

CONNECTED24

AI and the Future of Higher Education

The Five Transformative Opportunities



Your Host for Today's Session



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Higher Education Leaders Have Vastly Different Takes on AI

Four AI Personas Found Across the Cabinet



Stubborn Skeptic

"AI is just the latest overhyped piece of technology."



Passive Observer

"AI is a pedagogical issue. Faculty should play around with it but that doesn't make it an IT priority."



Curious Examiner

"I am exploring AI applications, but I'm not sure what problems it helps me solve yet."



AI Champion

"AI will transform every part of higher education."

AI Breaks the Mold of Technology Adoption

ChatGPT's User Base Grew Much More Quickly than Other Tech Breakthroughs

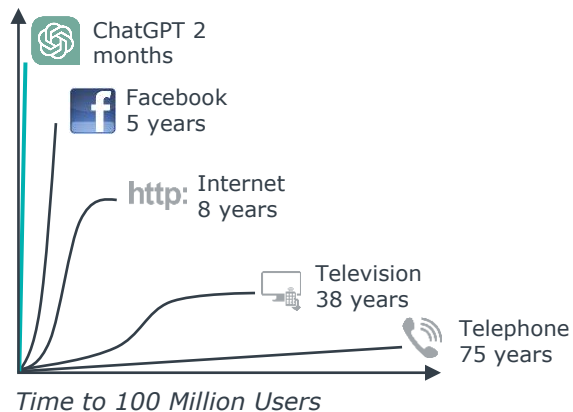
What Is Generative AI?

Latest development in AI that refers to deep-learning models that can **generate high-quality text, images, and other content** based on the data they were trained on.¹



ChatGPT's Meteoric Adoption Rate Sets Record

Time to 100M Users by Technology



Generative AI Reaches Inflection Point Due to Unique Developments

▶ Accessible and User-Friendly

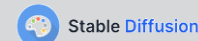
Web-based access allows anyone to use AI via everyday devices such as PCs and phones. Users can use simple text prompts to deliver commands and process outputs.

▶ Trained on Vast Knowledge Base

Models are trained on large sets of data (e.g., books, web texts, and articles from billions of Internet webpages).

▶ Generates New, Human-Like Content

Tools can generate new, creative content across domains (e.g., text, images, software) that is often indistinguishable from human outputs.



1) [IBM Research definition](#).

Level-Setting: Three Facts About AI

AI Is Quickly Becoming a Staple in Everyday Life



Mainstay Vendors Integrate Generative AI into Key Offerings

- Google launches generative AI-powered search experience
- Microsoft releases Copilot throughout Office 365 Suite
- Adobe launches Firefly, generative AI for creators, across products

More Vendors Plan to Launch AI Offerings



Students, Staff (Even Presidents) Already Using AI Tools



89%

of students admitted to using ChatGPT in their coursework

67%

of higher education staff reported using generative AI for their work in the 2022-23 academic year

Wells College President Jonathan Gibraltar is among several higher ed leaders who used ChatGPT to craft parts of their graduation speeches.

Business AI Tools Less Risky than Public Tools



More Options for Safeguards with Business AI Tools

- Institutions negotiate security in contracts with AI vendors
- Vendors, along with institutions, can train tools and implement guardrails to minimize inaccuracies and hallucinations

AI Risk Frameworks Follow Tried-and-True Templates

- National Institute of Standards and Technology (NIST) released an [AI Risk Management Framework](#) in 2023, following template of cybersecurity framework
- Focus is similarly on educating users on safe data practices

AI and the Future of Higher Education: Five Transformative Opportunities



Prepare Your Students for the Future of Work by Infusing AI Across the Curriculum



Provide 24/7, Personalized Student Support with One-Stop Conversational AI



Supercharge Faculty and Staff Productivity with AI Efficiency Tools



Maximize Enrollment and Advancement Yield with Hyper-Personalized Content Generation



Transcend Historical Bounds of Innovation in Research by Using AI to Expand Human Capabilities

AI and the Future of Higher Education

TRANSFORMATIVE OPPORTUNITY



Prepare Your Students for the Future of Work
by Infusing AI Across the Curriculum

1

Encourage Faculty Use of AI in Pedagogy



Institutional Statement Embracing AI

USC's Provost and Academic Senate released a [statement](#) urging faculty to encourage students to explore AI



