

Western Critical Minerals Consortium
Pilot Mineral Processing (PMP) Project Workshop Agenda
<https://www.gi.alaska.edu/wcmc-pmp-project-workshop-2025>

Outcome: The WCMC will form teams to design and develop plans for PMP projects in Alaska, Montana, and South Dakota. Determine what could be viable projects and develop white papers to seek support and funding, for engaging industry partners, and for advocacy to Congressional Delegations and Governors.

When: June 17, 2025

Location: 215 Elvey Building, UAF Geophysical Institute, Fairbanks, Alaska

Purpose: The Western Critical Minerals Consortium is teaming with the Defense Innovation Unit to develop a plan to build and operate pilot mineral processing projects in Alaska, Montana, and South Dakota.

Invitees (please fill out information on [invitees from your respective jurisdictions or units](#))

Montana and South Dakota: Montana Technological University (MTU), South Dakota School of Mines and Technology (SDSMT), University of Alaska Fairbanks (UAF), Montana Bureau of Mines, Navy, Idaho National Laboratory (INL), Defense Innovation Unit (DIU)

Day 1 June 17, 2024


MC: Steven Masterman, UAF GI, Deputy Director Alaska Critical Minerals Collaborative

8:00-8:30 AM arrive UAF, coffee and light breakfast items

Part 1: Morning Session: Informational Presentations

8:30-9:00 AM Overview and Round Table Introductions


Craig Bleile, Director of S&T, R&D and Experimentation at Naval Undersea Warfare Center (NUWC) Division Keyport

Robert McCoy, Director UAF GI:  McCoy_UARC Butte.pdf

Laura Conner, UAF Vice Chancellor for Research

9:00-9:15 AM Overview of Defense CMs and Workshop Objectives, Goals and Outcomes for PMP projects


Lee Ann Munk, UAF GI, Director Alaska Critical Minerals Collaborative:


 Munk_WCMC June 2025 Workshop.pdf

9:15-9:45 AM Options for types of PMP projects

1) Jon Keller (SDSMT) 10 minutes:  Keller_WCMC PMP Project Workshop.pdf


- 1) Robin Bullock (MTU) 10 minutes

 Bullock_mt-tech-presentation-UAF june 17 meeting.pdf


- 2) Steven Masterman (UAF ACMC) 10 minutes  Masterman DIU Mtg.pdf

9:45-10:15 AM Micro-nuclear as power source

Jeremy Kasper, Director Alaska Center for Energy and Power

 Kasper_advanced_reactors_intro.pdf

Bob Fox, Senior Manager Critical Minerals, Idaho National Laboratory


 Fox_Next Gen Mine Power.pdf

10:15-10:30 AM Funding the projects - (DIU and AIDEA) Craig Bleile (DIU) and Kevin Thompson (E4M)


10:30-10:45 AM Break

10:45-11:15 AM Feasibility study frameworks and timelines of total projects


- 1) Robin Bullock (MTU) 10 minutes
- 1) Jon Keller/Andrea Brickey (SDSMT) 10 minutes:



 Brickey_Feasibility_Presentation_Fairbanks 2025_SDMines.pdf

- 2) Brent Sheets (UAF INE) 10 minutes

 Sheets_June 17 2025 Feasibility_Study_Frameworks.pdf

11:15-11:45 AM Intellectual Property (IP), Translation of Innovation to Practice (T2P), economic development - Peter Webley (UAF Center ICE):

 Webley_Intellectual Property (IP), Translation of Innovation to Practice (T2P), economic d...

11:45 AM-12:15 PM Formal and informal project permitting - Robert Loeffler Jr and Brett Watson (UAA ISER)  Loeffler_Permitting Critical Minerals Processing.pdf  Watson_WCMC.pdf

12:15-1:00 PM lunch

Part 2: Afternoon Session: Breakout Groups and Wrap Up Discussions

1:00-2:15 PM **Breakouts - to discuss challenges and opportunities that need to be addressed wrt:**

Breakout groups will have lead(s) and others can join based on expertise/interest.

