

ALASKA LEGISLATURE COMMITTEE ON

2053 SSA RECRUITING PROFESSIONALS - SUBCOMM. ON AK. FUTURE

Sen. Stimson
p. 3

depending on the average salary of the people who take advantage of the program. The second alternative would require a larger appropriation to LAA by the amount and number of the higher salaries authorized.

Precedents for this Program

I do not know of instances of people taking leave from agency positions for work with the legislature, although there may well be some. (I did not research the question.) Certainly it does not appear to be a common occurrence and I doubt that many legislators or state employees are aware of the opportunity created by the personnel rules.

According to Ms. Cindy Simmon, an expert on state legislative staffing with the National Council of State Legislatures, no other state has a formal program like the one proposed here.

I think the idea represents a significant legislative innovation, and if a program is implemented I recommend that it be evaluated (frequency of use, areas of expertise utilized, assessment of the value of the program by participants, etc.) so other states can benefit from Alaska's experience.

SCI-TECH

HEARINGS

1981

Major Issues Raised at the Hearings on
The Role and Status of Science and Technology in Alaska

1. Due to the proposed federal budget cuts, the State may soon be faced with the question of whether to increase its funding of scientific research.
 - The full impact of the budget cuts is not yet clear, but it appears they will seriously reduce current research programs in Alaska. Apparently, the Reagan administration expects the energy-producing states like Alaska to bear a greater share of the financial burden for obtaining basic scientific and resource information.
 - Particularly hard hit by the budget cuts will be research programs in alternative energy (geothermal, solar, wind, and possibly fossil fuels), environmental health, transportation technology, and recreation. In addition, the National Science Foundation's budget for arctic research will probably be cut by 50 percent.

2. The possibility of increased state funding raises the questions of research priorities and coordination.
 - Most people agree that research priorities should reflect the needs of Alaska. However, some scientists stated that these needs are currently being determined primarily by politics rather than through a balance of the scientific and political viewpoints.
 - The relative values of basic vs. applied research are controversial. Representative Abood and Gordon Zerbetz of the Alaskan Energy Center stressed the need for practical results with immediate positive effects. Representative Rogers and others emphasized the necessity for a continuum of basic and applied research.
 - Scientists stressed that the development of new knowledge is a necessity, not a luxury. Neil Davis pointed out that the actual money spent on development of new knowledge is far less than compilations of research and development expenditures suggest, since much of the science conducted within government agencies is procedural or a rehashing of known information.
 - Dave Hickok stressed the need for an arctic science policy to coordinate research, highlight problem areas, and establish partnerships between government entities, industry, and the science community. Congress and the Alaska legislature were deemed the only forums which could create and establish such policies.
 - Due to the lack of an arctic science policy on both the state and national levels research has, in many cases, been uncoordinated both between and within agencies. Because of this, surprising gaps have occurred in necessary basic data including hydrological data (e.g., snow surveys), soil information (e.g., permafrost), ice information and research, climatological information, and natural hazards (e.g., seismic).
 - University, industry, and government representatives seem to agree that there are appropriate areas of research for each sector. According to this consensus, the public sector should be responsible for research related to basic environmental understanding and the private sector for site and project specific knowledge as well as technological innovations.

3. The role of the Alaska Council on Science and Technology (ACST) was examined in discussing research priorities and policy.
 - At this point the purpose of and necessity for the ACST is unclear to some. Representative Abood questioned why "another layer of bureaucracy" was necessary to determine research needs. Abood queried why university scientists, for example, could not determine their research priorities without the ACST. ACST supporters countered that it was desirable to have an external source coordinate the research priorities of the state and the university. Senator Fischer requested that the ACST write a paper on its purpose (see attached).
 - Most of the scientists present lauded the ACST's efforts to prioritize statewide research. Fran Ulmer recommended that the ACST produce a 3 to 5 year plan for research.
 - State government representatives and scientists stressed the importance for the ACST to provide a two-way information exchange between the science community and decision makers.
4. Representatives from the news media stressed the need for scientists to communicate effectively and the public's hunger for factual, issue-oriented information.
 - Joe LaRocca pointed out that unless scientists could learn to communicate they were destined to be ignored, shunted aside, underfunded, and forgotten.
 - Doug McConnell suggested that commercial broadcasters do not have the resources to present complex, issue-oriented programming. In light of this, the responsibility of the State to provide factual unbiased information was questioned.
5. The importance of continuity, evaluation, and feedback in the legislative process was underlined.
 - Lee Gorsuch suggested that a small percentage of a program's cost should be spent to objectively evaluate whether the legislation was fulfilling its original intent. Social scientists could provide this analysis and feed the resulting information back to the legislature.
 - Gorsuch also stressed the importance of continuity in research and suggested the possibility of multiple year funding.

Annotated Agenda from the Hearings on
The Role and Status of Science and Technology
Senate and House State Affairs Committees
April 11, 1981, Juneau, Alaska

Overview of Alaska Science and Technology

"Alaska and U.S. Arctic Science Policy" — David Hickok, Alaska Division of the American Society for the Advancement of Science. Director of the Arctic Environmental Information and Data Center, University of Alaska.

To exploit desperately needed resources, conduct military operations, understand arctic health problems, and represent its other interests in the Arctic on an international basis, the U.S. must have a substantial and well-coordinated research program in Alaska and the Arctic generally. Congress and the Alaska legislature need to establish legislatively the partnerships between industry, state and federal government, the science community, and indigenous peoples which will be necessary to achieve a cohesive and long-term commitment to increasing our knowledge of the Arctic.

"Characteristics of Current Research in Alaska" — Dr. Larry Underwood, Arctic Environmental Information and Data Center, University of Alaska.

The Current Research Profile is an annotated listing of research projects which has been compiled and published by the University of Alaska for the past 7 years. The profile shows that some 1,674 research projects costing approximately \$183 million were completed, continued, or initiated in 1979. The federal government was the primary supporter (\$146 million), aided by the State (\$30 million), and others (\$7 million) of projects in the physical (\$68 million), biological (\$62 million), and social (\$52 million) sciences.

"Status and Direction of Federal Science in Alaska" — Walter Parker, Special Counsel to the Alaska Council on Science and Technology.

Federal programs have a "massive impact" on the success of state and private ventures through funding of basic research and the expertise which has been built up in federal agencies. The proposed federal budget cuts will severely reduce federal science programs in Alaska including cancellation of the National Oceanic Satellite System; reduction in LANDSAT programs; cancellation of programs in environmental health, transportation technology, parks and recreation, and alternative energy; reduction in monies available for fossil fuel research; and approximately 50 percent cuts in grants for arctic research by the National Science Foundation.

"Priority Needs and Other Alaska Science Issues" — Dr. T. Neil Davis, Chairman, Alaska Council on Science and Technology. Professor at the Geophysical Institute, University of Alaska.

Alaska can best ensure a viable economy and desirable quality of life in the future by investing in knowledge and people. We must commit a larger percentage of the "gross Alaska product" to research, and we must establish a science policy and research priorities which are based on the needs of Alaska as determined by a balance of the political and scientific viewpoints.

Public Interest in Science and Technology in Alaska

Joe LaRocca, Newsman.

Scientists must learn to communicate effectively with the general public, both directly and through the popular press, if they are to build broad support for, and understanding of, their goals. This means training scientists not to speak in the incomprehensible jargon of specialists. It also requires a significant budgetary commitment for professional public information dissemination.

Doug McConnell, Electronic Media Specialist.

The public is hungry for well-produced programs about Alaska and the multitude of issues which face us. Few commercial broadcasters have the time or resources to produce factual, unbiased programs, and federal sources of funding appear to be shrinking with the Reagan budget cuts. The State should consider funding informative, issue-oriented programs.

Science and Technology Needs and Priorities as seen by
Government, Industry and Public Witnesses

Fran Ulmer, Director, Division of Policy Development and Planning, Office of the Governor.

One of the key dilemmas before us is bridging the timing and communications gap so that scientific research can assist public decision makers. The Alaska Council on Science and Technology has a significant role to play in that effort by (1) continuing to identify research priorities, (2) building a 3-5 year research agenda, and (3) evaluating the proposed federal budget cuts and making recommendations for subsequent funding. Technological innovation is crucial to our economic growth, and we should be forging new partnerships between the public and private sectors to meet this challenge.

Rich Shafer, Manager, Environment/Safety/Security, Sohio Alaska Petroleum Company.

Industry accepts the responsibility to do research which will provide safe and efficient technology for oil exploration and production. Government should continue to provide long-term basic research including: mapping, satellite remote sensing, collection of weather and climate data, hydrologic data, oceanographic data, and broad geological and geohazard information, particularly as the industry moves into more difficult areas like the Beaufort and Bering Seas.

George West, Acting Vice President for Academic Affairs and Institutional Planning, University of Alaska.