AI Literacy Courses

Auburn offers a hands-on "[Teaching with AI](#)" course that approximately 600 faculty members have enrolled in



Faculty AI Teaching & Learning Workshops

The University of Mississippi launched a paid (\$1,000 stipend) two-day [AI Summer Institute for Teachers of Writing](#)

Create AI Learning Opportunities for Students



UNIVERSITY OF
SAN FRANCISCO

Student Orientation Session on ChatGPT

USF developed a Zoom orientation session on ChatGPT for incoming students, focused on pros, cons, and ethics of using AI for schoolwork



On-Demand Student Trainings

Vanderbilt offers free, extensive AI training (including workshops and online courses) for students, faculty, and staff



Subsidized Tokens and Micro-Credentials

HKU pays half of the course fees for students taking Coursera modules on AI and provides them with 500K AI access tokens (costing ~\$1-2 per student per month)

AI Reconstructs Nature of Work Across Industries

AI Disruptions Across Industries

Before Generative AI



TV & Movie Writing:

Studios rely on writers for source material and actors for performances



After Generative AI

Writers & Actors on Strike

"Generative AI writes scripts and creates backdrops, replacing writers and background actors"



Legal Services:

Only basic document review can be automated or outsourced



Rise of Robot Lawyers

"Research finds nearly half of legal work could be automated"



Graphic Design:

Designers create projects based on pre-set visuals, fonts, and layouts



Designs on Steroids

"Microsoft Designer tool generates complex designs in an instant based on text descriptions"



Software Engineering:

Engineers write code to implement software functionality using various programming languages



2X Faster with AI

"McKinsey study shows software developers complete coding tasks up to twice as fast with generative AI"

Future of Work Demands AI Fluency for All Students

Demand for AI and Machine-Learning Roles Surge...



Increase in demand for AI/machine-learning engineers since 2020



Projected growth of AI/machine-learning jobs from 2023 to 2027

...But Need for AI Skills Extend Beyond Tech Roles

2023 Job Descriptions on Indeed.com

Graphic Designer

Qualifications & Skills



- ▶ Familiarity with AI and ChatGPT technology, utilizing it to enhance multimedia projects

Protein Sciences Research Scientist

Qualifications & Skills

- ▶ Experience utilizing artificial intelligence protein design, SAR, or related biological applications

Content Writer, Editor, and Researcher

Qualifications & Skills

- ▶ Proficiency in prompting and navigating AI tools such as ChatGPT

UF Infuses AI Education into All Disciplines

Preparing Students for the Future Requires AI Integration into Coursework

Key Elements of the University of Florida's AI Initiative



Top-Down Approach to AI

UF President and Provost strongly encouraged and incentivized incorporation of AI across all 16 colleges



AI-Specific Faculty Hired

UF hired 100 new faculty with AI backgrounds or experience across disciplines, with each college receiving at least one new hire



AI Courses Across All Disciplines

230 AI courses offered at undergraduate, graduate, and professional levels, ranging from introductory to major-specific courses



AI Pathways Career Coach

Career Center staff educate students on the use of AI in the job recruitment process



Course Offerings

- AI in Agriculture and Life Sciences
- Business Applications of AI
- AI in Healthcare and Public Health

Research Applications



AI System Detects Bruised Strawberries Before Market



Building Equitable Workplaces with AI Technologies



AI Platform Predicts Surgical Complications

AI Becomes as Essential to Learning as Math and English



AI Pathways Across Disciplines— and Even Entirely New AI Disciplines

Not only will every discipline include built-out AI pathways, but entirely new disciplines will emerge, much like how the rise of data analytics spawned fields such as business analytics.

- Example: AI Behavioral Sciences, a new discipline at the intersection of AI and human behavior, focusing on AI's influence on social dynamics and individual decision-making



AI Becomes an Essential Teaching and Learning Tool

Faculty will move away from designing AI-proof assignments to requiring the use of AI tools.

- Example: Language classes will require interactions with AI avatars who speak in native tongues and create immersive environments, allowing for real-time cultural immersion and language practice.

Key Questions For Leaders

- How embedded is AI in your current curricula and teaching and learning infrastructure?
- What steps must your institution take to reach this future state?
- What role does senior leadership play in infusing AI across the curriculum?

