

# **A Report on AI and the UAB Community**

## **Prepared by the Provost-appointed AI Working Group**

### **Attestation**

This document was developed, authored, and reviewed by members of the AI Working Group in response to a charge from the provost. The authors also consulted with additional members of the UAB community, considered published articles and internet content, reviewed the AI responses of other universities, and employed AI technology as a resource in its development. We attest that all content contained herein represents our own work and is accurate and factual at the date of its submission, June 29, 2023.

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### **Introduction**

Artificial Intelligence technology in higher education offers exciting opportunities for personalized learning, efficient assessment, enhanced accessibility, intelligent tutoring, and streamlined administrative tasks. It can revolutionize the way we teach, learn, and work. However, there are challenges to consider. Ethical and legal concerns arise regarding data privacy, authorship attribution, potential machine-induced biases, and job displacement are also anticipated. Balancing human interaction with AI integration is crucial to the future success of the Academy.

It is incumbent upon UAB to develop policies and procedures to be an effective actor in this new environment. The university must ensure that AI is ethically deployed, appropriately integrated, and used as a tool to enhance rather than replace the essential roles of humans. Those in academic communities are likely to encounter AI in most digital products in the future, and it is essential that students, educators, researchers, scholars, and clinicians are trained to maximize the benefits and minimize the harms of this powerful new technology.

### **Relevant AI Technologies**

The following Generative AI technologies are important for members of the UAB community to consider.

## **Text Generation**

AI text technologies can be beneficial in improving writing skills by automating language processing tasks like grammar and spell checking, providing personalized feedback, and offering virtual assistants for support.

- Automated Language Processing: AI text tools automate language tasks like grammar and spell checking, proofreading, and translation.
- Intelligent Tutoring Systems: AI-powered tutoring systems offer personalized feedback and guidance to improve writing skills.
- Natural Language Processing (NLP): AI systems use NLP techniques to understand and generate human-like text.
- Large Language Models (LLMs): Examples like OpenAI's GPT-3.5 or GPT-4 can perform tasks such as translation or summarization, but their understanding of text is purely statistical and lacks human-like comprehension.
- Plagiarism Detection: AI-powered software efficiently analyzes text to identify potential instances of plagiarism.

## **Image Generation**

AI tools can automate the creation of visuals, benefiting data visualization, content creation, and accessibility in education.

- Data Visualization: AI can help produce interactive visuals that assist with understanding complex information, enhancing lectures and presentations.
- Content Creation: AI can automate and simplify visual content generation, saving time for faculty and students, enabling them to focus on analyzing data rather than designing visuals.
- Augmented Reality (AR) and Virtual Reality (VR): AI can assist with the creation of virtual environments and overlays digital content onto the real world, enhancing learning experiences in subjects like archaeology or biology.
- Accessibility: AI can generate alternative text descriptions for images (alt tags), making visual elements accessible to visually impaired students, promoting inclusivity in teaching materials.

## **Image Analysis**

AI and machine learning tools can be used for image analysis in diverse clinical settings, offering potential improvements in accuracy, detection, measurement, standardization, efficiency, and decision support.

- Radiology Image Analysis: AI can aid in the identification and diagnosis of medical conditions by analyzing radiology images, including X-rays, CT scans, and MRI scans.
- Pathology Image Analysis: AI can assist pathologists in analyzing tissue samples, aiding in the identification and diagnosis of diseases.

## **Computer Coding**

- Software Coding: AI can offer specific coding solutions to enhance efficiency in software development, helping programmers write code more effectively.
- Clinical Coding for Billing: AI can assist in identifying and accurately coding patient diagnoses and treatments in Electronic Health Records (EHRs), improving the accuracy of billing and reimbursement processes.
- Application (App) program interfaces (APIs) that use general AI's to create tools for specific functions such as grant writing, reference identification, etc.

## **Clinical Functional Analysis**

- Predictive Analytics: AI can analyze patient data to predict future health events or outcomes, such as the likelihood of readmission or the development of chronic conditions, assisting healthcare providers in proactive care management.
- Clinical Decision Support Systems: AI can analyze patient data and offer personalized treatment recommendations to doctors, enhancing the accuracy of diagnoses and treatment plans.