The University of Alaska may lose a total of \$14.3 million (\$9 million in organized research) if the proposed federal budget cuts are passed. The devastating short-term impacts of this would include the loss of 96 professional appointments, 70 technical appointments, and 20 secretarial and administrative appointments. A reduction in qualified staff of this magnitude would impair the already modest ability of the university to conduct research in the physical, marine, agricultural, mineral, ecological and environmental, social, and economical sciences including Alaska issues and problems.

Wayne Meyers, Executive Director of the WAMI program (Washington, Alaska, Montana, Idaho health program).

Federal funding for health programs in Alaska has been continually reduced since the 1960's leaving not only substantial research gaps but little expertise available in the state. To counter this decline and confront the many health problems common to the Arctic will take a substantial financial commitment.

Lee Gorsuch, Director of the Institute for Social and Economic Research.

Legislators should consider allocating a small percentage of a program's cost to evaluate whether a particular piece of legislation is fulfilling its original intent. Legislators should also consider multiple year funding to provide continuity to long-term research projects.

Charles Logsdon, Agriculture Consultant.

To meet the Alaska Agricultural Action Council's goal of 500,000 acres in production by 1990 will require an increase in state employment of agricultural scientists from our current level of 16 to a minimum of 58. To coordinate and accomplish agricultural research efficiently, I recommend that the state fund the University as the prime research agency.

Phil Holdsworth, Placer Annex representing the Alaska Coal Industry.

Most of the research on coal will be done by the private sector on a project specific basis. The industry believes, however, that state involvement is important and appropriate in the following areas.

- *Compilation of oil well drilling data and geologic mapping to define major coal basins.*
- *Expansion of the university's Mineral Industry Research Laboratory sampling program.*
- *Expansion of the state aerial mapping and photo interpretation project.*
- *Continuation of the North Slope experimental surface mine.*

Tom Crafford, Geologist, Anaconda Copper Company.

Hard rock mining can, and should, be a vital part of Alaska's economy. To promote the industry the state should continue or expand its research in the following areas.

- *Mapping and field work by the state geological survey.*
- *Low level color aerial photography.*
- *Methods to decrease turbidity downstream from placer operations.*
- *Support of an outstanding program in arctic engineering at the University of Alaska.*

Gordon Zerbetz, Executive Director, Alaska Energy Center.

Research should be based on needs, rather than on the generation of information and knowledge for its own sake. Furthermore, properly structured and managed research programs can, and should, provide an economic return for users.

Steve Pennoyer, Commercial Fisheries Division, Alaska Department of Fish and Game.

The fisheries industry including commercial, sport, and subsistence efforts is the largest industry in Alaska. To manage this complex resource effectively will require a great deal of additional knowledge about the stocks and how to protect, enhance, and develop them.

April 13, 1981

THE ALASKA COUNCIL ON SCIENCE AND TECHNOLOGY AND ITS ROLE

The three primary purposes of the Alaska Council on Science and Technology are:

1. To provide an academy-like forum for the science and technology community to provide impartial advice to state government and assist in the development of science policy for the state;
2. To provide a mechanism to review state-funded activities in science and technology, to provide advice to state government on those activities and to provide a two-way channel of communication between state government and the science and technology community;
3. To award and administer monies appropriated for research and technology, and to promote and enhance the standards for research activities.

A major ongoing activity of ACST--one that relates to the first two purposes listed--is evaluation of the status of knowledge and current activities in each of the various fields of science and technology in Alaska, and determination of priorities for research in each of these fields. For this purpose the Council has used its authority to convene committees comprised of knowledgeable persons drawn from the academic community, state and federal agencies, industry and the public. Each ad hoc committee is asked to assess priorities from the viewpoint of what will most benefit Alaska. As each committee completes its work, the

results are transmitted in a short report to the legislature, executive branch agencies and other cognizant organizations and individuals. The current emphasis of this activity is upon setting immediate priorities, but as this need becomes better met the emphasis will shift more in the direction of long-range planning and assistance to the state in development of science policy.

For the purpose of developing policy, the Council is participating with the National Academy of Science's Polar Research Board in an ongoing effort to develop a more cohesive federal policy for Arctic and Alaskan science. Also for same purpose and for the purpose of assisting in the development of state policy, the Council is actively working with the Alaska Division of the American Association for the Advancement of Science, a group which traditionally has represented the scientific community in Alaska.

In the role of providing advice and assistance to state agencies, the Council has responded to requests from various agencies to assist in review of specific science-related proposals or in the establishment of procedures to solicit and evaluate proposals. These agencies or organizations include the Division of Policy Development and Planning, the Department of Commerce and Economic Development, Alaska Renewable Resources Corporation, University of Alaska, the Department of Public Safety, and the Department of Transportation and Public Facilities. As mandated by law, the Council has met with and coordinated with the Alaska Energy Center and the Alaska Renewable Resources Corporation. Currently, the Council administers for the Department of Public Safety research projects on the use of smoke detectors in rural residences and methods of obtaining water for fighting fire in winter.

The Council's role in the award and administration of monies appropriated by the Legislature is currently being carried out through the conduct of two grant programs. One, the Northern Technology Grants program is intended to help develop and encourage the use of low-cost and small-scale technologies appropriate to Alaska. The intent is to provide funds to persons with innovative ideas to assist in the development of those ideas into technologies useful to Alaskans. Areas involved are food production, waste disposal, recycling, transportation, building design, energy generation, and any residential or industrial enterprise which may be more efficient, less costly and less energy-intensive than methods now in use. Individual grants are limited to \$5,000; the total being awarded during FY 1981 is approximately \$260,000.

The second grant program provides funds for research on geophysical hazards and other areas of research determined by the Council. During FY 1981, approximately \$300,000 is being awarded on a competitive proposal basis for research in areas that include Alaskan natural hazards, Alaskan seismology, Alaskan minerals, Alaskan transportation, human life and health, and Alaskan rural primary and secondary education. As this is a new program this year, its establishment has required the Council to develop proposal review and research administration procedures that will be helpful in future to other agencies as well as being useful for the Council's purpose.

The FY 1981 operating budget for the Council is approximately \$250,000. With these funds the Council maintains a two-person staff and office in Juneau and conducts its activities using limited contractual and substantial volunteer labor.



Alaska State Legislature

Senate

Committee on State Affairs

Official Business

Pouch V
State Capitol
Juneau, Alaska 99811

2-26-81

SUGGESTED APPROACH

Hearings on the Role and Status of Science and Technology
in Alaska before the Senate and House
State Affairs Committees

A. Overview of Alaska Science and Technology: A Panel Presentation
(45 minutes)

- Alaska and U. S. Arctic Science Policy - D. M. Hickok, AAAS, Alaska
- Who is Involved in Alaska Science; Areas of Greatest Emphasis - L. Underwood, University of Alaska
- Findings of Alaska Council on Science and Technology Hearings on the Status and Direction of Federal Science in Alaska - W. Parker, ACST
- Priority Needs and Other Issues connected with Science in Alaska - T. Neil Davis, ACST

(NOTE: The full text of reports on the above will be available; presentations will be summaries)

Questions and Dialogue between Legislative Members and the Panel
(30 minutes)

B. Public Interest in Science and Technology in Alaska: A Panel Presentation of newspaper, radio, and television individuals
(45 minutes)

Questions and Dialogue between Legislative Members and the Panel
(30 minutes)

C. Science and Technology Needs and Priorities
(3 hours total)

- 10 minute presentations by each Government, Industry, and Public witness (with filed statements)
- 10 minute committee dialogue for each witness

(9 Witnesses)

State of Alaska	-F. Ulmer, Office of the Governor, DPDP (or possibly Lt. Gov. Miller)
Oil and Gas Industry	-AOGA Representative or NPC Study Representative
University of Alaska	-J. Barton, President
Sealaska Corporation	-B. Mallot, President
Health and Medicine Community	-W. Meyers, WAMI
Resource Economics	- _____
Fisheries Industry	- _____
Agriculture Industry	- _____
Coal and Mineral Industry	-C. Hawley or C. Herbert

SYNTHESIS: George Rogers



Alaska State Legislature

Senate Committee on State Affairs

Vic Fischer, Chairman • Pouch V • Juneau, Alaska 99811 • (907) 465-4954

Official Business

April 1, 1981

Copy

Mr. Max Beazley
Alaska Oil & Gas Association
3201 C Street, Suite 270
Anchorage, AK 99503

Dear Mr. Beazley:

Last week I sent you an invitation to speak at hearings on the role and status of scientific research and development in Alaska. These hearings are being held by the House and Senate State Affairs Committees in Juneau on April 11, 1981 from 9:00 a.m. to 1:00 p.m.

Enclosed please find a preliminary time schedule for the hearings. Please contact Nancy Groszek or Sumner Putnam at my office (465-4954) regarding your participation.

