Moderator's Briefing: Architecting the AI-Fluent University

Part I: Setting the Stage - Defining the New Landscape

A. Introduction by the Moderator

The period following the public release of advanced generative artificial intelligence in late 2022 marks a strategic inflection point for higher education, comparable in significance to the advent of the internet or the mobile computing revolution.[1] Institutions have moved rapidly through an initial phase of reaction, characterized by concerns over academic integrity and the formulation of provisional policies, into a more considered, strategic phase. The central challenge is no longer whether to engage with AI, but how to do so proactively and comprehensively. This requires a shift from isolated, classroom-level tactics to a cohesive, institution-wide strategy that prepares the entire campus community for a future where AI is an integral collaborator in learning, research, and administration.

The core thesis of this discussion is the necessary evolution from *AI literacy* to *AI fluency*. Literacy can be defined as the foundational ability to understand, use, and critically evaluate AI tools. Fluency, however, represents a more profound capability: the ability to collaborate effectively with AI, to apply it innovatively within a specific discipline, and to create new knowledge and solutions through this human-machine partnership. This evolution is not merely a pedagogical concern; it has deep implications for institutional governance, IT infrastructure, faculty development, and the very definition of student success.

To navigate this complex terrain, this panel brings together three distinct and essential perspectives. Dr. Melanie Hibbert, Director of Academic Technology Services at Barnard College, offers a lens grounded in pedagogy and the development of foundational literacy frameworks. Dr. Jesse Spencer-Smith, Chief Data Scientist at Vanderbilt University's Data Science Institute, provides the perspective of an applied technologist, focused on building and deploying enterprise-scale AI systems and fostering industry-academia partnerships. Dr.

Greer Arthur, Research Director for the NC Collaboratory at the University of North Carolina at Chapel Hill, contributes a systems-level view, drawing on her experience in mobilizing large-scale, multi-institutional research to address complex societal and policy challenges. Together, their expertise covers the critical domains required to architect an AI-fluent university.

B. Defining the Core Concepts: Literacy vs. Fluency

A shared vocabulary is essential for a strategic discussion. The terms "AI literacy" and "AI fluency" are often used interchangeably, yet they represent distinct stages of a developmental continuum. Establishing a clear understanding of this continuum is the first step toward building a coherent institutional strategy.

Dr. Melanie Hibbert's work at Barnard College, in collaboration with academic and technology teams, has produced a nationally recognized "Framework for AI Literacy".[2] This framework provides a conceptual foundation for AI education, structured as a four-part pyramid. At its base (Level 1) is the ability to

Understand AI, which covers basic terms and concepts.[5] Moving up, the framework emphasizes core competencies such as successfully utilizing generative AI tools, experimenting with prompting techniques to improve outputs, and critically reviewing AI-generated content for potential "hallucinations," incorrect reasoning, and bias. At its apex, the framework calls for the ability to examine AI in a broader disciplinary context, critique AI tools, and analyze the ethical considerations in their development and deployment.[5] This model deliberately maintains a neutral stance on AI use, recognizing that true literacy can empower an individual to make an informed decision

not to use AI in certain contexts.[5] This foundational literacy—understanding the mechanics, capabilities, and limitations of AI—is the essential prerequisite for any deeper engagement.

Building upon this foundation, the concept of AI fluency describes a more advanced, applied, and collaborative state. While AI literacy focuses on comprehension and critical consumption, AI fluency is about sophisticated application and creation. One prominent definition, emerging from Ohio State University's campus-wide initiative, frames fluency as becoming "bilingual"—that is, being fluent in one's primary field of study and simultaneously fluent in the responsible and innovative application of AI within that field.[6] This moves beyond generic skills to deep, domain-specific expertise. For a data scientist like Dr. Jesse Spencer-Smith, who teaches courses on artificial intelligence and leads collaborative research projects, this concept resonates deeply. The goal is not to turn every student into a data scientist, but to empower every student to think

like a data scientist within their own domain—to clearly define problems, understand the capabilities of available tools, and communicate effectively with stakeholders about data-driven solutions.[8] Fluency, from this perspective, is the capacity to harness AI as a powerful tool to accelerate discovery and solve complex problems within one's discipline.

When this concept is scaled from the individual to the organization, it becomes a question of "institutional fluency." Dr. Greer Arthur's work with the NC Collaboratory provides a powerful analogue. The Collaboratory was established to utilize and disseminate research expertise from across the state's university system for practical use by government and industry, effectively creating a network that translates specialized knowledge into broad societal impact.[11] It has managed complex, multi-institutional research programs, such as a $6.73 million initiative involving 20 research projects across 14 North Carolina institutions to understand and mitigate COVID-19-related learning loss.[12] Institutional AI fluency, then, is more than the sum of its fluent parts. It is a coordinated, systemic capability. It requires the organizational structures, policies, and collaborative pathways that allow a university to leverage distributed pockets of AI expertise for strategic goals, much as the Collaboratory mobilizes research expertise for public policy. It is the institution's ability to function as an integrated, AI-enabled ecosystem.

