into account the availability of generative AI tools to assess student learning, including traditional grading practices (but not immediate feedback). It may also include more generalized concerns or potential future actions not yet taken.	"...come up with quick reading comprehension quizzes, essentially to make sure that students have done the reading if there's something we're discussing"

Authorship and authenticity	Response describes concerns and challenges related to the use of AI tools to produce materials and questions about who owns that material or whether that output is "authentic."	"...just that idea, 'Is it really mine then, if I'm influenced by the machine's thinking?'"
Awareness: Minimal	Response may describe a vague notion that there are activities taking place, but does not provide any specific examples.	"But yeah, so that's all I'm aware of that the institution has done. There may well be more, but that's all I'm aware of. And my department has done nothing..."
Awareness: Some	Response describes one or two specific example of university actions in response to generative AI	"Yeah, we've had some work groups already started. Our Instructional Technology and our Center for Teaching and Learning and Assessment has brought in some individuals with expertise. We have some faculty that are in this space as well that are helping with those work groups and in starting to stand up modules for faculty to get trained on the, I guess, appropriate use."
Awareness: Strong	Response describes three or more specific examples of university actions in response to generative AI	"We've got a committee that we're discussing AI and that's relative to the students, to the faculty, to the research community as a whole. That I know is being done as well as the other projects. Basically the tutoring system that's going to be specific to the courses taught at UD. And just seeing that as a very unique aspect, having the professor's notes and slides and very specifically based upon how that professor teaches the course is what's just amazing about it. With that coming, and then I know that's at the Winter Institute that there was the... actually was that, sorry, Keep Calm. Not the Winter Institute, but the Keep Calm did have some sessions on AI to at least introduce it to the faculty, give them an understanding. And then I know that there's a bigger push for our summer institute to have more AI involved and even possibly, as we have discussed, a separate day just for AI."

<p>Biggest teaching challenge: Costs</p>	<p>Response describes challenges focused on the costs of using some of the tools.</p>	<p>"... it will be interesting if could be in the institutional support, like institution will pay our business things for the entire university..."</p> <p>"...I just think it's inequitable because they don't have the paid version and I have the paid version..."</p>
<p>Biggest teaching challenge: Effective use of AI</p>	<p>Response describes challenges finding uses of the tools that are effective in helping students learn.</p>	<p>"...the biggest challenge is trying to strike the balance between what can help your work and help your learning versus do your work for you..."</p> <p>"... how to offer student the opportunity of creative thinking while allowing them to reach help from AI."</p> <p>"...I would worry that including it would only dilute the helpful information that students would receive."</p>
<p>Biggest teaching challenge: Existential challenges</p>	<p>Response describes challenges in fundamental foundations of teaching and learning. These may be immediate and visceral challenges e.g., changes in foundational pedagogical philosophies. They may be theoretical e.g., challenges to the structure of higher education and classroom teaching.</p>	<p>"So I used to have homework assignments, for example, where they would do, they'd read a text, a short story, poem, and they would do a paragraph summary, a paragraph analysis. And again, that's just too easy to get from ChatGPT. So now, what I've done, is found a literary note, or short article about the text, and that's what they're summarizing and analyzing. But I'm sure that ChatGPT is going to get to the point where that'll be in there, and they'll be able to get the summaries analysis pulled off of that."</p>
<p>Biggest teaching challenge: Institutional policy</p>	<p>Response describes challenges focused on the current institutional policies related to the use of these tools in coursework. This includes responses that focus on the lack of relevant institutional policies. It also includes challenges related to the different policies adopted within the institution i.e., different faculty are adopting different policies.</p>	<p>"I would also love to have some additional support from university to make sure all faculty are also on the same page about using AI tool."</p>

