RIT AI Task Force

Final Report

April 1st 2024

Executive Summary of Recommendations

The AI Task Force has made the following recommendations, which are supported through the following report. Those recommendations highlighted with an asterisk (*) are recommended for immediate implementation. This categorization underscores the urgency of initiating these processes, as articulated with a thorough analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT). Although the report does not offer an exhaustive execution blueprint or specific resource allocation details, there is sufficient information provided such that executive decisions can be made quickly while, in parallel, a detailed action plan can be developed.

The pivotal recommendation of an **AI Hub** is emphasized and implied collectively by all three subcommittees of the AI Task Force. The AI Hub would play a critical role in steering RIT forward in AI development and application. The AI Hub would provide a coordination center for many of the recommendations in the report.

Subcommittee for Research, Scholarship and Innovation:

- *Create an RIT **AI Hub** to Catalyze AI Research, Scholarship, and Innovation
- *Launch Cross-disciplinary Cluster Hires in AI at RIT
- Strengthen Research Computing for AI
- Amplify AI Research Communication

Subcommittee for Experiential Aspects of AI Embedded in Campus Life:

- *Create an AI powered chatbot on RIT's website to support student success and engagement - "Ask Ritchie"
- *Establish an "AI Compass & Resource Center" (or **AI Hub**) to guide RIT members through an ever-changing AI landscape and set up RIT for successful adoption of AI.
- Develop Virtual RIT Concierge Kiosks and Robots

Subcommittee for Teaching and Curriculum:

- Establish governance and administrative structures to support AI in teaching and curriculum
- Create an **AI Hub** infrastructure to support faculty in the use of AI in teaching and curriculum
- Emphasize ethics and critical thinking across RIT's AI curriculum
- Implement generative AI tools that protect privacy and increase accessibility

Introduction

The capabilities, availability and potential impacts of AI are receiving much attention with the advent of Large Language Models (LLMs) like ChatGPT and generative AI (GAI). Associated promise and perils are spawning considerable discussion over appropriate and responsible use. RIT is well-positioned to lead the emerging AI revolution through multidisciplinary perspectives that ensure responsible and ethical AI.

To date, our efforts at RIT have focused on advancing research, developing formalized AI curricula, and providing faculty and staff training in the use of AI within the teaching, learning, research, and scholarship domains.

In the long term, however, our institutional niche in innovation and creativity within technology, art, and design, combined with our existing expertise in AI, afford us the opportunity to be a leader in this area. This requires a bold vision and achievable goals for the uses and impacts of AI on teaching practices, curricular offerings, research, scholarship and innovation, and positioning RIT as a living laboratory for responsible AI.

Task Force Charge

To this end, the Provost established an AI Task Force to help the University examine important questions and arrive at recommendations for shared solutions, best practices, and ethical approaches that could be carried forward within our institution and as a higher education leader.

This Task Force comprised community members who would focus on three main areas:

- **Research, Scholarship and Innovation**
- **Experiential Aspects of AI embedded in Campus Life**
- **Teaching and Curriculum**

The committee's focus included:

- Assessing the current AI landscape at RIT and our peer/aspirational institutions
- Recommending key areas where RIT can experiment with AI, from admissions, to instruction to administration, to use of service robots, to all forms of research

- Developing and implementing policies and guidelines for responsible and ethical AI with risk mitigation approaches that protect data and privacy and minimize bias and harm as we embed AI in various facets of campus life

Task Force Organization

The Task Force was co-chaired by Dr. Ryne Raffaelle, Vice President for Research and Associate Provost and Dr. Christopher Collison, Harris Endowed Professor, School of Chemistry and Materials Science, College of Science.

The Task Force was populated by invitation from the Provost and was made up from faculty and staff from across the university. The task force divided its work into three self-populated subcommittees aligned with the aforementioned three areas and each subcommittee had the opportunity to invite other members of the RIT community to participate in its work, as needed and appropriate. The membership of the three subcommittees was as follows:

Research, Scholarship and Innovation
Clark Hochgraf (convener)
Cecilia (Cissi) Alm (convener)
Ferat Sahin
Evan Thompson
Cory Crane
Andreas Savakis
Irina Mikhalevich
Manlu Liu
Tina Chapman
Pengcheng Shi
Bartosz (Bartek) Krawczyk

Aspects of AI embedded in Campus Life
Sara Bayerl (convener)
Nilay Sapio
Ferat Sahin
Aldwin Maloto
Shawn Plummer
McLean Bulmer
Sarah Godoy
Trevor Smart

Teaching and Curriculum
Liz Lawley (Convener)
Neil Hair (Convener)
Brain Trager
Juan Noguera
Neeraj Buch
Jenn Schneider
Diane Slusarski
Ahmad Kirmani

Timeline:

The Task Force was first convened on December 14, 2023 and charged with providing the Provost with a report by April 1, 2024, which would include recommended action steps and an implementation timeline. These action steps were to include at least three activities in the short-term that RIT could explore, experiment with or implement, by the fall of 2024, in addition to activities recommended for the longer term.

Overarching End Goal:

In the end, the work of the Task Force would help us answer the important underlying strategic imperative:

***How can our campus community operate as a living laboratory for human-AI coexistence, in turn translating our experiences into innovations in instruction and research in AI and its ethical governance*?**

Work Product

The Task Force organized its work around a number of strategic questions which were solicited from the task force membership, and prioritized. The subcommittees were then charged with producing a Strength, Weakness, Opportunity, and Threat (SWOT) analysis for the topic of each strategic question.

For example:
How will we develop AI across the curriculum, guaranteeing that RIT degrees include relevant AI knowledge, ensuring graduates are ready for an AI-centric future, and providing an assessment of the impact of AI integration in the curriculum?

The SWOT analysis would then cover:

- Injection of AI across the curriculum
- Expectations for AI Knowledge in RIT degrees
- The impact of AI across the curriculum

Upon the completion of the SWOT analysis, the groups were then asked to provide the necessary action steps relating to the strategic questions in each group which would eventually lead to the recommendations associated with the final report.

Strategic Questions

Teaching and Curriculum Committee

1. How will we develop AI across the curriculum, guaranteeing that RIT degrees include relevant AI knowledge, ensure graduates are ready for an AI-centered future, and assess the impact of AI integration in the curriculum?
2. How will we develop policies for ethical AI usage, inform the community about AI's limitations and biases, prepare for the implications of third-party AI-generated content, and establish guidelines for integrity in AI education?

3. How will we develop an educational/support/professional-development/strategic AI Hub (AI Epicenter) for the RIT community and what features should it have?

Research, Scholarship, and Innovation Committee

1. How do we increase the level of AI expertise on campus and connect that expertise to the community?
2. How do we brainstorm and then prioritize the core areas for AI experimentation and application?
3. How do we develop partnerships inside and outside of RIT (industry/educational) to successfully apply AI throughout campus?
4. How will we develop an educational/support/professional-development/strategic AI Hub (a physical AI epicenter) for the RIT community and what features should it have?

Experiential Aspects of AI Embedded in Campus Life Committee

1. How will we develop an educational/support/professional-development/strategic AI Hub (a physical AI epicenter) for the RIT community and what features should it have?
2. How should RIT develop a framework to manage AI for all/any campus services and operations, (and how do we secure our data)?
3. How do we develop a differentiation strategy and position RIT within the industry? How do we develop a vision, a narrative, marketing, and a brand identity for AI at RIT?
4. How do we allocate resources between AI application, AI software/development, and AI hardware?

Layout of Report

Each subcommittee addressed the charge, the SWOT analysis and the strategic questions in their own way. The recommendations from each subcommittee follow in the main body of the report.

The results of the SWOT analyses, and information supporting the recommendations are provided in the Appendices A-G.

Some sample responses to the strategic questions were shared with the task force by the co-chairs on January 2nd. This was done to seed the process, with the understanding that the working approach would be managed within each subcommittee. These sample responses are found in Appendix H.

Appendix I contains a list of responses and recommendations from the first full-task-force meeting where the members were asked to dream without restraint about AI at RIT, and to share any burning strategic questions that may not have been captured by the original guiding questions.

A sample “Proposal for Usage Guidelines Policy” for RIT use of AI is found in Appendix J, which came from an Educause Article, a review of which was shared in January 2024 and is also found in this appendix. The article and review provide some excellent guidelines for policy development.

A list of CTL Presentations & Resources is found in Appendix K.

A list of AI-related events at RIT and other universities is provided in Appendix L.

A proposed Charge for Faculty Senate Artificial Intelligence Council is provided in Appendix M.

Task Force Recommendations

AREA I. Research, Scholarship, and Innovation

Four recommendations are identified below as major difference makers that will advance RIT's position in AI research, scholarship, and innovation.

Recommendation 1: Create an RIT AI Hub to Catalyze AI Research, Scholarship, and Innovation

This "Year Zero" recommendation should be enacted immediately.

The RIT AI Hub aims to be a centralized space for AI research and innovation, combining administrative, operational, and multidisciplinary elements.
It will include work and office spaces for AI faculty, PhD students, postdocs, visiting scholars, and an AI Hub director with staff. Additionally, it will house strategic AI project areas, and spaces for meetings, classes, and seminars. It would also house the CHAI, and AWARE-AI offices and programming.

The Hub will ensure the sustainability of key AI research initiatives including, but not limited to, AWARE-AI and CHAI, creating a focal point for AI research activities. It would be a convergent and inclusive go-to place that pools and synthesizes research activities in AI. This will not only highlight RIT's role in AI but also underscore its dedication to educating future AI leaders with comprehensive skills and π-shaped competencies in AI research.
The features and benefits of the proposed RIT AI Hub with respect to Research, Scholarship and Innovation are provided below.

- **Enhanced Collaboration**: A centralized space will facilitate and foster an environment where faculty, students and staff from various disciplines will deeply collaborate. Ideas, possibilities, technical know-how and application expertise will emerge in this welcoming and inspirational space. Common problems will be solved, computing time negotiated, and opportunities developed through direct communication. The RIT AI Hub will be the heart of the AI Living Laboratory initiative at RIT.

- **Increased Visibility for AI at RIT**: A centralized AI marketing engine, reporting to AI Hub leadership, can promote the brand of AI at RIT and the communication of AI successes on campus and externally. This will make RIT more attractive to external stakeholders, government agencies, industry partners, etc. It will be an attractor for student and faculty talent.
- **Consolidated Research to Attract Top Talent**: A centralized AI Hub will attract and house new faculty hires and senior RIT faculty, with expertise and prominent research programs in AI. The AI Hub may also initiate a fixed term post-doctoral program as an effective way to attract top talent to RIT for subsequent position openings.
- **Resource Optimization**: Resources such as computing power, data storage, centralized sensor equipment, robotic resources, and specialized software, may be (re)housed to leverage further efficiencies. New hardware located in the AI Hub may lead to cost savings, since it would avoid the redundancy of IT resources across different departments. The AI Hub will also attract new investment leading to resource growth.
- **Facilitated Access to External Funding**: A centralized AI Hub can support the process of applying for grants and funding. A single, unified entity will retain greater credibility, and will more effectively negotiate with funding bodies and industry partners to attract and land larger AI National Center and collaborative inter-institutional or international awards. The AI Hub will propel RIT and its faculty to connect with major sponsors and stakeholders such that with RIT faculty experts may serve on high-impact, influential external advisory boards. An AI Hub staff member will coordinate with grants offices and support grant procurement, will facilitate cross-college collaborations on project proposals, and work closely with a designated liaison in Sponsored Research Services.
- **Enhanced Industrial Partnerships, Outreach and Advancement**: AI Hub administrators can establish stronger connections with industry, national labs, local, state and national stakeholders, and thus will centralize responsibility for networking, identifying opportunities, and provide support for AI Core/Application faculty.
- **Community Engagement and Impact**: A centralized AI Hub will act as a beacon for community and region engagement, by hosting workshops, seminars, and outreach programs.
- **AI Support Services and Seed Funding**: With consolidation and centralization coupled with a powerful communications network within RIT, a future chargeback structure will ween the AI Hub from start-up funding to independent financial sustainability. Financially sustainable operation will also advance centralized interdisciplinary seed-funding initiatives in AI.

- **Professional Development and Training**: Focused professional development programs for faculty and staff can be housed in the AI Hub. Training programs can continually improve and evolve when the same people responsible for effective teaching and curricular ideation are part of the AI Hub that promotes AI research. This ensures that RIT remains at the cutting edge of AI technology and methodologies. This complementary approach will foster innovation and keep the institution competitive.
- **Inclusive Steering, Oversight and Faculty Buy-in**: The RIT AI Hub would be guided by an internal advisory board with members from across the university, including at least a dean's representative from each college and representatives from the Office of the Vice President for Research, the Provost's Office, the RIT Graduate School, and the Division of Diversity and Inclusion. An external advisory board may comprise leaders from governmental national labs, industrial research labs in AI research, and academic or government leaders in AI. The potential threat of underutilization due to lack of faculty buy-in suggests a need for strategies to engage faculty from the outset. Faculty will be involved in the planning and ongoing development of the Hub, perhaps through surveys, workshops, and representation on advisory boards.

The SWOT analysis that led to this recommendation can be found in Appendix A.

Recommendation 2: Launch Cross-disciplinary Cluster Hires in AI at RIT

<u>This "Year Zero" recommendation should be enacted immediately and should inform all future RIT Faculty Hires</u>

We recommend reigniting a cluster hiring initiative, similar to the initiative launched pre-Covid, but with a single emphasis on AI. These cluster hires should be in both core AI and use-inspired scientific research areas, which will revolutionize AI or be revolutionized by AI. Below, we build on the "Call for Proposals" for "Strategic Incremental Faculty Hires" communicated by RIT's Office of the Provost in 2020 (see Appendix B). In recognizing the setbacks from that 2020 cluster hiring initiative, for the most part due to RIT's plan to adapt to the COVID pandemic, we can learn from that process and enact a clear, actionable strategy to overcome bureaucratic hurdles, and reinforce the commitment to change. We propose the following strategy to achieve a successful cluster hire process.

- **Differentiate from competition by enhancing and complementing current strengths**: Assess current strengths, weaknesses, opportunities and threats based on 100 faculty members active in AI research as listed on https://www.rit.edu/ai/research-our-colleges. Leverage and build upon RIT's existing strengths in multidisciplinary research and the presence of multidisciplinary research centers of excellence in AI. (See Appendix B for more information).
- **Engage Stakeholders**: The cluster hiring initiative must involve faculty from various departments that intersect with AI, to ensure the initiative benefits multiple disciplines. This would also allow faculty outside of the AI Task Force to contribute to the strategic direction of the cluster hiring process.
- **Call for Proposals**: The cluster hiring initiative would solicit proposals from interdisciplinary teams. For each proposal a standard template might include at least three tenure-track faculty, with *at least one position earmarked for core AI* (defined at rit.edu/AI) to ensure balance with foundational expertise, and minimally three colleges involved. Review criteria may include:
    - Level of cost matching
    - Likely success in external funding opportunities, with a list of relevant agencies and industries included
    - Expectations for unique, differentiated and high impact contributions

    - Inclusion of one or more explicit external partnerships from industry, national labs, government, etc., honoring RIT's tradition of strong connections with external stakeholders
    - Alignment with existing PhD programs and/or the vision and mission of the RIT AI Hub
- **Recruitment plan**: The SWOT analysis mentions RIT's bureaucratic and non-agile hiring processes as a weakness. There must be specific measures to streamline hiring processes, making them more agile and responsive to the fast-paced AI market. Centralized oversight or dedicated teams, perhaps associated with the AI Hub, would determine job descriptions, outreach and advertising, and elicit a diverse applicant pool. Search committees must include corresponding expertise in core AI and in any use-inspired area of the proposed cluster hire theme.
- **Competitive and Sustaining Support**: A package must be developed that, in addition to start-up funding, may include professional development, collaboration opportunities, research computing support, and connection to a thriving AI Hub. Ongoing support may include tenure-track time-limited endowed positions that incentivize competitive applications on a recurring basis.
- **Continuous Evaluation**: The impact of the cluster hire on RIT's AI capabilities, research output, and educational offerings must be assessed regularly, with appropriate feedback mechanisms. Strategies for sustainability and return on investment can be adjusted, as needed.