A critical examination of these definitions reveals a subtle but important divergence in the concept of fluency, which can lead to strategic misalignment if not properly understood. The Ohio State model emphasizes deep *disciplinary application*—the art historian using AI for provenance research or the chemist using it for molecular modeling.[6] Another model, developed by researchers in collaboration with the AI company Anthropic, defines fluency through a set of universal

collaborative competencies, summarized as the "4Ds": Delegation (knowing what tasks to assign to AI), Description (crafting effective prompts), Discernment (critically evaluating AI outputs), and Diligence (iterating and maintaining ethical oversight).[14]

This distinction presents a strategic choice for university leaders. An institution that exclusively pursues the disciplinary model risks creating siloed excellence, with individual departments reinventing the wheel and a lack of common standards or shared language. Conversely, an institution that focuses only on the universal collaborative model may successfully train its community in generic skills but fail to catalyze the truly transformative, field-specific innovations that represent the ultimate promise of AI. A successful institutional strategy must therefore bridge this gap. It requires a centralized "core" of training in the universal competencies of human-AI collaboration, accessible to all students, faculty, and staff. This must be paired with a decentralized, "spoke" model of support that empowers individual departments and colleges to explore and develop the deep, disciplinary applications that are most relevant to their fields.

Furthermore, the panelists themselves embody the three essential, and at times conflicting, pillars of a comprehensive university AI strategy. Dr. Hibbert represents the **Pedagogist**, whose work is grounded in critical thinking, ethical awareness, and the human-centered liberal arts tradition.[5] Her approach is fundamentally bottom-up, focused on empowering the individual learner. Dr. Spencer-Smith represents the

Technologist, whose expertise lies in building enterprise-scale systems, deploying powerful platforms like Vanderbilt's Amplify GenAI, and ensuring robust, secure, and scalable infrastructure.[16] His approach is top-down and systems-oriented. The potential tension between the pedagogist's call for careful, critical, and sometimes cautious individual adoption and the technologist's drive for rapid, scalable, enterprise-wide deployment is palpable.

This is where the third perspective becomes the crucial link. Dr. Arthur represents the **Orchestrator**, whose work is defined by creating networks and fostering partnerships that translate specialized knowledge across institutional silos to achieve broader impact.[11] Her experience in building Research-Practice Partnerships offers a blueprint for how a university can create an institutional "nervous system".[12] This system can connect the pedagogical needs identified in the classroom with the technical capabilities offered by enterprise IT, ensuring that technology deployment is driven by academic mission and that pedagogical innovation is supported by robust infrastructure. The conversation, therefore, is not about three separate domains, but about how to weave these three essential functions—pedagogy, technology, and orchestration—into a single, coherent institutional fabric.

Part II: The Institutional Blueprint - From Strategy to Execution

Moving from conceptual definitions to campus-wide implementation requires a practical blueprint. This involves establishing clear governance, building faculty capacity, and architecting the necessary technological infrastructure. These foundational elements are the essential enablers of a truly AI-fluent campus.

A. Governance and Policy: Creating the Guardrails

The rapid proliferation of generative AI has forced institutions to move from initial reactive policies, often outright bans, toward more nuanced, context-specific guidelines.[1] Crafting a policy framework that simultaneously encourages responsible innovation and upholds academic integrity is a paramount challenge. The most critical element is clarity: a successful policy must clearly define what constitutes acceptable and unacceptable use, provide guidance for citation, and empower faculty to set specific standards for their courses, while being flexible enough to adapt to a technology that is evolving at an unprecedented pace.

At Barnard College, the AI literacy framework was developed in an environment of institutional neutrality, with "no mandate or recommendation for faculty to embrace or ban AI in their classrooms".[5] This approach places a significant emphasis on faculty autonomy and, by extension, on the need for effective faculty development. In such a context, maintaining academic integrity shifts from a purely disciplinary function to a pedagogical one. The focus moves away from AI detection tools, which are increasingly unreliable, toward assignment redesign. The challenge for academic technology leaders like Dr. Hibbert is to equip faculty with the skills to create "AI-resistant" or, better yet, "AI-inclusive" assessments. This involves designing tasks that leverage AI for lower-order activities like brainstorming or summarizing, while assessing higher-order skills that AI cannot replicate, such as critical analysis, creative synthesis, or personal reflection on the learning process itself.[18] This pedagogical pivot is fundamental to maintaining rigor in the age of AI.

From an IT and data governance perspective, the proliferation of free, public-facing AI tools presents a significant institutional risk. When students and faculty use these tools for university-related work, they may inadvertently expose sensitive student data, violating the Family Educational Rights and Privacy Act (FERPA), or feed unpublished research and other institutional intellectual property into third-party models, where it can be absorbed into training data and effectively become public.[20] This creates a compelling case for an enterprise-level, "walled garden" approach. Vanderbilt University's Amplify GenAI platform, recognized with a 2025 AWS Champion award, is a prime example of this strategy. It provides the campus community with secure access to multiple leading AI models within a university-managed, cloud-based environment.[17] This approach allows the institution to manage costs, ensure data privacy and security through contractual agreements with vendors, and provide equitable access to powerful tools, thereby mitigating the significant legal, financial, and intellectual property risks associated with the unmanaged use of public AI platforms.

B. Faculty Development: Building Capacity and Confidence

For any campus-wide AI initiative to succeed, it must be embraced by the faculty. This requires a thoughtful and sustained investment in professional development programs that build not only skills but also confidence, moving the faculty mindset from fear to experimentation.

