ACADEMIC CREDIT

Participants will be registered in the Michigan State University summer quarter. The basic credit requirement is six points. This cost is paid by the Institute for N.S.F. participants. Additional credits can be arranged at $13 per point. Credits are transferrable to other universities.

ELIGIBILITY

The N.S.F. awardees must be enrolled in or accepted for graduate work as candidates for a degree at their respective institutions. Indication of intent to go to graduate school is not sufficient. A generally high academic record is expected. Considerable weight is also placed on personal character, demonstrated interest and professional motivation. Several post-doctoral awards are also given each year for qualified senior scientists.

APPLICATION

Application should be received by letter before June 30th. Earlier inquiry is urged. Letters of application should contain information on experience and adaptability to rugged field conditions; transcripts; evidence of graduate school status or acceptance; and letters of recommendation from departmental chairman and two other individuals regarding scholarship and character. Participants will be notified by July 5.

Make application to:
Director, Glaciological Institute
Department of Geology
Michigan State University
East Lansing, Michigan
Summer Address:
P.O. Box 775 Juneau, Alaska

Universal stage in ice petrofabric investigation on Taku Glacier.

Electro-Thermic equipment for drilling on Juneau Icefield.

STAFF

Dr. Maynard M. Miller, Director, Glaciological Institute; Professor of Geology, Michigan State University. (glaciology, glacial geology, geomorphology)

Dr. Roland Beschel, Director of Herbarium, Associate Professor, Botany, Queen's University, Kingston, Ontario. (arctic geobotany, lichenology, lichenometry)

Dr. Robert F. Black, Professor of Geology, University of Wisconsin, Madison, Wisconsin. (periglacial studies, permafrost, Pleistocene geology)

Dr. Hurd C. Willett, Professor of Meteorology, Massachusetts Institute of Technology. (climatology, atmospheric physics)

Walter I. Wittman, Head, Polar and Sea Ice Branch, U.S. Naval Oceanographic Office, Washington, D.C. (arctic meteorology, sea ice studies)

Dr. Peter Angus-Leppan, Professor and Head, Department of Surveying, University of New South Wales, Sydney, Australia. (geodetic surveying, field mapping, photogrammetry)

Dr. Adam Chrzanowski, Surveying Engineering Division, University of New Brunswick, Fredericton, N.B., Canada. (electronic surveys, research)

Dr. Tien H. Wu, Professor of Civil Engineering, Ohio State University. (structural glaciology, glacier mechanics)

Dr. Thomas C. Poulter, Senior Scientific Adviser, Stanford Research Institute, Menlo Park, California. (glacier geophysics, seismic methods)

Dr. Charles R. Bentley, Head, Geophysical and Polar Research Center, University of Wisconsin. (glacier geophysics, gravity methods)

Dr. Robert Ehrlich, Assistant Professor, Department of Geology, Michigan State University. (glacio-fluvial processes, Pleistocene sedimentation)

Dr. Herbert Curl, Jr., Associate Professor, Department of Oceanography, Oregon State University, Corvallis, Oregon. (glacio-oceanography, field research)

Leonard I. Knowles, Officer in Charge, Douglas Marine Station, University of Alaska. (North Pacific oceanography, research liaison, Juneau)

Barry W. Prather, Foundation for Glacier Research, Seattle, Wash. (glacier seismology, logistics, field facilities, expeditionary techniques)

David M. Potter, IV; Kenneth A. Henderson, Foundation for Glacier Research, Seattle, Wash. (terrain and safety instruction; field operations, equipment)

Medical staff and survival instruction: T. R. Haley, M.D., W. M. Smith, M.D., Otto Trott, M.D., J. O. Rude, M.D.