AI and the Future of Higher Education

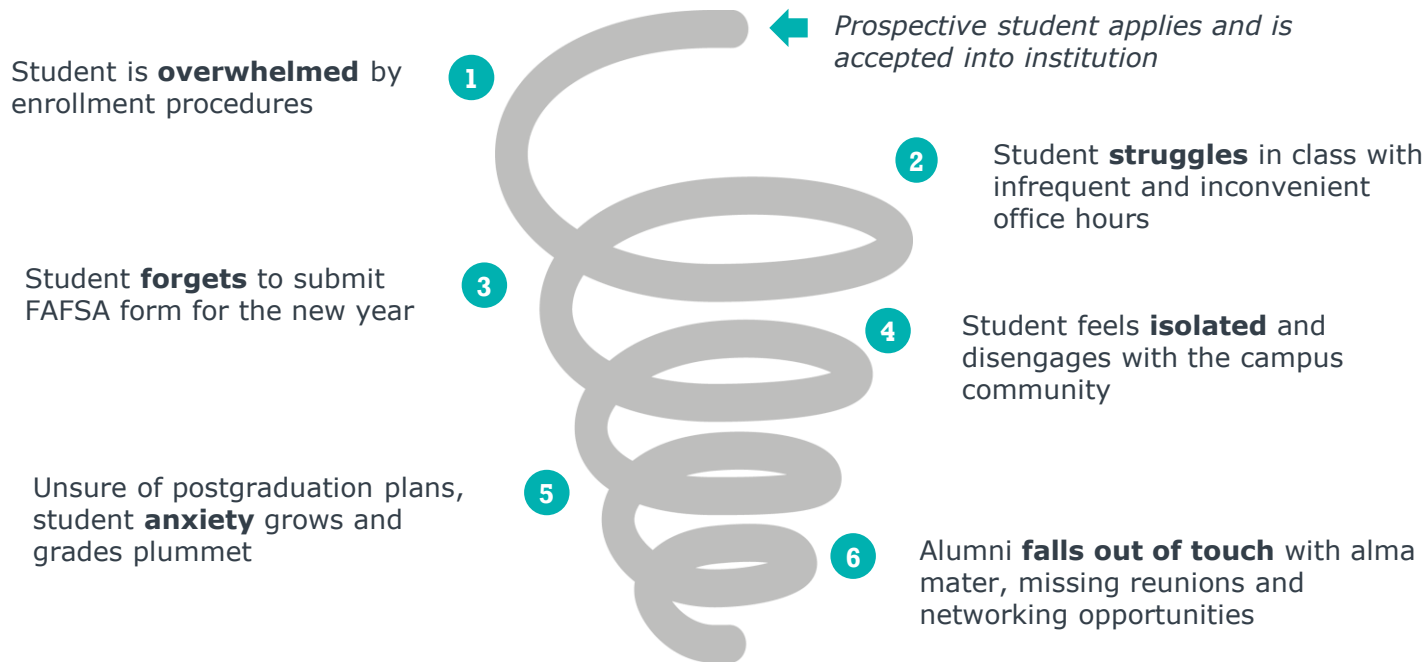
TRANSFORMATIVE OPPORTUNITY



Provide 24/7, Personalized Student Support
with One-Step Conversational AI

2

Service Pitfalls Throughout the Student Lifecycle



How One-Stop Conversational AI Preempts Common Service Pitfalls

Alumni

Engages potential donors based on personal motivations and past behavior



Career

Recommends best-fit professional opportunities based on skills, interests, and qualifications



Social

Recognizing disengagement, suggests campus activities and clubs based on student interests



Enrollment

Provides concierge-like service to prospective students, answering their questions with dynamic Q&A