A grassroots, community-based approach has proven effective. At Barnard, the development of AI literacy has been fostered through workshops and the creation of a generative AI community of practice.[5] These forums focus on practical, hands-on activities, such as real-time collaborative prompt engineering, where faculty can experiment in a low-stakes environment and learn from their peers. Another workshop focused on generating images with AI and then collectively analyzing them for biases, an activity that simultaneously builds technical skill and critical perspective.[5] The key ingredients for success in this model are peer leadership, a focus on pedagogical application rather than pure technology, and the creation of a safe space for open discussion about both the opportunities and the anxieties associated with AI in the classroom. This approach aligns with best practices from organizations like ISTE and EDUCAUSE, which emphasize practical, educator-focused training.[22]

For larger, more diverse institutions, a multi-tiered approach to faculty development is necessary to meet the community's wide range of needs. Vanderbilt's Data Science Institute exemplifies this strategy, offering a portfolio of engagement opportunities that cater to different levels of expertise and interest. For novices, informal, accessible events like "AI Fridays" or the "AI Flash" newsletter can build foundational awareness and literacy.[8] For those ready to go deeper, workshops and "AI Deep Dives" can provide more structured training on specific tools and techniques. For advanced researchers, the institute offers formal courses, summer training programs, and collaborative research support, enabling cutting-edge applications of AI.[8] Scaling this model requires a central hub of expertise, like a data science institute or a center for teaching and learning, that can coordinate this diverse array of programming, ensuring that there is an accessible on-ramp for every member of the faculty, regardless of their starting point.

C. IT Infrastructure: Powering the AI Campus

The conversation surrounding AI in higher education has been dominated by pedagogy and policy, but a looming challenge lies in the underlying infrastructure required to support these ambitions. AI is not merely a new software application; it represents a fundamental shift in computational demand that most existing campus IT infrastructures are ill-equipped to handle.

AI workloads, particularly the training of large models, are incredibly resource-intensive. Modern AI data centers are more accurately described as "AI Factories," purpose-built supercomputers that can consume 10 to 40 times more power and require advanced liquid cooling systems, far beyond the capabilities of traditional university data centers.[25] The analysis is stark: "AI has outgrown traditional university infrastructure," and many on-campus systems are projected to be "outpaced within 3–5 years".[26] This reality forces a critical strategic conversation for every CIO, CFO, and Provost. The key questions are no longer about incremental upgrades but about fundamental architectural choices. Should the institution invest millions in on-premise, high-performance computing (HPC) clusters? Should it adopt a flexible, scalable but potentially costly multi-cloud strategy, leveraging platforms like AWS? Or is a hybrid approach the most sustainable path forward? These are multi-year, multi-million-dollar decisions that must be made now to support the academic mission of the future.

A new and disruptive element in this equation is the emergence of the AI-powered PC. These devices are equipped with a dedicated neural processing unit (NPU), a specialized processor designed to handle AI tasks efficiently on the device itself, rather than sending them to the cloud.[27] This development has significant implications for the campus infrastructure strategy. For students and faculty, AI PCs promise faster, real-time AI assistance—such as live transcription and summarization of lectures—with lower latency and enhanced security, as sensitive data is processed locally instead of being transmitted to the cloud.[27] For researchers, especially those in the field without reliable internet connectivity, on-device AI capabilities can be transformative. From an institutional perspective, a robust fleet of AI PCs could potentially distribute the computational load, reducing the demand on centralized data centers and cloud services. The AI PC is not just a device refresh; it is a strategic asset that enables a more resilient, secure, and responsive hybrid computing environment, shifting some of the "AI Factory's" workload to the intelligent edge. The procurement of these devices, therefore, becomes a key component of an institution's overall AI infrastructure plan.

The immense cost and complexity of building a robust AI infrastructure create a significant risk of a new and profound equity gap in higher education. While the "digital divide" of the past was about access to computers and broadband, the emerging "computational power divide" is about access to the massive processing capabilities required for advanced AI. Well-resourced research universities, like Vanderbilt, can forge strategic partnerships with major cloud providers like AWS to build custom platforms and innovation labs, or invest in their own on-premise HPC clusters.[17] However, less-resourced institutions, including many regional public universities, community colleges, and minority-serving institutions, may be unable to afford such large-scale investments. They risk being relegated to a lower tier of capability, reliant on limited or pay-as-you-go cloud services that could constrain research and educational opportunities for their students and faculty. This disparity in infrastructure could exacerbate existing institutional hierarchies and limit social mobility, making strategic investment in and equitable access to computational resources a critical issue of educational justice.

Similarly, a more profound approach to policy development is needed. The common institutional trajectory—from bans to confusion to committee-drafted policies—is often reactive and focused on enforcement.[1] A more effective strategy is to treat AI policy as a pedagogical tool. Carnegie Mellon University's experience, where a spike in academic integrity violations was often due to student confusion rather than malicious intent, underscores the need for education over prohibition.[1] This means moving beyond a static policy document on a university website and actively

teaching the policy. This can be achieved by integrating discussions of ethical AI use and institutional guidelines into first-year seminars, library workshops, and course-specific orientations. By framing the policy not as a list of prohibitions but as a framework for responsible and effective collaboration, institutions can transform a governance requirement into a learning opportunity that directly contributes to the development of AI literacy and fluency across the student body.