Five rank-ordered key impacts for RIT, anticipated to result from the AI cluster hires are presented below:

- **RIT Credibility, Prestige and Brand**: Cluster hires will catapult RIT to the forefront of AI research and innovation, magnifying our TAD brand and attracting elite talent. This strategic move will demonstrate our commitment to excellence by building powerhouse research teams that exceed the capabilities of their individual members. Through cluster hiring, RIT is not just adding faculty; the university is creating a dynamic ecosystem of groundbreaking research and collaboration that achieves a visible high standard in AI academia.
- **Thriving, Productive, and High-Morale Faculty**: The cluster hires will establish a critical mass of AI researchers across academic units, fostering rapid advancement of substantial revenue-generating research proposals driven by core AI technologies, with subsequent expansion into applications of AI. RIT historically offers lower compensation and startup offers, creating challenges to attract and retain AI faculty talent. The resulting collaborative culture will

ensure the necessary intellectual environment to retain newly-hired and existing AI faculty.

- **Attracting Students**: The cluster hires will ensure RIT's continued competitiveness in attracting graduate student talent to RIT and the continued delivery of AI teaching operations at the graduate level for PhD programs (Computing and Information Sciences, Mathematical Modeling, Imaging Science, Cognitive Science, Electrical and Computer Engineering, Astrophysical Sciences and Technology, Industrial and Mechanical Engineering, Biomedical and Chemical Engineering, Microsystems Engineering, Physics) and Master's programs with heavy state-of-the-art AI curricula (Artificial Intelligence, Data Science, Computer Engineering, Electrical Engineering, and Computer Science). These faculty will also help RIT expand graduate research in transformative new directions.
- **Interdisciplinary Cross-College Collaboration**: By making cluster hires cross-college endeavors, from a recurring pool of competitive proposals by faculty teams working together with the support of their college deans, collaboration across colleges will be fostered, ensuring both broad faculty engagement and buy-in for sustained AI research endeavors.
- **External Collaboration and Funding**: Following AI cluster hires, RIT will be well positioned to partner with leading universities, industrial companies, and other organizations in large-scale efforts at the national, state, and international levels. RIT will compete effectively to secure center, institute, and accelerator level grants.

The SWOT Analysis leading to the specifics of this recommendation are provided below in appendix B.

Recommendation 3: Strengthen Research Computing for AI

To elevate our research computing capabilities and meet the evolving needs of our faculty, we must undertake strategic investments in infrastructure, support, and education. This is a necessary evolution to stay competitive and innovative in the field of AI research. Here are the key actions we need to embark upon

- **Specialized Support Staff in ITS**: Allocating dedicated support staff within Information Technology Services (ITS) to assist research faculty will bridge any gaps in its offerings. This specialized team will enable faculty to more effectively

utilize and customize software packages and operating systems, supporting their specific research requirements. These support staff will also streamline the onboarding process for faculty and students enabling them to better leverage RC resources from the outset of their project.

- **Investment in High-VRAM GPU Resources**: To support the demanding computational needs of AI research, particularly for tasks like hosting Large Language Models (LLMs), we propose the acquisition of dedicated GPU compute resources boasting higher VRAM (80GB). This investment will not only facilitate longer running tasks but also attract and retain top AI talent by meeting their advanced research needs. Periodic capital investments to upgrade GPU resources, coupled with an increased research computing operations budget proportional to new AI faculty additions, will sustain our research competitiveness.
- **Infrastructure Expansion Plan:** Expanding physical infrastructure to support power and cooling requirements would tackle a critical weakness and threat. This might include a phased development plan, potential instrumentation funding sources, and timelines, and would align well with the physical manifestation of the AI Hub, described above.
- **Innovative Funding Models for Equipment Upgrades**: To counteract the threat of equipment obsolescence and high costs, AI Hub personnel may explore innovative funding models that might include partnerships with industry, grant opportunities specifically for infrastructure, or an internal reinvestment strategy where research projects contribute a portion of their grants towards infrastructure maintenance and upgrades.
- **Expanded Storage for NIH Compliance**: Ensuring the privacy and security of patient-related and trial data as required by the NIH necessitates expanding storage resources. By doing so, and appointing dedicated staff for oversight, ITS reinforces its commitment to responsible and compliant research practices. This will further enhance RIT's attractiveness for external research partnerships and funding streams.
- **Educational Workshops and Materials**: To maximize the utility of our research computing resources, the creation and semesterly offering of interactive workshops is proposed. These sessions, complete with hands-on practice in a controlled sandbox environment, will be invaluable for postdocs, PhD, and MS students, enhancing their research capabilities.

Five rank-ordered key impacts for RIT, anticipated to result from the RC improvements

- **Catalyst for Breakthrough Research Success**: Improved faculty productivity for proposals and publications through enabling a category of experiments to be run where customization is needed.,
- **Magnet for AI Talent**: Ease of research and streamlined experimental processes enhance RIT's appeal, making it a prime destination for top AI faculty, thereby improving recruitment and retention.
- **Accelerator of Scholarly Output**: Enhanced access to research computing resources allows graduate students to rapidly advance their work, leading to a surge in high-quality publications.
- **Expand to LLM Architecture Research**: The initiative empowers long-term, innovative studies on Large Language Models and foundational models, breaking free from the limitation of training solely for model weights.
- **Gateway to NIH Funding**: Streamlining data management plans for all researchers, particularly in compliance with NIH requirements, can significantly boost the number of funded proposals.

The SWOT analysis leading to the specifics of this recommendation is provided below in appendix C.

Recommendation 4: Amplify AI Research Communication

To bolster the visibility and impact of AI research at RIT, we propose the creation of a dynamic communication platform, supported by a specialized Marketing and Communication (MARCOM) satellite team centralized through the AI Hub.

- **Skilled AI Communicators:** We advocate for enhancing the narrative around AI at RIT by employing communication staff skilled in articulating the nuances of core and use-inspired AI research.
- **Grant Writing Support**: As part of the AI Hub, communications expertise (e.g. graphical design) may be provided to support persuasive grant writing, to complement AI faculty whose primary strength may be idea generation over idea communication.
- **External Marketing Channels**: In addition to a dedicated research and partnership section on rit.edu/AI as the central hub for showcasing RIT's AI expertise and partnerships, the MARCOM team will maintain an AI News tab, engage in AI research reporting and manage press releases, and promote RIT AI

through social media feeds, thereby targeting a broader audience including potential students, faculty, and partners.

- **Internal Marketing Channels**: Managed channels may also include a dedicated section on RIT News and Events, or a publication where faculty can showcase their work, share insights, and cultivate collaborative ventures in AI research. Recognition programs for outstanding AI research contributions and successful collaborations can be established to enhance morale and promote a culture of excellence and innovation.
- **Feedback Mechanisms:** AI MARCOM may also field feedback channels from the RIT community and external partners on the effectiveness of AI research communication efforts, ensuring continuous improvement and management of the RIT AI brand.

Key impacts for RIT, anticipated to result from increasing AI research communication

- **Recognized Leadership in AI Research:** Communicating the strength in the RIT AI brand effectively to the outside world is necessary to elevate RIT to a distinguished position on the national and international stages. The ability to attract elite faculty and lucrative external partnerships relies on the ability to effectively communicate RIT's success, in all forms.
- **Increased Catchment for Aspiring AI Scholars:** Leveraging social media and digital platforms to amplify RIT's AI research will target a broader audience including potential students, faculty, and partners. Positioning RIT as the premier institution for graduate and undergraduate students will attract those eager to dive into cutting-edge AI research projects.
- **Vibrant Research Community:** Faculty morale and retention will be boosted by a culture that encourages interdisciplinary collaboration and recognizes high-achieving faculty.

The SWOT Analysis leading to the specifics of this recommendation are provided below in appendix D.

AREA 2. Experiential Aspects of AI Embedded in Campus Life

Three recommendations are identified below as major difference makers that will advance RIT's position with regard to Experiential Aspects of AI Embedded in Campus Life.

Recommendation 1: Create an AI powered chatbot on RIT's website to support student success and engagement - "Ask Ritchie"

<u>This "Year Zero" recommendation should be enacted immediately.</u>

In the rapidly evolving landscape of higher education, RIT must seek ways to leverage innovative solutions to enhance the overall student experience. One transformative approach is the creation and implementation of an AI-powered chatbot, designed to provide a way for students to obtain 24/7 access to information and foster increased student engagement. This new technology will allow us to provide streamlined information to students when they need it. This recommendation explores the potential benefits and strategic advantages of integrating an AI-powered chatbot within the university ecosystem.

The AI-powered chatbot for current RIT students should be located in an accessible location that is mobile and readily available and universally accessible to students. This could be through the RIT website or the myRIT portal. The idea is that current students will be able to utilize AI Ritchie to break down the barriers and bureaucracy within our RIT knowledge infrastructure and utilize it to engage in support that will increase their ability to engage on campus and to increase their ability to be successful. It is recommended that this AI-powered chatbot be trained in knowledge about RIT resources, tools, policies, procedures, events, and common barriers to student success. We understand that this potentially could also entail data feeds, but a more dynamic experience utilizing AI will allow students to engage in a conversational experience that could mimic what they would achieve in an office setting. AI Ritchie should not

replace needed in person support, but could triage, enhance, and guide students to garner these resources.

Data indicates that RIT students who connect, engage, and feel a sense of belonging are more likely to succeed. AI Ritchie facilitates this success by simplifying access to essential information across various domains, including wellness, student clubs and organizations, programs and events, academic support, transitional support, academic advising, financial services, on-campus services (dining, housing, and other amenities), and student employment. By assisting students in finding information, scheduling appointments, accessing tools, and recommending engagement and support opportunities, AI Ritchie will enable students to effectively navigate their RIT experience.

We believe that focusing on the needs of current RIT students should be a first priority. This same resource could potentially be utilized for admissions and orientation, co-op and career prep, alumni engagement, and community support. It would be ideal if this technology could be integrated into an AI Hub at RIT and the recommended virtual concierge/kiosk.

It should be noted that the Student Success Steering Committee has also looked at a similar option for our students based on their work. The committee has engaged with the vendor EdSights. EdSights aims to create a student-centered higher education system by involving students in conversations and listening to their voices at scale. EdSights combines artificial intelligence, behavioral science and texting to engage students. The developed framework is research-backed and based on four key drivers:

- Academic engagement
- Wellness
- Engagement
- Financial

The chatbot is used to support persistence, retention, proactive outreach and information sharing. EdSights builds the customized knowledge base utilizing the available public university web resources. The platform includes a dashboard which provides analytics for university stakeholders to reference and determine opportunities to support students. The primary value of EdSights is the ability to capture student voices through text responses simultaneously serving as a 24/7/365 resource for campus information.

It is understood that EdSights offers text-based and web-based interfaces and an internal dashboard to utilize data to drive individual student outreach or wide scale understanding of student trends. EdSights also utilizes the most recent student development trends based on national research models (Vincent Tinto) to drive the dynamic interactions with students.

There are numerous vendors that could support this recommendation, some with minimal need for RIT to train the AI, if RIT's information and process is documented. Whichever option is potentially chosen, the end goal would be to increase student engagement and persistence at RIT.

It is worth noting that by utilizing a 3rd party vendor, RIT may benefit by pre-emptively mitigating risk associated with possible public relations liabilities that might otherwise be shouldered by RIT if such a chatbot was built in-house, although a cost-benefit analysis would be beneficial.

Benchmarking or Best Practices:

The use of AI to support student engagement at colleges and universities is a growing trend, with institutions adopting various technologies to enhance the learning experience and overall student success. Many universities are deploying AI to improve various aspects of education and student life. AI-powered chatbots and virtual assistants are employed to provide instant responses to student inquiries related to admissions, course information, campus services, and more. These tools enhance accessibility and offer support 24/7. Currently RIT is not utilizing any AI-powered chatbots. RIT Admissions has an Ask Ritchie feature but it is pulling from only the Admissions website and is not dynamic or interactive.

According to an article by Phil Chatterton (2023), "A study by Invesp found that personalized AI interactions can increase student engagement rates by up to 25%...and reduce summer melt by 35%". In a study done at Oxford University in 2022, the use of AI-powered chatbots has increased student engagement and showed that students that interacted with these tools were more likely to feel connected to the university and have an increased overall sense of belonging on campus (Chatterton, 2023). Current and incoming students in this generation are used to 24/7 support and online engagement. They expect to be able to interact with their university experience in the same way.

It is understood that RIT does not want to manually integrate knowledge and data from all of our isolated systems. But we know that through the use of AI at other universities, there are systems that can be used to create a seamless experience. With the growing demands for administrative work needed to support the college student

experience, AI can reduce the response time and need for manual interaction. The University of Texas has reported that through the use of AI chatbots, they have reduced their response time for student questions and inquiries and alleviated the need to have staff utilize their time in this way, creating more efficiencies in staffing resources (Chatterton, 2023). University of Michigan has utilized AI-powered chatbots to assist students with their transition into the university and has seen significant increase in retention and satisfaction (Chatterton, 2023).

Universities across the country are also using AI-powered chatbots to break down communication and language barriers. With RIT's large deaf and hard of hearing population and growing international student population, we know that creating accessible and multi-modal means of communication is vital to RIT students' success. The University of Stanford has seen that the use of an AI-powered chatbot has broken down barriers and made their campus more accessible and inclusive. The chatbots have met students where they are and have been able to cross accessibility and language barriers while increasing engagement and success (Chatterton, 2023).

One major example of the use of AI-powered virtual assistants is through Georgia State University's implementation of "Pounce" in 2015. Since 2015, GSU has increased the use of their text based system and implemented a growing use of AI. This text based chatbot is powered by a vendor called Mainstay (formerly AdmitHub). GSU began the use of this tool through the admissions process and integrated it into the course experience in 2021. They have also expanded its use to supporting the student experience on campus including clubs, organizations, events, and services. GSU has found that although all students benefit from this tool, the greatest benefit has been to marginalized communities, especially low income, first generation, and underrepresented minority students who do not have the same access to built in support networks (www.gsu.edu, 2024).

It is finally worth noting that when faculty are hired with Core AI knowledge, there may be many opportunities to find applications within the realm of pedagogy and campus life. There may be many opportunities for collaborations to address selected unmet needs in campus operations.

Five rank-ordered key impacts for RIT:

1. Centralized hub of information for current students
2. Increased persistence rates of current students
3. Increased connections for students with offices, services, and organizations.

4. Enhanced student engagement through knowledge of programs, services, events, and opportunities on campus.
5. Increased access and accessibility of information

The SWOT Analysis leading to the specifics of this recommendation are provided below in appendix E.

Recommendation 2: Establish an "AI Compass & Resource Center" (or AI Hub) to guide RIT members through an ever-changing AI landscape and set up RIT for successful adoption of AI.