Understanding the significance of scientific research is important to the legislature, and I hope you will be able to participate in the hearings.

Sincerely,

Vic Fischer

NM:VF/pb

Enclosure

*- see back for list of the letter
was sent to*

Mr. T. Neil Davis
Alaska Council on Science & Tech
Pouch AV
Juneau,

Mr. W. Parker
same as above

Mr. Larry Underwood
Arctic Environmental Info.
and Data Center
707 A St.
Anch.

Mr. David M. Hickok
same as above

Mr. Dave Heatwole
Dist. Geologist
Anaconda Copper Co.
2550 Denali, Suite 1000
Anch.

Mr. Coe McFarland
Vice President
Placer/Annex
1 Calif. Bldg, Suite 2500
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Dr. Charles Logdson
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Box 387
Palmer

Steve Pennoyer
ADF&G
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Lee Gorsuch, Dir.
Institute of Social &
Economic Research
707 A St.
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Wayne Meyers, WANI
Med. Ed. Prog.
103 Arctic Health Research Ctr
U. of A.
Fairbanks

Byron Mallott
Board of Directors
Sealaska Heritage Found.
1675 C St
Anch.

President Jay Barton
U of A
101 Bunnell
Fairbanks

Office of Gov.
Juneau

Gordon Zerbetz
Energy Ctr
619 11th Av
Fairbanks

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWELFTH LEGISLATURE - FIRST SESSION

Relating to a call for Congressional
hearings on Arctic Science and Tech-
nology

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS the Arctic contains resources including petroleum, strategic minerals, and fish which are of vital importance to the nation; and

WHEREAS the Arctic has national strategic importance due to its location and whereas defense-related activities are particularly difficult in the Arctic environment; and

WHEREAS the Arctic environment poses unique health problems and effects which are not adequately understood; and

WHEREAS in many cases the scientific and industrial communities lack the site-specific information base to exploit Arctic resources, conduct military operations, or understand arctic health problems; and

WHEREAS the nation presently has only very limited scientific and technological expertise in arctic subjects; and

WHEREAS only a long-term, well-coordinated research program can develop this Arctic expertise; and

WHEREAS such a research program would require partnerships between government, industry, the science community, and others which do not presently exist;

BE IT RESOLVED by the Alaska State Legislature that Congress convene hearings on Arctic science and ^{policy} technology, ~~policy~~ and research coordination.

Copies of this resolution will be sent to President Reagan, the Secretaries of Defense, Energy and Interior, and the Alaskan Congressional delegation.

Testimony of Joe La Rocca
for the
Hearings on the Role and Status of Science and Technology in Alaska
before the
Senate and House State Affairs Committees

April 11, 1981

Your co-chairman has asked me to speak for the press on the public interest in science and technology, and to discuss my thoughts on methods of increasing communication between the scientific community and the general public.

Before I get into that, let me offer one small disclaimer. While I'm pleased to speak as a member of the press, I won't presume to speak for the press. Ask most of my colleagues, and they'll tell you that I'm more in the habit of speaking against them, than for them.

Newsfolk, in fact, are alot like scientists in at least one respect. When we're not talking to ourselves, we talk mostly to each other.

That's how we, like scientists, rationalize our assumptions; legitimize our biases; objectify our prejudices; reinforce our agruments; confirm our conclusions; fortify our egos; and secure our professional reputations.

Seriously though, I've long been persuaded that the scientific community in Alaska suffers from a chronic crisis of confidence. If I were critiquing a speech by someone who used that grossly alliterative phrase - "chronic crisis of confidence" - I'd probably accuse him or her of stating a contradiction in terms. How, I would rhetorically ask, my voice dripping with scorn, can a crisis be chronic? But in this case, I think the phrase is apt. The scientific community is, to a large extent, caught up in a critical phase which is both enduring and pervasive. If it weren't, we probably wouldn't be here today.

I suspect that each of us addressing you today thinks that his or her orientation in this context is the most compelling one. I do; at any rate.

I'm convinced that if scientists were able to communicate effectively with the general public both directly and through the popular press, they suffer none of the indignities which have long plagued them which is to be ignored, shunted aside, de-prioritized, unfunded, unheard, unheeded, and sometimes reviled by the community-at-large.

Unfortunately, the role of communications within almost any public institution whose principal function is not the delivery of information tends to be relegated to last place. The premise seems to be that if there are any funds left in the budget after everyone's administrative

research, travel, per diem, equipment and personal needs are taken care of, the remainder can be thrown at the public information or communications section. And institutions of science tend to be the foremost purveyors of that syndrome. Indeed, scientists seem to take an almost masochistic delight in spruning public understanding and acceptance and cultivating public apathy.

If scientists want to reverse that almost universal perception, they must make a real commitment to communicating with the public-at-large; and rather than toss budgetary leftovers at the public information section, give it a substantial percentage of the budget right off the top - even if the budget is very tight - and elevate it to the same status as the department's principal role.

Because when an institution is as dependent upon gratuitous public funding as research and scientific institutions are, the medium is as important as the message.

By suggesting that the communications function should be upgraded, I don't mean that scientists or the institutions with which they are associated should create propaganda mills designed to beautify the institutional carcass, which is what far too many public information sections tend to do.

What I do mean is that they should engage professional technicians trained in the art of translating scientific literature into plain but appealing English who also know how to utilize the full mix of media to convey it to John and Jane Doe in a meaningful and relevant context.

One of the most effective barrers to communication between scientists and the general public is scientific jargon, the effect - if not the intent of which - is to obfuscate rather than illuminate. I suspect that many scientists feel that the only way they can preserve their mystique is to cloak their dialogue in mysterious cadences and arcane phraseology. I would seriously suggest that the science curricula at both the undergraduate and graduate level include mandatory courses on non-scientific writing and speaking so that scientists can articulate their work and results in terms that non-scientists can fathom.

I think it's generally true that most scientific inquiries ultimately have some application to some definable end goal which is relevant to some public constituency. If the inquiry, the goal and the constituency can be linked together in a chain of symbiotic interaction through effective communications tool, then both science and the constituency will be mutually well-served. I don't mean to imply that scientists should try to be all things to all people; only that virtually every constituency should be able to extract something which is relevant to its interests from the endeavors of science.

And I think that building that broad constituency and fashioning that link through effective communication with the community at-large is the only way that the scientific community can hope to elicit the

support it needs to achieve the goals and satisfy the needs that some of those who preceded me have discussed. If scientists would stop talking to themselves and start talking to lay persons in terms they can comprehend about matters that are relevant to them, I think they can create a large and powerful advocate for science outside their own ranks which will give them considerable political clout. If only half the constituents who call or write their legislators to ask them where the hell their auto registrations or their tax rebate checks are would, for example, add a postscript or a footnote asking them to support funding for state takeover of the Naval Arctic Research Lab, the lab could not only be kept open, but probably substantially expended as well.

Let me give you one example of the kind of thing I'm talking about. I have here the Current Research Profile for 1979, published by Dave Hickok's shop, the Arctic Environmental Information and Data Center, which was loaned to me by Chris Noah. This edition lists and briefly outlines 1,674 research projects which were completed, continued or initiated during 1979.

As I browsed through it cursorily, I found scores of project descriptions, which even in bare outline, instantly piqued my interest, and made me wish I had before me the full report to read or the investigator to interview. If every investigator who submits a project resume to be published in the profile were to take just one hour or less of his time to write a full but concise narrative account of his or her research project along with an explanation of its implications, in clear understandable prose, then send or take it to one or more members of the press around the state, I suspect that a large number of them would be used as a basis for news or feature stories which would attract a large and interested audience. If for example, the authors of all of the 1,674 projects listed in the 1979 profile were to submit synopses of their projects, the 1979 scientific and research effort in Alaska would have earned a tremendous audience with little or no additional expense or work on the part of the investigators. At the same time, they would gain wide exposure for their efforts, and inform literally thousands of interested Alaskans about the results of their work, which could in some cases, lead to implementation or application of the results.

But more importantly, it would be one means of building that broad constituency which the scientific community so sorely needs to win the political support required to pursue the short and long-term policies and goals that are being addressed at these joint hearings.

One excellent, but all too rare example is the weekly scientific column that Neil Davis writes for publication in a number of newspapers around the state. They are interesting and often fascinating. I'm tempted to refer to Neil as Alaska's Carl Sagan, except that Sagan's material sometimes falls to the level of pseudo-scientific drivel, whereas Neil's never does, and he would suffer from the analogue.

Several years ago I wrote a piece which was somewhat critical of that year's Alaska Science Conference at the University of Alaska, Fairbanks, because of the failure of its organizers to make a concerted effort to attract political figures to the conference. It was yet another case of scientists talking to scientists. I suggested at the time if science were going to gain any ground in Alaska, it was going to have to become aggressively involved in the political brawl. While this gathering signifies a step in that direction, there's still a long way to go. It doesn't do the scientific community a hell of a lot of good, frankly, to make its pitch to the Brian Rogers and the Vic Fishers. They're already advocates of science. It's more important to work on those who aren't.