Part III: AI Across the Quad - Transforming Research, Teaching, and Student Life

To move from abstract strategy to tangible value, it is essential to explore the real-world applications of AI across the full breadth of the university. These use cases not only demonstrate the power of AI fluency but also spark the imagination of faculty, staff, and students, illustrating how these tools can transform their own work.

A. The AI-Powered Researcher: STEM and Beyond

In the STEM fields, AI is rapidly evolving from a specialized tool to a fundamental partner in discovery. At institutions like Vanderbilt, AI is being used to develop smart microscope systems to better understand cellular behavior, create AI-enhanced wearable devices for sleep monitoring, and accelerate the development of vaccines through computational modeling.[30] This goes beyond simple data analysis. The concept of the "AI co-scientist"—an AI system capable of forming hypotheses, designing experiments, and interpreting results—is moving from science fiction to reality.[32] This paradigm shift demands a new set of skills from graduate students and researchers. They must not only possess deep domain expertise but also be adept at collaborating with AI systems, critically evaluating their outputs, and understanding the computational principles that underpin them.

While STEM applications often capture the headlines, the impact of AI in the humanities and arts is equally profound and, in some ways, more complex. Scholars are using AI for large-scale textual and historical analysis, uncovering patterns and connections in vast digital archives that would be impossible for a human to detect.[33] At a liberal arts college like

Barnard, faculty and students are critically engaging with AI models themselves as cultural artifacts, exploring how they are trained and what societal biases they reflect and amplify—a classic digital humanities inquiry.[5] Furthermore, generative AI is emerging as a creative partner. Dr. Spencer-Smith's "AI for Artists" workshop highlights this collaborative potential, where AI is used not to replace human creativity but to augment it, generating novel melodies or visual styles that a human artist can then refine, remix, and imbue with meaning.[34] This creative interplay offers a valuable lesson for technologists: the non-linear, intuitive, and iterative process of artistic creation provides a powerful model for how humans can most effectively collaborate with AI systems.

B. The AI-Enhanced Classroom: New Pedagogies

Within the classroom, AI is enabling a long-sought-after goal of higher education: personalized learning at scale. AI-powered adaptive learning platforms can tailor content to individual student needs, providing extra support on challenging concepts or accelerating pathways for those who have mastered the material.[35] Intelligent tutoring systems can offer students immediate, 24/7 feedback on their work, helping to close learning gaps and free up faculty time for more high-impact interactions.[37] From an academic technology perspective, the key is to identify and support tools that are both pedagogically sound and accessible to faculty without extensive technical training. This could include platforms that help generate diverse practice problems, create interactive simulations, or provide sophisticated feedback on student writing, allowing instructors to focus on teaching critical thinking and creativity.

The potential of AI extends beyond the individual classroom to address systemic educational challenges. The NC Collaboratory's coordinated research effort to combat pandemic-related learning loss is a case in point.[12] While this initiative relied on traditional research methods, it highlights the kind of large-scale problem that AI could be uniquely positioned to tackle in the future. One can envision AI-powered systems being deployed across a state or district to deliver highly targeted, individualized tutoring to students who have fallen behind, analyze system-wide data to identify the most effective pedagogical interventions, and provide educators and policymakers with real-time insights to guide resource allocation. This represents a shift from using AI as a classroom tool to deploying it as a public policy instrument for educational equity and improvement.

C. The AI-Supported Student: Beyond the Classroom

The impact of AI on the student experience extends far beyond academics. Universities are increasingly deploying AI to enhance a wide range of student support services, improving efficiency and providing more personalized support throughout the student lifecycle. AI-powered chatbots and virtual assistants can provide students with 24/7 answers to common questions about registration, financial aid, and campus services, freeing up staff to handle more complex issues.[38] Predictive analytics can identify students who are at risk of dropping out, allowing advisors to intervene proactively with targeted support.[35] AI-driven career services platforms can analyze a student's skills and interests to recommend relevant courses, internships, and job opportunities, helping to bridge the gap between college and career.[41] These applications demonstrate how AI can be used to create a more seamless, supportive, and responsive environment for all students, contributing to improved retention, success, and well-being.

The proliferation of these use cases reveals that AI is not just a tool to be used *within* traditional academic disciplines; it is a powerful catalyst for work *between* them. Dr. Spencer-Smith's "AI for Artists" workshop is a direct fusion of computer science and fine art.[34] Humanities scholars are using computational methods for textual analysis while also providing a critical, ethical lens on the AI models that STEM fields create.[5] University-industry partnerships, such as Vanderbilt's collaborations with Nissan and HCA Healthcare, show AI bridging the gap between the campus and the workplace.[9] This demonstrates that AI fluency is an inherently interdisciplinary competency. Consequently, a university's AI strategy must actively break down silos. It must encourage and fund interdisciplinary research centers, cross-listed courses, and collaborative projects that bring together students and faculty from diverse fields. The most significant breakthroughs and the most well-rounded AI-fluent graduates will emerge from these intersections.

However, a persistent concern that cuts across all these applications is the risk of de-skilling. Critics argue that an over-reliance on AI can undermine the development of foundational knowledge and critical thinking skills, as students may use AI as a shortcut that "bypasses reflection and criticality".[36] This concern necessitates a fundamental pedagogical shift toward valuing and assessing the

process of inquiry rather than just the final product. If an AI can produce a polished essay in seconds, then the essay itself becomes a less valid measure of student learning. In response, educators are redesigning assessments to include more scaffolded assignments, in-class writing, oral defenses of work, and metacognitive reflections where students must articulate *how* they used AI as a collaborative tool and justify their intellectual choices.[18] Some institutions, like the University of the Arts London, now require students to maintain a log of their AI use to situate it within their creative process.[44] This represents a significant change in pedagogical practice and assessment, placing a greater emphasis on the journey of learning and discovery. It is a more labor-intensive approach for faculty, and it requires institutional support and recognition to be implemented successfully.