<u>This "Year Zero" recommendation should be enacted immediately.</u>

AI will soon permeate every aspect of our campus life, whether in our personal routines or work environments. Navigating through how to robustly implement or responsibly use AI technologies may be challenging and this can create added risks for RIT. Additionally a smooth and scaleable adoption strategy of new AI tools and infrastructure will require a thoughtful and centralized approach. A centralized hub is a common practice for the organizations that implement AI on a large scale (Fountaine, McCarthy, Saleh, 2019).

An RIT AI Hub would essentially be a centralized AI Compass and Resource Center space that guides RIT members through the AI landscape by providing best practices, training resources, and operational solutions. This center should have dedicated staff (that includes AI industry experts, thought leaders, technical experts, system implementers, consultants, trainers, etc.) and allocated budget & resources to accomplish its mission. The center can also utilize a partnership model across campus to ensure all divisions and colleges are represented and are dedicating personnel to learn about AI best practices and participate in the AI related initiatives.

This center will serve RIT in the following ways:

- Lead the campus level strategic AI initiatives and the roadmap.

- Coordinate cross-functional operational AI initiatives to ensure optimization, scalability, and consistency across different practices.
- Collaborate with RIT researchers to streamline moving of research projects into customer tools that can be used across campus.
- Assist in developing AI roadmaps for operational/functional areas.
- Develop training materials and promote AI best practices around how to effectively and responsibly utilize AI for different constituents.
- Provide consulting, mentorship, training and education to a wide range of audiences.
- Encourage sharing of information and data across different departments.
- Lead the shared AI governance efforts through an established AI Advisory board and contribute to the AI policy proposals
- Increase campus engagement and excitement about AI through hosting events.
- Facilitate risk mitigation by educating RIT members about AI relevant security standards such as NIST AI Risk Management Framework and data classifications.

Five rank-ordered key impacts for RIT:

1. Streamlined AI initiatives across campus which promotes efficiency, consistency, scalability, cost-effectiveness, and increases the overall impact of AI projects across the campus.
2. Ensures safe and compliant use of AI through educating and governing and reduces potential risks for RIT.
3. Reduced anxiety around AI by providing learning opportunities and an ability to participate in a shared governance. As highlighted in an Inside Higher Ed article in 2023, many other universities are establishing diverse AI boards to ease concerns about the uncertainties associated with AI (Coffey, 2023).
4. Establishes a strong and robust AI governance and policy structure
5. Growth and availability of AI tacit knowledge from increased interaction, context, and experience.

The SWOT Analysis leading to the specifics of this recommendation are provided below in appendix F.

Recommendation 3: Develop Virtual RIT Concierge Kiosks and Robots

Develop an RIT Virtual Concierge (RITchie) that would be accessible through on-campus kiosks. This recommendation will focus on the kiosk scenario but the underlying data resources and presence would share the online Student Experience and Success recommendation. Virtual Concierge Kiosks will evolve towards mobile robotic agents.

The on-campus kiosks would be available across campus both inside high-traffic locations such as the SAU, SHED, Gordon Field House, Campus Center, Magic Studio, etc… and outside along high-traffic paths such as the Quarter Mile, Global Village, Bus Loop, etc… There are numerous examples of kiosk models that already exist that could be used similar to ones seen in malls and convention centers. Below are a few links to some examples for reference:

- Cambridge, UK "Virtual Assistant" Kiosk
- Living Map Kiosk
- Wayfinding/Directory Kiosk

The Virtual Assistant/Kiosks could support a multitude of scenarios that could supplement and expand some current services and resources while also delivering new experiences to the entire RIT community. Many of these scenarios are not AI-driven solutions but would integrate various disparate resources, data, and services across RIT into a holistic customer-focused solution. Below are some of the key experiences that could be provided:

- Virtual Assistant Scenario
    - Needs to be able to accommodate all RIT Community members including the NTID community and/or individuals with special needs including but not limited to vision impairment or physical limitations.
    - Voice recognition for visually impaired or physically impaired. AI avatar to work with the NTID community and needs to be able to use ASL when needed. Voice recognition should also be an option for anyone who wants to use it.

- The use of an avatar to be able to interact with the deaf community using natural language. Here are a few examples of existing sign language avatars solutions, although NTID must be consulted fully around this recommendation (see Appendix B).
  - Sign-Speak
  - Kiki - Hyper-Realistic Avatar & Sign Language Interpreter
  - MS Research Sign Language Translator using Kinect
  - MS Research Kinect Sign Language Interpretor
- The virtual assistant would help people navigate campus to include where an event is happening, dining locations, public safety, department offices, and any other key areas of interest. This could be used with a type of wayfinding feature. For example, as you pass other kiosks on your journey, it will recognize you and help you continue on your journey. Delta Airlines has developed a prototype solution in their Detroit Terminal that recognizes you and presents information only you can see on the display board based on where you are in relation to the overhead display board so each user has a customized experience. Delta Terminal Assistant.
- Both scenarios rely on the integration of multiple data sources across campus to be able to provide relevant and timely information
- This could be used as a visual showcase of how RIT is incorporating AI into the campus life. An opportunity could be using a playful interaction experience with an AI RITchie avatar to encourage the use of the technology. Disney has an attraction that you can see at this link Turtle Talk With Crush.

Four rank-ordered key impacts for RIT:

1. A visual showcase of RIT starting down the AI journey
2. No current solution on campus to meet some of these common navigation/wayfinding scenarios
3. A combined showcase for NTID and RIT's technical leadership in support of the deaf community
4. Expand on and supplement the limited "Campus Center" helpdesk

The SWOT Analysis leading to the specifics of this recommendation are provided below in appendix E.

AREA 3. Teaching and Curriculum

RIT must foster a culture that embraces AI in teaching and learning, including developing AI-focused courses. The goal is to prepare students for evolving workplaces by emphasizing AI technology and applications, ethical usage, and critical analysis of AI's impact in the workplace and society.

By incorporating the integration of AI across our curriculum in the university's strategic plan, this will signal a concerted cultural shift that positions RIT as a center of AI excellence.

Recommendation 1: Establish governance and administrative structures to support AI in teaching and curriculum

1.1 Create a new faculty senate committee for AI in teaching & curriculum

Faculty governance must be involved in changes to curriculum and educational policies. A new standing committee on AI in teaching and curriculum is proposed as part of Faculty Senate. In the short term, an Ad Hoc committee on AI in teaching and curriculum may be charged.

The committee would guide and review short and long term actions related to AI in teaching, with a specific focus on the following:

- Make recommendations regarding faculty evaluation, resourcing and POW process to encourage and reward interdisciplinary work & integration of AI.
- Suggest modifications to policies and governance standards to guide AI use, keeping in mind ethical and legal concerns.
- Evaluate AI-related potential impacts and changes in curriculum, pedagogy, and career paths and make recommendations to the senate and provost based on those changes.
- Lead an ongoing strategy for ethical AI use across TAD domains
- Consider the implementation of an AI certificate for undergraduates.

1.2 Ensure Oversight of AI Initiatives in Academic Affairs

A central office or role is recommended to coordinate AI initiatives in Academic Affairs, across, for example, academic units, the Center for Teaching and Learning, and the library.

The person in this role would have responsibility for, at a minimum, these activities:

- Monitor current educational trends, accreditation standards, and practices at peer and aspirational universities to recommend new programs and enhance AI course offerings
- Maintain a list of courses on or incorporating AI, and work with the provost and deans to identify opportunities to encourage and support the expansion of these offerings across the curriculum.
- Identify opportunities for cross-unit multidisciplinary courses, and provide resources to support the development and offering of those courses.
- Work with RIT units, including RIT Certified and Exec Ed, to identify opportunities and funding for professional training in AI across professional domains.
- Supervise efforts across academic organizations, including CTL and the RIT Libraries as well as academic units.

In the short term, the following actions are proposed:

- Deploy a teaching and learning focused faculty survey to help determine (1) current faculty knowledge, interest in, and use of current AI tools, and (2) current and planned courses on or incorporating AI concepts.
- Work with Student Government and Student Affairs to survey student use of AI, both within and outside of their classes. Identify patterns of use (or non use) across disciplines and colleges.

Recommendation 2: Create an AI Hub infrastructure to support faculty in the use of AI in teaching and curriculum

2.1 Provide support for faculty professional development and curriculum development

There is an immediate need for discipline-specific support to be provided for faculty who are interested in developing new courses and revising current ones to incorporate AI concepts. Furthermore, while faculty retain the freedom to select course content and teaching modalities, there is value in modeling how the integration of AI in their classes may increase the relevance and effectiveness of teaching.
The following actions are therefore recommended:

- Provide resources for faculty to modify existing classes to incorporate aspects of AI tools, incorporating not only technical and applied skills but also critical thinking and ethical use of AI.
- Provide support for faculty development of one or more multi-disciplinary / cross-unit courses or learning experiences that can provide a strong foundation in AI concepts and applications for all students at RIT.
- Create a dedicated funding stream specifically for AI course development and enhancement, possibly as part of an expanded PLIG process.
- Fund exhibitions and publications on faculty use of AI for teaching and learning, including student faculty partnerships.

2.2 Develop and maintain a comprehensive resource site for faculty and students

A number of competitive and aspirational universities are providing detailed resource sites on generative AI for faculty and students–for example, University of Michigan's genai.umich.edu site. In addition to providing critical support for faculty as they seek to integrate AI into their classes, it would also serve as a powerful marketing tool to indicate that RIT is a leader in integrating AI across the curriculum.

Implementing such a site is a short-term priority; ideally, it would be in place by fall 2024. While CTL has begun work on this issue, the design of this site and its preliminary content

needs significant faculty engagement. We recommend incentivizing faculty to work with CTL to deploy this site.

The site should contain tutorials, documentation, and other resources to support both faculty and student needs.

For faculty, this would also include a repository of best practices and practical examples in the following areas:

- Course policies relating to use of AI, including requirements for documentation/citation
- Assignment design
    - Assignments teaching AI tools
    - Assignment redesign in the context of generative AI
    - Application of critical thinking in assignment design
    - Use of AI tools in creating assignments
- Assessment strategies
    - Assessing student work in the context of AI
    - AI-assisted assessment

For students (both current and potential), the site would provide aggregated information about classes, certifications, and instructional materials.

NOTE: In order to keep such a site useful, there would need to be faculty or staff members with strong domain knowledge to maintain it on an ongoing basis, perhaps through connection to the AI Hub.

Recommendation 3: Emphasize ethics and critical thinking across RIT's AI curriculum

3.1 Make Ethical AI central at RIT for a competitive edge

RIT's competitive edge may be enhanced by positioning the university as a leader in responsible AI development and application. By leveraging its strengths in Ethical AI, RIT not only aligns with global trends but also elevates its profile. Embedding Ethical AI principles deeply within RIT's culture, curriculum, and research can create a distinctive advantage:

1. **Innovative Curriculum**: Integrating ethical considerations into AI and computing courses ensures that graduates are not just technologically proficient but also ethically aware, making them highly desirable to employers seeking to navigate the complex moral landscape of AI technology. By pioneering an education model that balances technical skills with ethical understanding, RIT can attract students and faculty committed to responsible innovation.
2. **Research Leadership**: Focusing on Ethical AI research projects can position RIT as a thought leader in identifying and solving ethical dilemmas presented by AI technologies. This focus can attract research funding, partnerships, and high-caliber researchers interested in contributing to meaningful, socially responsible technological advancements.
3. **Interdisciplinary Collaboration**: Ethical AI inherently requires a multidisciplinary approach, drawing on insights from humanities, social sciences, law, and technology. Promoting interdisciplinary work around Ethical AI can foster unique collaborations that not only innovate but also critique and guide the development of AI technologies. This approach encourages a holistic educational experience and research environment that bridges technical expertise with ethical reasoning and social impact assessment.
4. **Ethical AI Frameworks and Standards**: Developing and adopting Ethical AI frameworks and standards for AI projects and research at RIT can serve as a model for other institutions and industries. By leading in the establishment of best practices, RIT can influence the broader discourse on AI ethics, positioning itself as a pivotal player in shaping the future of ethical technology development.
5. **Industry Partnerships and Innovation**: Strong ties with industry partners focused on ethical AI development can provide students with real-world applications and ethical problem-solving experiences. These partnerships can lead to innovative projects, internships, and job placements that distinguish RIT graduates as ethically informed practitioners, giving them a competitive edge in the job market.

6. **Community Engagement and Policy Influence**: Engaging with the wider community on ethical AI discussions and policy development can extend RIT's influence beyond academia into real-world applications and legislation. This engagement positions RIT as a community leader in ethical technology, influencing public policy and community standards around AI use.
7. **Global Network and Ethical AI Summit**: Hosting an annual Ethical AI Summit that brings together experts, practitioners, policymakers, and students from around the world can establish RIT as a central hub for global discussions on ethical AI. Such events not only enhance RIT's reputation but also provide a platform for networking, collaboration, and showcasing the university's commitment to Ethical AI.

3.2 Emphasize critical thinking as a core aspect of AI education

Recommendation 4: Implement generative AI tools that protect privacy and increase accessibility

The use of free online generative AI tools such as ChatGPT, Claude, and Copilot can raise concerns regarding the privacy and security of information. While not all data shared with these tools is directly used for their ongoing training, the potential for sensitive information to be exposed to data breaches or mishandled exists. Paid versions of most of these tools may provide the ability to protect data from inclusion in training data. However, if proprietary content, confidential information, or Personally Identifiable Information (PII) is shared with these tools, it could pose risks, leading to legal complications for the university, as well as for faculty and students on an individual basis. Therefore, the following recommendations are made:

- Educate the campus community on the risks associated with providing these tools with private data of any kind
- Implement paid versions of these tools—such as the enterprise versions of ChatGPT and Copilot for Office 365–to reduce accidental breaches of confidentiality
- Consider implementing an internal version of an LLM chat tool–such as the Universitiy of Michigan's GPT/Maizey, or UCI's Zotgpt.

Appendix A

SWOT Analysis for Research, Scholarship and Innovation Committee, Recommendation 1: Create an RIT AI Hub to Catalyze AI Research, Scholarship, and Innovation

Strengths

- RIT is a STEM-focused university, with active AI faculty researchers across its colleges.
- In particular, the Center for Human-aware AI (CHAI) brings multiple faculty researchers together.
- RIT has strengths in remote sensing, chips, human-aware or human-centered AI and adjacent core AI areas (computer vision, natural language processing, robotics, etc.), human-AI interaction in AI for accessibility and cybersecurity, and there is strong potential in neuroscience- and cognitive-inspired AI.
- In disciplines, broad areas are also represented in applications and use-inspired AI in their research portfolios.
- RIT's approach to the MS in AI Joint Program has provided an incentive to create lasting collaborations in the AI space across colleges and disciplines.
- RIT excels at and attracts awards in AI research training (e.g., AWARE-AI at the graduate level and REU Sites at the undergraduate level).
- RIT has a reputation as a strong technical institution.

Weaknesses

- In contrast to other institutions, RIT is not making investments in AI researchers and AI faculty. There are no incremental hires and no space infrastructure specific to AI.
- Core-AI active faculty across colleges have left RIT. Faculty replacements have not been made in some cases.
- The AI Hub will by itself not add incremental faculty lines that bring new expertise to RIT.
- RIT is absent in the area where political connections are made in AI at the NY State level – e.g. RIT was notably absent in **the Governor's AI center announcement.**
- Not enough national partnerships with R1 universities.
- There are no seed grants at an adequate level in AI. The seed grants that are offered are not large enough to enable meaningful research collaborations in AI.