STATE OF ALASKA

JAY S. HARMOND, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

SUPPORT BUILDING
JUNEAU, ALASKA 99801

April 21, 1981

The Honorable Vic Fischer
Alaska State Senate
Pouch V, State Capitol
Juneau, AK 99811

Dear Senator Fischer:

I appreciated your invitation to participate in last Saturday's panel and was sorry to have missed the opportunity to present information to your committee. Enclosed is written testimony which should provide your committee the information you requested. If you have any questions please let me know.

Sincerely,



Steven Pennoyer, Director
Division of Commercial Fisheries
(907) 465-4210

Enclosure

SCIENCE AND TECHNOLOGY NEEDS OF THE FISHERIES INDUSTRY IN ALASKA

Steven Pennoyer
Alaska Department of Fish and Game
Commercial Fisheries Division

The fisheries industry in Alaska, including commercial, sport, and subsistence, is the largest industry in the state, employing some 40 thousand commercial fishermen, ten to 15 thousand processing plant employees, nearly a thousand commercial processing operators, numerous professional sport fish guides, and with at least 10 thousand participants in the salmon subsistence fishery alone, plus some 200,000 licensed recreational anglers. The commercial fishery in 1980 was worth some \$500 million to individual fishermen and about a billion dollars in first wholesale value to the processors. The value of the subsistence salmon harvest is difficult to calculate in terms of replacement value, but it must be in the order of 25 to 30 million dollars. Recreational harvest also provides nutrient values to the participants. Recreational fishery values have not been adequately addressed, since an actual sale or transaction does not take place. Various studies have inadequately assessed the impact on the economy through tourism and consumer sales of goods, but the direct expenditure by anglers is about 14 million dollars per year. The value of the commercial, subsistence, and recreational fishery, of course, is multiplied throughout the economy beyond the direct value to the individual participant. The commercial fishery alone through direct taxes and licenses provides some 20 to 25 million dollars in annual revenue to the state.

These industries are based on a renewable resource which, with proper fostering, can be maintained and extended for future generations of Alaskans. There is no indication that the demand for fisheries products in the United States or worldwide will decrease. Rather, the reverse is likely. Whether this future will be in relatively scarce, high value luxury products as much of it is today, trend toward more volume at a lower price to satisfy protein requirements or, as is more likely, some variable mix of the two, is not completely forecastable at this time. Development of major protein fisheries such as groundfish is market-dependent and includes questions of international politics.

The continued health and growth of this industry is dependent on a number of factors, some dealing with the resource itself and the regulation of harvest on it, others with the marketing and harvesting technology, and still others with institutional factors such as government regulation, tax, and financial assistance. I will address the first two, both of which require research, monitoring, and implementation programs to be effective.

Industry, of course, is dependent on the resource itself and the abundance and availability of that resource. The major areas of concern are the (1) maintenance of reproductive success for major resources; (2) maintenance of existing fisheries; (3) optimization of biological and economic yield in these fisheries through the accurate identification of available annual surpluses for harvest and regulation of the fisheries to make those surpluses available in as economic a fashion as possible; and (4) the extension and development of both new and existing fisheries. A fifth category might be the nonreproductive requirements of the resource to sustain itself at a high yield--particularly habitat concerns.

Resource Knowledge--Management

This category generally covers the first three items mentioned above concerning brood stock, maintenance of fisheries, and optimization of yield. It basically includes all of the data gaps regarding the resource itself as they affect our ability to perpetuate the harvest of that resource consistent with our objectives. These data gaps include insufficient knowledge about the magnitude of the resource, its basic biology, its reproductive characteristics and requirements, its relation to the ecosystem of which it is a part, particularly the relationship of the harvest of it or other species on each other. Desirable outputs include definition and forecast of harvestable surplus by major reproductive stock; inseason management by identifiable stock units; and harvest management strategies that can be advanced to various user groups in deciding on allocative problems.

a. Reproductive requirements: Obviously we must safeguard reproductive brood stock of important commercial and recreational species. Generally this consists of defining numbers, characteristics, and distribution of breeding populations and regulating harvest to achieve them. When information on these requirements is lacking or ability to measure the actual brood stock is poor, management is necessarily conservative with potential loss of available harvest. In some cases these losses may be substantial. There are fisheries resources around the state that, despite management efforts, continue in a depressed state or are actually declining. In many cases this is a result of our inability to either refine the reproductive requirements or to obtain them. In certain mixed stock fisheries such as in Southeastern Alaska it resulted in less productive species being overharvested. The level of depression has often been in direct proportion to the complexity of the stock mixture, interacting fisheries, the number of stocks involved, and the lack of a good data base. Certainly further research is required on reproductive requirements, including studies of population abundance fluctuations as related to brood stock levels versus other environmental factors.

b. Maintenance of existing fisheries: In the context of science and technology needs I do not think I'll spend very much time on this category. Certainly the maintenance of existing fisheries requires annual projects to monitor the abundance of the resource and allocate harvest appropriately. Most of these resources fluctuate dramatically on an annual basis and the harvest must be tailored to these fluctuations. Even where the techniques are known sometimes very sophisticated resource assessment and monitoring programs must be carried out to support this activity.

c. Optimizing yield from existing fisheries: In many cases we have fisheries that are well managed from a stock status standpoint. We manage to preserve the basic reproductive quality of the resource and harvests are held at a relatively long term consistent level within the limits of natural fluctuations. This does not mean that we are realizing the maximum benefits available from these resources. Often improved ability to manage individual stock units with their differing levels of productivity will increase the annual surplus available in these various fisheries. Much of the work needed in this arena is not new or exciting in terms of technique, but rather an expansion of existing, relatively similar techniques to a broader number of stocks and fisheries. This area includes such things as inseason abundance estimators, stock separation, improved forecasts, better definition of brood stock requirements. We need an improved knowledge of the basic biology of the species and how it relates to associated species.

Aside from the more biological aspects of appropriate harvest levels by stock, we have also heard a great deal about industry preparation and quality of product. Obviously from a marketing standpoint, industry and fishermen need a better forecast to prepare for each season often in the face of resources demonstrating rather wide natural fluctuations. The longer in advance a forecast of some accuracy is made available, the better use that can be made of surpluses. Forecasts of a general nature can be made years ahead of time, refined further a year in advance of the season, and then updated as the season progresses. We have also heard a lot about fish quality and it is quite obvious that manageability and fish quality go hand and hand. For example, the better our forecasts and inseason run assessment by stock, the more latitude we can allow in terms of harvest of resources farther from their point of origin in the case of migratory species. This allows processing over a longer time period, prevents gluts, and often allows the harvest of a higher quality product.

Extension and Development of Fisheries

a. Developing fisheries: In this category marketing and economic information comes strongly into play. Nevertheless, there are also major questions about resource status, abundance, distribution, and the effects of harvest of that particular resource on other species either due to stock interactions or because of impacts of the gear use on associated fisheries. Generally agencies are not funded to carry on this type of work very well, since there is no established constituency clamoring that the work be done. However, a number of people are usually interested in getting into this type of operation. It requires an investment against a potential future return, not necessarily supported by any existing tax structure. In this arena from the state perspective, research on domestic groundfish fisheries, and perhaps particularly those around communities and inshore areas where small Alaskan boats are most likely to get involved, would have a high priority. Some herring fisheries are still expanding against a woefully inadequate data base, and there are opportunities in some of the bivalve fisheries, particularly if problems associated with paralytic shellfish poisoning are brought under control.

b. Extension of fisheries: Fisheries extension can be accomplished in some cases through supplemental production technology, particularly in the case of hatchery production of salmonids. This area shows real promise for contribution to the fisheries industry in Alaska, especially in areas of depressed fisheries. Development of brood stocks, precautionary measures to avoid disease problems, development of harvest management strategies to prevent overharvest of natural stocks dictate that the commitment to enhancement and rehabilitation must be long term, although significant short term gains are being made. Keep in mind, too, that Alaska is going to lose salmon habitat to logging, mining, industrial development, and population growth. Now is the time to develop and perfect rehabilitation and enhancement techniques.

Aside from the specific biological resource/management research considerations discussed above, there are a few other areas that perhaps should be highlighted.