Part IV: Navigating the Gauntlet - Ethics, Equity, and Trust

As higher education embraces the transformative potential of AI, it must also confront a gauntlet of profound ethical challenges. Building a trustworthy AI-enabled campus requires a proactive and transparent approach to mitigating algorithmic bias, protecting data privacy, and upholding the core values of the institution.

A. Algorithmic Bias: The Risk of Amplifying Inequity

One of the most significant risks of AI is algorithmic bias. AI systems learn from data, and if that data reflects existing societal biases, the AI will not only replicate but often amplify those biases, leading to unfair or discriminatory outcomes.[45] In higher education, this risk is acute and has been documented in several high-stakes areas. AI-powered admissions tools have been shown to favor applicants from privileged backgrounds, predictive advising software has been found to flag minority students as "at-risk" at disproportionately high rates, and automated essay scoring systems can exhibit bias based on a student's socioeconomic status or dialect.[47]

Addressing this challenge requires a two-pronged approach. From a technical and data science perspective, institutions must implement robust safeguards throughout the AI lifecycle. This includes meticulously curating diverse and representative training data, employing bias detection tools to audit algorithms before and after deployment, and ensuring that AI systems are transparent and explainable, so that their decisions can be understood and challenged.[46] For leaders like Dr. Spencer-Smith, who build and manage these systems, these are not optional add-ons; they are essential components of responsible AI development and deployment.

However, technical fixes alone are insufficient. A humanistic and critical perspective is equally vital. As Dr. Hibbert's framework suggests, a core component of AI literacy is the development of "ethical awareness" and "critical thinking".[5] All members of the campus community, not just computer scientists, must be equipped to question the outputs of these seemingly objective systems. They need to understand that AI is not neutral; it is built upon human knowledge and values, with all their inherent biases and inequities.[5] This means integrating critical AI studies into the curriculum across disciplines, teaching students and faculty to probe the assumptions embedded in algorithms, to consider whose voices might be missing from the training data, and to analyze the potential societal impact of AI applications. This critical literacy is the essential human counterbalance to the technical power of AI.

B. Data Privacy and Security: The University's Responsibility

The voracious appetite of AI models for data creates unprecedented challenges for privacy and security. As previously noted, the use of free, public AI platforms for university work poses an unacceptable risk. These tools often lack the contractual privacy protections necessary to comply with regulations like FERPA and can incorporate user inputs into their training data, leading to the public disclosure of sensitive student information or valuable institutional intellectual property.[20]

A comprehensive data governance strategy for the AI era must therefore be built on a principle of containment and control. An enterprise platform, like Vanderbilt's, is a critical first step, as it ensures that all interactions with AI models occur within a secure, university-managed environment governed by robust data protection agreements.[17] Beyond this, institutions must establish and clearly communicate a "Dos and Don'ts" list for handling data with AI.[51] This policy should explicitly forbid the input of any personally identifiable information (PII) or other confidential data into any non-approved, public-facing AI tool. It should also provide clear guidance for researchers on how to use AI with sensitive datasets in a manner that is compliant with Institutional Review Board (IRB) protocols and other research ethics standards.

The experience of managing large-scale social science research, a domain familiar to Dr. Arthur, offers valuable lessons for university-wide AI data governance. Such research often involves the collection and analysis of sensitive data from multiple sources, requiring rigorous protocols to protect participant privacy while enabling valuable inquiry.[12] These protocols typically involve data anonymization, secure data storage and access controls, and a clear ethical review process to weigh the potential benefits of the research against the risks to individuals. Universities can adapt this framework to govern the use of institutional data in their own administrative and academic AI systems. By treating student data with the same level of care and ethical consideration as human subjects research data, institutions can build a foundation of trust that is essential for the responsible adoption of AI.

Underlying these ethical challenges is a fundamental tension between the pursuit of AI-powered efficiency and the commitment to educational equity. Many of the most heavily promoted AI applications in higher education are those that promise to automate administrative tasks and streamline operations, such as screening admissions applications, identifying at-risk students, or grading assignments.[35] For institutions facing financial pressures, the appeal of this efficiency is powerful. However, these are precisely the applications where the risks of algorithmic bias are most pronounced. An algorithm may efficiently identify students for academic intervention, but if it does so by disproportionately flagging students from marginalized communities, as has been documented, then the "efficiency" has been achieved at the direct expense of "equity".[48] This creates a critical dilemma for university leaders. To navigate it, institutions must move beyond a simple return-on-investment analysis for AI procurement. Every proposed AI implementation, particularly those involving high-stakes decisions about students, must be subjected to a rigorous "equity impact assessment." This process would require leaders to ask not only, "Will this tool make us more efficient?" but also, "Which student populations might be disproportionately and negatively impacted by this tool?" and "What are our mechanisms for redress if the algorithm is wrong?" This requires a new layer of governance that blends technical, ethical, and social analysis, ensuring that the pursuit of efficiency never compromises the institution's fundamental commitment to fairness and justice.

