

NOAA Science Advisory Board

Review of the Cooperative Institute for Arctic Research (CIFAR)

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Cooperative Institute for Arctic Research

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Introduction

The Cooperative Institute for Arctic Research (CIFAR) was established through a Memorandum of Understanding between the University of Alaska and NOAA in April 1994. It is one of thirteen national NOAA-university joint institutes; CIFAR is the only joint institute exclusively concerned with arctic research. It is currently operating under Cooperative Agreement NA17RJ1224 covering the period 1 July 2001 to 30 June 2006.

CIFAR's host NOAA laboratory is the Pacific Marine Environmental Laboratory (PMEL), located 1500 miles away in Seattle, Washington. Unlike other joint institutes, CIFAR has no permanent in-house scientific staff, but does have a four-person administrative staff: the director Dr. Gunter Weller, the associate director Dr. Patricia Anderson, the publications and meetings manager Ms. Barb Hameister, and the financial administrator Ms. Sherry Lynch. All four are located as an independent unit within the International Arctic Research Center (IARC).

Review Panel Meeting

The CIFAR Review was conducted at CIFAR on June 3 – 4, 2004. The panel met both in executive session and in open sessions with:

- CIFAR director Dr. Gunter Weller and associate director Dr. Patricia Anderson
- University of Alaska Provost Dr. Paul Reichardt
- IARC director Dr. Syun Akasofu
- NOAA Arctic Research Office program manager Dr. John Calder
- NOAA PMEL director, Dr. Eddie Bernard
- Incoming CIFAR director Dr. John E. Walsh
- University of Alaska/CIFAR Principal Investigators
- National Weather Service Alaska region, Dr. Gary Hufford and James Partain

Also present for some of the presentations were staff and commissioners with the U. S. Arctic Research Commission.

The review on Thursday consisted of a number of formal presentations on CIFAR programs, interspersed with executive sessions with CIFAR senior management, NOAA program representatives, University of Alaska personnel, and the review panel by itself. The first day concluded with a poster session highlighting CIFAR funded scientific projects and a reception with the U. S. Arctic Research Commission.

A briefing book was provided to the review committee by CIFAR staff a week in advance of the review and additional materials were provided in a timely fashion during the review.

The review panel consisted of (biographical information attached as Appendix A):

- **Dr. John Weatherly** (Chairperson)
Cold Regions Research and Engineering Lab
- **Dr. Gunnar Knapp**
Institute of Social and Economic Research
University of Alaska Anchorage
- **Dr. Elizabeth A. Logerwell**
Alaska Fisheries Science Center
- **Ms. Molly McCammon**
Alaska Ocean Observing System
- **Dr. Thomas A. Schroeder** (Ex Officio panel member)
Joint Institute for Marine and Atmospheric Research, University of Hawaii

Also present:

- John Cortinas, NOAA Joint Institutes program manager
- Ms. Jacqueline Rousseau, NOAA Educational Partnership Program/Minority Serving Institutions Program Director.

We have organized our report around a set of standard questions for joint institute reviews developed by the NOAA Science Advisory Board. These questions deal with the institute's science plan, science review, outreach and education, and science management. Our findings related to these are followed by a set of recommendations directed to CIFAR, the University of Alaska and NOAA.

Summary of Recommendations

1. A science advisory group that includes NOAA scientists, program managers and University of Alaska researchers should be established to help undertake a formal strategic planning process on a periodic basis, and provide input to CIFAR's annual science plans and future Announcements of Opportunity for CIFAR funding. This group should have discussions with ongoing research planning efforts (such as the North Pacific Research Board and the Alaska Ocean Observing System), as well as with other NOAA joint institutes, and help identify additional opportunities for cooperative research.
2. CIFAR should develop a process for meeting periodically with the "users" and "stakeholders" affected by the research themes (such as resource managers, policy makers, and individual residents) in order to discuss research needs, products and potential benefits.
3. To satisfy the Memorandum of Understanding, the CIFAR Executive Board and Council of Fellows need to be named and conduct their planned meetings.

4. CIFAR should continue its valuable outreach activities with the media and support for graduate research fellowships, and should take advantage of the University of Alaska's Sea Grant Program for expanding its education and outreach opportunities.
5. CIFAR should identify where support could be provided for research Fellows at additional sites in Alaska where NOAA facilities and University of Alaska researchers are co-located as a means of expanding additional opportunities for cooperative research.
6. CIFAR management should improve the accounting for director, associate director and staff time between separately-funded CIFAR and non-CIFAR functions, to satisfy Federal requirements and also for internal management purposes. The division of labor among the separately funded centers should be delineated in an updated management plan.
7. CIFAR and the National Weather Service should pursue opportunities for collaboration in regard to climate, forecasting and development of value-added products. This effort should include exploring opportunities for collaboration with researchers based at other UA campuses.
8. NOAA and the University of Alaska should ensure that CIFAR has sufficient staffing by maintaining funding through NOAA's Office of Arctic Research and the University's Center for Global Change and exploring additional financial contributions from other entities within NOAA and UA.