### **Other Clinical Areas**

- Robotic Process Automation (RPA): RPA can automate routine tasks like appointment scheduling and lab result processing, enhancing operational efficiency in an Academic Medical Center (AMC).
- Virtual Health Assistants: AI-powered virtual health assistants can offer patients personalized health information and support, enhancing patient engagement and improving health outcomes.

## **Identified Capabilities and Limitations of AI Technologies as of July 2023**

### **Text Generation**

#### Capabilities:

- Automated Language Processing: AI text tools efficiently perform tasks like grammar and spell checking, language translation, and proofreading.
- Intelligent Tutoring Systems: AI-powered tutoring systems offer personalized feedback, identify areas for improvement, and provide revision suggestions based on analyzing students' written work.
- Natural Language Processing (NLP): NLP techniques enable AI systems to understand and generate human-like text, enabling interactive learning materials and virtual teaching assistants.

#### Limitations:

- Contextual Understanding: AI text tools may struggle with nuanced or context-dependent language, leading to occasional inaccuracies or misinterpretations.
- Lack of Creativity: AI can generate text based on patterns and examples, but it lacks the originality and creativity of human expression.
- Ethical Concerns: AI text generation raises ethical issues related to bias, misinformation, and potential misuse of technology.

### **Image Generation**

#### Capabilities:

- Data Visualization: AI can generate visually appealing and interactive data visualizations, aiding in understanding complex information.
- Content Creation: AI image creation tools can automate the generation of visuals such as charts, graphs, diagrams, and illustrations, saving time for users.
- Augmented Reality (AR) and Virtual Reality (VR): AI can enhance immersive learning experiences by creating virtual environments or overlaying digital content onto the real world.

#### Limitations:

- Creative Limitations: AI-generated visuals may lack the creativity and artistic judgment that human designers possess.
- Complexity: Some complex visuals or intricate designs may be challenging for AI to generate accurately.
- Ethical Considerations: AI image recognition and generation algorithms may exhibit biases or inaccuracies, requiring careful monitoring and consideration to avoid unintended consequences.

## **Clinical Applications**

### Capabilities:

- Automation of routine tasks: AI products can automate repetitive or time-consuming tasks, freeing up time for healthcare providers to focus on patient care.
- Improved accuracy: AI products can analyze vast amounts of data and identify patterns and correlations that might not be immediately apparent to humans, leading to more accurate diagnoses and treatments.
- Standardization/precision: AI products can improve consistency and standardization in repetitive clinical tasks.
- Personalization: AI products can provide customized recommendations and treatments based on individual patient data and history, leading to improved patient outcomes.
- Improved Efficiency: AI products can process and analyze large amounts of data rapidly, enhancing the speed and accuracy of decision-making processes. They also improve efficiency by enhancing patient triage, reducing MRI scan time, aiding in interpretation, and streamlining documentation processes.

### Limitations:

- Lack of Understanding of Complex Medical Concepts: Language-based AI products may struggle to comprehend intricate medical concepts and conditions, potentially leading to inaccurate diagnoses and treatments.
- Bias in Training Data: If the data used to train AI contains biases, these biases may manifest in the predictions and recommendations made by the AI product.
- Lack of Transparency: AI products may not always provide clear explanations for their decision-making process, making it challenging for healthcare providers to understand how these decisions were reached.
- Dependence on High-Quality Data: AI products require accurate and comprehensive data to generate precise predictions and recommendations, so any errors or gaps in the data can limit the effectiveness of the AI product.

## **Unforeseen Capabilities and Threats**

- Capabilities: The various AI systems use randomization algorithms as part of their innerworkings. As a result, they routinely create valuable and unanticipated content.
- Threats: AI systems can fail in surprising ways that are not always easy to identify. It is difficult or impossible to understand how some AI algorithms generate their output. Large language models (LLMs), like ChatGPT and others, have demonstrated a propensity to 'hallucinate' and create output text that seems to be true or accurate but is actually false or inaccurate. LLMs can also create output that many would find offensive and biased due to inherent bias in the training of the algorithms.

## **Potential Impact on the UAB Campus**

AI has the potential to make a significant impact on both the academic and clinical aspects of the UAB community.