Part V: The Horizon - Future-Proofing the Institution

As the initial wave of AI adoption crests, university leaders must look to the horizon and consider the long-term implications for their graduates and their institutions. The goal is not simply to integrate today's AI but to build an organization that is agile, resilient, and prepared for the AI of tomorrow.

A. The AI-Fluent Graduate

The ultimate measure of a university's success in this new era will be the capabilities of its graduates. As AI automates an increasing number of routine cognitive tasks, the premium on uniquely human skills will only grow. The AILit Framework and other analyses point to enduring competencies that AI cannot easily replicate, such as critical thinking, creativity, empathy, ethical judgment, and complex collaboration.[53] Higher education must therefore double down on its historic mission to cultivate these skills. This means fostering learning environments that prioritize inquiry-based projects, interdisciplinary teamwork, and engagement with complex, ambiguous problems that have no easy answers. The AI-fluent graduate will not be the one who can simply use AI to find information, but the one who can collaborate with AI to create new knowledge, solve novel problems, and ask the questions that AI cannot yet conceive of.

B. The AI-Ready Institution

To produce such graduates, the institution itself must become more agile and adaptive. The rapid pace of AI development means that a five-year strategic plan for technology is obsolete on arrival. Institutions need to build organizational structures that facilitate continuous learning and evolution. The responsive, networked model of Dr. Arthur's NC Collaboratory, which is designed to quickly mobilize expertise to address emerging challenges, offers a compelling blueprint.[12] Universities might create standing AI task forces with representation from across campus—faculty, IT, administration, library, and students—empowered to constantly scan the horizon, pilot new technologies, and recommend rapid adjustments to policy and practice.

When embarking on this journey, university leaders often make the mistake of viewing AI as a purely technological problem to be delegated to the CIO. This is a fundamental misconception. As the preceding analysis demonstrates, a successful AI strategy is deeply intertwined with pedagogy, curriculum, faculty development, ethics, and institutional culture. It is an academic mission problem with a technological component, not the other way around.

For the individual faculty member or academic department that feels overwhelmed by the scale and pace of this change, the first step is the most important. It is not necessary to become an AI expert overnight. The advice is to start small and be curious. Begin by experimenting with a single generative AI tool. Bring it into one class with a single, low-stakes assignment. Be transparent with students about the experiment. Engage them as partners in exploring both the capabilities and the limitations of the tool. This first practical step, taken in a spirit of open inquiry, is the beginning of the path from literacy to fluency.

C. Final Thoughts

The integration of artificial intelligence represents one of the most profound opportunities and complex challenges for higher education in a generation. It demands more than new tools; it demands new ways of thinking, teaching, learning, and organizing. The institutions that thrive in this new era will be those that move beyond a reactive posture of fear and prohibition to a proactive strategy of engagement and innovation. They will build a foundation of critical AI literacy for all, foster deep, disciplinary AI fluency in their students and faculty, and architect the robust and equitable infrastructure necessary to power their ambitions. Most importantly, they will do so with a clear-eyed understanding of the ethical responsibilities involved, ensuring that these powerful technologies are deployed in service of the enduring humanistic mission of the university: to cultivate wisdom, advance knowledge, and empower individuals to build a more just and prosperous future.

Appendix A: Moderator's Strategic Map

This table provides a strategic map for navigating the webinar discussion. It aligns key topics and questions with the specific expertise of each panelist, suggests opportunities for cross-panelist interaction, and links the conversation to core thematic pillars and the evidence base.

Discussion Topic/Question	Primary Panelist	Secondary Panelist	Core Themes
Walk us through your "Framework for AI Literacy" and how it sets the stage for fluency.	Dr. Hibbert	Dr. Spencer-Smith	Literacy-to-Fluency Continuum [2]
From a Chief Data Scientist's view, how does "fluency" differ from "literacy"?	Dr. Spencer-Smith	Dr. Hibbert	Literacy-to-Fluency Continuum [6]
What does "institutional fluency" look like at a systems level?	Dr. Arthur	All	Institutional Strategy [11]
How does institutional neutrality on AI use impact academic integrity policies?	Dr. Hibbert	Dr. Spencer-Smith	Policy & Governance, Academic Integrity [5]
Why is a "walled garden" approach like Amplify GenAI critical for data governance?	Dr. Spencer-Smith	Dr. Hibbert	Policy & Governance, Data Privacy [17]
What are the key ingredients for a successful, confidence-building faculty development program?	Dr. Hibbert	Dr. Spencer-Smith	Faculty Development[5]

How do you structure development programs to cater to both novices and advanced researchers?	Dr. Spencer-Smith	Dr. Hibbert	Faculty Development[8]
What are the strategic questions a CIO should ask about building a campus "AI Factory"?	Dr. Spencer-Smith	Moderator (on AI PCs)	IT Infrastructure, Equity[25]
How is AI changing the nature of STEM research and creating the "AI co-scientist"?	Dr. Spencer-Smith	Dr. Arthur	Cross-Disciplinary Use Cases (STEM)[9]
What unique critical perspectives do the humanities bring to the AI conversation?	Dr. Hibbert	Dr. Spencer-Smith	Cross-Disciplinary Use Cases (Humanities)[5]
Could AI be deployed at scale to tackle systemic challenges like learning loss?	Dr. Arthur	Dr. Spencer-Smith	Institutional Strategy, Student Success[12]
What are the most effective safeguards to mitigate algorithmic bias in student-facing systems?	Dr. Spencer-Smith	Dr. Hibbert, Dr. Arthur	Ethics & Equity, Algorithmic Bias[45]
What enduring "human skills" must higher education cultivate that AI cannot replicate?	All	All	Future-Proofing, The AI-Fluent Graduate[32]