Panel Findings

1. CIFAR Science Plan

The core vision of the institute is to foster collaboration between NOAA, the University of Alaska and others working in the Western Arctic (Alaska and the Bering, Chukchi and Beaufort Seas) and to conduct research relevant to NOAA's mission as encompassed in the CIFAR research themes. These themes are atmospheric and climate research, marine ecosystem studies, tsunami research, climate modeling, fisheries oceanography, contaminant effects, UV and arctic haze studies, hydrographic and sea ice studies, and data archiving and support. These are very broad and were identified based on NOAA and UAF interests and new research developments in the Arctic.

Research is conducted using two primary mechanisms: 1) NOAA funding of directed research needs, usually in line with identified research themes, that are then conducted by University of Alaska researchers and 2) opportunistic Announcements of Opportunity (AOs) which take an identified funding source and involve the entire scientific

community through a competitive process. The AO mechanism often results in non-UA scientists conducting some of the research.

Findings

- CIFAR has succeeded in providing valuable collaboration between NOAA and the University of Alaska. This collaboration has produced significant high quality research.
- CIFAR research activities are very closely aligned with all four of the mission goals in the NOAA Strategic Plan (ecosystem based management, understanding climate variability, weather and water information, and safe marine transportation and commerce).
- CIFAR research themes are very broad, and as such, will almost “never” be completed, although their underlying issues and needs may change over time.
- CIFAR has no specific scientific plan other than the identified research themes and overall programmatic vision of fostering collaboration between NOAA and UA and conducting research relevant to NOAA’s mission. The CIFAR 2001-2005 proposal serves as the *de facto* scientific strategic plan for the institute.
- Scientific planning has consisted primarily of NOAA and UA personnel identifying particular needs on an opportunistic basis. The most extensive planning appears to be with development of the Announcements of Opportunity (AOs). These have used a process of workshops that have highlighted past work and identified future needs.
- CIFAR planning and visioning appears to be accomplished by a very small circle – driven by the interests of the CIFAR director and current CIFAR PIs.
- Criteria for measuring the progress of accomplishing CIFAR’s goals and objectives include the standard measurements of publications, scientific presentations, number of projects funded, etc., as well as direct benefits to society.

2. Science Review

CIFAR-supported research projects have focused on several research foci: the Steller Sea Lion research in response to NOAA’s mission; the Arctic Research Initiative focused on natural and human impacts on the Bering Sea and Western Arctic ocean and climate change in the Arctic; and tsunami research and the tsunami warning system. The Arctic Climate Impact Assessment (ACIA), partially NOAA-supported through CIFAR, will release its 1,500-page report to the international community in November 2004 in Iceland. A joint U.S.-Russian cruise in the East Siberian and Chukchi Seas is planned for summer 2004 to study the marine ecosystem and the physical environment.

Findings

- CIFAR has succeeded in valuable collaboration between NOAA and UAF that has produced significant achievements of high quality research.
- Partners in the NOAA Arctic Research Office, the host laboratory PMEL, and the University of Alaska have all been satisfied with CIFAR research activities.

3. Education/Outreach

CIFAR engages in outreach to the public through media interviews, requests for information, and talks in schools and villages several times per month. U.S. and international television and radio features on Arctic climate change have featured the CIFAR director and supported research. A video feature on the Alaska tsunami warning system and its CIFAR research project has been produced. These activities have given CIFAR research a visible profile in these areas.

Findings

- CIFAR has been active and successful in outreach through the media in local, national, and international levels, particularly on the topic of Arctic climate change. CIFAR interviews and material have been used in print media, radio and television features.
- CIFAR funding has allowed for significant numbers of graduate student research grants which have expanded the breadth of graduate research training.
- While website development is essential for contact and background information, it is not as far-reaching to the public and private sectors as through the media and other outreach efforts. This is particularly true for outreach to Alaska state government officials, legislative and congressional representatives, and University trustees.

4. Science Management Plan

The CIFAR science management is in transition in 2004, with the retirement of their current director, Dr. Gunter Weller, and the increasing participation of the new director Dr. John Walsh. CIFAR's associate director, Dr. Patricia Anderson, is also planning to retire in January 2005, and the search for a new associate director is underway. This transition has some inherent challenges, as CIFAR is looking to redirect its efforts from programs that are completing in 2004, including the Arctic Climate Impact Assessment (ACIA), to other new initiatives. An additional challenge is the budget outlook for NOAA funding for CIFAR projects beyond 2004, which may limit the number of new research projects that might be supported.

Findings

- The review panel heard nearly universal support for the choice of Dr. John Walsh as the new director, and appreciation for the long-time service of the outgoing director Dr. Gunter Weller.
- There are concerns over the extended range of the new director's roles between CIFAR and other tasks, including conducting science at IARC and the Center for Global Change.