## **Potential Impact on Academics**

- Students: AI can potentially support students by offering personalized learning experiences, identifying areas of weakness, and providing tailored support to enhance their learning.
- Teachers: AI can potentially aid teachers in grading assignments and delivering feedback, saving time for more meaningful student interaction and instructional planning.
- Scholarly Works and Publications: AI can potentially assist researchers in quickly identifying relevant articles and publications in their field, streamlining the literature review process.
- Science and Research: AI can potentially help researchers analyze large datasets, revealing patterns and correlations that may not be immediately apparent to humans, thereby enhancing scientific discoveries. LLMs like GPT-4 can be used to improve multiple aspects of grant applications and improve efficiency by 20-50% in completing a grant application.
- Predictive Analytics: AI can potentially be used to analyze research trends and predict future developments in various fields, allowing academics to stay ahead of the curve.
- Personalized Learning: AI can potentially provide personalized learning experiences, improving the effectiveness of education and helping students achieve their goals.
- Improved Collaboration: AI can potentially assist academics in collaborating with others by recommending potential collaborators based on their research interests and expertise.

### **Potential Impact on Specific Academic Disciplines**

- Computer Science and Engineering: AI technologies are directly related to these fields, and departments offering programs in computer science, artificial intelligence, and machine learning will play a vital role in advancing AI capabilities.
- Data Science and Analytics: AI relies heavily on data analysis and interpretation. Departments specializing in data science, analytics, and statistics can leverage AI tools to gain insights from large datasets and make data-driven decisions.
- Health Sciences and Medicine: AI has the potential to revolutionize healthcare through applications like medical imaging analysis, drug discovery, precision medicine, and patient monitoring, impacting departments such as nursing, pharmacy, medical research, and biomedical engineering.
- Business and Finance: AI can enhance business operations, automate processes, optimize financial strategies, and improve customer experiences. Departments of business administration, finance, and marketing can benefit from integrating AI technologies.
- Education and Learning Sciences: AI has implications for educational technologies, personalized learning, intelligent tutoring systems, and adaptive learning platforms. Departments focusing on education, instructional design, and learning sciences can explore AI's impact on teaching and learning.
- Social Sciences and Humanities: AI technologies offer new avenues for analyzing social and cultural data, natural language processing, sentiment analysis, and understanding human behavior. Departments such as sociology, psychology, linguistics, and anthropology can explore AI's impact on their research and analysis.

- Creative Arts and Media: AI-powered tools can aid in music composition, visual arts, graphic design, and video editing. Departments encompassing fine arts, music, design, and media production can explore the integration of AI in creative processes.
- Library and Information Sciences: AI can assist in managing vast amounts of information, enhancing information retrieval systems, and enhance collection development and management activities, such as metadata creation, by providing improved analysis of content objects and analytics. Departments specializing in library sciences, information studies, and archival management can benefit from AI technologies.
- Overall, how the use of AI impacts the domains of patent applications, copyright licensing, and trademarks is unclear.

### **Potential Impact on Academic Integrity**

- Cheating: AI can be used to generate answers to test questions, allowing students to cheat on exams and assessments. Chatbots like ChatGPT can also be used to generate answers to homework assignments, undermining the integrity of academic work.
- Plagiarism: AI can generate research papers and essays, making it easier for students to engage in plagiarism by copying and pasting information from online sources without proper attribution.
- Bias and Discrimination: AI depends on the internet and other public domain materials for its training data, and if the data is biased, the algorithms may make biased or discriminatory decisions, affecting the fairness and objectivity of academic processes.
- Automation of Grading: AI can automate grading, but the lack of human interaction may limit educators' ability to provide meaningful feedback and assessment. Important nuances in student work that a human grader would detect may be overlooked.
- Impact on Originality: AI can reduce the incentive for students to think critically and creatively, as they can rely on the algorithms for answers and solutions instead of developing their own original ideas.

### **Potential Clinical Impact**

- Clinical Decision-Making: AI can analyze patient data and offer personalized treatment recommendations to healthcare providers, enhancing the accuracy and efficiency of decision-making processes.
  - Clinical Decision Support Systems (CDSS) that provide simple reminders or alerts to healthcare providers usually do not require FDA clearance. However, CDSS that offer more complex recommendations, like personalized treatment plans, may be considered high-risk medical devices and may require FDA clearance.
- Radiology and Pathology: AI can assist radiologists and pathologists in analyzing images and tissue samples, aiding in more accurate and efficient identification and diagnosis of medical conditions. As of January 2023, 76% (396/520) of all FDA cleared algorithms are in radiology/imaging.
- Electronic Health Records (EHRs): AI can extract relevant information from unstructured text in EHRs, improving the accuracy of patient records and supporting clinical decision-making. OpenAI's LLMs are currently being integrated into Epic, Cerner, Nuance and other text-based clinical systems.