Works cited

1. The rise of AI tools forces schools to reconsider what counts as cheating, accessed September 18, 2025, https://apnews.com/article/ai-cheating-school-chatgpt-4f89a552e9093ce2180471b4d4736675
2. A Framework for AI Literacy - Columbia Academic Commons, accessed September 18, 2025, https://academiccommons.columbia.edu/doi/10.7916/cvjz-ve81
3. Melanie Hibbert | Barnard College, accessed September 18, 2025, https://barnard.edu/profiles/melanie-hibbert
4. Melanie Hibbert | EDUCAUSE Members, accessed September 18, 2025, https://members.educause.edu/melanie-hibbert
5. A Framework for AI Literacy - EDUCAUSE Review, accessed September 18, 2025, https://er.educause.edu/articles/2024/6/a-framework-for-ai-literacy
6. AI Fluency: FAQs | Office of Academic Affairs - The Ohio State University, accessed September 18, 2025, https://oaa.osu.edu/ai-fluency-faqs
7. AI Fluency | Office of Academic Affairs - The Ohio State University, accessed September 18, 2025, https://oaa.osu.edu/ai-fluency
8. Jesse Spencer-Smith - DSIDSI - Vanderbilt University, accessed September 18, 2025, https://www.vanderbilt.edu/datascience/person/jesse-spencer-smith/
9. Jesse Spencer-Smith, PhD | - Vanderbilt University Medical Center |, accessed September 18, 2025, https://www.vumc.org/brockcenter/person/jesse-spencer-smith-phd
10. Vanderbilt Data Science Spotlight: Jesse Spencer-Smith - YouTube, accessed September 18, 2025, https://www.youtube.com/watch?v=JPa-Fp0P3ig
11. Working for the NC Collaboratory with Dr. Greer Arthur | All Swell?, accessed September 18, 2025, https://www.coastalnewstoday.com/podcasts/working-for-the-nc-collaboratory-with-dr-greer-arthur-all-swell
12. NC Collaboratory & NCDPI Partnership for Evidence-based Policymaking, accessed September 18, 2025, https://www.osbm.nc.gov/documents/files/evaluating-impacts-covid-19-k-12-learning/open
13. Researchers Seek COVID-19 Learning Loss Solutions | NCPRO - NC.gov, accessed September 18, 2025, https://ncpro.nc.gov/blog/2023/03/09/researchers-seek-covid-19-learning-loss-solutions
14. Launch of New Open Course: AI Fluency – Framework and Foundations, accessed September 18, 2025, https://www.teachingandlearning.ie/2025/06/19/launch-of-new-open-course-ai-fluency-framework-and-foundations/
15. AI Fluency: Framework & Foundations - Anthropic Courses, accessed September 18, 2025, https://anthropic.skilljar.com/ai-fluency-framework-foundations
16. Jesse Spencer-Smith | Biography | Vanderbilt Business, accessed September 18,

2025, https://business.vanderbilt.edu/bio/jesse-spencer-smith
17. Celebrating the 2025 AWS Champions: Visionaries transforming government and education | AWS Public Sector Blog, accessed September 18, 2025, https://aws.amazon.com/blogs/publicsector/celebrating-the-2025-aws-champions-visionaries-transforming-government-and-education/
18. Course and Assignment (Re-)Design | U-M Generative AI - University of Michigan, accessed September 18, 2025, https://genai.umich.edu/resources/faculty/redesigning-assessments
19. Teaching with AI: How college professors are redefining the classroom - Ohio University, accessed September 18, 2025, https://www.ohio.edu/news/2024/09/teaching-ai-how-college-professors-are-redefining-classroom
20. Artificial Intelligence in Education: Striking a Balance between Innovation & Privacy - Edly, accessed September 18, 2025, https://edly.io/blog/artificial-intelligence-in-education-and-privacy-concerns/
21. AI and Data Privacy and Security - University Center for Teaching and Learning, accessed September 18, 2025, https://teaching.pitt.edu/resources/ai-and-data-privacy-and-security/
22. Artificial Intelligence in Education - ISTE, accessed September 18, 2025, https://iste.org/ai
23. Teaching with AI | EDUCAUSE Events, accessed September 18, 2025, https://events.educause.edu/teaching-with-ai
24. Jesse Spencer-Smith - DSI | Vanderbilt University, accessed September 18, 2025, https://www.vanderbilt.edu/datascience/author/spencejb/
25. Inside the world's most powerful AI datacenter - The Official Microsoft Blog, accessed September 18, 2025, https://blogs.microsoft.com/blog/2025/09/18/inside-the-worlds-most-powerful-ai-datacenter/
26. Beyond the Campus: Why Leading Universities Are Moving Their AI Infrastructure Off-Site, accessed September 18, 2025, https://www.nextdc.com/blog/universities-offsite-ai-infrastructure
27. What Is an AI PC, and Why Would Higher Education Need One? - EdTech Magazine, accessed September 18, 2025, https://edtechmagazine.com/higher/article/2025/07/what-is-ai-pc-perfcon
28. Vanderbilt University launches Cloud Innovation Lab in collaboration with AWS, accessed September 18, 2025, https://aws.amazon.com/blogs/publicsector/vanderbilt-university-launches-cloud-innovation-lab-in-collaboration-with-aws/
29. Examples of possible academic integrity policies that address student use of generative AI tools - Eberly Center - Carnegie Mellon University, accessed September 18, 2025, https://www.cmu.edu/teaching/technology/aitools/academicintegrity/index.html
30. Lucas Johnson - College of Connected Computing - Vanderbilt University, accessed September 18, 2025, https://computing.vanderbilt.edu/author/johnsll9/
31. Research and Innovation | Vanderbilt University, accessed September 18, 2025,