- CIFAR is taking advantage of opportunities that arise in response to science questions and the mission of NOAA, although more could be done with additional management staff and an active science advisory panel and Council of Fellows.
- CIFAR Staff has been very successful in overlapping programs to fund administrative activities and support programs (ACIA, Center for Global Change). Neither NOAA nor UAF have been concerned with this arrangement, and it provides flexibility. However, the overlapping programs make it difficult to account for which programs staff spends their time on, the relative costs of these different activities, or the financial or in-kind contribution of the University of Alaska to CIFAR. In addition, it appears that the CIFAR management costs are not shared throughout NOAA and the University of Alaska system, but rather, are provided solely by the NOAA Office of Arctic Research, and the UAF Provost through the Center for Global Change.

Appendix A.
CIFAR Review Panel Biographical Information

Dr. John Weatherly (Chairperson)

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Dr. Weatherly received his B. S. in Physics from the Ohio State University in 1987, his M.S. degree in Physics in 1989 and his Ph.D. in Atmospheric Sciences in 1994 from the University of Illinois. Since 1994 he has been involved in research on Arctic and Antarctic sea ice and its role in the global climate system, including natural and anthropogenic climatic changes. He was a visiting postdoctoral researcher at the National Center for Atmospheric Research until 1996, and then he was an NCAR visiting scientist until 1998. He became a Research Ice Geophysicist at the Cold Regions Research and Engineering Laboratory from 1998 to the present. Dr. Weatherly has been author or co-author on 25 journal publications and conference papers concerning sea ice, global climate modeling, and climate change, including modeling development and contributions to the NCAR Climate System Model and the Parallel Climate Model. He was co-chair of the NCAR CSM Polar Climate Working Group until 1999. He has served on the NSF Arctic System Science (ARCSS) Committee since 1998, and has chaired the ARCSS Data Management committee since 2002.

Dr. Gunnar Knapp

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Gunnar Knapp has been on the faculty of the University of Alaska Anchorage Institute of Social and Economic Research since receiving his Ph.D. in Economics from Yale University in 1981. Dr. Knapp has conducted a wide variety of research on the Alaska economy and Alaska resources, including Alaska fisheries and timber resources. Since 1990, Dr. Knapp has studied world salmon markets and the effects of changing market conditions on the Alaska salmon industry. From 1994 until 1998, Dr. Knapp directed the Salmon Market Information Service, funded by the Alaska Seafood Marketing Institute, to provide current market information to Alaska salmon fishermen. Dr. Knapp has made numerous presentations relating to salmon markets for both academic and industry groups, and has traveled to Japan, Russia, Norway and Chile in connection with his

research. Other areas of recent research include management of Alaska salmon fisheries, effects of the Alaska halibut and sablefish IFQ system, and markets for Alaska herring roe and Alaska pollock. Dr. Knapp teaches courses at the University of Alaska Anchorage on Resource Economics and the Economy of Alaska.

Dr. Elizabeth A. Logerwell

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Dr. Logerwell received her B.S. in Biology from Stanford University in 1988 and her Ph.D. in Ecology and Evolutionary Biology from the University of California Irvine in 1997. Dr. Logerwell has been involved in fisheries biology since 1997, first as a post-doc at Southwest Fisheries Science Center (NMFS), then as a post-doc at University of Washington's School of Aquatic and Fisheries Science and finally as a Research Fishery Biologist at Alaska Fisheries Science Center (NMFS). She has been involved in research on marine fisheries ecology in diverse systems, from southern California Current sardine, to Washington-Oregon Coho salmon, to Alaska groundfish. She is currently lead of the Fishery Interaction Team, a sub-task of the Status of Stocks and Multispecies Assessment task at AFSC. This research team is engaged in investigating the potential impacts of commercial fisheries on Alaska ecosystems, in particular, endangered Steller sea lions.

Ms. Molly McCammon,

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Molly McCammon is currently the Executive Director of the Alaska Ocean Observing System, a coalition of partners including the University of Alaska, federal and state agencies, and NGOs, working together to integrate ocean observations and provide better information for users of the ocean and ocean resources. Prior to that, she served for nearly a decade as the Executive Director for the *Exxon Valdez* Oil Spill Trustee Council, administering the restoration fund established as a result of a court settlement between the United States government and the state of Alaska and Exxon Corporation following the 1989 *Exxon Valdez* oil spill. During her tenure at the Trustee Council, she helped establish the Gulf Ecosystem Monitoring Program – a permanently endowed, long-term ecological monitoring program for the northern Gulf of Alaska.

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Dr. Thomas A. Schroeder is Director of the Joint Institute for Marine and Atmospheric Research (JIMAR) at the University of Hawaii at Manoa. In addition he is the Chairman of the Department of Meteorology. As Director of JIMAR he manages an \$11M per year enterprise employing 70 full-time and as many part-time employees pursuing a broad agenda of interdisciplinary research ranging from climate to fisheries oceanography. His personal interests include tropical meteorology and societal impacts of weather and climate. He is a past chairman of the American Meteorological Society's Committee on Severe Local Storms.