- **Patient Engagement and Outcomes:** AI-powered virtual health assistants can provide patients with personalized health information and support, improving patient engagement and outcomes. AI systems can be used to improve clinical visit efficiency and documentation.
- **Operations and Efficiency:** AI can automate routine tasks, such as scheduling appointments and processing lab results, improving operational efficiency in an AMC.
- **Predictive Analytics:** AI can analyze patient data and predict future health events or outcomes, allowing healthcare providers to take proactive steps to prevent or mitigate these events.

### **Potential Impact Related to Equity**

- **Digital Divide:** Not all students, staff, or institutions have equal access to the necessary hardware, software, or high-speed internet needed to utilize AI technologies. This is particularly true for individuals in rural areas, low-income families, or those in developing countries.
- **Technical Literacy:** The effective use of AI technology often requires a certain level of digital literacy. People who lack these skills may not be able to fully benefit from these technologies, which can lead to further inequities.
- **Language and Cultural Barriers:** Many AI technologies are developed and optimized for English language users, which can marginalize non-English speakers. Also, AI can unintentionally perpetuate cultural biases if they are primarily trained on data from a certain group of people.
- **Cost of Implementation:** Implementing AI technology in administrative functions often involves significant costs, including the cost of the technology itself, the cost of training people to use it, and the cost of maintaining and updating it. These costs may not be bearable for smaller or less well-funded educational institutions, widening the gap between them and more resourced institutions.
- **Data Privacy and Security:** Not all institutions or individuals may have the resources or knowledge to effectively protect the data used and generated by AI systems, potentially leading to unequal risks regarding data privacy and security.
- **Bias:** AI can perpetuate existing biases, leading to unfair and unequal treatment of different groups of students. For example, facial recognition technology has been shown to be less accurate in recognizing individuals with darker skin tones, which can create disparities in access to certain educational opportunities and resources.

### **Positive and Negative Implications**

The use of AI can bring about positive outcomes for students, researchers, and staff, enhancing the overall success and competitiveness of the university. However, the increased reliance on AI may result in the loss of certain skills and knowledge as some tasks become automated, which could potentially affect the long-term competitiveness of universities. Below are both the positive and negative implications of AI in areas such as teaching, scholarship, authorship, copyright, administrative functions, and legal applications.

### **Teaching**

Positive Implications:

- **Personalized Learning:** AI can provide personalized learning experiences by adapting content, pace, and feedback to individual student needs, enhancing student engagement and academic performance.
- **Efficient Assessment:** AI-powered tools can automate grading, provide immediate feedback, and offer data-driven insights on student performance, allowing instructors to focus on instructional strategies and providing targeted support.
- **Enhanced Accessibility:** AI technologies can improve accessibility for students with disabilities by providing alternative formats, closed captioning, and text-to-speech capabilities, promoting inclusivity in education.
- **Intelligent Tutoring:** AI-based intelligent tutoring systems can provide round-the-clock support, answering student queries, offering guidance, and providing additional resources to enhance learning outside the classroom.
- **Streamlined Administrative Tasks:** AI can automate administrative tasks like scheduling, course registration, and managing learning materials, freeing up faculty time for instructional planning and engagement with students.

**Negative Implications:**

- **Ethical Concerns:** AI raises ethical concerns related to data privacy, security, and potential bias in algorithms, requiring careful implementation and monitoring to ensure fairness and accountability.
- **Human Interaction:** Overreliance on AI in teaching may reduce the opportunities for face-to-face interaction and personalized support from instructors, which can be essential for building relationships and addressing complex learning needs.
- **Job Displacement:** Integrating AI in teaching may raise concerns about job displacement among educators, as some routine tasks could be automated. However, it can also create new roles and opportunities for instructors to utilize AI technologies.
- **Dependence on Technology:** Overreliance on AI technologies may diminish critical thinking and problem-solving skills among students, as they may excessively rely on automated tools for learning and assessment.
- **Accessibility Challenges:** While AI has the potential to enhance accessibility, it may also introduce new challenges if the technology is not inclusive and fails to consider diverse student needs, potentially creating barriers for students with disabilities.