<p>Biggest teaching challenge: Instructor knowledge and experience</p>	<p>Response describes challenges focused on limitations of the instructor's knowledge and experience.</p>	<p>"...it's really my education that's the limiting factor." "...I feel too unfamiliar with it and the options to know how to integrate it." "I would actually need training." "I could be wrong, I am not an expert in education. I'm slowly becoming an expert in my domain alone." "I also am hesitant to dive too deeply into something that I don't feel I have a solid footing on."</p>
<p>Biggest teaching challenge: Student knowledge and experience</p>	<p>Response describes challenges focused on limitations of students' knowledge and experience related to AI use.</p>	<p>"...it is the students not all being technologically savvy..." "...some students really need much more tutoring about using prompts and editing..."</p>
<p>Biggest teaching challenge: Student resistance</p>	<p>Response describes challenges focused on student resistance to faculty directives or desires.</p>	<p>"They're not hanging with me in that level of nuance. So I don't know how to get them to realize why I'm using it in some places, not in others." "... just be to sell students on the fact that using AI, learning how to use AI is a skill."</p>
<p>Desired training and tools: Community</p>	<p>Response explicitly describes a desire for connection and community with colleagues to learn about and explore generative AI tools and related ideas.</p>	<p>"...the summer institute to invite some or to organize some session really to gathering or share some best practices about ChatGPT because at this point we all know the existence of this tool..."</p>
<p>Desired training and tools: Discipline-specific</p>	<p>Response describes a desire for resources, opportunities, application, or demonstration of an application that is discipline-specific.</p>	<p>"I wish that all the professional organizations that I belong to had working groups on AI and put out regular information, updates. We're not there yet."</p>
<p>Desired training and tools: Hands-on training</p>	<p>Response describes a desire for hands-on training opportunities for faculty.</p>	<p>"That is, I would say, pretty hands-on, where you can actually experiment with using these tools and discuss with colleagues..."</p>
<p>Desired training and tools: Interdisciplinary discussions</p>	<p>Response describes discussions and interactions that are explicitly interdisciplinary.</p>	<p>"Everyone's affected. Really make sure that we have a mixed group of people. People who are computer scientists, people who focus on natural language</p>

		processing and machine learning and these fields in the conversation but not dominate the conversation."
Desired training and tools: Ongoing training	Response describes a desire for training opportunities that are not one-off but include multiple opportunities spread over time.	"It has to be opportunities, and it has to be recursive, meaning that you don't just have one-shot seminars, things that you do all the time, right? Like you go, you try it out. You model it. You have time to practice. You have time to come back and discuss."
Desired training and tools: Online repository	Response explicitly describes a desire for a centralized, online repository of materials related to generative AI.	"So I would like to see whether UD can create a platform for all the faculty to share their modules of using it. For example, I heard that some faculty already developed certain case studies using AI or some module at the beginning of each semester to help a student get familiar with AI."
Desired training and tools: Prefer in-person	Response indicates a definite preference for training and tools that are made available in-person.	"Yeah, I mean, probably the most effective medium is an in-person short course, something like that."
Desired training and tools: Prefer online	Response indicates a definite preference for training and tools that are made available online. This can include hybrid offerings.	"And I would need something that was online and at my convenience."
Desired training and tools: Tools	Response describes a desire for access to specific tools that have not yet been created or made available in the local context.	"ChatGPT become institutionally free, things like that. And creating plugins, eventually, for Canvas, for Moodle, that will be integrated and easy to use."
Desired training and tools: Up-to-date materials or training	Response describes a desire for up-to-date (or regularly updated) materials or training made available to faculty.	"I think it should be our channel that can be consistently updated with newest AI information for all of the student or faculty to access the latest advancement."
Desired training and tools: Workshops	Response describes a desire to have access to a workshop(s) or unspecified "training."	"Maybe a workshop about training the faculty or staff how to use the AI and what are the resources that can provide. Because mostly we are still using Google, and ChatGPT, we sometimes use it, but not very often. "