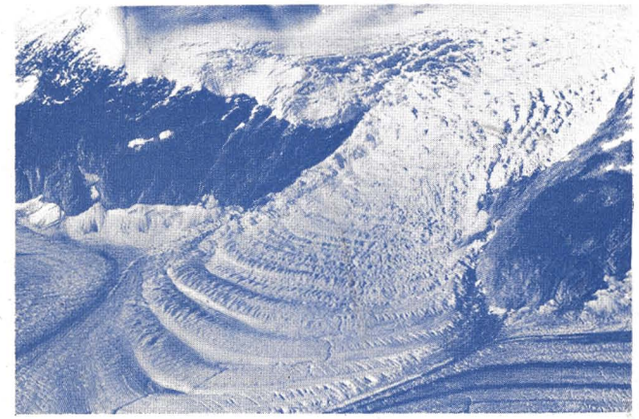
Adjunct lecturers and research affiliates: Dr. James B. Harrington, Michigan State University (micro-meteorology); Dr. E. C. Little, Naval Electronics Laboratory, Calif. (sea ice physics); Dr. J. W. Glen, Birmingham University, England (glacier physics); Dr. A. Ford, U. S. Antarctic Research Program (field geology); P. Wilson, University of New Brunswick (glacier photogrammetry); A. Helmers, U. S. Forest Service, Juneau, Alaska (hydrology); W. I. Dobar (heat budget); C. P. Egan (glacial geology); T. F. Kittredge (structural glaciology); R. Peebles (glacio-hydrology); C. Zenone (ice budget); D. Swanston (mass wastage); J. H. Anderson (academic assistant, geobotany); P. Welsh (academic assistant, glacial mapping); W. E. Garrett (field photography); Gen. Wm. Elmore, Alaska Air National Guard (arctic aerial logistics).

THE GLACIOLOGICAL INSTITUTE
DEPARTMENT OF GEOLOGY
MICHIGAN STATE UNIVERSITY

6TH SUMMER INSTITUTE OF GLACIOLOGICAL AND ARCTIC SCIENCES

JULY 20-SEPTEMBER 5, 1966
JUNEAU ICEFIELD, ALASKA

Sponsored by the NATIONAL SCIENCE FOUNDATION in cooperation with the Foundation For Glacier Research and the Juneau Icefield Research Program



PURPOSE

The Summer Institute of Glaciological Sciences was organized in 1960 and has been carried through each summer since to provide academic and field training, primarily at the graduate level, for potential polar and mountain scientists. By attendance at lectures held at pertinent field sites, by participation in demonstrations with instruments and materials in the field, and by taking and recording scientific measurements under supervision as part of an actual field research program, the student should gain maximum stimulation and appreciation of the significance of the inter-disciplinary investigational approach in glaciology and its allied disciplines. In this approach, the student should obtain a more realistic understanding of glacio-climatological, glacio-geological and glacio-ecological relationships. In addition to the academic offerings, the Institute provides practical training and experience in field work in a variety of sub-Arctic to high-Arctic and mountain expeditionary environments. It is these aspects of the Institute which can make its contribution to the learning process especially significant and meaningful.

DATE

The Institute will be held for seven weeks beginning July 20 and ending September 5, 1966. For qualified students interested in participating in the affiliated Juneau Icefield Research Program or desiring field work in special or thesis problems, up to six weeks of additional field time can be arranged.

THE CURRICULUM

Eight catalogued courses will be offered: *Field Glaciology, Periglacial Geomorphology, Glacio-ecology, Glacio-lichenometry, Glacier Mechanics, Glacier Surveying, Terrestrial and Glacier Photogrammetry* and *Field Problems* in glaciology, glacier geophysics, glacial geomorphology, glacio-meteorology and glacio-hydrology. The courses are designed to take full advantage of both the glacial and periglacial environments of the region in terms of field and "laboratory" instruction.

Additionally, special lectures, field studies and problem sessions will be held on adjunct topics such as mapping and surveying, snow physics, glacier physics, lichenology, glacio-oceanography, permafrost, glacio-fluvial processes, mountain geology, and Arctic soil science.