**Scholarship, Science, and Entrepreneurship**

**Positive Implications:**

- AI can assist researchers in quickly analyzing large sets of data, helping them uncover patterns and correlations that may not be readily apparent without AI assistance.
- AI can aid researchers in efficiently identifying relevant articles and publications in their field, reducing the time and effort required for comprehensive literature reviews.
- AI can automate routine tasks, freeing up scholars, researchers, and entrepreneurs to focus on other higher order tasks.
- AI and data science will enable academic libraries and other information organizations to provide more efficient delivery and improved discovery of multiple types of information.

**Negative Implications:**

- Overreliance on AI may lead to diminished critical thinking and understanding of concepts.
- Lack of literacy about how AI models are trained may lead to less robust scholarly and scientific output if users do not develop appropriate methods for verifying results of AI-enabled tools.
- Ethical concerns arise when biased training data influences research outcomes.
- The lack of transparency and interpretability of some AI algorithms hinders explanation and credibility.
- Data privacy and security risks.
- The potential displacement of human researchers.

### **Authorship**

Positive Implications:

- The increased use of AI in research can lead to the production of more accurate and advanced scholarly works, improving their overall quality and the productivity of the author.

Negative Implications:

- AI systems can autonomously generate content, making it challenging to discern the contributions of human researchers. This raises concerns about appropriately attributing credit to human authors and their intellectual efforts.
- The potential lack of transparency in AI-generated research can undermine the integrity and trustworthiness of scholarly works.
- If AI systems are used to generate a significant portion of research papers, it may lead to a devaluation of human expertise and discourage traditional research methods.

### **Copyright and Patent Rights**

Positive Implications:

- The use of AI in research may result in the creation of new forms of intellectual property, potentially leading to new revenue streams for universities.

Negative Implications:

- The use of AI in research may raise questions about who owns the rights to the work produced by AI, potentially leading to legal disputes. At present, the person entering the prompts and text materials retains the copyright.
- Pathways for copyright holders to either withdraw their contributions from training sets or to seek compensation are currently being developed and may change the availability and accuracy of AI output in the future.
- The use of patented or copyrighted material as a prompt for the AI may compromise claim or security of those materials.

### **Science**

Positive Implications:

- AI may be helpful in the identification and discovery of information useful for improving society. For example, AI may be able to create previously unimagined compounds or pharmaceutical agents.
- AI systems can improve the speed of processing, allowing for rapid advancements and breakthroughs.
- AI can assist scientists in designing experiments by predicting potential outcomes or optimizing variables. This can save time and resources by identifying the most promising research directions.

- AI can automate routine tasks, freeing up scientists to focus more on conceptual understanding and complex problem-solving tasks.

Negative Implications:

- The AI may or may not consider the ethical issues related to any new material it creates.
- Over-reliance on AI tools could lead to a decline in certain skills, particularly those associated with traditional research methods.
- As AI continues to advance, there is the potential that it could replace some roles within the scientific community, particularly those involving routine tasks or data analysis. This could lead to job losses or shifts in career paths.
- The use of AI often involves handling large amounts of data. In certain fields, such as medical research, this could raise concerns about data security and privacy.
- Advanced AI systems can be expensive and require technical expertise to use effectively. This could widen the gap between well-funded research institutions and those with fewer resources, potentially leading to inequality in scientific discoveries and advancements.
- AI systems, particularly those based on complex machine learning algorithms, can sometimes be a "black box," meaning their decision-making processes are not easily understandable by humans. This could lead to issues with transparency and trust in scientific research.
- The fast pace of AI development can make it challenging for regulations and ethical guidelines to keep up, potentially leading to misuse or unintended consequences.

### **Administrative Functions**

Positive Implications:

- AI can automate routine tasks, such as scheduling appointments and processing lab results, improving operational efficiency in higher education.

Negative Implications:

- There can be an over-reliance on AI systems for administrative tasks, which can lead to job displacement and a lack of human oversight.
- Errors or biases in the AI can also lead to significant mistakes or inequalities, such as incorrect scheduling or unfair treatment of students or staff.
- Implementation of AI can be costly and technically complex, potentially excluding smaller or less resourced educational institutions.
- AI systems struggle with tasks requiring nuanced understanding, empathy, or discretion, which are often important in educational administration.
- Privacy and data security are also significant concerns when using AI for handling sensitive information.