Ethics: Academic publication standards	Response explicitly discusses ethical issues being addressed by academic publishers, including journals and editors and their policies and practices.	"Some journals say as long as you cite appropriately and you may include some content generated by AI. But some other journals totally prohibit submit anything that comes from or was created by AI. So I think we are still learning." "I know some journals, actually, some poetry journals shut down because they just couldn't tell whether or not what they were getting was actually poetry written by a human."
Ethics: Acknowledged but not explored	Response indicates an awareness of ethical issues but also an acknowledgement that the respondent has not sufficiently explored them to begin forming opinions and actions.	"I haven't really gone looking yet, but it's certainly on my mind..."
Ethics: AI training data	Response explicitly describes ethical concerns about how generative AI tools are trained and issues about the underlying data.	"...AI is learning from texts, or images and videos available on internet. The more AI will generate this content, the more it will be distorted in its learning..." "...if AI extract information from New York Times and manipulate and publish as AI-generated work, would that be copyright protected or a copyright phrase?"
Ethics: Helpful resources	Respondent explicitly describes or names one or more specific resources that are helpful in this area.	"I have found some people that are posting relative to those items that have been very helpful..."
Ethics: No helpful resources	Respondent explicitly acknowledges that they do not know of any specific resources that are helpful in this area.	"...I haven't seen anything."
Ethics: Trust	Response explicitly describes ethical concerns related to trust and confidence.	"...the spread of the fake news, fake research, fake this, fake that, you can generate that, and that's my concern..."

<p>Exciting uses: Accessibility</p>	<p>Response focuses on accessibility, including disabilities, geography, finances, or language.</p>	<p>"...could be really, really useful in terms of immersing a student in an environment where maybe they don't have the opportunity to study abroad..."</p>
<p>Exciting uses: Complex discipline-specific challenges</p>	<p>Response focuses on using AI tools to address complex challenges in a specific discipline.</p>	<p>"...rare cases or medical conditions." "It's simple fact that when they're putting in symptoms and getting diagnosis, that the AI outperformed physicians on the diagnosis..."</p>
<p>Exciting uses: Increased access to knowledge and intellectual labor</p>	<p>Response focuses on how AI tools expand access to knowledge, information, and higher-level thinking. This could be immediate and practical uses that are already in place or theoretical advances and uses that the respondent hopes will become available.</p>	<p>"...a human being can only learn so much in a certain amount of time, whereas that AI is going to be that storage and as every new research component comes out, gets fed into there..." "...AI can really shorten the literature search..."</p>
<p>Exciting uses: Independently conduct research</p>	<p>Response focuses on how AI tools can independently conduct research, including running experiments. This could be immediate and practical uses that are already in place or theoretical advances and uses that the respondent hopes will become available.</p>	<p>"...AI can be used to perform some of the experiments and it will be very good, it will be very useful because it can provide repeatability and it's more efficient..."</p>
<p>Familiarity: Advanced understanding or regular use</p>	<p>Respondents with advanced knowledge and who actively experiment with various AI tools, including prompt engineering and understanding model training.</p>	<p>"I started experimenting with it at that point, really starting to learn how to do the prompt engineering and from there continued on and then of course with other models coming around." "I have a decent amount of expertise with knowing how the tool is constructed and what the methods that go into training it are."</p>
<p>Familiarity: Beginning understanding</p>	<p>Respondents who identify themselves as having minimal knowledge or are at the early stages of learning about AI and generative AI tools. No or minimal experience using the tools.</p>	<p>"I would say I'm a beginner." "Very low."</p>

<p>Familiarity: Intermediate understanding</p>	<p>Respondents who describe themselves as having a basic to intermediate level of understanding and usage of AI and generative AI tools. Some experience using the tools but not regular, frequent usage.</p>	<p>"I would say AI in general, I would say basic understanding. I would say generative AI, I've thought a lot more about if that makes more sense, more intermediate." "In general I have, I guess, I don't know, it is more than rudimentary, a decent working knowledge of AI in general, but most specifically, yes, I know much more about the GPT technology."</p>
<p>Familiarity: Scholar or developer</p>	<p>Respondents who have a historical or professional background in AI or machine learning, often with experience from previous generations of AI technology. This includes significant knowledge of the underlying technology such as installing and running LLMs on their own.</p>	<p>"So, first there's the history of being a developer of AI tools, but in a previous generation, the seventies, and the eighties."</p>
<p>Immediate student feedback</p>	<p>Response describes new instructional practices explicitly focused on using generative AI tools to provide students with immediate feedback.</p>	<p>"I've had students teach themselves about a social issue and obviously check sources and other things" "I think students readily adopt them when it helps them make code run that there's a real satisfaction with it."Student study aid</p>
<p>Impact on faculty workload</p>	<p>Response describes how new instructional practices explicitly focused on generative AI impact faculty workload, sometimes positively and sometimes negatively.</p>	<p>"it's a big time saver"</p>
<p>Impact on teaching: No change</p>	<p>Response describes no appreciable change in teaching (or at least not a meaningful change that has occurred yet).</p>	<p>"I have not really gotten into it and it's something I should do."</p>