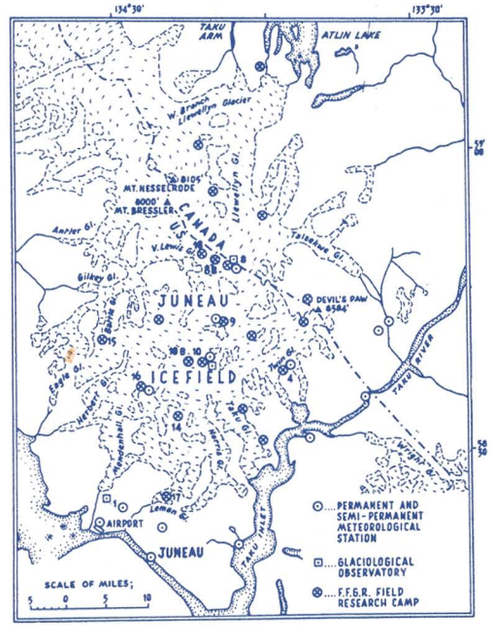
All offerings will be given concurrently during a five-week session on the Juneau Icefield. A sixth week will be used for a specific field problem depending on the student's aims and interests. A seventh week of observation will be conducted in a peripheral area of deglaciated terrain. For those wishing to ally the instructional program with specific M.S. or Ph.D. thesis programs, or equivalent research, field problems may be developed and variable credit obtained.

PARTICIPANTS

Fourteen National Science Foundation field participantships are available at the graduate and post-doctoral levels, plus three University scholarships, two Institute grants and one NSF undergraduate research participant grant for qualified undergraduates. Places for several additional students without Institute support are available. The fee in such cases is $1000 per student. Two graduate teaching assistantships and two graduate research assistantships are also offered each year to outstanding previous participants in the Institute program.

LOCATION

The main field sites lie on or near the Juneau Icefield in the Alaska-British Columbia Coast Range near Juneau, Alaska. Field trips are also conducted to observe phenomena in the deglaciated coastal environs, such as Glacier Bay, the Chilkat region, the forest fiords of Lynn Canal, the Taku River Valley or in the Dezadeash and Lake Atlin areas on the continental side of the Alaska-Canada Boundary Ranges.



Juneau Icefield and vicinity showing meteorological and glacier research stations. Main permanent stations are numbered. Summer Institute headquarters at Camp 8 (elev. 7,200 ft.) and Camp 10 (elev. 4,000 ft.).

FACILITIES AND LOGISTICS

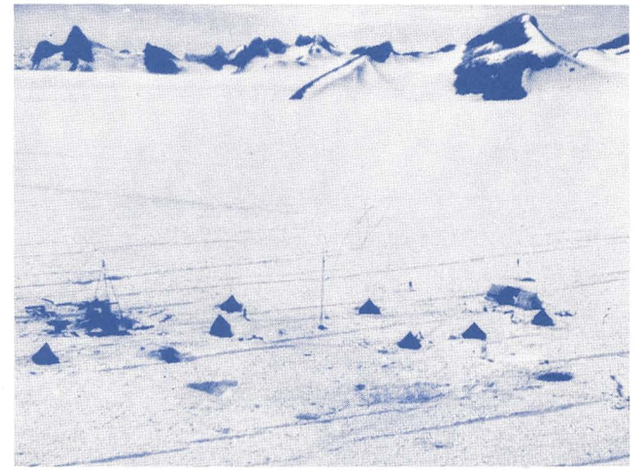
Six main stations and 14 lesser camps and research facilities are located on the icefield. Insulated and aluminum-sheathed buildings, including a 46-foot laboratory and classroom, exist at the field sites. At trail camps, tent facilities are used. A 1,000-volume library containing pertinent research materials, maps and basic references is maintained at the two main stations. Field and laboratory equipment for geophysical, glaciological, surveying, meteorological and general geological work is available for teaching and research.

Communication between camp sites and with Juneau is handled by radio. When necessary, helicopter and ski-plane transport is used, with logistical support for heavy equipment and supplies provided by the Alaska Air National Guard. For ground transport, oversnow vehicles and skis are used.

The permanent installations are provided by the Juneau Icefield Research Program through the cooperation of its sponsoring agency, the Foundation for Glacier Research, Seattle, Wash.

AWARDS AND ALLOWANCES

The N.S.F. participants receive free tuition and are furnished round-trip air travel expenses, Seattle/Juneau, plus all food, lodging and facilities during the seven-week session. The participants can use the $150 travel allowance, in lieu of Seattle/Juneau round trip air fare, for their own automobile arrangements to and from Juneau. The Institute will try to put participants in touch with each other if they care to make combined travel arrangements.



Field camp on 4,000-foot névé of the Juneau Icefield.