Socioeconomic Characteristics of the Fishing Industry

There is a need for a comprehensive survey of the value of fish and wildlife resources to the state, to specific geographic areas, and to various communities. This survey should cover recreational, commercial, and subsistence values and include indirect benefits as well as direct benefits such as price paid to fishermen for their harvest. This should not be a one shot study which, while important as a data base, would be of limited usefulness as a predictor or continuing assessor of these parameters in a rapidly changing situation. Looking at world fisheries and marketing and what's happening in Alaska today demonstrate that these questions are going to be with us for a long time and the information should really be available to form the basis for annual planning. The recent dramatic changes in resource availability in such things as bottomfish, recovered salmon runs, the questions raised this year and last by Bristol Bay processing capacity, and exercise of legislation and regulations to respond to the question engendered by too many fish, show the dynamic nature of the problems we face. The state, or somebody, needs some ongoing, centralized entity to look into fisheries marketing and economics. The needed study should include an updating mechanism whereby the information generation and maintenance of a model of fisheries economics in the state is an integral part of the study recommendations.

Habitat Related Fisheries Questions

There are two primary priorities requiring more study and attention. First might be the effects of logging on fisheries. In Southeastern Alaska this has been a recurring question. There still exists uncertainty as to what the total impact of logging to date has been on the resource and an inability to quantify relative resource damage. We have some ideas of how to minimize damage, mostly based on inferential or commonsense parameters, but there are some really pressing questions to be answered regarding leave strips, the effect of canopy (or lack of it) on stream temperatures, log dumps, and other forms of estuarine disturbance.

The second priority habitat research concerns instream flow and hydroelectric development. Generally, we need to better understand the relationship between the volume of flow and fluctuations in flow and water temperature to production of fish in our various river systems.

Ecosystem Analysis

Resource management operates along a continuum from management of single species by themselves to management of a total ecosystem. Given the complexities of most ecosystems, it may never be possible to totally achieve something called ecosystem management. Nevertheless, we certainly cannot manage for single species with no regard to the effect on other species. Effects may be in terms of incidental harvest of associated species or the effects on the ecosystem as a whole of the removal of a large volume of fish. Our understanding of predator-prey relationships and impacts on stock reproduction are primary concerns.

Fisheries Technology

Another aspect of optimizing yield for fisheries includes research into fisheries technology. Particularly at current energy costs, if we can discover cheaper ways to harvest and process fish, coupled with improved quality and marketing of the product, both fishermen and industry would be the beneficiaries.

I have not suggested the priorities or given specific project proposals. I have tried to emphasize that the fishing industry requires a great deal of additional knowledge about the resource upon which it depends and means by which that resource can be protected, enhanced, and/or developed.

It was requested that we mention something on the effects of Federal budget cuts. Federal dollars in direct grants in aid to the states support a substantial part of our research on fisheries in Alaska.

Over \$700,000 in Federal funds is spent in cooperatively funded research programs on salmon forecasting, logging-habitat studies, shellfish indexing programs, salmon inseason abundance estimates and similar projects. Funding for these programs will probably be terminated in FY 82.

Potentially as damaging to the acquisition of needed fisheries knowledge may be reductions within the Federal program itself. We depend heavily on certain Federal research and resource monitoring projects dealing with stock assessment on groundfish and shellfish, Outer Continental Shelf oil and gas leasing impacts, high seas salmon interceptions, effects of logging and other development and various resources' population dynamics. Most of these programs are within the National Marine Fisheries Service. We do not yet know which specific projects may be dropped or even the magnitude of budget reductions overall affecting Alaska.

Hearings on the Role and Status of Science and Technology in Alaska before the Senate and House State Affairs Committees

A. Overview of Alaska Science and Technology: A Panel Presentation

- 9:00 a.m. ✓ Alaska and U.S. Arctic Science Policy - D.M. Hickok, AAAS, Alaska
- 9:10 a.m. ✓ Who is Involved in Alaska Science; Areas of Greatest Emphasis - L. Underwood, University of Alaska *AEIDC*
- 9:20 a.m. ✓ Findings of Alaska Council on Science and Technology Hearings on the Status and Direction of Federal Science in Alaska - W. Parker, ACST
- 9:30 a.m. ✓ Priority Needs and Other Issues connected with Science in Alaska - T. Neil Davis, ACST

(NOTE: The full text of reports on the above will be available; presentations will be summaries)

- 9:40 a.m. ✓ Questions and Dialogue between Legislative Members and the Panel
- 10:00 a.m. ✓ Break

B. Public Interest in Science and Technology in Alaska

Link between Public & Science

- 10:15 a.m. ✓ Statement from the Press *Joe LaRocca, Doug McConnell - bridging gap*
- 10:35 a.m. ✓ Questions and Dialogue between Legislative Members and the Press Representative

C. Science and Technology Needs and Priorities: 10 Minute Presentations by Government, Industry, and Public Witnesses (with filed statements). There will be 5 minutes for committee dialogue with each witness.

- 10:45 a.m. ✓ State of Alaska - Governor's Office *Fran Ulmer*
- 11:00 a.m. ✓ Oil and Gas Industry - AOGA Representative *Rick Shafer*
- 11:15 a.m. ✓ University of Alaska - J. Barton, President *George West*
- 11:30 a.m. X Sealaska Corporation - B. Mallot, President
- 11:45 a.m. ✓ Health and Medicine Community - *W. Meyers, WAMI*
- 12:00 a.m. ✓ Resource Economics - Lee Gorsuch, Director ISER
- 12:15 p.m. ✓ Fisheries Industry - Steve Pennoyer, ADF&G *[Signature]*
- 12:30 p.m. *12 PM* Agriculture Industry - Charles Logsdon, Agresources *r local, disting. career*
- 12:45 p.m. *1:12-20* Coal Industry - Cole McFarland, Placer Annex *Phil Holdsworth*
- 1:00 p.m. *1:23-30* Mineral Industry - Dave Heatwole, Anaconds *Tom Crafford*
- 1:15 p.m. *1:30-37* Energy Center - Gordon Zerbetz, Director

ill. submit in writing

OUTLINE OF COMMENTS BEFORE JOINT STATE AFFAIRS COMMITTEE
ON THE ROLE OF RESEARCH AND ON
THE ALASKA COUNCIL OF SCIENCE AND TECHNOLOGY

By:
Frances A. Ulmer

General comments about original purpose of Governor's support for ACST.

Identify several areas which Council should concentrate on.

I Research is an important tool for management. Good decision depends on good information in both public and private sector.

- need to build the research capacity to provide us with the information we need to make good decisions;
- need to educate ongoing managers to use it, to ask for it; and
- need to continually strive to improve communications between research committee and decision makers.

Recognition of lack of confidence that research can be relevant, timely, actually impact decisions.

Build confidence and develop broad consenses on what's most important (among all sectors and the public) develop 3 to 5 year research agenda.

II Federal cutbacks in funding for research:

- need to analyze the proposed cuts;
- evaluate which are the most serious;
- identify those which State should lobby Congress to keep; and
- identify those which State should fund if feds don't.

NOAA OCSCEAP cuts \$20 million to \$16 million to \$8.6 million, how to make decisions without this information? Which decisions most imminent; which research most needed, first?

III Partnership between public needs and private needs for research.

Technological innovation economic growth for the 80's.

The U.S.A. has experienced serious productivity declines; Science and Technology can help. We need to contribute to this effort.

NGA efforts committee work on technological innovation:

California private sector bridge:

"Investment in Economic Strength" program.

Natl Gov Assn Mtg Feb Wash DC
1980

*Technological Innovation: Economic Growth in the 80's
Columbia A, Lower Level*

California Gov. Edmund Brown, Jr., vice chairman of the association's Committee on Transportation, Commerce and Technology, will serve as moderator for the day-long meeting. The conference will examine the potential of technological innovation for helping to solve such key national and state problems as unemployment and inflation.

The conference's overall purpose is to lay the framework for a policy on technological innovation to be drafted over the next 6 months by the NGA's Committee on Transportation, Commerce and Technology.

The conference will focus special attention on the potential of knowledge processing and resource-efficient technologies. At the same time, the conference will highlight the need for a better working relationship among business, labor and government to meet the challenges of heightened international competition and domestic resource and energy constraints.

A National Science Foundation study released last year found that state and local governments have moved in recent years to replace declining federal research and development support with their own funds. The NSF study found that in fiscal 1977 (the most recent year for which there was complete data) state and local governments provided about one-half of the funds expended on their R&D programs, with federal agencies accounting for most of the remainder.

NSF also found that, beginning in the mid-1960s, states began to develop policies for the use of science and for incorporation of R&D activity into program operations and into state planning at the highest levels.

In the past few years, the steady deterioration in the nation's economy and world trade posture has contributed to interest in high technology industries. California, for example, is proposing a \$15 million package of state incentives aimed at protecting and stimulating high technology industries in the state. A recent study indicates that nearly one of every four new manufacturing jobs in the state are in high technology industries. Other states also are looking at ways to stimulate similar industries: North Carolina last year committed \$1.8 million in state funds for a new microelectronics research center; Minnesota legislators are considering financing the expansion of a similar facility at the University of Minnesota; and Ohio has set up a \$5 million fund to make direct loans to high technology industries.