Impact on teaching: Shift focus from content to process	Response describes a shift in goals, teaching, and assignments away from a primary focus on content to a stronger focus on process, including reflection.	"I give a presentation about shifting my writing assignments from being kind of final product-based to process-based... a significant portion of the grade is based on the self-evaluation and reflection on their process." f
Incorporation into instructional practices: No current incorporation and no future plans	Response does not describe any meaningful incorporation of generative AI into instructional practices and there are no future plans to do so.	"No, I have used it, well, the only way I have used it is typing my own essay questions into it to see what the response would be possibly if a student used it." "Yeah, I haven't really." "Right. No, I think most of what I've said has been the extent of where I've been thinking so far."
Incorporation into instructional practices: No current incorporation but future plans	Response does not describe any meaningful incorporation of generative AI into instructional practices and there are future plans to do so or clear signs of being open to future use.	"Yeah, I would like to use it more."
Incorporation into instructional practices: Not successful	Response describes meaningful incorporation of generative AI into instructional practices that the respondent explicitly describes as unsuccessful. This may be a judgment or perception; it does not need to be empirical.	
Incorporation into instructional practices: Successful	Response describes meaningful incorporation of generative AI into instructional practices that the respondent explicitly describes as successful. This may be a judgment or perception; it does not need to be empirical.	"Why don't I see, let's use technology together and learn how to use it responsibly, cite it. And since then, I really have found students are citing things more, which is good. So I'm pleased with that."
Incorporation into instructional practices: Tentative steps	Response describes new instructional practices that are very small, often coupled with skepticism or a desire to slowly conduct pilot tests before committing to more substantive uses.	"I guess one reason I haven't pulled the trigger is that I haven't convinced myself." "Not a lot, a little bit," "...currently I try in a very careful way."

Incorporation into research: Direct AI-related research	Response describes research that directly and explicitly focused on using or understanding generative AI.	"That article that I wrote with ChatGPT and other colleagues, it's one good example." "I am writing up the results of a study on generative AI..."
Incorporation into research: Editing	Response describes using these tools to edit research materials.	"...I mostly just use ChatGPT or like a bar or something just to polish in the language."
Incorporation into research: Ideation	Response describes using these tools to generate ideas.	"I brainstormed ideas."
Incorporation into research: Locate or summarize literature	Response describes using these tools to interact with research literature, including locating or summarizing materials.	"I have used it to help me summarize current research articles." "...try to find some kind of historic information..." "...the most effective thing that I've encountered is a tool called Consensus AI, I don't know if you've come across it yet. It is a tool for finding sources about something..." "...I have used AI to synthesize materials."
Incorporation into research: No use	Respondent reports not using these tools in their research methods or workflow. This includes respondents who report having no research expectations in their workload.	"No." "Since I don't have a direct research role at the university, I haven't used it to produce any research per se, like anything that's going to go into publication."
Incorporation into research: Not successful	Response describes explicit attempts at using these tools in their research methods or workflow but the attempts have been unsuccessful.	"And I think I'm going to try it again, but the first try generated completely misleading information. I don't know, it was just very interesting to see that, I didn't expect that the results would be so far off."
Incorporation into research: Successful	Response describes explicit attempts at using these tools in their research methods or workflow but the attempts have been successful.	"Yeah, it's been super helpful."