Opportunities

- The RIT AI Hub will raise RIT's profile in AI, helping to attract new faculty and student talent, and bring additional AI research funds to the university. It will enable RIT Government and Community Relations to increase RIT's presence at the state and federal levels so RIT becomes part of the state-level conversation about AI, and promote advancement linked to AI research activities and faculty experts.
- The RIT AI Hub will provide an opportunity for launching a one-year or two-year postdoctoral program in AI, which can be an effective way to attract top talent to RIT for subsequent openings which includes expectations on expertise in one or more AI areas.
- The Hub can coordinate higher-than-usual seed funding mechanisms for cross-college internal grants e.g. $100-200k seed projects, $1M AI signature subareas of strength within the AI hub. These will enable faculty to work across colleges and build external partners.
- The AI hub's physical space should include CHAI and can have other subcenters. It can increase connections among centers of knowledge like CHAI and other research areas.
- The RIT AI Hub will strengthen facilities that enable faculty to submit large proposals that require dedicated physical infrastructure (e.g., NSF AI institutes, ERCs, STCs, tc.)
- The administrative structure of the new space can liaise with dedicated SRS staff members for AI with focus and experience across multiple national agencies and funding organizations. For example, SRS can use the space to train faculty in how to apply to different entities for AI projects (NSF, DoD, NIH, NSF limited submission awards, etc.), since this knowledge is often researcher-specific or college-specific.
- It can strengthen connections between core AI, application areas across disciplines, and key intellectual areas of strengths (AI ethics, AI policy) under a shared AI umbrella.
- The RIT AI Hub can enable tapping into funds for developing short-term and long-term AI strategies (e.g., consider the national attention to AI misinformation and democratic threats, cognitive-neuroscience brain initiatives, national space science initiatives, etc.).

Threats

- Not being part of the NYS Empire AI Consortium is a serious threat to AI efforts at RIT.

- Without adequate investments in a physical and administrative AI Hub, RIT will not effectively leverage its dispersed AI knowledge which remains siloed in colleges, and momentum that has been built with CHAI, AWARE-AI, and the MS in AI can dissipate.
- Several universities are ahead on the curve compared to RIT with a dedicated AI space.
- If faculty buy-in is not guaranteed as it is set up, the space might be underutilized.
- Not having funding long-term for maintaining the AI Hub can be an issue.
- Limited staffing will also limit the RIT AI Hub's effectiveness in creating impacts.

Appendix B:

SWOT Analysis for Research, Scholarship and Innovation Subcommittee, Recommendation 2: Launch Cross-disciplinary Cluster Hires in AI at RIT

Strengths

- Multidisciplinary research is appreciated for tenure and promotion generally, and is a part of RIT research culture.
- There are existing PhD programs (Computing and Information Sciences, Imagine Science, Cognitive Science, Electrical and Computer Engineering, Industrial and Mechanical Engineering, Mathematical Modeling) and multidisciplinary research centers of excellence that are grounded in AI (CHAI, PHT180, ESL Center for Cybersecurity).
- The community strength in AI and initiatives like AWARE-AI can attract faculty.

Weaknesses

- RIT has in the past offered too low compensation and startup for AI faculty talent, relative to the domestic academic market.
- RIT loses AI faculty to other institutions in the second half of the tenure-track process and in mid-career. RIT is reasonably good in recruiting, but offers inadequate support of junior and mid-career faculty in AI.
- RIT is also not providing resources to sustain existing AI areas (e.g. one faculty has been left to teach and mentor students in NLP research after faculty attrition).
- RIT has not historically engaged in cluster-hiring. RIT has dated, decentralized, non-agile, and bureaucratic processes that make accommodating the fast pace of hiring AI researchers and the AI job market difficult.
- Other universities are acting faster to integrate AI in PhD-level research education broadly.

Opportunities

- Fundraising in the AI space for endowed positions at any faculty level can be attractive to donors.
- There is an opportunity to tie hires to the new RIT AI Hub (Recommendation 1 above), i.e., a new physical space that can host existing centers and encompass or connect to RIT's PhD programs.

- If RIT announces its R1 aspirations clearly, this can be attractive to potential AI faculty hires.
- RIT can cease the opportunity to repurpose faculty lines in areas with less enrollment into AI.
- Academic Affairs should support colleges joining together to make positions more attractive for cluster hires, even if a hire is a standalone position within a single college.
- Investing in junior-level endowments, i.e., assistant or associate professorships for early-career stars is cost-effective. These should be incremental lines, rather than a rebranding of replacement hires. These hires can be tied to the new AI Hub and exciting research centers.
- RIT can also consider hiring researchers from non-academic institutions, such as from industry research labs and national labs.
- To attract AI faculty, RIT must consider offering more flexible startup packages such as postdoc funding.
- RIT should consider expanding dual hiring initiatives and to conduct strategic outreach to attract hires from certain states (Florida, Georgia, etc.) which are experiencing attrition.

Threats

- If RIT is not paying attention to its strengths in AI as a STEM university, then RIT can lose its current advantages.
- Hires may be attracted to AI initiatives at other universities such as Harvard or Buffalo. RIT is also not yet part of the NYS Empire AI consortium.
- Limited RC infrastructure resources, support services, and staffing can impact recruitments.
- Expedited tenure reviews should be used with caution to ensure that the sought outcomes of cluster hires are met.
- RIT faculty put effort into the pre-Covid cluster hiring initiatives. Trust that was lost when cluster hires did not materialize must be rebuilt.
- Cluster hires must include a strong intellectual on core AI research and on theoretical analysis of AI in computing, sciences, ethics/policy, and not merely on its implementation or use. (RIT currently pays too much attention to applications and the use of AI, rather than attending to faculty AI research focused on the development of core AI algorithms, architectures, and systems.)

Office of the Provost Call for Proposals (2020)

Strategic Incremental Faculty Hires

Eligible Participants: All RIT Faculty

Executive Summary: A theme set forth in our current strategic plan is that RIT will be internationally distinguished as a research university through its focus on and investment in faculty. One element of this goal is to engage the faculty in identifying areas of greatest opportunity. To this end, we are inviting proposals to identify and provide support for incremental tenure or tenure-track faculty lines in strategic research areas in which RIT can be a global leader.

Faculty Hiring: We anticipate hiring at least 20 new faculty over the next five years through this proposal process. These hires build on current research strengths or nucleate new strengths in currently disparate areas of research. The level of appointments is open. Proposals can include clusters of up to four faculty lines. This can include faculty lines that contribute to the relief of high teaching loads in research active areas. These hires are expected to be incremental and will not replace any hires being made on the basis of enrollment growth or ordinary faculty turnover. This call is part of a broader initiative to bring at least 50 new tenured or tenure track faculty to RIT.

Teams: We encourage proposals from disciplinary teams or interdisciplinary teams with representatives from multiple colleges, departments, and centers. Teams with a history of collaboration, particularly in funding or publication, are especially encouraged to apply.

Due Date: Proposal documentation (including a fully signed PRF) is due on or before 5:00 pm on **March 1, 2020**.

Cost Matching: Not required, but highly encouraged. The extent to which the teams, centers, academic departments and Deans financially support the proposed hires will be a review criteria. Examples of support include, but are not limited to: replacement tenure-track lines, start-up funds, operating funds from discretionary accounts, equipment investments, and travel funds. Signed letters of commitment are required.

Space Considerations: Proposals should identify space needs but should not let current space limits constrain what is presented.

Proposal Length: The proposals should be no more than 10 pages in length using 12 pt. Times New Roman font.

Proposal Guidelines:

Executive Summary (1-page): In 1 page and written in accessible language, the summary should provide an overview of the proposed hire(s) and how they build on existing research strengths or nucleate a new area of research strength. It will spell out what will be achieved in terms of near and long-term research

goals. It should provide a vision of the research opportunities that will establish RIT as a global leader in the area. Where applicable, it should describe how the new hires contribute to the relief of high teaching loads.

Narrative (5-pages): The narrative should include a comprehensive description of the research area of focus for new hiring. It should describe how the new hires will enhance opportunities for funding and for pursuing research questions of high impact. It should also explain how this research area fits into the stated RIT goal of being a leading student-centered research institution.

The narrative should answer:

1) How will the proposed faculty hires **build on current faculty strengths or nucleate disparate strengths to enhance RIT's reputation, while leveraging existing resources**? This should include a complete description of what current facilities will support the new hires, with a summary of existing funding and other support for on-going activities that will be used to support the proposed hires. [*Note that lack of space does not preclude hiring opportunities, but space limitations need to be understood for appropriate space planning.]

2) The commitment of department(s), school(s), and college(s) to building, growing, and sustaining a long-term effort in the area of the strategic hire; plans for integration of the new faculty in the department(s) in which they will presumably reside; how the new hire enhances current cross- departmental research collaborations; and enables the creation and support of educational programs.

3) How will the proposed faculty hires be reflective of research areas that are significant to society? What are the **relevant funding agencies and industries** that support this research area? This should include specific examples of funding opportunities that the team has competed for or will pursue in the future.

4) How can RIT make **unique and high impact contributions**, particularly given our relatively "young" research endeavor and the presence of other well-established competitors? A description of the competitive advantages over peers that will be gained by key additional hires should be provided.

5) If applicable, how will the proposed faculty hires provide relief for areas with high teaching loads?

6) If applicable, what special administrative and/or regulatory issues need to be considered in connection with the proposed hire(s)? Examples include but are not limited to human subjects research, animals, biosafety issues, and potentially classified research.

Team (2-pages): Identify who are the team members and how their current research relates to the proposed areas of hire. Describe the new collaborative research opportunities that may result from the proposed hires. Please include a standard 2-page bio-sketch (NSF format is fine) and current and pending form for all senior personnel. (The bio-sketch and current and pending forms do not count against the page limit).

Partnering Strategy (1-page): Describe any external partners (i.e., corporations, national labs, other academic institutions, etc.) with which the team has and/or will collaborate.

Cost Match (1-page): Describe in detail commitments that will support the faculty hire(s). Additional budget sheets summarizing matching funds should also be included. There are no restrictions on matching funds except they must be consistent with institutional guidelines and documented. (Matching fund budget sheets do not count against the page limit).

Proposal Submission: Send proposals with completed Proposal Routing Forms and to the Provost's Office by 5:00 pm on March 1, 2020.

Considerations for Hiring Strategy:

A deeper Dive.

As part of an effort to understand specific strengths, weaknesses, opportunities and threats in AI research at RIT, a survey of the 100 faculty listed on https://www.rit.edu/ai/research-our-colleges is proposed. That survey would ask about anticipated funding, research computing needs, growth expectations, core AI support required etc.

That list of faculty currently includes:

COS

- Bartosz Krawczyk - Machine Learning and Computer Vision (MLVision) Lab: Continual learning, data streams, concept drift, class imbalance, ensemble learning, and XAI.

- Dimah Dera - Robust and trustworthy ML solutions for healthcare, cybersecurity, remote sensing, and surveillance systems.
- Christopher Kanan - Human-aware AI, continual deep learning, overcoming dataset bias, and multi-modal large language models.
- Carl Salvaggio - Digital Imaging and Remote Sensing: Remote sensing problems using ML, image processing, and computer vision.
- Dr. Diaz - AI in mobile eye-tracking technology, particularly for VR/AR applications.
- Dr. Emmett Ientilucci - Remote sensing, spectral image analysis, hyperspectral target detection, and AI/ML/CV techniques for remote sensing.
- The Swartzlander Group - Advanced imaging, space optics, sensor protection, and geometric phase optics.
- The Qiao group - Ultrafast Laser Photonics, 3D writing of integrated photonic devices, and AI-based material interactions.
- Dr. Vodacek - Machine learning for imaging systems and sensor networks, remote sensing, and ML for IoT sensor systems.
- Amir Hassanzadeh, Aaron Gerace, and Eon Rehman - Remote sensing, AI, machine learning, hyperspectral and thermal imaging.
- Dr. Jan van Aardt - AI for natural resource assessment, remote sensing, and LiDAR data analysis.
- Christopher Collison - Machine learning, explainable AI, and inverse design for photoactive organic molecules.
- Dr. Emiliano Brini - Integrating Molecular Dynamics, MELD, and AI for crystal structure prediction.

SaundersCB

- Sean Hansen - Information management and systems, technology management, computing, healthcare technology.
- Duygu Akdevelioglu - Technology miniaturization, social networks, social media connectivity.
- Archana Jain - Market microstructure, financial regulations, algorithmic trading.
- Emi Moriuchi - Health communication technology, avatar-based therapy, social marketing, voice conversation agents.
- Ali Tosyali - Network science, machine learning, information systems, financial services analytics, social network analysis, healthcare analytics.
- Rajendran Murthy - Consumer behavior and e-business, search engine marketing and analytics, electronic commerce, business ethics.

- William Dresnack - Accounting.
- Manlu Liu - MIS, finance.
- Jing Tang - MIS, finance.
- Quang Bui - Human-centered generative AI, machine learning, healthcare.

In addition, there are 28 people in GCCIS, 28 people in KGCOE, 6 in CET, 15 in CoLA.

In addition, a deeper dive into the SWOT of RIT AI research should include our strengths in areas such as NTID. For example:

NTID has a rich culture, and some great opportunities for AI application, from signing avatars for an AI-driven kiosk or robot, or to "Deaf voice recognition". Furthermore, NTID has access to 20 years of transcripts from C-Print, and hence a large corpus of data that could be used for LLM training, assuming the ethical use of that data. Together with the challenge of modifying LLM architecture, to address such broad-impact applications, there seems to be a winning research combination that will attract interested applicants as part of a broader RIT AI cluster hire. Thus, RIT and NTID will leverage their strengths both as a major player in technology art and design, and as a national leader in far-reaching education and research for the deaf and hard of hearing, and in access services more broadly. This is also a prime example of how RIT will differentiate itself as a Leader in AI.

Research Connected to Current Federal Funding:

A study on the availability of AI funding at the federal level is recommended as part of the cluster hire. A starting point may be the overviews of funding found at various locations including, https://fedscoop.com/five-ai-takeaways-bidens-budget/, From which excerpts afre taken, and presented below.

Research at NSF

The budget includes more than $2 billion in funding for NSF's research and development in AI and other emerging technology areas, including "advanced manufacturing, advanced wireless, biotechnologies, microelectronics and semiconductors, and quantum information science." It also includes $30 million to fund a second year of the pilot for the National AI Research Resource (NAIRR), which is designed to improve access to resources needed to conduct AI research. The pilot, which began in January, was required under President Biden's order and bipartisan, bicameral legislation pending in Congress seeks to authorize the full-scale NAIRR.

AI cybersecurity at DOE

The budget also includes "$455 million to extend the frontiers of AI for science and technology and to increase AI's safety, security, and resilience" at DOE. The funding would support efforts "to build foundation models for energy security, national security, and climate resilience as well as tools to evaluate AI capabilities to generate outputs that may represent nuclear, nonproliferation, biological, chemical, critical-infrastructure, and energy security threats or hazards," according to the document. It would also support the training of researchers.

AI guardrails at Commerce

The budget seeks $65 million for Commerce "to safeguard, regulate, and promote AI, including protecting the American public against its societal risks." Specifically, that funding would support the agency's work under the AI executive order, such as NIST's efforts to establish an AI Safety Institute. The recently passed fiscal year 2024 appropriations from Congress included up to $10 million to establish that institute.