In Maryland, Gov. Harry Hughes worked for establishment of the Maryland Ocean Thermal Energy Conversion Corporation, which promotes commercialization of ocean thermal energy technologies as a means to spur employment in the state. Engineering plans and

designs for the technology were developed at Johns Hopkins University.

New Jersey Gov. Brendan Byrne, in his 1981 state of the state message, indicated that the state will undertake a major effort to attract new high technology industry, especially technology linking computers and communications.

Michigan Gov. William Milliken has proposed establishment of a technology-based innovation fund in the state Department of Management and Budget to fund developing research and technology and application projects.

In Colorado, 86,000 new residents are expected by 1990 as a result of technological advances that contribute to energy development of the state's natural resources. In Massachusetts, many economists attribute the relatively strong showing of the commonwealth's economy to successful efforts to attract high technology industries.

The panel discussions at the conference will investigate what the private sector, labor and government can do to spur technological innovation.

The first panel is expected to stress the importance of technological innovation for economic growth, jobs, and lower inflation and will include an evaluation on the expected directions of the American economy in the 1980s. The panel will emphasize the potential of information processing technologies for increasing productivity and relatively resource efficient economic growth.

The luncheon speaker, David Kearns, president and chief operating officer of the Xerox Corporation, will discuss the role American corporations need to play in the 1980s to promote technological innovation, both internally within the corporation and externally in working partnerships with other sectors of the economy.

The second panel will present a series of views on the role of labor in contributing to economic growth. Such questions as worker involvement at the workplace, worker purchase of stock, and the potential of labor pension fund investment for promoting technological innovation will be discussed.

The third panel will discuss the role of federal, state and local government in promoting technological innovation. The role of government in capital formation, research and development, working with universities, and increasing its own productivity through technology is expected to be discussed.

The final panel will stress such questions as the importance of increasing efficiency and productivity in the use of energy and resources and will introduce the technology exhibits that will be on display in conjunction with the conference.

PARTICIPANTS

GAR ALPEROVITZ

Gar Alperovitz is Co-Director of the National Center for Economic Alternatives, a Washington-based organization which conducts research and develops proposals for economic policy.

Dr. Alperovitz is Chief Economic Adviser to C.O.I.N. (Consumers Opposed to Inflation in the Necessities), a coalition of national consumer, labor, minority and religious groups. He has offered testimony before a number of House and Senate Committees, and served as legislative Director in the U.S. House and Senate. He and his Co-Director, Geoffrey Faux, are currently completing a book entitled Rebuilding America.

Dr. Alperovitz earned his B.S. degree from the University of Wisconsin, a M.S. degree from the University of California at Berkeley, and a Ph.D. in Political Economy from the University of Cambridge.

LES AUCOIN - Chairman, Industrial Innovation Task Force, U.S. House of Representatives

Les AuCoin is a United States Representative from Oregon and is Chairman of the Task Force on Industrial Innovation.

Congressman AuCoin has worked as a newspaper editor and journalist, and was elected to the Oregon State House of Representatives, where he served until his election to the U.S. Congress in 1975. Since his election he has served on various committees, including the Appropriations Committee and the Committee on Banking, Finance, and Urban Affairs. He was made chairman of the Task Force on Home Ownership in 1978.

Congressman AuCoin is a native of Oregon.

EDMUND G. BROWN, JR.

Edmund G. Brown, Jr. of California was first elected Governor in 1974 and re-elected in 1978.

He served as Secretary of State from 1971 through 1975.

He worked as a research attorney for the State Supreme Court and for a Los Angeles law firm. In 1969 he was elected to the Los Angeles Community College Board of Trustees.

Governor Brown is a graduate of the University of California and received his law degree from Yale University.

GEORGE E. BROWN, JR.

George Brown was first elected to the United States House of Representatives in 1962. He served for eight years, sought the U.S. Senate seat in 1970, and returned to Congress in 1972 as representative of the Riverside-San Bernardino area of California. He is a senior member of the Science and Technology Committee where he serves on the Subcommittees on Science, Research and Technology; Natural Resources, Agricultural Research and Environment; and Space Science and Applications.

Congressman Brown is a native of California. He graduated from the University of California at Los Angeles with a degree in Industrial Physics.

SOLOMON J. BUCHSBAUM

Solomon Buchsbaum is Executive Vice President, Customer Systems at Bell Laboratories. He is responsible for customer services, processor and common software systems, computing technology, design engineering, and military systems.

Dr. Buchsbaum joined Bell Laboratories in 1958, and became Director of the Electronics Research Laboratory in 1965. In 1968, he became Vice President in charge of research at the Sandia Laboratories. He returned to Bell Laboratories in 1971.

Dr. Buchsbaum received his B.S. and M.S. degrees from McGill University and his Ph.D. from Massachusetts Institute of Technology. He is a native of Poland.

BRENDAN T. BYRNE

Brendan Byrne is in his second term as Governor of New Jersey.

Governor Byrne served his legal clerkship with Judge Joseph Weintraub, who later became Chief Justice of New Jersey. He was made Essex County prosecutor in 1959, and served in that position until 1968 when he was appointed to the Public Utilities Commission. In 1970 he was appointed to the Superior Court, where he remained until his election to the Governorship.

Governor Byrne is a native of New Jersey and graduated from Princeton University School of Public and International Affairs. He received his law degree from Harvard University.

DONALD F. EPHLIN

Donald Ephlin is Vice President of the United Auto Workers Union.

From 1968 until 1977, Mr. Ephlin served as Administrative Assistant to Leonard Woodcock, who was director of UAW GM Department, and later became President of the United Auto Workers. In 1977, Mr. Ephlin was elected Director of UAW Region 9A which covers 50,000 UAW members in the northeastern United States.

Since 1971, Mr. Ephlin has been active in the development of union programs to increase employee participation and improve the quality of worklife. He served on the GM national Committee which initiated the quality of worklife.

Mr. Ephlin was born in Massachusetts. He currently resides in Michigan.

ROBERT C. HALL

Robert Hall is President of Satellite Business Systems, a position he has held since 1979.

Mr. Hall was employed by Control Data Corporation from 1961 to 1972, when he became first President, Chairman, and Chief Executive Officer of Securities Industries Associations Corporations. Before assuming his present position, Mr. Hall was Executive Vice President of the New York Stock Exchange.

Mr. Hall earned a B.S. in Mechanical Engineering from the University of Iowa. He is a native of Iowa.

HARRY HUGHES

Harry Hughes won election as Governor of Maryland in 1978.

Governor Hughes was elected to the Maryland Senate in 1958 and served until 1970. He won Senate Majority Floor Leader and Chairman of the Senate Finance Committee from 1965 until 1970. In 1971, Governor Hughes was appointed first Secretary, Maryland Department of Transportation, a position he retained until 1977.

Governor Hughes is a native of Maryland. He received his B.S. degree from the University of Maryland, and his LL.B. from George Washington University.

JAMES B. HUNT

James B. Hunt, Jr. is Governor of North Carolina. He was first elected in 1976, and reelected in 1980.

Governor Hunt served as an economic advisor to Nepal from 1964 to 1966. Upon returning to the United States, he practiced law in Wilson, North Carolina. As Assistant State Democratic Party Chairman, he supervised the reorganization of the party structure to allow greater participation by women, minorities, and young people. Hunt was elected Lieutenant Governor in 1972.

Governor Hunt was born in North Carolina. He earned his B.S. and M.S. at North Carolina University, and received a J.D. from the University of North Carolina School of Law.

DAVID T. KEARNS

David Kearns is President and Chief Operating Officer of Xerox Corporation. He is Director of Rank Xerox Limited and Fuji Xerox Company Limited.

Mr. Kearns was a Vice President in the data processing division of International Business Machines Corporation. In 1971, he became Corporate Vice President at Xerox. He has held various other positions at Xerox, including Vice President in charge of marketing, Vice President in charge of international operations, and Executive Vice President.

Mr. Kearns was born in Rochester, New York, and graduated from the University of Rochester with a degree in business administration.

FRANCIS KELLY

Francis Kelly is Executive Vice President in IDS Advisory, a division of Investors Diversified Services, Inc. The Advisory is responsible for the management of pension funds.

Mr. Kelly worked for eighteen years on Wall Street as an Investment Analyst, Economist, and Director of Research. He joined the Investors Diversified Services Advisory as a Senior Vice President-Portfolio Manager in January, 1980.

Mr. Kelly is a native of Scotland, where he studied philosophy, political science, and political economy. He holds an advance degree in Political Economy from the University of Edinburgh.

RICHARD D. LAMM

Richard D. Lamm is in his second term as Governor of Colorado.

Governor Lamm was an attorney for the Colorado Anti-discrimination Commission from 1962 until 1963. From 1963 until 1974 he practiced law in Denver, and served as a Professor of Law at the University of Denver from 1969 until 1974. In 1966 he was elected to the Colorado House of Representatives, where he served as Assistant Minority Leader from 1971 until 1974.