### **Legal Compliance**

Positive Implications:

- The use of AI can improve compliance with regulations and legal requirements, reducing the risk of legal action against universities.
- ChatGPT can provide layman summaries, direct attention to specific clauses within long contracts, or identify conflicting statements in long documents.

Negative Implications:

- The use of AI may raise new legal and compliance considerations, such as privacy and data protection.

### **Recommendations Regarding AI in the UAB Community**

The following recommendations are provided by the Provost's AI Working Group for members of the UAB community. These include guidelines for teachers and students, researchers, and for use in the Academic Integrity Code. Suggestions are also provided for acquisition of AI technologies and compliance with legal issues.

#### **Teachers and Students in the UAB Classroom**

The use of generative AI in academic work is a challenging and complex issue with advantages and disadvantages. A hallmark of academic institutions is the freedom to research, investigate, experiment with, and debate such matters. The principles of academic freedom dictate that teachers have "substantial latitude" in how to teach their courses. As such, UAB does not dictate that teachers shall require or prohibit the use of generative AI in their course objectives, assignments, or assessments. Academic freedom does not give students or faculty the right to ignore college or university regulations or to violate principles of academic integrity. All course requirements must adhere to UAB policies as well as the UAB Academic Integrity Code.

Teachers are encouraged, in cooperation with their departmental leaders, curriculum committees, and program directors to make course-level decisions that are appropriate for their specific content and student learning objectives. Once developed and approved, these decisions regarding the use of AI should be clearly outlined in the course syllabus and communicated to students.

UAB teachers are empowered to:

- Insist on academic integrity.
- Ensure AI cannot be used as a proxy to pass a university course.
- Learn and teach how to use AI as part of students' academic and professional development.
- Encourage openness and sharing of experiences with emerging technologies.
- Require complete and accurate documentation of how AI is employed to complete assignments.

Students are encouraged to learn to use AI tools in ways that support their success and comply with university guidelines and the principles of academic integrity. They are responsible to know, understand, and comply with AI guidelines established for their courses and presented in the course syllabus.

UAB students are empowered to:

- Understand and embrace academic integrity.
- Learn how to use AI as part of their academic and professional development.
- Use AI tools, at their teachers' direction, to encourage critical thinking, enrich learning, and boost creativity.
- Document the use of AI as directed by their teachers when completing assignments.
- Share their own experiences and skills with emerging technologies with teachers and peers.

#### **Researchers**

When producing scholarly works including, but not limited to research papers (manuscripts), books, theses or dissertations, conference papers or posters, review articles, case studies, white papers, academic essays, sponsored project applications (proposals), progress reports, compliance protocols and reports, intellectual property disclosures, or other deliverables, UAB authors and investigators must follow guidelines on the use of AI established by the meeting organizer, publisher, sponsor, or oversight agency. Absent specific guidelines, UAB authors should use guidance established by the [Committee on Publication Ethics \(COPE\)](#).

### **Academic Integrity and AI**

Academic misconduct is defined in the UAB Academic Integrity Code as:

“The use or provision of unauthorized assistance with the intent to deceive an instructor or other person assessing student performance.” Academic misconduct is present in an academic work wherever AI assistance has not been disclosed as required.

UAB teachers, as well as professional organizations, publishers, and the university may establish explicit requirements about the use or non-use of AI-generated material. By submitting any academic work, students, and all members of the UAB community attest that they have adhered to all established requirements.

Furthermore, if requirements allow the incorporation of AI generated material in academic work, members of the UAB community attest:

1. That all sources used in preparation, that go beyond common knowledge, are attributed. (Common knowledge is what a knowledgeable reader can assess without requiring confirmation from a source).
2. That generated material accurately reflects the facts.

If these statements are untrue, whether by intent or negligence, it is considered deceit and a violation of UAB’s shared commitment to truth and academic integrity. Such behavior constitutes academic misconduct and is subject to review according to UAB’s Academic Integrity Code.

### **Acquisition and Assessment of AI Technologies**

AI systems should be approved for use by a UAB vetting counsel with representation from legal, compliance, finance, IT, and faculty/staff representation. The goal will be to choose secure, useful, and cost-effective tools with minimal overlap in functionality.