Lesson planning and course development	Response describes new instructional practices explicitly focused on the instructor using generative AI tools to develop or modify lesson plans, assignment design, or course design. This may also include explicit discussion of how the tools are not useful or appropriate in lesson planning or course development.	"It can help plan ahead when thinking of discussion questions, or I use it in class or to come up with debate topics."
New funding	Response describes a need for new or additional funding from the university to support, encourage, or incentivize faculty learning or using generative AI tools in teaching or research.	"So some additional small incentives, small grants, small grant" I think can really help us to do more or really encourage additional devotion to this idea to work with AI in a current academic setting. So I would love to see some additional resources out there to support us."
Not being addressed	Response explicitly describes how the respondent's discipline or unit is not addressing AI in teaching, learning, or research. This is often, but not always, discussed in terms of disappointment.	"...but I do not see any research itself directly related to ChatGPT or AI. Or maybe the content is really hard to integrate, but not just ChatGPT, but some technology-related content."
Plagiarism and cheating	Response describes a focus or concern on plagiarism or cheating. This may include a shift or increased focus on detecting or preventing plagiarism or cheating using generative AI tools. It may also be a more generalized concern that has not yet risen to the level of concrete action. This may also be positive or negative in valence.	<p>"Certainly I'm concerned about plagiarism or cheating... it's hard for me to trust or guarantee that they have not used generative AI."</p> <p>"Any written assignment I give can be written by ChatGPT and not by my student... how do you now make writing assignments that students will still read the material for and write themselves?"</p> <p>"There are ways of creating questions that it's going to be tough for even a human being to answer, but also understanding that if it's tough for the human being to answer..."</p> <p>"...very worried that they're getting words that are somebody else's words."</p>

Prepare research outputs: Design and layout	Response describes meaningful attempts to use generative AI tools to produce or edit the design of research outputs.	"...we definitely used a couple of different tools to help us with the poster production and design..."
Prepare research outputs: Ethical concerns	Response explicitly ethical concerns about the use of generative AI tools to prepare research outputs.	<p>"I feel like it's all a gray area. I feel like that would be unethical, to use in a research context unless you're trying to have something whittled down for word count or if you're putting your original work into the AI to have it help you divide a presentation."</p> <p>"I have to think about that for a bit. What is mine? It's the authorship ownership piece, and if I'm giving it to a computer to clean up, that's not necessarily... I find I'm very old school when it comes to my own research."</p>
Prepare research outputs: No use and no future plans	Respondent explicitly says that they have not used generative AI tools to prepare research outputs. This may include responses that describe using the tools as part of the research process but not prepare outputs. Respondent does not indicate any plans to use generative AI tools to prepare research outputs in future.	"Not much for research. Not at this point."
Prepare research outputs: No use but future plans	Respondent explicitly says that they have not used generative AI tools to prepare research outputs. This may include responses that describe using the tools as part of the research process but not prepare outputs. Respondent also indicates future plans to use the tools to prepare research outputs.	"...Or better believe I'm going to go try this out and see what happens."
Prepare research outputs: Not successful	Response describes meaningful attempts to use generative AI tools to prepare research outputs were not successful.	"It wasn't helpful to me at all."

Prepare research outputs: Successful	Response describes meaningful attempts to use generative AI tools to prepare research outputs that were successful.	"Yes."
Prepare research outputs: Writing	Response describes meaningful attempts to use generative AI tools to write or edit research outputs.	"...I've used AI to help me write about AI..."
Program curriculum impact	Response describes implications, ongoing or potential, of generative AI on program curricula.	"And I haven't been directly engaged in those conversations, but I know that they're happening as far as ethical use of AI and kind of tying back to even my colleagues wanting to embed it in the curriculum."
Researcher reactions: Mixed	Response explicitly or implicitly describes a range of reactions, positive and negative.	"I think the reactions have been mixed."
Researcher reactions: Negative	Response explicitly or implicitly describes primarily negative reactions, including fear and prohibitions in the use of generative AI.	"In my field, it's like Armageddon." "it's been more a fear and a reluctance to embrace it..."
Researcher reactions: Positive	Response explicitly or implicitly describes primarily positive reactions, including excitement.	"Primarily with excitement"
Researcher reactions: Skepticism and caution	Response describes a general reaction of researchers who question the value or practicality of the tools.	"I think in the research side of things, on that end, it's somewhat limited." "I know that they've been really cautious about it"
Student study aid	Response describes new instructional practices explicitly focused on helping or requiring students to use generative AI tools to study course content, review course content, or teach themselves course content.	"That way it's able to ask them as they move along through reviewing content or trying to figure out something that they don't have a full understanding of." "...if they just want to see more examples of something, they can use it to generate more examples."