Governor Lamm is a native of Wisconsin. He earned his B.A. from the University of Wisconsin, and his L.L.B. from the University of California.

DELMAR L. LANDEN, JR.

D.L. "Dutch" Landen is director of Organizational Research and Development (ORD) for General Motors, a position he has held since January 1966. ORD coordinates quality of worklife activities throughout General Motors.

Dr. Landen is an Adjunct Professor of Management and Psychology at Wayne State University, and serves on the board of directors of the American Quality of Work Life Center. He is also a member of the Human Resource Advisory Committee of the American Productivity Center.

Dr. Landen obtained his B.A. and his M.A. in Experimental/Theoretical Psychology. He earned his Ph.D. in Industrial/Organizational Psychology from Ohio State University.

A.C. MARKKULA

A.C. (Mike) Markkula is Executive Vice President and Chairman of the Board of Apple Computer.

Mr. Markkula worked for four years as Marketing Manager at Intel Corporation. He also held key marketing positions at Fairchild Semiconductor Corporations, and Hughes Aircraft Corporation. He joined Apple Computer as Vice President, Marketing, in May 1977.

Mr. Markkula received his B.S. and M.S. degrees in electrical engineering from the University of Southern California.

WILLIAM G. MILLIKEN

William G. Milliken is in his third full term as Governor of Michigan.

Governor Milliken served as a State Senator from 1960 to 1964, and as Lieutenant Governor under Governor George Romney for four years. In 1964, Governor Romney became U.S. Secretary of Housing and Urban Development, and William Milliken assumed the Governorship. He was elected to a full term as Governor in 1970.

Governor Milliken served as Chairman of the National Governors' Association from 1977 to 1978. He is a graduate of Yale University.

WILLIAM C. NORRIS - Chairman, Chief Executive Officer, Control Data Corporation

William Norris is Chairman and Chief Executive Officer of Control Data Corporation. Mr. Norris founded Control Data in 1957.

Mr. Norris participated in the founding of Engineering Research Associations, a company that contributed to the development of digital computer technology. ERA merged into Sperry Rand Corporation, where Mr. Norris worked through mid 1957.

Mr. Norris has authored a series of booklets addressing the use of technology to solve society's problems. He assisted in the founding of City Venture and Rural Venture, organizations which plan and manage programs for redevelopment in low-income areas.

Mr. Norris is a native of Nebraska, and a graduate of the University of Nebraska, where he received a degree in Electrical Engineering.

ROBERT N. NOYCE

Robert Noyce is a founder and Vice Chairman of Intel Corporation. He served as President until 1975, and Chairman until 1979.

Dr. Noyce worked in the Research Division of Philco Corporation from 1953 until 1956, when he joined the Shockley Semiconductor Laboratory of Beckman Instruments. In 1957, Dr. Noyce became one of the founders of Fairchild Semiconductors. In 1968, Dr. Noyce joined with others to found Intel Corporation.

Dr. Noyce is a native of Iowa. He received his B.A. degree from Grinnell College, and his Ph.D. degree in Physical Electronics at Massachusetts Institute of Technology.

THOMAS O. PAINE

Thomas Paine is President and a Director of Northrup Corporation.

Dr. Paine was appointed Deputy Administrator of the National Aeronautics and Space Administration (NASA) by President Johnson in 1968. He was appointed Administrator of NASA in 1969 by President Nixon. Dr. Paine directed NASA during the first Apollo Missions, including the first landing on the moon. In 1970, Dr. Paine returned to General Electric as a Vice President and Group Executive. In 1973 he was appointed Senior Vice President of GE for Science and Technology.

THOMAS O. PAINE - Continued

A native of Berkeley, California, Dr. Paine received an A.B. degree from Brown University. He earned an M.S. and Ph.D in Physical Metallurgy from Stanford University.

MARKLEY ROBERTS

Markley Roberts is a member of the AFL-CIO Department of Economic Research, where he has served since 1971.

Dr. Roberts was employed by the Washington Star from 1952 to 1957, when he took a position in Senator Hubert Humphrey's office. In 1961 he became a member of the AFL-CIO Department of Legislation, where he remained until 1971.

Dr. Roberts earned a B.A. at Princeton University, an M.A. and a Ph.D. in Economics from American University in Washington. Dr. Roberts' parents were missionaries residing in Shanghai, China at the time of his birth.

ROGER SANT

Roger Sant is director of the Energy Productivity Center of the Carnegie Mellon Institute where he has served since the summer of 1977.

Mr. Sant was assistant administrator of the Federal Energy Administration, Conservation Activities from 1974 until 1976. He has also been a Professor of Business at the Stanford School of Business.

Mr. Sant is the author of Least Cost Energy Strategy, published by the Mellon Institute in September, 1979.

Mr. Sant earned a B.S. from Brigham Young Institute, and a M.B.A. from Harvard Business School.

JOHN B. SLAUGHTER

John Slaughter is Director of the National Science Foundation.

Dr. Slaughter became Director of the Applied Physics Laboratory and Professor of the Department of Electrical Engineering at the University of Washington for Astronomical, Atmospheric, Earth and Ocean Sciences. He then served as Vice President and Provost of Washington State University at Pullman, where he remained until his appointment to NSF.

Dr. Slaughter earned a B.S. degree in electrical engineering, and a M.S. degree at the University of California, Los Angeles. He is a native of Kansas.

DOUG WALGREN

Doug Walgren of Pennsylvania was elected to Congress in 1976. He was made Chairman of the Subcommittee on Science and Technology in February, 1981.

DOUG WALGREN - Continued

Before his election to the House of Representatives, Congressman Walgren practiced law in Pittsburg. From 1973 to 1975 he was Corporate Council for Behavioral Research Laboratories, Inc.

Congressman Walgren earned a B.A. at Dartmouth and LL.B. from Stanford University. He is a native of Pennsylvania.



Alaska State Legislature

Senate Committee on State Affairs

Vic Fischer, Chairman • Pouch V • Juneau, Alaska 99811 • (907) 465-4954

Official Business

M E M O R A N D U M

TO: Legislators

FROM: Senator Vic Fischer ^{VP} and Representative Mike Miller

DATE: April 27, 1981

RE: Role and Status of Science and Technology in Alaska

Science in Alaska is big business. Nearly \$200 million are spent each year in the state on scientific research involving hundreds of projects. The results of such research may well provide a key to our future.

The House and Senate State Affairs Committees recently held hearings on the status of scientific research in Alaska. The most significant issues discussed were the impact of proposed federal budget cuts, the controversy over research priorities and coordination, the importance of providing scientific information to the public and decision makers, and the future role of the Alaska Council on Science and Technology in light of these issues. A summary of the major issues, brief excerpts of the presentations, recommendations, and a statement from the ACST on its role are attached.

Full proceedings are available in the Office of the Governor, Senate President, Speaker of the House, Senator Fischer, and Representative Mike Miller.

I urge your careful consideration of science issues and look forward to your comments.

/sq

Recommendations

1. The Alaska state legislature should transmit a resolution to Congress citing the importance of Arctic science in resource development, defense, and environmental health and requesting the Congress to convene hearings on arctic science policy.
2. The Alaska Council on Science and Technology should take all steps possible to communicate Alaskan interests in arctic science policy to the federal committee on Arctic policy established by section 1007 of the National Interest Lands Act.
3. The Alaska Council on Science and Technology should promote cooperative science programs between government and industry for resource developments.
4. The Alaska Council on Science and Technology should develop a program for information exchange between the science community, decision makers, and the general public.

Things to Remember

- Ask people to state name + affiliation for the record
- Be sure to get all written statements assembled.
- Limit testimony to 10 minutes

Members present - Vic + Mike

(1)

4/11-81

Senate House State Affairs Sci-Tech

0027

Vic opens meeting + outlines agenda

0034

Mike Miller makes opening statement
"Get Sci-Tech on the record"

0047

Thanks Chris Neuh

0061

Panel members pull up to table
Hickok, Underwood, Parker, Davis (?)

0070

- requests they watch the clock.

- Vic explains "legislative participation limited"

0083

Dave Hickok - present highlights of paper on
need for support for technology in
U.S. + Arctic - need for Arctic Policy
to be built in U.S. (beginning w/ E.L. Bell
Penthetts efforts → ? → LBJ - died with him)
Nat'l Sec. Advisor Kissinger → "no discussion of
Arctic science"

0129

Paper outlines needs in areas of Nat'l Resources,
Environmental Change, Climatic Change,
Health + Welfare of people + Nat'l Security
Barriers to development of science policy
- Industries lack basic knowledge needed.

page 2

9:17
0144

- Efforts in polar science → Antarctic

- People in Arctic - deserves
some attention

Conduct of science in govt (Fed + state) is
procedural rather than oriented toward
developing ^{new} knowledge.

