Margaret Murie Building
University of Alaska Fairbanks

Inspiring discovery.
Inspiring greatness.
Inspiring, naturally.

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The University of Alaska Fairbanks is a Land, Sea, and Space Grant Institution

- Founded in 1917 when Alaska was still a territory.
- Currently, enrollment at UAF is nearly 11,000 students, with 8,000 on the 2300 acre Fairbanks Campus.
- UAF offers over 200 certificates, undergraduate, graduate, and doctoral programs.
- Research Revenue tops $125 Million annually, with nearly 50% of UAF undergraduates participating in undergraduate research.
- Biological (Life) Sciences is UAF’s largest program with nearly 1500 students taking at least one biology class each year.
The Challenge

2001 Science Initiative: Preparing for a shift in teaching and research priorities

UAF saw increasing success in climate related grant awards

Graduate Student enrollment skyrocketed as research grew
The Science

Use of hibernating Arctic Ground Squirrels

Changing climate, changing habitats, changing food sources

High occurrence of Sudden Infant Death Syndrome in Alaska villages
The Legacy Facilities

Arctic-based Research and Teaching restricted by Legacy Facilities

Biology classrooms were single use spaces, often with less than 30% utilization.

Biology buildings were over 40 years old and new space had not been constructed since 1972.
The Need to Uncap the Potential
The Location: West Ridge Fairbanks Campus in 2002
Our First Attempt to address The Need:
2002 Original Biological and Computational Sciences Facility

- Project was large and overwhelming, trying to serve too many users and functions. Hindered also by a large foot print, bad politics and a huge price tag, the project went unfunded for 8 years.
**Political Realities Drove a Divided Approach**

- Many years of planning created a Life Sciences District that could be built in pieces. The time lapse between 2002 and 2013 actually created opportunities to **maximize our science potential**.
One Need, Three Buildings

Margaret Murie Building: Research and Teaching

Animal Resources Facility and State Virology Lab

Total Program Cost: 190,000 gross square feet of new facility for a total cost of $143.5 million
Maximize the Science Potential

Adopt a change in culture of space use and you can achieve the potential of the science.

Used young faculty and peer persuasion with legacy faculty to further change

Create thematic-based open labs
Maximize the Space Potential
Adopt a change in culture of space utilization and create a science community

Fly tying class in the marine biology classroom

Class labs under control of General Registrar
Maximize the Mission Potential

Maximize the potential to meet mission through flexible lab design

Flexible Lab Design means you can teach anything from Cellular Biology to Advanced Portrait Painting in the same space. (Animals make great models!!)
Maximize the Funding Potential
Maximize your space potential and your capital funding simultaneously

Double loaded lab prep rooms

Long term storage in low cost spaces

Multi-use teaching labs that reach beyond the intended department
Maximize Student Potential
Space Efficiency ratios will never be a measure of student potential and happiness.

A place for early students to wait before class

A place for students to collaborate, study, catch a hockey game, and enjoy their time between class

Lunch time lecture series are very popular in these common spaces
Teaching

Place the high cost infrastructure around the perimeter only. Use tables instead of fixed cabinets and reduce installed lab casework cost by at least 50%.
Teaching

Do the simple low cost things to eliminate the legacy spaces.
Eliminate costly storage in the main teaching labs by constructing high
density storage in preparatory labs.
Research

Ceiling Service Panels mean shorter wire and pipe runs.

Factory wired and plumbed modular casework

Windows=Happy Grad Students

Increase organization your control area.

Adjustable Height Counters
An open lab layout with all the amenities of a modern biomedical lab, but with shared infrastructure in a flexible design.
Maximize the Energy Potential

UAF Combined Heat and Power Plant

Sunrise and Sunset on Winter Solstice
An Extreme Climate with Extreme Energy Needs

Fairbanks Climate at a glance:
Avg. Temp: 18 F
Number of Days Below Freezing: 222

Record High: 96 F
Record Low: minus 66 F
Average Heating Degree Days: 14,000
An Extreme Climate with Big Energy Challenges

High Fuel Cost in a fuel rich state, air infiltration and stack effect, extreme temperature swings, heating outside air requirements
Maximize the Energy Potential

Adopt an Energy Budget at programming and Maximize the Energy Potential

Addressing the challenges of building at 40 below!

Variable Speed Drives on All Pumps

100% Sealed Envelope
Radiant Floor Heating AND Cooling

Fume Hood Heat Recovery

Ventilation Units utilize thermosyphon technology

Steam powered central chilled water for building cooling
Murie Building Final Project
102,000 gross square feet, $88.5M
Design Cost: $7M
Total Construction Cost: $70M
Furniture and Equipment: $6.0M
Project Management (by UAF): $5.5M

All Photos Courtesy of Todd Paris @ UAF Marketing and Communications and Ken Graham Photography
It takes a team to pull it all together!!!
Maximize the Space Potential: Increased flexibility and lab utilization does not come at a high price during construction.

Maximize the Science Potential: Adopt a culture of change and that culture will adapt.

Maximize the Energy Potential: Set an Energy Budget early and use it as a vision statement, even when building in the Arctic.
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