Financial Aid

Grants individualized support while completing yearly FAFSA submissions



Academic

Supplies 24/7, personalized tutoring and support

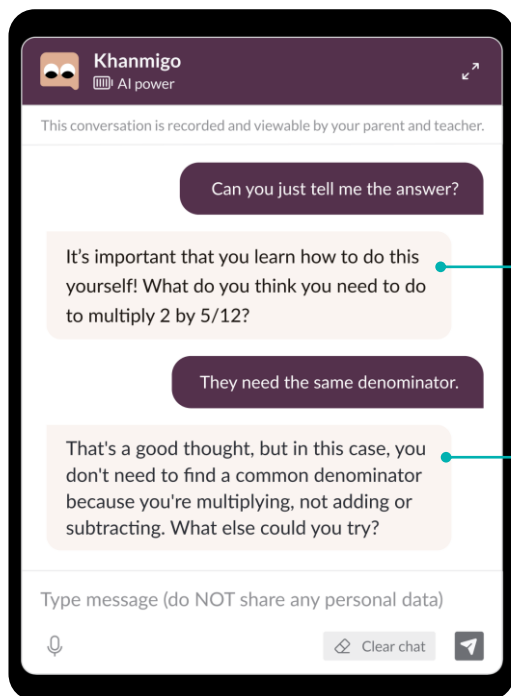


r a Pipe Dream—24/7, Personalized



The Tutor That Never Sleeps





Khan Academy Launches Conversational AI Tutor Personalized to Students



Case in Brief: Khanmigo, AI Tutor

- ▶ Khanmigo supports real-time, one-on-one tutoring personalized to students.
- ▶ The conversational AI operates on GPT-4 and is trained on Khan Academy's learning content.

How Students Can Use Khanmigo

-  Coach writing
-  Serve as a debate partner
-  Assist with coding
-  Converse with historical figures

Additional guardrails prevent Khanmigo from outright giving students answers when they are struggling and ensure Khanmigo always keeps an encouraging tone.

Generative AI Lowers Barrier to Entry

Two AI Tools Developed Out of the University of Michigan

U-M GPT: A General AI Assistant

U-M GPT answers any academic or UM-specific question for all campus members. It can also summarize general information and produce written work.

Users can choose and experiment with **AI models** (GPT-3.5, GPT-4, Llama 2) depending on their needs

Technical Details

- ▶ Students can access U-M GPT at **no cost** and can generate up to 25 prompts per hour¹
- ▶ No **user-specific data** is used to train the model subsequently

U-M Maizey: A Personalized AI Tool

U-M Maizey connects to user's personal accounts (e.g., Google, Canvas) to provide customized answers to questions and insights from connected data sources.

With U-M Maizey, Users Can:

- ▶ Upload unstructured, natural-language texts such as Google Docs, PDFs, etc.
- ▶ Adjust the AI tool by changing the "temperature," or sensitivity, of outputs
- ▶ Use or share their customized AI tool

U-M Maizey is available to members of the UM community at no cost through 2023. Afterwards, users will be charged monthly.¹

 **8 Months** was spent on **tool development** following ChatGPT's release. The tools allow for moderate-sensitive data to be inputted.

1) Each question asked is considered one prompt.
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Say Goodbye to Text Chatbots; Say Hello to Your Omnipresent AI Buddy



Not Just Chatbots Anymore – AI Provides Multimodal Support

Future student support bots (based on multimodal LLMs¹) will be able to output multimodal content.

- Example: Student asks a bot to draw a map of their route to class or verbally talk them through a complex course topic.



Student Support Anytime, Anywhere and Everywhere

Future AI bots will provide support everywhere, not just through chat interfaces in a phone or computer.

- Example: Students speak “into the air” (i.e., to their phone or devices like Amazon’s Alexa) and receive assistance no matter where they are on campus, while still receiving text records of interactions.

Key Questions For Leaders

- Do you have an existing chatbot that could be upgraded with generative AI?
- What are the pros and cons of building your own student support bot versus partnering with a vendor?
- What data collection and management are necessary to create an AI bot?
- Who will be responsible for maintaining student support bots?

1) Large language model.

AI and the Future of Higher Education

TRANSFORMATIVE OPPORTUNITY



Supercharge Faculty and Staff Productivity
with AI Efficiency Tools

3

Generative AI Projected to Augment Majority of Roles...

2/3

of current jobs are exposed to some degree of AI automation

50%

of current workforce tasks may be automated by 2030

75%

of companies plan to adopt AI or AI-adapted technologies 2023-2027

Private Sector Augmenting Their Staff with Conversational AI Bots

Morgan Stanley

- ▶ Morgan Stanley trained GPT-4 on 100,000 of its bank and research documents for its financial advisors (FAs)
- ▶ FAs can now ask the AI bot anything from general business queries to investment strategy recommendations



- ▶ PwC developed a conversational AI bot that expedites tasks from contract analysis and due diligence to legal and consulting services
- ▶ The AI bot is now in use by 4,000+ PwC lawyers

Harnessing AI to Enhance Faculty Productivity

Teaching & Learning



Course Planning

Using ChatGPT, Louisiana State University's provost was able to generate a syllabus for an [interdisciplinary AI course](#) in **one hour as opposed to days**.

