NSHE»SCS

Nevada System of Higher Education
System Computing Services

ARTIFICAL INTELLIGENCE at NSHE
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Prepared by NSHE CIO Anne Milkovich

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Artificial Intelligence Collaboration at NSHE

The purpose of leveraging Artificial Intelligence (AI) Collaboration across NSHE is to use this emerging power tool to further drive the mission and goals of NSHE institutions.

Background

AI Collaboration across NSHE started through different grassroots efforts at institutions, often led by faculty, learning technologists, or information technologists. The efforts to gain traction were stymied by the enormity of the possibilities brought by AI as well as the rapid evolution of AI change, with new capabilities and opportunities emerging almost daily. As word spread of various AI efforts, individuals reached out to each other to collaborate and leverage collective strengths, forming a "coalition of the willing."

Coalition of the Willing

The following representatives began working together Spring of 2025 to share ideas and gather disparate efforts into a collective of shared and non-competing efforts.

INSTITUTION	NAME	ROLE
UNLV	Yvonne Houy	Learning Technologies
UNLV	Beth Barrie	Vice Provost Teaching and Learning Innovation
UNR	Ed Huffman	Provost, Digital Learning
CSN	Mary Ann Hughes-Butts	Professor, Business
CSN	Ayla Koch	Professor, Math
GBC	Madison Arbillaga	Instructor, Computing and Information Tech
NSU	Morgan Iommi	Director, Teaching and Learning Center
TMCC	Elyssia Fraga	Program Director, Learning Commons
TMCC	Fred Lokken	Professor, Business
WNC	Troy Wadsworth	Interim Director, Computing Services
NSHE	Anne Milkovich	Chief Information Officer

AI Efforts to Date

Initial conversations of the coalition indicated that institutions were in varying degrees of development around AI efforts. We did not compile a comprehensive list, but plan to do so this Fall.

Institutional examples include:

- UNLV and UNR held a symposium around AI in teaching and learning and were planning a follow-up inclusive of more institutions.
- TMCC stood up an AI server in the SCS data center and were using AI to develop operational efficiencies.
- CSN was developing courses for AI tools.
- DRI was focusing on teaching AI prompt engineering.
- Most institutions were incorporating AI acceptable use into their syllabi.
- Smaller institutions were eager to leverage the experience and developments of the larger institutions.
- All institutions had interest and were doing something to make progress.

SCS is developing resources to serve institutional efforts, to be deployed this Fall:

1. **Public Website** to showcase institutional developments and programs in AI and other emerging technologies.
2. **Internal Website** to share information without public exposure on developments in AI academic, operational, and research programs.
3. **Subscriber Email List** that AI collaborators or interested institutional consumers can subscribe or unsubscribe to, sharing developments, questions, suggestions, and answers in near time.

Emerging Technologies Working Group

The coalition loosely referred to itself as the NSHE AI Task Force, initially. Members believed that new technologies will continue to emerge, and the task force should be more expansive than just AI in 2025. The group proposed that a standing NSHE council or working group be created to leverage emerging technologies to best purpose. They wrote a first-draft charter before summer schedules took the faculty members offline.

The vision of the Emerging Technologies Working Group was to span the primary objectives of:

a) Teaching and Learning

b) Research

c) Operations

The group would consist of an executive governing body with smaller workgroups dedicated to applying tools to the objectives of the three areas. The workgroups would be populated by a facilitator of the executive body and Subject Matter Experts (SMEs) from each area of expertise.

The group will reconvene beginning Fall semester to plan a series of AI Collaborative events across NSHE focusing on teaching and learning, research, and operations.

Types of Artificial Intelligence

As AI emerges and develops rapidly, many ways of categorizing it exist.

CAPABILITY *	
Narrow Artificial Intelligence (ANI, Weak AI)	Performs specific, well-defined tasks. Example: Image recognition.
Artificial General Intelligence (AGI, Strong AI)	Possesses human-like capacity for learning, reasoning, problem-solving and adaptability across different tasks. Theoretical.
Artificial Super Intelligence (ASI)	Surpasses human intelligence in creativity, knowledge, and problem-solving. Hypothetical.

**Sourced from Google AI Mode, ChatGPT*

USES**	
Agentic AI	Operates autonomously to complete complex tasks with minimal human intervention. Can reason, make plans, make decisions and take actions to achieve a pre-defined goal. Use Case: Service Operations
Analytical AI	Analyzes data, discovers patterns, generates insight. Can collect and prepare data, create models, recommend actions, implement and monitor the models. Use Case: Research
Generative AI	Creates new content based on learned patterns. Content can be written, musical, visual.

	Use Case: Teaching and Learning

***Sourced from Google AI Mode*

HABITATS	
Enterprise AI	Implemented and controlled by the organization. Example: Licensed ChatGPT.
Built-in AI	Incorporated into commercial products. Example: Workday feature to rank recruitment candidates.
AI in the Wild	AI found anywhere online. Example: Unlicensed ChatGPT used without approval.