AI talent surge

The request also seeks funding for the U.S. Digital Service, General Services Administration and Office of Personnel Management "to support the National AI Talent Surge across the Federal Government." The budget estimated that funding to be $32 million, while the analytical perspectives released by the White House put it at $40 million. Those talent surge efforts were outlined in Biden's executive order and have so far included establishing a task force to accelerate AI hiring, authorizing direct-hire authority for AI positions, and outlining incentives to maintain and attract AI talent in the federal government.

Networking

Further networking is recommended as part of the Cluster Hiring Strategy, along with dialogue to further explore connection with NYS Empire AI intiative.

Appendix C:

SWOT Analysis for Research, Scholarship and Innovation Subcommittee, Recommendation 3: Strengthen Research Computing for AI

Strengths

- We do have a research computing office with many GPUs (A100 with 40 GB)
- Research computing staff responsive to requests, but limited in resources.
- There is a process for requesting compute resources https://help.rit.edu/sp?id=sc_category&sys_id=59a1dcbb1b0ac0d07cc34377cc4bcbe7&catalog_id=e0d08b13c3330100c8b837659bba8fb4
- Research computing is highly utilized – see usage graphic at the end of this report.

Weaknesses

- Level of customization doesn't meet some researcher's needs— e.g. installation of needed software sometimes can't do it. Locked into Redhat Linux vs Ubuntu.
    a. Faculty currently build their own systems using grant money to get around research computing limitations. Becomes an issue for support.
- Access is limited – often saturated – becomes an issue when a deadline occurs. Current infrastructure is at capacity - don't have power, cooling, or other infrastructure capacity to expand – would need a larger physical building infrastructure.
- CHST perspective: data storage is insufficient and a larger issue than compute – having to write storage costs into grants. Biomedical research using AI needs guaranteed high-level security, which can make entering into partnerships and securing extramural support challenging.
    b. grants require long term storage e.g. NIH. We currently store datasets offsite in perpetuity. Data needs to be accessible by researchers outside of RIT.
- Limited compute capability impacts recruitment of faculty and effectiveness of faculty (takes longer to conduct research, publish papers).

Opportunities

- NY state's new AI compute initiative [link at end]. Perhaps we could obtain lower cost compute timeshare through this consortium or research collaborations but we would need to have a seat at the table.

- AWS or other cloud computing could be used but the ongoing cost is significant. There are some lower cost networks such as akash.network but the costs vary over time based on marketplace.

Threats

- Obsolescence of equipment, wearout of equipment (3-5 years), requires on-going funding for replacement and electricity. Not enough cooling and power infrastructure.
- Cost of adding compute is currently high (competition for GPUs due to AI push)

- Research Computing usage stats:

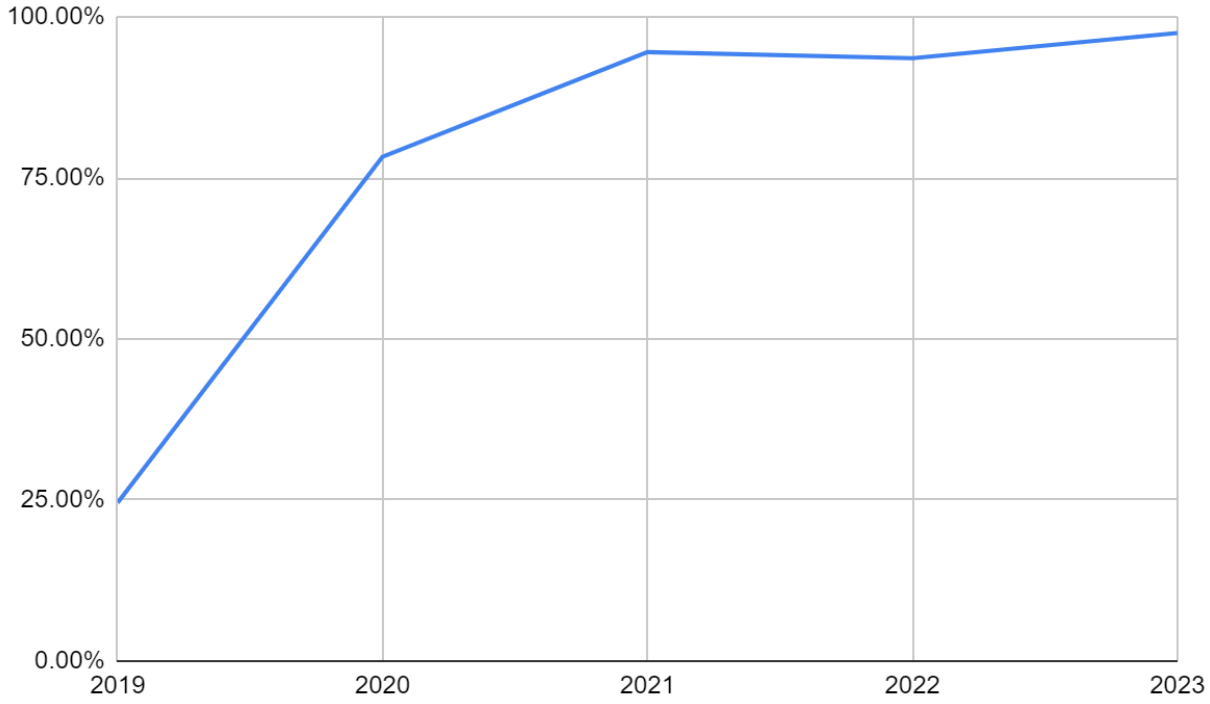

Figure 1: Utilization of RIT's Research Computing cluster over time (data from RC).

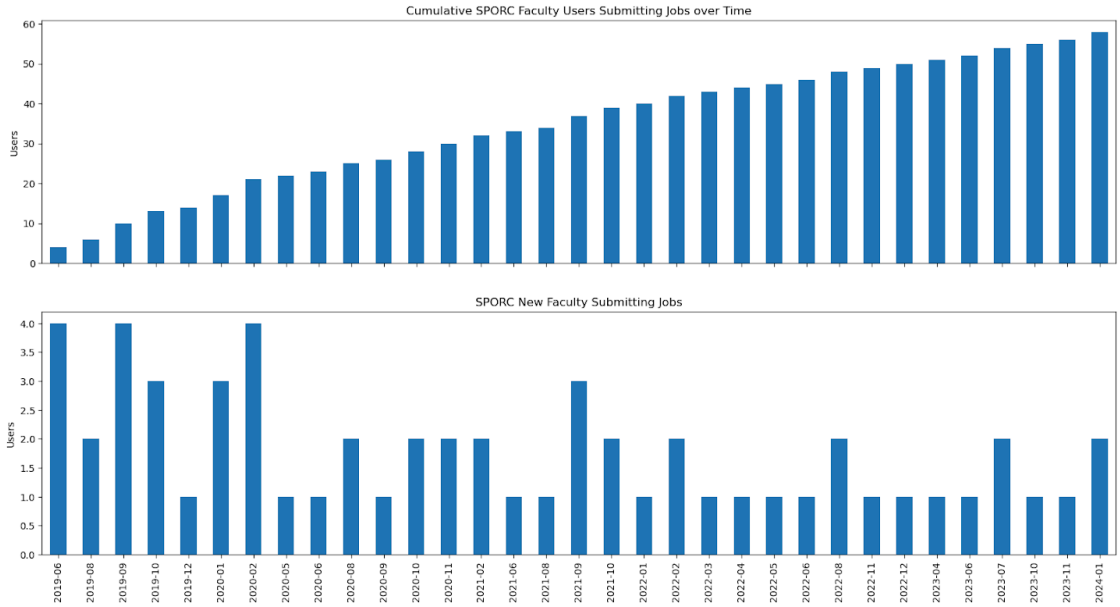

Figure 2: Cumulative faculty researchers submitting jobs over time (above) and new faculty submitting jobs (below). Around 28 new faculty users over the past three years.

Appendix D:

SWOT Analysis for Research, Scholarship and Innovation Subcommittee, Recommendation 4: Amplify AI Research Communication

Strengths

- RIT has a story to tell about AI research (CHAI, AWARE, GCI, PHT180, Center For Imaging Science, Magic Spell Studios, and lots of other opportunities).
- RIT has an established and award winning MARCOM division and communication medium (e.g., News and Events).
- RIT has a long-standing commitment to inclusive excellence in research, learning, and community building.
- RIT has a reputation as a strong technical institution.
- RIT is an industry-recognized leader in diversity and inclusion. (As recognized by ***INSIGHT Into Diversity*** magazine, RIT is the 2023 Higher Education Excellence in Diversity (HEED) Award winner and a 2023 Diversity Champion. This is the 10th consecutive HEED Award and the ninth consecutive Diversity Champion designation for RIT).

Weaknesses

- RIT terminated the *Research Magazine*.
- Communication across the institution is lacking; many colleges are doing research in AI but it remains unknown to other colleges.
- RIT has fallen behind in research communication and has not established a high level communication of AI at RIT.
- Only certain faculty are collaborating due to lack of awareness of research activity at RIT
- Challenging for RIT Communication to produce articles on technical information
- RIT is absent in the area where political connections are made in AI at the NY State level – e.g. RIT was notably absent in **the Governor's AI center announcement**.
    - University News has little communication about AI research internally and externally (e.g., AI Summit was not externally visible and lacked broad University News coverage).

Opportunities

- We can create a very strong message to encourage faculty to deliver output more effectively
- Develop an interdisciplinary platform where the faculty can connect to collaborate together in AI research, a key opportunity for the work being done at RIT
- More efficient publications: helps faculty, especially non-tenured faculty, get inspired and supported by others
- Create an AI platform where faculty can work together to advance their research and development
- Increase opportunities for funding by sharing our stories with people who have access to budgets for advancing AI research
- Improve how we tell technical stories (The Alan Alda Center for Communicating Science that helps scientists tell compelling stories about their research https://www.aldacenter.org/).
- Continue to review peer institutions for benchmarking AI research marketing and communication plans.
- Potential venue for short articles about RIT AI research. This site gets reposted by Google's News feed, increasing visibility. https://www.marktechpost.com/category/technology/artificial-intelligence/

Threats

- We are falling behind by standing still in research, which impacts our ability to attract and retain faculty, staff and students, i.e., diminishes RIT's credibility to be a leader in any emerging technology or field of study.
- We will be behind in interdisciplinary collaborative research.

Select Link Resources from Aspirational Institutions:

Boston University:

- Cluster hiring initiative in AI: https://www.bu.edu/cds-faculty/culture-community/join-us/faculty-positions/ai-hiring-initiative-2024/
- "AI Research Initiative" centered on ML and connected to AI cluster hiring initiative: https://www.bu.edu/hic/centers-initiatives-labs/air/
- Hariri Institute for Computing (HIC) houses AI Research: https://www.bu.edu/hic/research/artificial-intelligence/
- HIC staff includes communications staff: https://www.bu.edu/hic/people-2/esc/

- New Data Science building for education and research: https://www.bu.edu/cds-faculty/explore/bu-center-for-computing-data-sciences/

Princeton:

- https://www.princeton.edu/news/2023/12/20/governor-murphy-and-princeton-announce-plans-establish-artificial-intelligence-hub
- https://dof.princeton.edu/guidebook-department-chairs-and-managers/chapter-i-faculty-appointments-and-promotions/f-faculty-new

CMU:

- AI website: https://ai.cmu.edu
- Under the AI main presence are four centers of particular strengths : https://ai.cmu.edu/research-and-policy-impact
    - AI Institute for Societal Decision Making: https://www.cmu.edu/ai-sdm/
    - The Block Center for Technology and Society: https://www.cmu.edu/block-center/
    - Delphi Research Group: https://delphi.cmu.edu/
    - Robotics Institute: https://www.ri.cmu.edu/

Northeastern University:

- A physical "AI Solutions Hub": https://ai.northeastern.edu/offerings/#AISolutionsFactory
- Also houses the Institute for Experiential AI: https://ai.northeastern.edu/
- Since 2022, major faculty hiring initiatives (500 over 5 years) since 2022, including joint appointments: https://news.northeastern.edu/2021/11/02/northeastern-hiring-five-hundred-new-faculty-members/ https://news.northeastern.edu/2022/10/20/experience-unleashed-global-issues/
- Institute for Experiential AI (EAI): https://ai.northeastern.edu/ including: *Responsible AI, AI for Health, AI for Life Sciences, AI for Climate and Sustainability, AI for Cybersecurity, AI for Telecom, AI for Finance*
- Northeastern Global News has dedicated articles to Science and Technology that cover AI: https://news.northeastern.edu/category/science-technology/

University at Buffalo (SUNY):

- NSF AI Institute of AI and Data Science with otherI related activities are handled under this institute: https://www.buffalo.edu/ai-data-science.html

- AI research infrastructure and 12 research foci from robotics to social sciences under the AI institute: https://www.buffalo.edu/ai-data-science/research/areas.html
- New PhD and MS programs related to AI. i.e MS Engineering (Artificial Intelligence) and PhD in Computational and Data-enabled Science. https://www.buffalo.edu/ai-data-science/academics/grad/cdse-phd.html

Massachusetts Institute of Technology:

- SAIL houses faculty and AI research: https://www.csail.mit.edu/
- CSAIL releases news articles: https://www.csail.mit.edu/news/
- MIT News has dedicated articles on AI: https://news.mit.edu/topic/artificial-intelligence2
- MIT Technology Review features articles on AI: https://www.technologyreview.com/topic/artificial-intelligence/

University of Wisconsin Madison:

- Hiring 50 new AI faculty in the next 3-5 years, with AI being the first area:. https://www.wpr.org/news/uw-madison-launches-rise-with-plans-to-hire-faculty-focused-on-ai

Pratt Institute of Art:

- Statement on Artificial Intelligence: https://www.pratt.edu/resources/statement-on-artificial-intelligence/
- Pratt CTL (Center for Teaching and Learning) on AI: https://prattctl.com/?s=ai

Other:

- Governor Hochul's initiative on AI compute: https://www.governor.ny.gov/news/governor-hochul-unveils-fifth-proposal-2024-state-state-empire-ai-consortium-make-new-york#:~:text=January%208%2C%202024-,Governor%20Hochul%20Unveils%20Fifth%20Proposal%20of%202024%20State%20of%20the,in%20AI%20Research%20and%20Innovation&text=Governor%20Kathy%20Hochul%20today%20announced,of%20the%20artificial%20intelligence%20transformation.