### **Legal and Compliance Recommendations**

Numerous legal issues are related to the use of AI technologies, including management of data, the university’s responsibility and liability, adherence to disability laws, and accessibility considerations. UAB’s legal department is currently working with the system office to consider these and other issues. The working group is not able to offer legal advice, but recommends that the UAB legal office develop policies related to the following issues:

- **Data Management and Privacy:** Ensure data privacy, security, and compliance with regulations like the GDPR. Ethical considerations regarding data collection and usage should also be addressed. As personal data collected or processed by ChatGPT or similar products becomes part of the product, adequate safeguards should be considered.

- Legal Concerns: For compliance with laws and regulations, clear policies, and guidelines addressing accountability and potential risks are essential.
- Liability and Accountability: Assessing liability and accountability for inaccurate or misleading information generated by ChatGPT or similar product is necessary. Clear guidelines and disclaimers should be established to inform users and allocate responsibility.
- Disability Laws: Universities must comply with disability laws and regulations, providing equal access to educational services and reasonable accommodations. ChatGPT interfaces should comply with accessibility standards and guidelines such as WCAG 2.1 or 2.2. These should consider factors such as alternative text, keyboard navigation, screen reader compatibility, and color blindness accommodation.

### **Communication of Recommendations to the UAB Community**

The working group recommends that information from this report be disseminated to the UAB community in a timely manner through established communication channels. As information is disseminated, it should be clear that this is a developing situation and that guidance may change and evolve over time.

### **Training**

As the widespread use of AI technologies has emerged so suddenly and for all members of the university community simultaneously, an unprecedented amount of training will be needed at all levels of the university. Teachers, researchers, scholars, clinicians, students, administrators, and staff will need to be trained on the effective and appropriate uses of AI tools. It will be important that training be developed at various levels and available on a university-wide level as well as in more granular and discipline-specific settings. Campus organizations including UAB IT, the Center for Teaching and Learning, the Division of eLearning, the office of the Vice President for Research, UAB Libraries, UAB Counsel and others will need to be involved in developing and providing this training. The working group recommends that the training be accessible and delivered in multiple modalities and be ongoing due to the evolving nature of the situation.

### **Additional Resources**

#### **Sample Syllabus Statements**

The following statements are provided as examples for teachers that may be useful in designing and teaching their courses. Clear and concise course policies and explicit instructions for course assignments and assessments related to the use of generative AI are key to compliance with standards of academic integrity. Below are statements for all teachers, for those teachers who prohibit the use of generative AI in courses, and for those who allow its use with attribution.

Sample Statements for All Teachers:

#### **Academic Integrity**

*Academic misconduct is present in an academic work wherever AI assistance has been used when unauthorized, or when authorized, has not been disclosed as required. Such behavior is considered deceit and a violation of UAB's shared commitment to truth and*

*academic integrity. Deceit constitutes academic misconduct and is subject to review according to UAB's Academic Integrity Code.*

Expect changes

*The developments around generative AI are in flux and the rules that are expressed in this syllabus may need to change on short notice. This may affect the contents of assignments, as well as their evaluation.*

Sample Statements for Teachers Prohibiting the Use of Generative AI:

Generative AI Use Is Prohibited

*The use of generative AI is strictly prohibited in this course.*

Closed Book Exam/Quiz

*The use of AI tools is not permitted.*

General Writing

*The use of generative AI tools is not permitted on writing assignments in this course. By submitting a writing assignment, you attest that you are the only and original author.*

Computer Code

*The use of generative AI tools to develop code is strictly prohibited in this course. By submitting an assignment, you attest that you are the only and original author of the code submitted.*

Sample Statements for Teachers Allowing the Use of AI with Attribution:

General Writing

*In principle you may submit material that contains AI-generated content, or is based on or derived from it, if this use is properly documented. This includes, for example, drafting an outline, preparing individual sections, combining elements, removing redundant parts, and compiling and annotating references. Your documentation must make the process transparent – the submission itself must meet our standards of attribution and validation.*

Open Book Exam/Quiz:

*The use of AI tools is permitted, provided you follow our standards for attribution, validation, and transparency.*