Leveraging AI

In the author's opinion, NSHE needs four things to effectively leverage AI:

1. **Goals**. The group needs to know what problems to tackle, what goals to achieve. The goals and mission of higher education are known and can be immediately assumed, but more specific goals may be helpful.
    a. Improve access.
    b. Reduce time-to-graduation.
    c. Reduce the achievement gap.
    d. Increase research.
    e. Develop the workforce.
2. **Capacity**. Faculty and administrators need fundamental knowledge and skills of AI. This is the new "Office" skill. For NSHE-internal development, we need computing capacity, including power and cooling, on premises or purchased commercially.
3. **Know-how**. In addition to the fundamental knowledge of AI needed by everyone in a knowledge-worker role, we need to create or acquire access to the expertise needed to develop agentic, analytical, and generative AI applications.
4. **Creative Ideas**. This is the secret ingredient. We need to imagine a new world where we can wave an AI Wand to do things we never thought possible before.

First Proof of Concept

Imagine… a prospective student with a busy life schedule wants a degree to improve their earning potential and quality of life. Late night is the only time they have to explore the feasibility of this dream. The individual is located in Reno and is interested in the field of medical technicians. Can they find a program to fit their schedule?

Imagine… an NSHE AI interface that can speak in natural language and solve complex questions. The prospective student asks the NSHE AI to develop a bachelor's degree roadmap in a medical technician field that will fit the specific schedule they input.

The NSHE AI interface finds a radiology bachelor's degree at TMCC. The program requirements and class schedules are already on the public-facing website. The AI interface builds the roadmap that fits most of the schedule provided. It shows which classes are available self-paced online and which classes require physical presence on campus and when they occur. It includes estimated time to graduation and offers strategies to reduce that time based on interaction with the prospect, e.g. by asking questions such as "Is it more important to fit your schedule or to graduate sooner?"

When the options are determined and one or more roadmaps are generated, the AI interface then connects the prospect with a TMCC guidance counselor, including their name, photo, and a friendly profile to break the ice, and (with permission) provides the roadmap and the prospect preferences to the counselor. And it took just minutes to do, without burdening staff and without requiring any additional maintenance.

NSHE is already working on this proof of concept with external AI developers.
What else can AI do?

Call to Action

What can NSHE leaders do to help?

1. Reimagine higher education.
2. Publicly acknowledge innovations.
3. Collaborate on academic AI programs.
4. Champion fundamental AI education for all.
5. Review, endorse, and support the ET Working Group.
6. Appoint representatives to the ET Working Group.
7. Support and endorse upcoming AI events.

Appendix A: What are the subsets of AI?

Response received from Google AI Mode.

Here are the key subsets (or branches/subdomains) of Artificial Intelligence (AI):

Machine Learning (ML): Focuses on enabling machines to learn from data and improve their performance without being explicitly programmed for every task.

Types of Machine Learning:

- Supervised Learning: Training models with labeled datasets to predict outputs.
- Unsupervised Learning: Discovering patterns in unlabeled data.
- Reinforcement Learning: Training models through interaction with an environment, using rewards and penalties to guide behavior.

Deep Learning (DL): A subset of ML that uses multi-layered neural networks (inspired by the human brain) to process and learn from vast amounts of data.

- Deep learning models, particularly those based on neural networks, are capable of learning complex patterns and representations from data, making them ideal for tasks like image and speech recognition.

Natural Language Processing (NLP): Enables computers to understand, interpret, and generate human language.

- Examples include speech recognition, chatbots, and language translation.

Computer Vision (CV): Trains computers to "see" and interpret visual information from images and videos.

- Used in applications like facial recognition, object detection in self-driving cars, and medical image analysis.

Robotics: Involves designing, building, and programming robots to perform tasks autonomously or in collaboration with humans.

- AI plays a vital role in robotics, enabling robots to perceive their environment, plan actions, and interact with humans.

Expert Systems: AI programs that mimic human expertise in specific domains to solve problems or make decisions, according to Scribd.

- Rely on knowledge bases and inference engines to emulate human decision-making abilities.

Neural Networks: Computational models inspired by the human brain, forming the basis for deep learning algorithms and used for tasks like pattern recognition.

Fuzzy Logic: A technique that allows AI systems to handle uncertainty and ambiguity in data by considering degrees of truth rather than absolute true/false values.

Evolutionary Computation: A family of algorithms inspired by biological evolution, used for optimization problems and tasks like artificial life and evolutionary robotics.

Cognitive Computing: Focuses on creating systems that can mimic the human thought process, including reasoning, learning, and decision-making.

This list represents the major categories, but AI is a rapidly evolving field, and new subfields and techniques emerge constantly. The specific classifications may also vary slightly depending on the source.

AI responses may include mistakes. Learn more