Examples of Research Communications about AI at Aspirational Institutions:

Princeton:

LLM Forum: Wai Chee Dimock with Meredith Martin (topic: culture)
LLM Forum: Meredith Whittaker with Arvind Narayanan (topic: society)
Princeton Symposium on Biological & Artificial Intelligence

AI and the Future of Manufacturing: A Synergetic Relationship
The Future of AI: Scaling AI Through AI Engineering
The Future of AI in Robotics Driven by Pittsburgh's Innovation Ecosystem
Accelerating the Future of AI through Investment in Fundamental Research and Beyond
Building a 2021 Workforce with AI
Generative AI: The Good, The Bad and the Precarious Edges
VI Consortium Workshop for Language Teaching and Learning (CLTL)
Faculty Workshop: AI and Our Classrooms: Generating Images with DALL-E 2
Princeton Symposium on Biological & Artificial Intelligence

CMU:
CMU Artificial Intelligence Seminar Series
Artificial Intelligence Seminar
Artificial Intelligence (AI) Strategy Workshop
Alumni-Faculty Forum: Building a Smarter World: How Artificial Intelligence is Shaping Our Future

SUNY Buffalo:
https://www.buffalo.edu/ai-data-science.html
https://www.buffalo.edu/ai-data-science/news-events/news/newsletter.html
https://www.buffalo.edu/ai-data-science/news-events/events/iad-days.html
https://www.buffalo.edu/ai-data-science/news-events/news.html
https://www.buffalo.edu/news/our-services/media-contacts.html

Pratt:
https://prattctl.com/2023/12/14/ai-and-the-classroom-2023-ctl-year-in-review/
https://talks.pratt.edu/media/t/1_6bj28rtx
https://talks.pratt.edu/media/t/1_caac9mph
https://libguides.pratt.edu/c.php?g=1351566&p=9995501
https://www.pratt.edu/about/offices/communications-and-marketing/

Sample Hiring Language:
RIT Artificial Intelligence is accepting applications from strong candidates for multiple 9-month, full-time faculty positions at the rank of assistant professor (tenure-earning) and associate professor or professor (tenured) in core areas of AI and their applications including: Imaging Science, Chemistry and Materials Science, Natural Language Processing, Robotics, Machine Learning, Data Analytics, Cyber Security, Mathematical Aspects of Deep Learning, Theory of AI and Data Science, Biomedical Applications, Genomics and Computational Biology, as well as Innovative Computing domains including but not limited to XXXXX**.**

Appendix E:

SWOT Analysis for Experiential Aspects of AI Embedded in Campus Life Subcommittee.
Recommendation 1: Create an AI powered chatbot on RIT's website to support student success and engagement - "Ask Ritchie"

- **Strengths:**
  - Will support ease of access to accurate information
  - Would make access to RIT resources and information more accessible to students.
  - Would streamline RIT information and breakdown barriers for students to access the knowledge they need to be successful.
  - Centralize information on engagement opportunities, programs, and events for students.
  - Would allow for efficient ways to provide students information and cut down on the need for staff to have to manually respond to inquiries which will allow them to have more intentional face to face interactions with our students.
  - RIT will be able to access trends in data to identify common themes among questions, concerns, or engagements with the chatbot and then respond in a real time manner.
- **Weaknesses:**
  - Potential to be a costly investment if using external vendor.
  - Lack of documentation of information and processes within the RIT infrastructure to assist in training this technology.
  - Potential risk of wrong information being provided to students, as with all AI powered technologies.
- **Opportunities:**
  - Utilize SSO to limit the access to this tool. It should focus currently on students and student organizations.
  - Potential to increase the scope of reach to incoming students, students engaging in co-op and careers, classroom support, alumni engagement, etc.
  - Ability to look at trends of conversations to identify opportunities for services, programs, and increased in person response.
  - Would have to integrate the chatbot into our computer rights and responsibilities to ensure appropriate use of the chatbot.

- **Threats:**
    - Risk potential if students disclose information indicating imminent threat to safety.
    - Risk for students to engage in the chatbot while seeking mental or physical health support.
    - Fear from RIT faculty and staff that their roles and positions will become obsolete.
    - Concern of ethical use for the tool and the lack of guidelines and policies integrated into RIT's infrastructure.
    - Ability to scale the technology to ensure that it is accessible to students even with heavy use during peak times.
    - User trust and acceptance - students may not feel comfortable utilizing this tool to seek our support or questions due to the lack of clarity of AI in our culture.

https://news.gsu.edu/2022/03/21/classroom-chatbot-improves-student-performance-study-says/

https://mainstay.com/case-study/how-georgia-state-university-supports-every-student-with-personalized-text-messaging/

https://www.linkedin.com/pulse/higher-ed-students-can-flourish-personalized-ai-phil-chatterton-hcukc/

https://www.edsights.io/suny-case-studies

Appendix F:

SWOT Analysis for Experiential Aspects of AI Embedded in Campus Life Subcommittee.

Recommendation 2: Establish an "AI Compass & Resource Center" to guide RIT members through an ever-changing AI landscape and set up RIT for successful adoption of AI.

- **Strengths:**
  - Dedicated staff can serve as an accelerant to effective, efficient, and responsible use of AI across campus.
  - Centralizing resources can help prevent formation of fiefdoms and silos across campus and prevent haves and have-nots.
  - Sharing of knowledge can prevent redundancy or duplicate tools be purchased across campus.

- **Weaknesses:**
  - Would require significant investment in staffing.

- **Opportunities:**
  - Moving things from research or small scale to operational supported tools is a gap. This could serve as a model to be more effective at that.
  - Having infrastructure in place for AI would assist in meeting requirements of grants.
  - The AI resource center can help to capture and digitize the extensive, yet often undocumented, knowledge of our long-serving staff members, making it accessible for AI applications and future use.
  - Can collaborating with our data program aims to foster a culture of data sharing within our organization, which is currently hindered by siloed departments, reluctance to embrace new processes, and concerns regarding data security and privacy.

- **Threats:**
  - Things could move so fast that investments in hardware may be not necessary as cloud services rise up.
  - Investments in hardware could change as advancements in ability to run models on smaller scale hardware advance or as needs and sizes of models explode. Unknowns and a rapidly changing landscape make major investments risky.

- Data quality and structure issues may impact AI LLM models if we decide to build customized LLMs

References:

Fountaine, McCarthy, Saleh. 2019. "Building and AI Powered Organization", Harvard Business Review. Retrieved from: https://hbr.org/2019/07/building-the-ai-powered-organization

Coffey, L. 2023. "Advisory Boards Aid in Alleviating AI Anxiety", Inside Higher Ed. Retrieved from:https://www.insidehighered.com/news/tech-innovation/artificial-intelligence/2023/09/28/higher-ed-ai-anxiety-advisory-board-could

Appendix G:

SWOT Analysis conducted by Teaching and Curriculum Committee

- **Strengths:**
    - This could be a very visual way to show RIT is working with AI on campus. How do you make it visually appealing for guests and community members?
    - This is a great way for the "blue dot" generation and beyond to interact and find their way around campus
- **Weaknesses:**
    - Who would support the hardware/software?
    - Department Silos of information could pose a challenge to getting these fully operational
    - The avatar and interactions with the user seem to be one of the only things in this recommendation that would be using AI
    -
- **Opportunities:**
    - This would help new students and guests the most in learning about and finding their way around campus
    - Sparking feedback in ways to improve the kiosks to assist in everyday campus life
- **Threats:**
    - Data quality in multiple systems could skew information given at the kiosks
    - Costs of getting the hardware, resources to clean up data needed, potential privacy risk in "following" users around campus

Appendix H: Sample/Seed Answers to Strategic Questions

1. **How will we develop AI across the curriculum, Guarantee that RIT degrees include relevant AI knowledge, Ensure graduates are ready for an AI-centric future, and Assess the impact of AI integration in the curriculum**
    - Include students with tutoring and teaching responsibilities in AI curriculum discussions.
    - Emphasize lifelong learning and adaptability using AI tools like GPT AI and adaptive learning platforms.
    - Build a data model to identify student needs in real-time, aiding in Student Success initiatives.
    - Equip faculty with professional development and tools for AI integration in teaching.
    - Leverage AI-powered assessment tools for learning assessment. (NS)
    - Consider short-term and long-term impacts of generative AI on teaching and assessment methods.
    - Focus on AI design inclusion, biases, and the importance of heterogenous design teams in curriculum.
    - Include user feedback in curriculum design as a core element.
    - Ensure faculty hiring across colleges emphasizes AI teaching at all levels.
    - Promote swift adoption of AI in teaching, including AI-focused tracks.
    - Showcase student and faculty applications of AI in learning.
2. **How will we develop policies for ethical AI usage, Inform the community about AI's limitations and biases, Prepare for the implications of third-party AI-generated content; Establish guidelines for integrity in AI education.**
    - Develop safety, ethics, and application policies for AI in curriculum and courses.
    - Prepare students to be aware of potential biases in AI, emphasizing the value of diverse design teams.
3. **How will we develop an educational/support/professional-development/strategic AI Hub (a physical AI Epicenter) for the RIT community and what features should it have?**
    - Develop a Core/modular educational support infrastructure focused on efficiency.

- Develop a Physical AI Epicenter, fostering a unique positioning for RIT. (Various Contributors)

4. **How do we increase the level of AI expertise on campus and connect that expertise to the community?**
   - Identify and grow core areas for AI experimentation and application.
   - Educate RIT researchers and faculty on AI applications and integration in grants.
   - Connect AI experts with non-expert faculty for collaborative projects.
   - Develop scalable AI research infrastructure for handling large datasets.
   - Formulate a vision and narrative for AI research at RIT.
   - Prioritize strategic planning and buildup of AI expertise and infrastructure.
   - Foster external partnerships to enhance AI research and application.
5. **How do we brainstorm and then prioritize the core areas for AI experimentation and application?**
   - Focus on strategic emphasis and growth in AI research expertise.
   - Implement an "Imagine RIT AI" forum for sharing and collaboration.
   - Revive proposals for AI-focused cluster hires involving multiple colleges.
   - Address potential biases in AI research, using examples like "Unmasking AI".

6. **How should RIT develop a framework to manage AI for all/any campus services and operations, (and how do we secure our data)?**
   - Manage equitable access to AI tools for experimentation and usage.
   - Secure RIT data sources against scraping by AI giants, designating data as RIT-owned IP.
   - Assess infrastructure needs for AI expansion, including data storage.
   - Consider a framework for AI within campus services, contemplating technology landscapes and integration.
   - Evaluate AI licensing models and benefits for campus services.
   - Develop a data privacy/protection framework.
   - Integrate AI for analytics and dashboarding in decision-making for instructors and administrators.
   - Identify areas to utilize AI in improving organizational effectiveness.
   - Develop AI algorithms for optimizing course scheduling and selection.
   - Use AI to support tutoring centers and academic success.
   - Explore AI use in student services (Health Center, Counseling Center, etc.).
   - Develop chatbots for student services, based on RIT policies and procedures.
   - Utilize AI in career services (resume building, interview prep, etc.).
   - Investigate AI's role in achieving strategic plans and addressing resource limitations.

7. **How do we develop partnerships inside and outside of RIT (Industry/Educational) to successfully apply AI throughout campus?**
    - Develop internal and external partnerships for AI application.
    - Cultivate strategic partnerships with AI leaders and academic institutions for resource sharing.
8. **How do we develop a differentiation strategy and position RIT within the industry? How do we develop a vision, a narrative, marketing, and a brand identity for AI at RIT?**
    - Develop a differentiation strategy, leveraging RIT's strengths in innovation and AI.
    - Formulate a comprehensive AI capabilities review (SWOT analysis) for RIT.
    - Engage stakeholders for systemic AI integration.
    - Launch AI Innovation Labs in key areas (admissions, curriculum, student services) for experimentation and implementation.
    - Initiate an Annual AI Summit for discussions on AI's educational impact.
    - Advance Professional Development programs for AI knowledge integration.
9. **How do we allocate resources between AI application, AI software/development, and AI hardware?**
    - Conduct cost-benefit analysis to prioritize AI initiatives.
    - Identify budget for implementing AI-related recommendations.
    - Reinvent curricula to include AI and redefine instructor roles.
    - Attract top talent in AI and related fields.
    - Ensure RIT degrees include AI knowledge and prepare graduates for an AI-centric future.

Appendix I: Anonymized Responses Additional Questions:

Q1: “In addition, our committee has been charged to consider how to attract our whole community to AI, on our campus, in a fun, exciting, innovative, engaging and maybe playful way. Please suggest below any ideas for a display of AI. Please throw off the chains in your consideration and leave any ideas or thoughts below that may inspire!”

Responses:

- A photo station which lets users create their pictures with the help of their input and generative AI. AI photo booth.
- An AI-based meal or drink maker based on human AI interaction in one of the food service areas.
- Create a Vision Portal into the future: What does the future look like?
- Using the large screen in the SHED to create a vision portal where students, faculty, staff, administrators, community members can share 1-5 minute videos (possibly created with AI) that invite the viewer to visit a range of possible Generative AI influenced futures.
    - What is the future of education?
    - What is the future of the workplace?
    - What is the future of collaboration, teaming, social media, classrooms, cellphones, cars, campuses, spam, TV news, concerts, homelessness, incarceration, employment, sports, humor or anything that might change from Generative AI?
    - Invite a wide range of perspectives from utopia to dystopia.
    - Create themes for certain events and invite community members to contribute short films/videos of ideas.
    - Again leverage Gen AI to lower the barrier so that any idea can be shown. Hold salons to have discussions around these themes and play the videos on the SHED screen.
    - What world do we want, what world will we make?
    - Hold a mirror up to all the possible futures and encourage people to critically think about the outcomes and whether they are the ones we want. Continually update the portal and explore different timeframes.
    - Make it must see TV each week. Hold a popcorn event every Friday for new releases. Open it to everyone but have it curated of course.
- Suggestions we can offer on campus and have the campus community experience or help produce:

    - The Life of RITA, RIT's first AI student – a futuristic play or story of RITA, a new AI students at RIT who goes through their first week of classes, experienced through the point of view of an AI system. Through the play or story audiences can:
        - Discover how RITA learns and gathers new information,
        - Discover how RITA's neurons are engaged to create new information/deep learning
        - Witness contradicting responses from RITA where each are correct based on the information they are taught
- Discover the challenges and opportunities design teams face in the emerging AI industry.
- Stories from the Task Force - A podcast that chronicles RIT's journey to becoming a leader in AI. Perhaps we share stories from the Task Force members, aired on RIT's radio station or short videos on our website.
- AI design game – created like Monopoly or The Game of Life, where players are racing to create an AI robot or system that is "perfectly designed" but we don't tell the players what's required to make the robot/system "perfect." They must learn this along the way. The hidden gems of the game or the important elements we are trying to address on our Task Force. Perhaps a game like this already exists.
- Campuswide student AI innovation challenge/competition.
- Multi tier resources with some AI freely available to RIT/wider community.
- Interactive, RIT AI student who can in "attend" and learn from courses. (e.g. Discussions in mycourses).
- A type of mascot that could grow over time (e.g., become a sort of TA overtime, responding to student questions.)
- Education and communication about AI. Email blast about free AI with examples about simple things it can do to at least expose people to AI.
- "information kiosks" – kiosks would offer general help to students, faculty, staff and visitors
    - Where can I eat? How do I get to….? I need help with…? Tell me an interesting fact…
- Create RIT AI help app for smart phones
- AI convenience store
- I asked a similar question to my students, and they quickly came up with a number of exciting and creative ideas. Since we want to make sure that our recommendations benefit and respond to students interests at both, the undergraduate and graduate levels, a suggestion would be to illicit student interests in two stages 1. brainstorming 2. feedback on a paired down list.

- Provide training and workshops for anyone on campus interested in learning how to use AI in their daily lives.
- Imagine RIT
- Develop an AI Road show or workshop, and present it to various groups on campus, for example, college/divisional Townhall.
- Provide examples/demonstrations of what is currently happening on campus and/or ideas. There are a lot of individuals who don't even know what they don't know in the space.
- Student projects are always interesting.
- We need a way to showcase AI in Layman's terms for non-tech students, faculty and staff.
- Could we collaborate with the solar eclipse committee to do things on that day?
- We have a lot of major programs coming up that might be good to use as a showcase.
- I am most concerned about the operational impacts of AI across RIT from our product to our processes.

Q2. Are there any burning strategic questions that you feel are not captured in our first brainstorming exercise from the past weeks? Are there any comments or suggestions that you would like to share? Please write them below!