A+

Grading

A professor at DuPont University¹ uses an AI grading tool to evaluate written content, which **reduces time she spends grading**, and instead focuses more on teaching and research.



Faculty

Research



Brainstorming

A postdoc at the University of South Denmark used ChatGPT to create an outline for a journal article, which he estimates **saved 20 hours of work**.



Grant-Writing

Students at the University of Oregon developed [ChangeFinder](#), a tool that **streamlines the grant-writing process** by providing suggestions to user's responses to grant questions.

AI Staff Productivity Boons Throughout Departments

Modest Bets to Augment

Admissions

Maryville University used Sia to automate transcript review, affording 14 admissions counselors **50% more time to build deeper relationships with students** through online and social media campaigns

Procurement

University of Florida uses AI tools to review contracts and ensure regulatory compliance in a matter of **minutes instead of hours**

Big Bets to Replace Staff

Registrar

By automating **transfer credit evaluation**, Maple University¹ projects being able to achieve a **90% reduction in staff** required for this task

Enrollment Marketing

Maple University¹ projects that they will be able to **cut marketing costs by 40-50%** once they start using AI to help in their marketing campaigns

1) Anonymized institution.

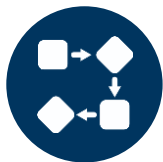
No Longer Viewed as a Corporate Productivity Tool, Every Role Embraces AI



Specialized AI Assistants for Each Department and Role

Faculty and staff departments will provide department- and role-specific AI assistants capable of supporting a variety of use cases to everyone.

- Example: A contract administrator not only uses their AI assistant to conduct contract review but also to provide insights on past vendor negotiations.



Faculty Research Administration Largely Automated

Faculty will embrace AI solutions that will help them streamline research administration.

- Example: AI tools generate biotech and automate completion of grant applications, giving faculty more time for core pedagogical and research activities.

Key Questions for Leaders

- How will you evaluate AI vendor tools and integrations?
- What is the role of IT in enabling faculty and staff AI tool usage?
- What steps need to be taken with faculty and staff to ensure security and data privacy when using AI tools?

AI and the Future of Higher Education

TRANSFORMATIVE OPPORTUNITY



Maximize Enrollment and Advancement Yield
with Hyper-Personalized Content Generation

4

The Marketing Arms Race's Next Evolution

Use AI to Hyper-Personalize and Scale Outreach

Two Ways USC's Annual Giving Team Used AI-Generated Messaging

1 High-Volume Giving Day Outreach

- Used ChatGPT to generate messages for high-volume annual Giving Day campaign
- Customized messages based on past donor behavior and written in the voice and tone of the giving team

2 Fiscal Year-End Appeals in the Dean's Voice

- Composed 392 appeals written in the voices of deans from 20+ departments
- Team provided ChatGPT examples of previous deans' appeals, fund descriptions, and donor history
- Nearly zero edits needed

Improved Yield and Time Savings



Highest number of Giving Day donors in 6 years

2K

First-time donors

392

Letters generated in a few hours

+2

Weeks of staff time saved

AI and the Future of Higher Education

TRANSFORMATIVE OPPORTUNITY



Transcend the Historical Bounds of Innovation in
Research by Using AI to Expand Human Capabilities

5

AI Redefines the Realm of What Is Possible in Research...

▶ Protein Design



AlphaFold, a DeepMind AI system, can accurately predict 3D models of protein structures – only a fraction of which have been studied – because it is an expensive and time-consuming process.

▶ Synthetic Clinical Data



NVIDIA and **University of Florida Health's** neural network, SynGatorTron, generates synthetic clinical data that mimics real populations without the risk or privacy concerns of human data.

▶ Speech Pathology



National AI Institute for Exceptional Education is developing an AI Screener to monitor students' speech and language-processing abilities by observing classroom interactions (e.g., speech, facial expressions).