Teaching about AI and AI usage	Response describes changes to teaching that explicitly incorporate AI or AI tools, often with a critical lens to help students become not only proficient but also informed and critical. This can include responses that only describe "talking about" the tools in class.	<p>"Another thing we did in another class, we did investigation of racial biases of ChatGPT, which is again, I can tell you exactly, I have actually saved that things, because it was fascinating."</p> <p>"Not a lot, a little bit, just in that we talk about what generative AI tools do, and I have shown students how generative AI tools can be helpful in the research rather than the writing part of the practice that they can find you sources sometimes."</p> <p>"...making sure that I am asking questions that make it obvious to identify when it's AI hallucinating something versus a student giving their own personal input."</p> <p>"...I have to spend extra time in class to teach them how to use AI as a useful tool..."</p>
Training and tools: AI in Teaching and Learning Working Group	Respondent describes attending training or using tools offered by the AI in Teaching and Learning Working Group.	"I'm aware of the working group."
Training and tools: AI tool developer	Respondent describes attending training or using tools offered by a company or organization that develops and supports AI tools.	" And this is actually coming from those that have designed AI systems, so very knowledgeable, but then also presenting the information in a level that's understandable."
Training and tools: AI working group seminars	Respondent describes attending one or more seminars offered by the university's AI in Teaching and Learning Working Group.	"I think I went to a couple of seminars offered by UD faculty, there is a symposium and faculty from different departments are exchanging ideas on how to use AI in research and how to establish a clear ethical rule or policy of using AI."
Training and tools: Availability and timing	Response describes a specific concern or experience related to the availability and timing of training opportunities.	"And I know they try to spread them over different days, but maybe I want to attend all the sessions and not just the ones that aren't on the days that I teach. So something has to be done to

		make them more broadly available, I think."
Training and tools: Colleagues	Respondent describes attending training or using tools offered by individuals that they consider a colleague. This can include colleagues here at UD, at other institutions, and in their professional and scholarly networks and organizations.	"So personally I would suggest more trial and also more backed practices, like if I can know for some other faculty, if they adopt some tools or practices and it's very successful."
Training and tools: CTAL	Respondent describes attending training or using tools offered by CTAL. This may include training or tools that are not actually from CTAL but from another partner unit on campus.	"And CTAL has been great at trying to give as many resources as possible."
Training and tools: Discipline-specific	Response describes resources, opportunities, application, or demonstration of an application that is discipline-specific.	"That is, I would say, pretty hands-on, where you can actually experiment with using these tools and discuss with colleagues in your disciplines and related disciplines."
Training and tools: E-mail	Response describes e-mail as a medium or tool that has been used to advertise or share training, tools, or resources that they have used.	"Also something I ran into via email."
Training and tools: Expert readings	Response describes making use of materials - newsletter, blogs, e-mails, etc. - about generative AI that are written by one or more experts.	"I believe I initially found one signed up for a newsletter of TLDR, so Too Long Did Not Read, and they've got multiple, and one of their sub-messages is AI, even though now it's within every single one of their messages, whether it's web development or user interface, there's AI just spread throughout now. "
Training and tools: Individual experts or groups	Respondent describes attending training or using tools offered by individual experts or groups not affiliated with specific publishers, vendors, or companies.	"I believe I initially found one signed up for a newsletter of TLDR, so Too Long Did Not Read, and they've got multiple, and one of their sub-messages is A..."

Training and tools: Publisher or academic vendor	Respondent describes attending training or using tools offered by a publisher or academic vendor.	" I've attended a couple of workshops that were put on by a publishing company that publishes a lot of...textbooks and had educators from other institutions demoing how they were using it in their courses."
Training and tools: UD workshop	Response describes attending a workshop at UD NOT explicitly offered by CTAL or the working group.	
Training and tools: Unspecified workshop	Response describes attending a workshop but does not specify who offered it.	"... the only thing so far is some workshops and videos, only a couple that I've attended to start to learn about it."
University response: Not satisfied	Response indicates general or specific dissatisfaction with UD's response.	"...my home institution isn't doing enough to educate people about exactly the kinds of questions we're probably going to discuss in this interview, for example."
University response: Satisfied	Response indicates general or specific satisfaction with UD's response.	"I guess I'm pretty satisfied with the university's response."