Responses:

- I am still wondering how we can preserve the diversity of perspectives and expertise of the full committee within our subcommittees. I mentioned expertise in AI ethics as an example during our meeting, but this includes representation from different colleges, departments, etc..
- Have our subcommittee teams model the best practices in team building and team work we are suggesting for the AI field.
- Experience a community building exercise or kickoff retreat to help members create an effective, inclusive, and supportive environment for us to do our best work. The kickoff can enable members to:
    - get to know each other better,
    - identify communication/process/conflict style differences,
    - increase awareness of intercultural communication, to remind us we all have cultural identities that may be at play when conflicts, biases, or assumptions occur
    - practice good group brainstorming techniques

    - be reminded of natural group dynamics and how to get to the “norming” stage faster
    - practice a SWOT analysis
    - Kickstart subcommittee work
- As part of the Task force’s activities, it would seem to useful to create a set of envisioned possible outcomes of how the world around RIT may change due to Gen AI and then to consider how these changes might affect RIT’s plans and resources. For example, it has been said that Gen AI will mostly impact people in the “cognitive class”, taking jobs from creative types and office workers including in technology areas. If that were to happen, and high paying jobs shifted out of some of the areas that students come to RIT for, what impact would that have on enrollment, endowment, and employability of graduates? Examining various scenarios and permutations could better equip RIT to adapt its programs, partnerships, and priorities to the evolving landscape shaped by Generative AI. What are the jobs of the future? Are they jobs with AI co-workers? What skills does the human need in this arrangement? Are the jobs more manual, more hands-on in some sense, or something else? What does teamwork look like in the future? I think this strategic analysis should at least be explored and influence our recommendations.
- Creating buy in from everyone on campus. The program will only be successful if we can educate and create excitement about AI
- How much AI needs to be student facing vs. back end office tasks
- I am interested our capacity to strategically respond here. Will this group essentially frame a strategic plan here or is this just a straw dog of prioritized ideas? These need to be coordinated and laid out, who is the recipient of our output beyond the provost?
- I think the back office type stuff and under the hood T&L are where the most power lies.
- I am also very interested in the policies that guide the ethics of AI. It will be the wild west, but as a university we have a responsibility to keep an eye on the ethics, and drive things in the right direction. This is important to me both as Fram chair and as a risk expert.
- We do need decent cross pollination in this process too. I am not sure that responding to the draft work is enough. Perhaps a process to input information for all across the subs.
- Faculty hiring gaps in core AI (We went from 2 to 1 faculty in NLP/speech processing, which is the research and curriculum we deliver to RIT in core AI
- I think we need to expedite writing draft guidelines and policies, instead of waiting until after April 1 to write them

- Changes in AI may happen faster than we can react; how do we stay ahead of this? How can we be agile as a committee or as Rit?
- Need a list of peer institutions for benchmarking purposes.
- Responsible and irresponsible use of AI. We need to be able to articulate when and where AI is appropriate and inappropriate.
- What students are interested in, with respect to AI?
- Being mindful of perception that AI will replace employees.
- Certain aspects like security, privacy and access to tooling, seem to cross all three groups and will be relevant to all of them. How will we ensure we don't silo these concerns to each group?
- What are we currently doing on campus with AI outside of the classroom?

Appendix J: Proposal for Development of AI Usage Policies

An article in Educause describes how to build a generative AI policy.
The following proposal comes from that article which Christopher Collison reviewed, below.

Jan 11, 2024
“The article starts with a concern regarding plagiarism and the effectiveness of Turnitin, highlighting its limitations. My read is that the article often views that administrators should treat AI from a restrictive lens, focusing on plagiarism and the need for regulation rather than exploring its potential to aid students.

However, of great value, and true to the title, a significant portion of the article discusses policy formulation, suggesting that universities involve a diverse range of stakeholders, including students, in the process. This recommendation aligns the aims in building our own AI Task Force, and I think it’s always a good ongoing question to ask whether we adequately represent all stakeholders. (There’s a valuable suggestion where the authors emphasize university policy writers to collaborate with the Accommodations office to understand better how AI might be used to benefit students, regarding ADA compliance).

There's a noted emphasis on including students in policy creation, but at one point the article seems to assign students a role of advocates for AI's benefits, as if contrary to a notion that faculty and university administrators will actually be the bigger advocates for the use of AI! For example, the article seems to imply that using AI for any document composition is questionable, with an apparent negative stance towards AI. I hope that we critically question (with an open mind) any bias or perception that AI is potentially harmful and in need of strict control. I think this open mind sums up how our task force will operate though, given its broad membership.

I am extracting below many really useful insights to support our efforts on the AI Task Force. The article helps a lot in that we don’t need to reinvent the wheel regarding how to set up an approach to policy writing.

“As original student writing becomes increasingly difficult to verify and confirm, developing a policy for AI detection might result in its being outdated just as the policy is implemented. Having an agile committee representative of diverse campus needs

who can both review these issues and considerations to craft a more useful policy is part of what is needed to both protect students and choose the right tools for navigating the technological changes."

"This is but one issue that higher education needs to navigate when crafting policy around generative AI. Other issues include but are not limited to the following:

- The role of generative AI in visual and textual outputs of the institution, be they for marketing, for social media, or in reports
- How and where faculty can use generative AI in the creation of course content, assignments, and feedback or assessments
- Addressing the embedded biases of the data and outputs
- The impact and challenge of information literacy
- The environmental impact of generative AI, including greenhouse gasses and water usage
- The impact on workers needed to run generative AI"

These are the questions that are recommended for developing a new policy:

- "Whom is the policy going to focus on? Students, faculty, staff, administration, third-party vendors, contractors, etc.?
- Can the same policy apply across the institution, or will different policies be needed for different parts of the organization?
- Will the policy stand on its own, or will there be room for adjustments (for example, will students encounter variations depending on whether instructors—under the notion of academic freedom—want to encourage or discourage certain uses of generative AI for the purposes of teaching)?
- What can or will be the implications of violating the policy?
- What methods of accountability with the policy can be created when it may be hard to actually detect generative AI text?
- Will there be differences between institutionally affiliated generative tools and those that are available to anyone?

Some questions to consider for other entities at your institution may include the following:

- Will the institution's upper management consider using generative AI to surveil employees' work to detect efficiency or generate employee evaluations?
- Should your policymaking efforts account for this scale of institutional use?
- How will AI be addressed in human resources, especially the recruiting and hiring process?

- In what ways will the community outside the campus be impacted by your policies?
- Do you have community partnerships in which you offer students an opportunity to put their theoretical learning into practice? Do you have an obligation to educate your students on the uses of generative AI as part of that collaboration?
- Will your institution be viewed as being a policy and position leader on the subject of generative AI?
- What will be reasonable and equitable means of challenging outputs by generative AI? “

There are some examples of policies already written:

https://docs.google.com/document/d/12Kx-Xp5lu1zQr16XFddvWOZg99UQCqpOqyn0Zg4Q10g/edit#heading=h.31io3d5xnjva

“Framework for Generative AI Policy Creation

- Below are the relevant sections that a generative AI policy should address to help institutions in their policy development processes. Each institution should have its own individual policy based on the needs of its community.
- Policy Audience: Whom is this policy for? Is it for the entire institution, faculty, students, staff, departments, third-party vendors, or others?
- Policy Timeline: What is the timeline for implementation? Should that timeline include a review and update cycle after initial implementation?
- Policy Tools: What counts as AI for this policy? Is it focused on all AI or only generative AI? Is it focused on all generative AI or just text-generating AI?
- Academic Integrity Guidelines: If the policy is related to student or faculty work, what are the integrity requirements to make sure academic integrity is upheld?
- Acceptable Use: If AI usage is acceptable, are there any limitations on the amount of usage (e.g., a certain percentage must be individually generated in certain contexts) or purposes for which generative AI may be used?
- Transparency: What practices are in place for communicating its usage throughout the institution?
- Security and Legal Considerations: What concerns need to be addressed concerning privacy, intellectual property, and proprietary knowledge around using external or enterprise generative AI tools? Does endorsing the use of generative AI conflict with any laws such as the General Data Protection Regulation?
- Ethical Considerations: What concerns or responsibilities does the institution have explicitly or implicitly within its mission that conflict with the environmental, human-exploitation, and bias issues related to generative AI?

- Institutional Resources: Which areas of the institution will be committed to supporting, responding to, and implementing uses of generative AI?
- Processes for Policy Violation: If the policy is violated, what are the steps for identifying and addressing it?”

Proposal of Usage Guidelines for AI Generative Tools at CU

These guidelines were created and reviewed by College Unbound students (S. Fast, K. Linder Bey, Veronica Machado, Erica Maddox, Suleima, Lora Roy) in Spring 2023 with the support of Lance Eaton, Director of Faculty Development & Innovation. For more information about this project, these guidelines, etc, please contact Lance Eaton at lance.eaton@collegeunbound.edu.

Introduction

The guidelines proposed here reflect the goal to support the responsible use of artificial intelligence (AI) generative tools in alignment with College Unbound's mission to reinvent the higher education experience for underserved adult learners, using a student-driven model of rigorous and engaged scholarship.

College Unbound is committed to the value and recognition of human thought and recognizing the complexities that such tools as AI generative tools might augment, enhance, and more concerningly, interfere or misrepresent our thought processes in ways still not fully understood. We wish to encourage and support faculty and students’ free expression while also creating opportunities for them to leverage technological tools that will likely be part of their future experiences. Also, we recognize that these tools–at least currently–come with a range of complications such as concerns about bias, privacy, environmental harm, cultural privileging, and human exploitation that problematize our usage of them. These guidelines aim to provide guidance for students and faculty about the usage of AI generative tools that attempt to balance the aforementioned tensions.

We also want to emphasize transparency and accountability for both faculty and students in their usage of AI generative tools. This applies both in the legal expectations of those terms as they relate to institutional, local, state and federal laws as well as to the importance of these values in how CU cares for and supports students. In this way, these guidelines are structured to make it clear when, where, and how the use of AI generative tools are being used to help students and faculty to understand the depth and breadth of usage, which will also further inform subsequent guideline development.

At this document's center is the goal of helping students and faculty responsibly and transparently indicate the use of AI generative tools and its degree of use in the brainstorming, developing, drafting, and finalizing of content provided by students and faculty.

Definition

AI Generative Tools: We define "AI generative tools" as including (but not necessarily limited to): the use of technologies that rely on machine learning, large language models (LLMs) and other advanced data-manipulation tools to produce distinct answers or outputs based upon prompts by the user.

Usage: Usage of AI generative tools includes engaging with such tools to generate specific content that contributes to the submission of any activity or assignment or work to be evaluated in a course or requisite for graduation (e.g. Big 10, LIPS), including but not limited to papers, presentations, discussion posts, etc, by students or by faculty, including but not limited to learning content, presentations, assessments, feedback, etc.

Student Guidelines

1. Each instructor at College Unbound may have student usage policies that are different in terms of expectation and approach to using AI generative tools. An instructor's syllabus policy supersedes these guidelines in terms of appropriate usage, however an instructor cannot require students to create accounts with unaffiliated organizations for the purposes of any assignment. In the absence of a specific course policy, these guidelines stand as the default expectation.
2. If students choose to use these tools in some capacity that results in content from the generative AI tool making it into submitted student work, they must make clear and evident what portion of the work is generated by the AI tool and which AI tool they used.

a. When available, use the appropriate citation format (e.g. MLA or APA) as indicated by the instructor or syllabus.
a. In absence of a particular citation format, students should use quotation marks around the AI generated-text and include a Works Cited that includes both the tool that was used (e.g. Bard, ChatGPT) and the prompts used.
a. For visual materials or audio materials, consult your instructor on how they would want them particularly documented.
a. In situations where students use generative AI as part of the brainstorming or organizing process, they are not obligated to cite or reference.

2. Students are discouraged from copying entirely the content directly from an AI-generative text tool into their course work. Students should edit and revise the AI-generative tool's output, unless there are significant reasons not to (e.g. the instructor's guidelines say otherwise).

a. Use AI tools as a supplement to your learning, not as a replacement for traditional learning methods. Whenever possible, make sure the AI tool is accurately guiding your learning.
a. With regard to LIPS, Big 10s, and other reflective practices, students may use such tools as a resource for insight and further understanding, but their reflective submissions should be still created by the student entirely.

2. Students who do not adhere to these guidelines (or ones specified within a given course syllabus), will be subject to the process highlighted in the Student Handbook's policy (Academic Honesty item #6 on pg 107).
3. Students must get documented permission by faculty before putting original faculty content into any AI-generative tool. This might include communications, feedback, learning content, and the like.
4. If students choose to use these tools in some capacity related to their work, the submitted work should be less than 50% generated by the AI tool unless otherwise stipulated by the instructor or assignment guideline.
5. Students are responsible for the possible negative outcomes of using AI-generative tools in the submission of their work as they relate to College Unbound and its community. These negative outcomes include but may not be limited to:

a. The accuracy of the content of an AI-generative tool.
.For example, ChatGPT has been known to provide sources that do not exist or links that do not work. Integrating these into one's work fails to meet the standards of appropriately identifying one's sources of influence in a given work.
a. Usage that results in inappropriate harm to the wellbeing of others–individually or collectively.

.For example, using material generated by generative AI that results in reinforcing stereotypes (in written, oral, and visual mediums) for assignments or materials related to one's work at CU.

a. Usage that violates the privacy or security of other individuals.

.For example, students should not enter names and personal information or writing of other people (students, faculty, staff, etc) to produce an output for any work or activity related to their role at CU.

a. Usage that undermines the academic integrity of assessments, exams, or others evaluations at College Unbound.

.For example, putting students' work into a generative AI tool for the purposes of checking for plagiarism or generating feedback (without students' permission).

a. Any other usage that violates CU's policies.

a. If you are looking to use generative AI in connection with your learning at CU, please consider reaching out to the Director of Digital Pedagogy, if you have questions or concerns about how you are using it and the policy above.

Faculty Guidelines

1. Faculty may develop their own usage expectations within their courses that are different from this document. However, they would still need adhere to Item #3 in the Faculty Guidelines and follow the process highlighted in the Student Handbook's policy (Academic Honesty item #6 on pg 107) for students that do not follow expectations.
2. Whenever faculty use generative AI tools to produce anything related to teaching and assessment, faculty must make it evident how much of the content was created by them and how much was generated by the AI-generative tool.

a. For example, for written work, faculty should use the discipline's preferred citation format (e.g. APA, MLA) to cite AI generated text or some other method to distinguish it such as using boldface, italics, or highlighting the AI generated text and explaining that the text comes from a specific generative AI tool..

a. For visual materials or audio materials, faculty should include disclaimers about the role of AI-generative tools used to create such material–either as a preamble to the content or embedded within the content.

2. Faculty cannot require students to get an account with any AI-generative tools at this time. If looking for possible opportunities or practices for students to use AI-Generative Tools, please contact Lance Eaton, Director of Digital Pedagogy.
3. Faculty must get documented permission by students before putting original student content into any AI-generative tool. Failure to do so may be subject to dismissal or other disciplinary actions.

4. Faculty should be mindful of using these tools and keep a relational balance between what they ask of students in terms of how much AI-generative content can show up in student work and in their own work.

a. For example, if students are restricted from submitting work that includes more than 25% of AI-generative work in their submissions, then the faculty member's work should also not include more than 25% AI-generated content.