...As Governments Commit Unprecedented Levels of Funding

United States

- Invests **\$140 million** to establish seven new national AI research institutes after spending **\$3.3 billion** on AI research in 2022

Canada

- Awards nearly **\$1.4 billion** for AI and robotics research in largest-ever federal university grant

United Kingdom

- Announces **£54 million** investment to develop trustworthy AI research

Germany

- Plans to double public funding for AI research to nearly **€1 billion** over next couple of years

Source: A Costa, "[Unlimited Data, Unlimited Possibilities: UF Health and NVIDIA Build World's Largest Clinical Language Generator](#)," NVIDIA, March 22, 2022; C Nealon, "[UB awarded \\$20 million to establish national AI institute](#)," University of Buffalo, January 10, 2023; C Smith, "[£54 million boost to develop secure and trustworthy AI research](#)," Department for Science, Innovation and Technology, June 14, 2023; DeepMind, "[AlphaFold](#)," Google, 2023; N O'Neill, "[Largest-ever federal university grant awarded for AI and robotics research, as part of \\$1.4B fund](#)," CTV News, April 28, 2023; T Escritt & D Syamnath, "[Germany plans to double AI funding in race with China, U.S.](#)," Reuters, August 23, 2023; University of Florida, Gainesville, FL; EAB interviews and analysis.

Charting a Path Forward with AI

Top-of-Mind Questions for Student Success



How will AI impact the classroom experience and student employability?



Where should we invest? What AI solutions have the most transformative potential to help our students?



In what ways can AI help us more proactively and effectively intervene to support at-risk students?



How do we prepare students to employ AI tools while contending with its hallucinations and biases?

Charting a Path Forward with AI

Top-of-Mind Questions for Leaders and Teams Across Strategic Priorities



Provosts

- How can AI help free up time for faculty and staff so they can focus more on supporting students, especially considering post-pandemic mental health concerns?
- How do we adapt our curriculum and prepare our faculty across disciplines?
- How can we deploy AI to help us proactively manage our program portfolio and effectively intervene to support at-risk students?



Chief Information Officers

- How should we integrate AI into operations: leverage vendor products with AI features, use OpenAI API, or self-host open-source models?
- How will AI impact our cybersecurity and privacy risk environment?
- What foundational elements do we need (e.g., staffing, data, storage) to support AI innovation?



Data Management Teams

- Can AI improve the management, integration, and utilization of vast amounts of educational data?
- How will the emergence of AI require us to rethink fundamental data management models (e.g., governance structures, storage)?
- How can AI help us transform raw data into actionable insights to support decision-making at all levels?



Risk Management Teams

- What will AI's regulatory landscape look like in the coming months/years? How do we prepare?
- What steps can we take to mitigate the cybersecurity and privacy risks associated with AI?
- Can we be held liable for any inaccurate/harmful responses AI tools might produce?

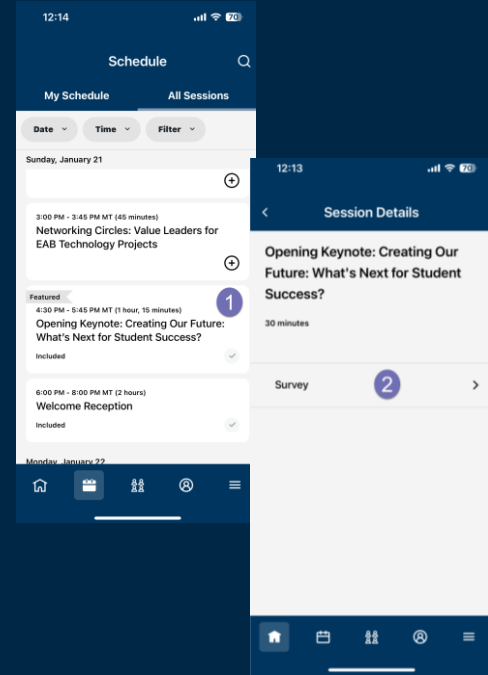
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Stop by the **information desk!**



CONNECTED24

Join us tonight for a
CONNECTED Celebration!



Join us at **5:00 p.m. in the Aurora Ballroom B-D** to celebrate with your colleagues and peers.

Bites, drinks, and fun provided



Next Up: **Lunch!**

Head straight to Aurora Ballroom A located on the 2nd floor.

Lunch is being served family style – it'll be ready for you at your table. Refer to your badge to locate your table number. There will be staff on hand to help direct you.



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