

SUBMISSION FORM

University System/Employee Intellectual Property Joint Participation MUSP 407

This form is to be submitted with any Board of Regents item whereby a campus seeks the approval of an agreement with or arrangement regarding an employee pursuant to 20-25-109 MCA and Regents Policy 407.

When the submission concerns matters of trade secrets or confidential business information, or any other matter entitled to privacy under state or federal law (e.g., the federal statute known as Bayh/Dole) the submitting campus may request consideration of the submission, in whole or in part, in executive session.

The submitting campus should also provide the Commissioner a copy of the contract(s) that form the basis for the cooperative arrangement for which approval is sought. Submission of the contract does not indicate a conclusion that all or part of the contract is a public document and the question of whether it is in whole or in part protected from public disclosure will be evaluated on a case by case basis.

1. Summarize the nature of the intellectual property that was developed by the employee seeking approval. Indicate the sources of funding for the research that resulted in this invention.

The intellectual property developed by the employee focuses on a breakthrough in hydrological modeling for ungauged basins across Montana, leveraging deep learning and artificial neural networks (machine learning & artificial intelligence) to predict streamflow with high accuracy. Traditional hydrological models often demand extensive, site-specific calibration and are limited in their ability to generalize across regions with varied watershed characteristics. In contrast, this innovative AI model can learn complex, sequential relationships within time-series data, making it adept at capturing streamflow patterns influenced by meteorological, pedological, and topographic data. This advancement was funded, in part, by the Department of Natural Resources and Conservation (DNRC) in partnership with the Montana Climate Office (MCO). The DNRC project objective was to develop historical flow predictions for Montana's HUC 10 ungauged basins and daily models of flow for drought applications.

2. a. Name(s) of the university employee(s) involved.

Dr. Zachary Harwood Hoylman, Ph.D.
Dr. Kelsey G. Jencso, Ph.D.

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- b. Name(s) of business entity(ies) involved.

Predictive Hydrology, LLC

3. The university and employee(s) are seeking approval for (check as many as appropriate):

a. The employee to be awarded equity interest in the business entity.

b. The employee to serve as a member of the board of directors or other governing board of the business entity.

c. The employee to accept employment from the business entity.

d. Other. Please explain: The University employees are establishing a limited liability company that will expand it's AI modeling framework for private sector applications.

4. a. Summarize the nature of the relationship between the university and the business entity (e.g., the entity is licensing the intellectual property from the university, the entity is co-owning the intellectual property with the university).

If this submission is approved by the Regents, Predictive Hydrology, LLC will seek to negotiate an exclusive license agreement with the University of Montana, through its Office of Research Compliance and Tech. Transfer, that would allow Predictive Hydrology to commercialize the intellectual property in exchange for industry standard

b. The proposed duration of the agreement or arrangement. Predictive Hydrology, LLC intends to seek a five-year license with a renewal option conditioned on meeting financial and distribution milestones.

c. The conditions under which the agreement may be terminated or dissolved.

1. Mutual Agreement: Both parties may agree in writing to terminate or dissolve the agreement at any time.

2. Breach of Contract: If either party fails to fulfill the terms specified in the agreement, the non-breaching party may provide written notice to address the breach. If the issue is not resolved within a specified cure period (90 days), the non-breaching party may terminate the agreement.

3. Non-Payment: If the business entity fails to make required payments (such as licensing fees or royalties) within a specified time frame, the university may terminate the agreement after providing written notice and an opportunity to cure the default.

4. Bankruptcy or Insolvency: If the business entity declares bankruptcy, becomes insolvent, or undergoes substantial financial restructuring, the university may have the right to terminate the agreement.

5. Expiration of License Term: If the agreement includes a specific term length, it will automatically dissolve at the end of the term unless renewed by mutual agreement.

6. Failure to diligently market or commercialize the university technology.

5. Explain specifically how the University System or the State of Montana will likely benefit from the agreement or arrangement.
 - a. The license agreement will include industry-standard royalty and/or milestone payments to the university. Such revenues are used to support research, faculty, and resources essential for ongoing innovation. These funds can be reinvested into similar high-impact research projects, promoting a cycle of development that bolsters the university's reputation as a leader in environmental and AI-driven technology. Importantly, it ensures University of Montana technology transfer that stimulates economic growth for Montana.
6. Summarize the financial terms of the agreement or arrangement. Include:

- a. The value, nature and source of the University's contribution.

The University's contribution primarily consisted of facilities during the development of the base technology for the MT DNRC. All equipment utilized in the research was procured through external funding sources, ensuring no direct University expenditure on technology-specific hardware or software for this project. Further, the sponsored research agreements and license agreements referenced herein were administered by the University's Office of Research and Creative Scholarship.
- b. The value and nature of the employee's contribution.

Dr. Zachary Hoylman's and Dr. Kelsey Jencso's contribution included expertise and labor in developing the AI-based hydrological model. Their time was fully supported through external grants, allowing them to focus on the project without requiring additional University funding.

- c. The anticipated revenue to be generated by the project and the timeline for generating such revenue.

The project is expected to generate revenue through the commercial sale of hydrological predictions, consulting, or other services/products derived from the licensed technology. The timeline for revenue generation is expected to begin within the first 1-2 years following commercialization, as the business increases its offerings and attracts clients.

- d. The manner in which revenue and expenses will be shared by the parties.

The University anticipates receiving a royalty on net sales of the licensed technology, representing its share of revenue. The business entity will cover all ongoing expenses related to commercialization, product development, marketing, and distribution.

- e. The nature of each party's equity interest in the project. If none, so indicate.

Neither the University nor the State of Montana holds an equity interest in the business entity. The University's financial interest is limited to royalty income, with no direct ownership or equity stake in the company.