2. Faculty can use AI Generative Tools in the following ways:

a. **Learning Materials, Evaluation Materials, & Class Preparation**: Faculty can use these tools to help create content for their courses whether it is learning materials, assignment guidelines, slides, conversation questions, activities, etc.

a. **Classroom Demonstrations & Learning Activities**: Faculty can use these tools as part of classroom demonstrations and learning activities where the instructor and student can engage with the AI-Generative Tool for discovery and/or critique purposes.

a. **Feedback**: Faculty can use AI-Generative Tools to create effective feedback for students. However, they are not allowed to put student-created work into AI-Generative Tools in order to create effective feedback without explicit permission from students.

2. Faculty are responsible for the possible negative outcomes of using AI-generative tools for any purpose related to their work at College Unbound and its community and may be subject to disciplinary action. These negative outcomes include but may not be limited to:

a. The accuracy of the content of an AI-generative tool.

.For example, ChatGPT has been known to provide sources that do not exist or links that do not work. Integrating these into one's work fails to meet the standards of appropriately identify one's sources of influence in a given work.

a. Usage that results in inappropriate harm to the wellbeing of others–individually or collectively.

.For example, using material generated by generative AI that results in reinforcing stereotypes (in written, oral, and visual mediums) for the purposes of teaching and learning.

a. Usage that violates the privacy or security of other individuals.

.For example, faculty should not create a chat thread on ChatGPT for each student, where they update ChatGPT about how the student is doing and requests feedback/strategies about that student

a. Usage that undermines the academic integrity of assessments, exams, or others evaluations at College Unbound.

.For example, putting students' work into a generative AI tool for the purposes of checking for plagiarism or generating feedback (without students' permission).

a. Any other usage that violates CU's policies.

a. If you are looking to use generative AI in connection with your course, it is recommended to reach out and talk with the Director of Digital Pedagogy to double check different assumptions about usage.

A final note about these policies: Because this technology is both new and continuing to change, we recognize that these policies cannot and will not cover every situation. Should issues and edge cases arise which fit outside these guidelines, CU representatives will operate from a position of good faith in trying to address each case, which will also be used to help us refine these policies.

Appendix K: CTL Presentations & Resources

1. What are the current CTL resources available to faculty? (online resources, in-house expertise, planned presentations/training)

CTL offers a range of resources, activities, events and consultations around the use of AI for teaching and learning. These include:

- Dedicated CTL Webpage on Generative AI in Teaching containing Getting Started Info, Teaching Practices, Examples, Events ,and Additional Resources (rit.edu/teaching/generative-ai)
    - Generative AI Teaching Examples/Microvideos (planning phase)
    - Generative AI Teaching Practices (planning phase)
- Faculty Fellows
    - Consultation services with the two Strategic Priority Faculty Fellows for Generative AI in Teaching and Learning (Shaun Foster & Clark Hochgraf)
    - Consultation services with Discipline Area Faculty Fellows in the arts, business, computer technology, engineering, humanities/social sciences, and science/health sciences
- Consultation services with academic technologists and teaching consultants
- Provost's Learning Innovation Grant with a Generative AI Teaching Focus Grant option
- 2024 Summer Institute will be held in conjunction with the AI Research Symposium, and have the theme of Teaching the 21st Century Student with one of the four tracks being Harnessing New Technologies, which includes Generative AI
- Events and post-event resources
    - Webinar: Faculty Panel on Generative AI in Education (Aug 2023)
    - Fall Symposium: Teaching & Learning in the Era of Generative AI (Sept 2023)
    - Webinar: Teaching with AI Showcase (Feb 2024)
    - Teaching Circles
        - Teaching Circle: Implementing Generative AI in STEM Courses to Enhance Student Learning (Fall Semester | Amanda Bao)
        - Teaching Circle: How Might Generative AI Change the Marketplace and Therefore Our Teaching of Software Technology? (Fall Semester | Keith Weber)
        - Teaching Circle: Just a "BEtter Pencil"? OpenAI, ChatGPT, DALL-E (Spring Semester | Lisa Hermsen)
        - Teaching Circle: Tech enabled teaching efficiencies (TBD | Garret Arcoraci)
        - Teaching Circle: AI and writing (TBD | TBD)
    - Teachers on Teaching presentation series (planning phase)
    - Hackathons (led by Faculty Fellows)
    - Fellows Forum on Getting Started with AI (TBD | Shaun Foster)

    - Fellows Forum on programming local instances of ChatGPT4 (TBD | Shaun Foster, Clark Hockgraf)
    - Fellows Forum on building auto graders (Clark)
    - Fellows Forum on building local instances of chat GTP4 for virtual TA assistance (TBD | Clark Hockgraf)
    - Teaching Jam (TBD | Shaun Foster, Clark Hockgraf)
    - Panel on detecting cheating with AI (TBD Shaun Foster, Clark Hockgrah, Phil Shaw)
    - Syllabus Jam - a review of specific examples across disciplines (TBD Fall 2024 | TBD)
- Project: A review of language on AI for Teaching and Learning across the colleges (planning phase)
- Project: Student Government collaboration student panel on Student use of Gen AI for Teaching and Learning (planning phase)

0. What are the current plans for increasing the resources available?

- Plans to survey students on how they are using of AI with support from Student Government
- Year two cycle of existing Faculty Fellows in the strategic priority area of AI
- Plans to create additional AI teaching practices with faculty-written articles
- Plans to create a series of short faculty produced videos of examples of using AI in teaching and learning
- Faculty Fellows holding series of short workshop discussion sessions within colleges on various AI topics

0. What does CTL know about faculty needs at this point?

- Surveyed Faculty to learn support needs for Fall semester (May 2023, n=110)
    - https://rit.az1.qualtrics.com/jfe/form/SV_dd7QLO06ueGqQVo
- Surveyed Faculty to gauge Faculty Perception on AI in teaching (Oct 2023-May 2024 n=35)
- Collected Faculty input at Fall Symposium on: benefits to educators, benefits to students, challenges & responsible use
- Faculty Fellows have the pulse of their disciplines registered
- Assessment of peer institutions

Summary:

CTL currently offers faculty a range of resources and support around using AI for teaching and learning. This includes dedicated webpages, consultation services with strategic priority and discipline-specific faculty fellows, events including webinars and symposiums, teaching circles focused on AI topics, and plans to enhance teaching assets including how to videos and best practices documents.

Looking ahead, CTL plans to continue building out resources and expanding support based on faculty needs and a wider assessment of teaching and learning in higher education. Future plans include surveying students on their AI use, continuing the faculty fellows program, creating additional self-serve support assets, offering AI-focused workshops within colleges, and holding events like jams and panels on AI cheating detection and responsible use.

To date, CTL has gathered faculty needs and perceptions around AI teaching through surveys, symposium input, and the work of faculty fellows embedded in their disciplines. CTL is also looking at how other universities are approaching AI teaching support. The focus is on understanding benefits and challenges from both educator and student perspectives to inform CTL's offerings.

Ongoing CTL Activities:

- Continue to fund and support Faculty Fellows
- Continue to focus PLIG grants special interest areas on AI
- Exhibit faculty use (including faculty/student partnerships) at public events like Imagine RIT and faculty events like the annual PLIG showcase
- Summer Institute / Teaching and Learning 2025 focus on celebrating AI@RIT
- Offer a student summit AI@Learning at RIT Fall 2024 partnering with Student Government - poster session in SHED
- Survey students on their use and experience with AI for teaching and learning
    - https://rit.az1.qualtrics.com/jfe/preview/previewId/fc86c41d-2769-4e9b-a684-83ffbc6d3a6d/SV_1UrvB9yKK191cpM?Q_CHL=preview&Q_SurveyVersionID=current

Appendix L: Examples of AI-Focused Events

RIT

AI@RIT Summit 2022

"The RIT Artificial Intelligence Summit will be held on campus on October 6-7, 2022 in MAGIC Spell Studios. Abstract contributions have been prepared from graduate and undergraduate students, staff, researchers and faculty whose research, teaching or activities involve any aspects of artificial intelligence in the widest sense of the word. The summit will be held over two days, with the first day dedicated to tutorials for those who want to know more about AI, while the second day will feature keynote speakers, poster presentations, demos and panel discussions."

AWARE-AI NRT Workshop

Hosted by the AWARE-AI NSF Research Traineeship (NRT) Program, this workshop welcomes AWARE-AI trainees and other RIT graduate students. Participants will discuss and gain experience with drafting a diversity statement.

Imagine RIT Exhibits on Artificial Intelligence

A number of student and faculty led exhibits at Imagine RIT 2023.

Events & Initiatives at Other Universities

UCF: Teaching and Learning with AI: A Sharing Conference

"The Faculty Center for Teaching and Learning, the Division of Digital Learning, and the UCF Libraries at the University of Central Florida have partnered to present the 2nd annual Teaching and Learning with AI conference. This event is open to educational practitioners in colleges and universities from around the U.S. and world."

Stanford HAI AI + Education Summit

This summit showcased the latest research in AI & education from Stanford faculty and researchers, examined how AI can be used to advance human learning through new pedagogies, new modalities of assessment, new foundation models, and more. In doing so, the summit asked the question of how AI can transform teaching and learning in an ethical, equitable, and safe manner.

University of Florida

1. **Responsible Entity**: Various departments and centers including the College of Journalism and Communications, UF Health, AI2C, and the College of Public Health and Health Professions.
2. **Dates**: Various dates throughout 2023 and 2024, including specific events on April 23, April 18, April 7, April 10, May 8, May 4, June, and July 22, 2023.
3. **Links**: The AI2 Center focuses on developing AI academic programs, engaging faculty and students with AI, and organizing seminars and conferences.
   UF Curriculum on AI

UC Berkeley

Responsible Entity: CITRIS Research Exchange and BAIR (Berkeley Artificial Intelligence Research Lab), among others.

Dates: Various, including lectures available for viewing on YouTube.

Links: Topics include "How Not to Destroy the World With AI", "Reinforcement Learning with Large Datasets", and "Generative AI Meets Copyright Law".

Indiana University AI Initiatives

Responsible Entity: Luddy School of Informatics, Computing, and Engineering; Luddy Artificial Intelligence Center.

- **Dates**: Ongoing
- **Links**: Initiatives include the "Accelerating Imagination" initiative and the AI Machine Learning Bootcamp. (Here linked letter from IU President, 2023)

University of Cambridge AI@cam Initiatives

- **Responsible Entity**: ai@cam

- **Dates**: Upcoming events include "AI Needs You" on Mar 14, 2024, and the 7th Machine Learning and AI in Bio(Chemical) Engineering Conference on Jul 2, 2024.
- **Links**: ai@cam focuses on AI for science, citizens, and society, driving interdisciplinary innovation.

Stanford Graduate School of Business - Harnessing AI for Breakthrough Innovation and Strategic Impact

- **Responsible Entity**: Stanford Graduate School of Business
- **Program**: "An executive education program designed to provide insights from world-renowned faculty across multiple disciplines on AI, strategy, innovation, technology, ethics, and more. This program is intended to offer a comprehensive understanding of how AI can be used for strategic advantage and innovation."
- **Link**: Program website

Brown University - Data Science Institute

- **Responsible Entity**: Data Science Institute
- **Programs**:
  1. **Master's Degree in Data Science**: Designed for students from a broad range of educational and work backgrounds, focusing on stimulating innovation and supporting aspirations to improve lives in a data-driven world.
  2. **Doctoral Certificate**: An academic certification for those pursuing in-depth study in data science.
  3. **Certificate in Data Fluency**: Aimed at providing undergraduates with the skills necessary to navigate and interpret data effectively.
- **Link:** DSI

Lindenwood University

New Programs being introduced: Lindenwood University is introducing a range of AI-centered academic opportunities, including a certificate, minor, and master's in Human-Centered AI, along with new tracks in Artificial Intelligence, Cybersecurity, and Data Science within its existing bachelor's in computer science. Additionally, a new master's in Applied AI is proposed for Summer 2024/

AI Certificate Programs

Here is a partial, ongoing list of universities that offer AI certificate programs of some kind. These initiatives demonstrate the growing emphasis on AI, and vary in focus, from AI in healthcare to machine learning and data science.

Drexel University - Graduate Certificate in Artificial Intelligence and Machine Learning
Eastern Kentucky University - Graduate Certificate in Artificial Intelligence in Data Science
Michigan Technological University - Artificial Intelligence in Healthcare Certificate
New Jersey Institute of Technology - AI Graduate Certificate
Saint Joseph's University - Artificial Intelligence Certificate program
Saint Mary's University of Minnesota - Online Artificial Intelligence Certificate
Stanford University - Graduate Certificate in Artificial Intelligence
University of Louisville - Graduate Certificate in Artificial Intelligence in Medicine
MIT xPRO - Certificate in Designing and Building AI Products

Appendix M:

Proposed Charge for Faculty Senate Artificial Intelligence Council:

The following is a template that must be further edited and does not represent the views of the committee members at the time of writing.

Artificial Intelligence Council (AIC). The Artificial Intelligence Council (AIC) shall have the following responsibilities:

- review, and approve new AI courses and programs
- Oversee modular AI education while minimizing overlap
- Write policy associated with AI use in curriculum and, where appropriate, on campus
- Study of Undergraduate Curricular Proposals: Examine proposals with a focus on how they integrate AI technologies and principles, ensuring that such integration enhances educational outcomes and aligns with industry and societal needs.
- Maintenance of Inter-College Relationships: Foster collaboration among colleges to promote the interdisciplinary teaching and application of AI, ensuring that AI-related courses and content benefit from a wide range of academic insights and practical applications.
- Periodic Review of Curricula: Conduct regular reviews of existing undergraduate program curricula to identify opportunities for the incorporation or enhancement of AI content, including university-wide curricular requirements such as general education (liberal arts and sciences) and writing curricula.

The membership of the AIC shall consist of the following: one faculty member per college which offers an undergraduate degree program, each to be elected by their collegial faculty; one representative elected at large by the Faculty Senate and who is a member of a college offering an undergraduate program; one representative from the academic deans or designee; one representative from Student Government; and the provost or their delegate (ex-officio, voting). The membership of the AIC shall also include the Director of the AI Hub or their delegate.

Alternatively the B02.0 ICC charge could be modified:

The ICC shall call upon the Senate to initiate college elections to fill positions on subcommittees it may form to oversee general education, **artificial intelligence use** and university writing. The college representation on the General Education or University Writing subcommittees shall reflect the college representation on the ICC. The College representation on the Honors Curriculum Committee shall be either appointed or elected by the voting faculty of the college according to college policy. The membership of the ICC shall consist of the following: one faculty member per college which offers an undergraduate degree program, each to be elected by their collegial faculty; one representative elected at large by the Faculty Senate and who is a member of a college offering an undergraduate program; one representative from the academic deans or designee; one representative from Student Government; and the provost or their delegate (ex-officio, voting).The membership of the subcommittee for General Education (GEC) shall include representation from the same units as ICC and will also include the director of the Office of Educational Effectiveness Assessment, Academic Affairs or designee (ex-officio, non-voting). The membership of the sub-committee for University Writing (UWC) shall include representation from the same units as ICC and will also include the First-Year Writing Coordinator, the University Writing Program director, one representative from the Academic Success Center, and one representative from the English Language Center. The membership of the sub-committee for the Honors Program Curriculum (HCC) shall include the following: one faculty member from each college, one representative from the academic deans or designee; the provost or designee; the director of the Honors Program. The membership of the sub-committee for Artificial Intelligence (AIC) shall include representation from the same units as ICC and will also include the Director of the AI Hub or their delegate. The chairs of GEC and UWC, or their designee, shall serve as an ex-officio non-voting member of the ICC. The chair of ICC, or designee, shall serve as an ex-officio non-voting member on each of the ICC subcommittees.