https://news.vanderbilt.edu/tag/research-and-innovation/
32. 'It's going to be a life skill': educators discuss the impact of AI on university education, accessed September 18, 2025, https://www.theguardian.com/education/2025/sep/13/its-going-to-be-a-life-skill-educators-discuss-the-impact-of-ai-on-university-education
33. The humanities in the age of AI: Notes on a participatory exploration at MLA 2025, accessed September 18, 2025, https://about.jstor.org/blog/mla_2025_highlights/
34. The Art Behind Data Science and Machine Learning with Dr. Jesse Spencer-Smith - Mission, accessed September 18, 2025, https://mission.org/hidden-in-plain-sight/the-art-behind-data-science-and-machine-learning-with-dr-jesse-spencer/
35. AI in Higher Education: How AI Is Reshaping Higher Education | USAHS, accessed September 18, 2025, https://www.usa.edu/blog/ai-in-higher-education-how-ai-is-reshaping-higher-education/
36. The Impact of Artificial Intelligence (AI) on Students' Academic Development - MDPI, accessed September 18, 2025, https://www.mdpi.com/2227-7102/15/3/343
37. The Role of AI in Modern Education, accessed September 18, 2025, https://onlineprograms.education.uiowa.edu/blog/role-of-ai-in-modern-education
38. Artificial Intelligence for IT Operations Is Key to Enhancing the Campus Experience in Higher Education - Juniper Networks, accessed September 18, 2025, https://www.juniper.net/content/dam/www/assets/editorials/us/en/idc-artificial-intelligence-for-it-operations-is-key-to-enhancing-the-campus-experience-in-higher-education.pdf
39. How Artificial Intelligence is Transforming Higher Education | ACE Blog, accessed September 18, 2025, https://ace.edu/blog/ai-in-higher-education/
40. Benefits of AI | Office of the Provost | Washington State University, accessed September 18, 2025, https://provost.wsu.edu/benefits-of-ai/
41. As Pell Grants enter the AI era, colleges face a test of worth, accessed September 18, 2025, https://timesofindia.indiatimes.com/education/news/as-pell-grants-enter-the-ai-era-colleges-face-a-test-of-worth/articleshow/123889519.cms
42. Research News - College of Connected Computing - Vanderbilt University, accessed September 18, 2025, https://computing.vanderbilt.edu/category/news/
43. How AI is undermining learning and teaching in universities, accessed September 18, 2025, https://www.theguardian.com/technology/2025/sep/16/how-ai-is-undermining-learning-and-teaching-in-universities
44. How to use ChatGPT at university without cheating: 'Now it's more like a study partner', accessed September 18, 2025, https://www.theguardian.com/education/2025/sep/14/how-to-use-chatgpt-at-university-without-cheating-now-its-more-like-a-study-partner
45. Risks of AI Algorithmic Bias in Higher Education - Schiller International University,

accessed September 18, 2025,
https://www.schiller.edu/blog/risks-of-ai-algorithmic-bias-in-higher-education/
46. What Is Algorithmic Bias? - IBM, accessed September 18, 2025,
https://www.ibm.com/think/topics/algorithmic-bias
47. Algorithmic bias in educational systems: Examining the impact of AI-driven decision making in modern education, accessed September 18, 2025,
https://journalwjarr.com/sites/default/files/fulltext_pdf/WJARR-2025-0253.pdf
48. What Are the Risks of Algorithmic Bias in Higher Education? - Every Learner Everywhere, accessed September 18, 2025,
https://www.everylearnereverywhere.org/blog/what-are-the-risks-of-algorithmic-bias-in-higher-education/
49. Algorithmic bias and fairness in education: a (very brief) primer, accessed September 18, 2025,
https://der.monash.edu/algorithmic-bias-and-fairness-in-education-a-very-brief-primer/
50. AI Literacy: A Guide for Academic Libraries | Lo, accessed September 18, 2025,
https://crln.acrl.org/index.php/crlnews/article/view/26704/34626
51. Hidden AI Risks in Your School: How to Protect Student Data - CESA 6, accessed September 18, 2025,
https://www.cesa6.org/blog/how-to-protect-student-data-from-hidden-ai-risks
52. AI Use Cases in Higher Education - Hyland Software, accessed September 18, 2025, https://www.hyland.com/en/resources/articles/ai-higher-education
53. Why AI literacy is now a core competency in education | World Economic Forum, accessed September 18, 2025,
https://www.weforum.org/stories/2025/05/why-ai-literacy-is-now-a-core-competency-in-education/