Computer Code

*In principle you may submit AI-generated code, or code that is based on or derived from AI-generated code, if this use is properly documented in the comments: you need to include the prompt and the significant parts of the response. AI tools may help you avoid syntax errors, but there is no guarantee that the generated code is correct. It is your responsibility to identify errors in program logic through comprehensive, documented testing. Moreover, generated code, even if syntactically correct, may have significant scope for improvement, regarding separation of concerns and avoiding repetitions. The submission itself must meet our standards of attribution and validation.*

Encourage Use of AI with Three Principles

*Generative AI (Artificial Intelligence that can produce contents) is now widely available to produce text, images, and other media. We encourage the use of such AI resources to inform yourself about the field, to understand the contributions that AI can make, and to help your learning. However, keep the following three principles in mind: (1) An AI cannot pass this course; (2) AI contributions must be attributed and edited for accuracy; (3) The use of AI resources must be open and documented.*

- 1. To pass this course: AI generated submissions cannot achieve a passing grade. This is necessary to ensure you are competent to surpass generative*

- AI in the future – whether in academia, research, the workplace, or other domains of society. If this cannot be achieved, if you are not able to maintain control of the rules, you are entering an unwinnable competition. To provide a baseline that is specific for the course, we will produce, analyze, and provide AI-generated sample solutions. Your task will be to surpass them.*
2. *Attribution: You are taking full responsibility for AI-generated materials as if you had produced them yourself: ideas must be attributed, and facts must be true.*
  3. *Documentation. A portion of your term grade will evaluate your documentation of AI use throughout the course. By keeping track of your AI use and sharing your experiences, we all gain understanding, identify potential issues in this rapidly changing field, and discover better ways to use the resources for our objectives.*

## **Selected Articles on AI in Higher Education**

### *The Chronicle of Higher Education*

- McMurtie, B. (2023). [Teaching, rethinking research papers, and other responses to ChatGPT.](#)
- McMurtie, B. (2023). [Will CHATGPT change the way you teach?](#)
- McMurtie, Supiano (2023). [Caught Off Guard by AI](#)

### *Inside Higher Ed*

- D'Agostino, Susan (2023) ["Designing Assignments in the ChatGPT Era"](#)
- D'Agostino, S. (2023). [ChatGPT advice academics can use now](#)

### *Times Higher Education: THE Campus*

- McKnight, L. (2022). [Eight ways to engage with AI Writers in Higher Education](#)

### *University World News*

- Greenfield, Nathan M. (2023). ["Facing Facts: ChatGPT can be a tool for critical thinking"](#)
- [Special Report: AI and Higher Education](#) - A collection of articles related to AI in higher education

### *Maclean's*

- Steipe, Boris (2023) ["My students are using ChatGPT to write papers and answer exam questions—and I support it"](#)

### *SSRN (Social Science Research Network)*

- Mollick, E. R., & Mollick, L. (2022). [New Modes of Learning Enabled by AI Chatbots: Three Methods and Assignments](#)

## **The Sentient Syllabus Project**

[The Sentient Syllabus Project](#) provides resources on AI technology in higher education. It is a public-good collaborative to enrich the discussion and create practical resources as higher education transitions into an era of digital thought. It includes:

- [General principles](#) on AI in the Academy
- What faculty and administrators [need to know](#) about AI
- [Syllabus Resources](#)
- Ideas for [course activities](#)
- Guidance on creating course [learning objectives](#)
- AI in the context of [academic misconduct](#)

## **Responses by Other Academic Institutions**

### [Stanford University](#)

<https://communitystandards.stanford.edu/generative-ai-policy-guidance>

Princeton University

<https://mcgraw.princeton.edu/guidance-aichatgpt>

Yale University

<https://poorvucenter.yale.edu/AIguidance>

Duke University

<https://learninginnovation.duke.edu/ai-and-teaching-at-duke/>

University of Missouri

<https://oai.missouri.edu/chatgpt-artificial-intelligence-and-academic-integrity/>

University of Washington

<https://teaching.washington.edu/topics/preparing-to-teach/academic-integrity/chatgpt/>

University of Rochester

<http://www.rochester.edu/college/honesty/assets/pdf/chatgpt-ai-guidance-for-instructors.pdf>

University of Georgia

<https://wwwctl.uga.edu/resources/documents/ChatGPT-Guidance-for-Instructorsc.pdf>

University of Alabama

<https://provost.ua.edu/wp-content/uploads/2023/05/Guidelines-on-Using-Generative-AI-Tools.pdf>