Teams will discuss from their perspectives/expertise then come back together and coalesce the ideas which will form the basis for white papers to DOD. White papers to circulate to potential industry partners and to Congressional Delegations and Governors should also be produced.

Group 1 - potential PMP projects
[#1 Breakout notes here](#) - Stefanie Hill

Existing mines, advanced exploration sites, military bases. What criteria need to be considered? Waste streams seem to be a priority. Many mines first need solid characterization of what they have (tailings and other waste streams).

Group 2 - feedstock options and designing the PMP projects
[#2 breakout notes](#) - Brett Watson

What feedstocks are available, how well characterized are they, what are the options for the type of processing operation based on feedstock type (waste streams, ores)?

Group 3 - power options and deployment of micro-nuclear reactor
[#3 breakout notes](#) - Sara Fisher-Goad

Depending on location are there different approaches, how much is field scale demo vs. actual power needs? What is the cost? Does micro-nuclear make sense?

Group 4 - operating the PMP projects
[#4 breakout notes](#) - Peter Webley

Industry-academia-gov't coalition required to design, implement, and operate the PMP projects

Group 5 - financial structure of the PMP projects
[#5 breakout notes](#)

How will the pre-feasibility, feasibility, and PMP projects be funded? Who will lead the pursuit of funding sources? What is the timeline of funding availability?

2:15-3:30 PM reports from each breakout group (10 mins each)

3:30 - 4:00 PM next steps - implementing funding, feasibility study, additions to team to fill out needed expertise/capabilities, discuss an advocacy/outreach plan to federal delegations and governors, the need for white-papers and 2-pager for the senators/governors, white paper to DOD and other fed agencies, to industry, schedule next workshop

4:00 - 5:30 Optional tours of the UAF Advanced Instrumentation Lab, Geochron lab, and Economic Geology Lab (Reichardt Bldg.) (lead by Dr. Nathan Graham) and the Institute of Northern Engineering Mineral Industry Research Lab and Critical Minerals Lab (Usibelli and Duckering Bldgs.) (lead by Dr. Nicole Misarti)

5:30-7:30 Optional meet up for drinks and dinner, site TBD (based on weather)

This UAF workshop is an outcome of the meeting held in Butte, MT in early April that included DIU Invitees to MTU (April 2025)

- Dr. Jerome 'Jerry' Downey - Extractive Metallurgy, MTU

- Dr. Robin Bullock - Director, Center for Environmental Remediation and Assessment, MTU
- Dr. Scott Rosenthal - Mining Engineering, MTU
- Dr. Tim Elgren - Provost & Executive Chief Chancellor, MTU
- Dr. Chris Gammons - Geological Engineering, MTU
- Dr. Angela Lueking - Vice Chancellor of Research, MTU
- Dr. Glenn Shaw - Geological Engineering, MTU
- Dr. Abhishek Choudhury - Mining Engineering, MTU
- Steven Masterman - Deputy Director, ACMC at UAF
- Dr. Robert 'Bob' McCoy - Director, Geophysical Institute at UAF
- Dr. Marisa Acosta - Economic Geology, UAF
- Dr. Steven Aumeier - Senior Advisor Strategic Programs, INL
- Kevan Thompson - Alaska Industrial Development and Export Authority (AIDEA)
- Tanya Parypa - Regional Director, DIU
- Craig Bleile - RD/ST Lead, NUWC Keyport
- Dr. Lee Ann Munk - Director, ACMC at UAF
- Dr. Ronald White - Director, Center for Advanced Materials Processing (CAMP) at MTU
- Dr. Jon Kellar - Materials and Metallurgical Engineering at SDSMT
- Dr. Laurie Anderson - VP of Research, SDSMT
- Dr. Andrea Brickey - Mining Engineering and Management, SDSMT
- Dr. John Metesh (not present) - Director and State Geologist, Montana Bureau of Mines and Geology