0168

(Hickock still) - Difference made by
indigenous people & their participation -
their sense of values.

If U.S. is to meet energy, mineral + defence
needs there can be partnerships -
state - fed govt, industry & science -
must be done soon

Arctic dilemma must be solved.

0199

- Vic asks for each panel member to give
name

0214

- Underwood, outlines CRP paper



physical, biological, social

page 3

Underwood

0228

Outlines breakdown by discipline - research being done in biological sciences, geology, oceanography, social sciences etc.

9:06

Trends (comparative) → gradual increase (34% 1976-7) in amount of research (1978-79 decrease 3%) - effect of tightening economy -

Where location of projects → South central at top of list...

Where home residence of scientists - more in South central

0278

Who conducts projects - Feds, State (Ug A) Governmental agency 1/2, State 1/2, academia 1/3

0298

- Vic - Did you make any comparison of \$ amounts

0301

Yes - project supports Fed (60%) State (25%?)

- \$ support - Fed (80%) state (16%)

Misleading as a lot of state % is Fed matching - Fed about actual 90%

200 Million > Total ~~output~~ cost -
~ 180 Million Fed

0324

- Has downward trend of 79 continued -
What is impact of Fed impact

page 4

on process of knowledge accumulation
in scientists.

0335 - Walt Parker -

Substantial reduction in Federal
monies - we will lose expertise of
Federal level.

(9:30)

Gaps in agency response - hydrology,
soils info., ice information, climatology

NOAA Fleet reduction → areas difficult to
replace - ^{specialized} research

Life sciences: environmental health -
programs have been largely eliminated.
State & private interests have not picked up
slack

Transportation - Increase in (6) surveillance
but not much new technology.

0440

Part's & Rec., Wildlife Research
- Effect of Federal cuts continues -

Cancel all research + dev't in alternate
energy ~~or~~ or fossil fuel research.

0453

Upsurge in private sector - Fed programs either

(5)

Jack Fuller + Mitch Abood Show

Stationary or ⁱⁿ decline

0462

Walt - continues

Impact on support services

Emphasis taken off environmental & energy programs -

0480

Neil Davis - ACST

- Alaska's current investment in research + development too small (1/2 that of Canada in relation to GNP)

ACST in past two years has been examining research priorities - Developed by 13 ad hoc committees of scientists -

0533

Even after identifying areas to be emphasized management of programs + procedures must be developed. Systems in place - operating on a low level:

0566

- End Neil -

Introduction Mitch + Jack

0570

- Mike amazed by small amount of private investment. - Is it all petroleum related?

0578

Dave Hickock - Largely, yes. AOB A^{improvement}

page 6

0594

Vic " How do you define "Alaska Science"?

0601

Dave H. → Interface Arctic - Alaska Science

Vic → Underwood - you were talking about all Alaska

0621

Dave Underwood - our primary concern - future of research.
20-30 million need

0641

Mitch Abood - Four comparisons are of Alaska to other countries (Russia, Sweden, Canada) - we are merely a state - can't U.S. pick up 20-30 million.

D.H. of course - partnership of state + Feds

0655

Fuller - how much shared into is there between U.S. + other countries

0661

- W. Pinker - Not much - no formal mechanism - even w/ Canada ~~the~~ only individual relationship

D.H. - Some exchange of data base w/ AIIDC + Calgary

page 7

0698 N. Davis - Atmospheric, space, aurora
borealis

0686 - Fuller - how much further ahead ~~than~~ Russia
is in winter construction, ice technology

0698 W. Parker - Not any vigorous exchange

0700 ^{Russia} advanced soil science, permafrost, etc. - Russia
much further along. - N. Davis

0715 Aboud - Private companies have volumes on
perma-frost (pipeline) if we can't apply
that information what good does it
do to repeat studies.

0740 Vic - To what extent is ACST going to come up w/
priorities

0744 - N. Davis - ongoing process rather than a point
in time

Re: oil companies research - they do not
know enough about basic physics of soil,
much is proprietary info which must be
bought

page 8

0762

view - partnership of industry + public sector necessary

0776

D.H. > do not have answers to how to bury pipeline - security of it.
Partnership between getting ahead of pipeline

(responsibility of public sector to learn certain facts

10:05

0793

- UF "How is ACST working out?" Do what extent are exec. legis. agencies showing an interest / being ~~more~~ affected in their activities.

0802

Neil Davis

- More interest from legis than exec. - limited in what we can do - we have had to rely on much volunteer labor. Increasing communication - 2 way - would like to see it improve.

0812

Size of operating budget. -

0824

UF How is grant money holding out (Northern Technology)?

Chris Noah - teaching out in Northern Tech - needed in research grant funds

0830

DA - larger question (ACST as a state Science Foundation - Nat'l Hazard Problems) not adequately funded.

(8)

0839 - VF Will you be coming to the legislature
& responding to priorities emerging from studies

0844 N. Davis - mm

0849 D. H. - ACST doesn't really care who gets
money

0853 Mitch Abbod - I do!

What about ice fog!!! as an example

Freight, aircraft

0875 VF - Jumps to Ben Franklin's defense

Mitch has practical interest in agriculture &
transportation

10:15
0857

Neil Davis - There may be no solution
to ice fog! By putting money into a
project like that we still hit on answers.
What is use of building RR that collapses
in 5 years.

0902 Mitch - doesn't object to Sci-Tech -
I'd go to Federal govt, someone
who's built a rail road!!!

0903 - VF - As someone who has been part of
scientific community I would not avoid
new for problem - Solutions are emerging &

0912 we can find ways to protect people.
I hope Council processes bringing
me answers.

0918 - Break.
10:15 Miller left.

0921 - B. Dohie Interest in Science & Technology
10:35
0930 Doug McConnell - Working in Alaska since 1973 -
concerned public w/ resources - TV Pgm -
Alaska Advocates - Public TV radio forum

Past decades years ahead - internally ^{strongly} assumed ^{visions}
resources etc. Choices must be made - 1. The
new advocacy info provided, we lag behind in
creating informed populations w/ the backdrop of democracy.
- Disparities - millions spent on Public TV.
system in little support for public programming
for information

0958 Linkage between SCI-TECH & importance of
public ⁱⁿ ^{publications} for progress in ^{publications}
0964 ^{advocacy} ^{measures} - difficulty of governmental ^{word} ^{doing}
technical writing.
There is interest in modes for info.
Pete Carran KRM said - Donahis required to
deal w/ scope of issue - want to call
someone to get our advocacy info. - ^{we} ^{dead} ^{up} ^{advocates}

10

0984

Orig cont.

Public is hungry for info about Alaska of well-produced.

0991

- Nat'l Science Foundation grant (format for broad dissemination) - 60 second slots for scientific tidbits - (Has been going on for 6 or 7 mos.)

1003

1045

Economics dictate against broadcasters working up their own material. We can provide this - there is a need. Funding usually comes from outside. Question state must ask -

1028

End long

1030

Joe La Roche - speaks for loss of public interest of Sci-Tech.

- Disclaimer - planned to speak as member of press but will not speak for press -

Newsmen like scientists - talking to ourselves or to each other!! Scientific community suffers from "chronic crisis of confidence" - caught up in critical phase

If scientists could communicate directly w/ public ^{via press} it would alleviate this problem.

Public is not priority esp. for science community.

1062

Scientists must make commitment to public at larger take public info off top of budget

(11)

Joe

1070

especially in light of their sustenance from donations,

- Professional technicians must be engaged for technical writing / media orchestration

1077

Science curricula should include a class in this skill.

Definable goals + constituency should be linked together. Building that constituency & fashioning that link will enable scientific community to achieve their goals - a large advocacy group can be developed w/ clout (political & \$\$\$)

1106

Inclusion of brief narrative account for media dissemination ~~for~~ those developing project proposals for profiles.

- Example - Neil Davis' column - Alaska's Carl Sagan - except Carl's material sometimes sinks to scientific level.

1120

- Doesn't aid scientific community to work on public issues. Brian Rogers - they are already advocates

1142

Abood to Doug -

How much info for the 60 second spots come from ACST.

(12)

1150 Dony - A lot from ACST, also at University
1155 other sources
Dony agrees to bring some ^{were running in last} ~~some~~ ^{night wind blew them} off the air.
(Brian Rogers shows)

1158 Mitch - problem of image of Alaska by U.S.
Can these 60-sec spots designed for use outside too.

Dony - ~~not~~ Not yet been an Alaskan team program for national distribution - one coming up on impact of T.V. ^{K.A.K.M.} on rural Alaska. for Nat'l Distribution.

We have important stories of national significance
K.A.K.M. also doing ~~one~~ on ^{del.} of U.S. & Western States | Stanford Commission / Saprobush Lab.
We now have the satellite technology at low cost to go to low 48. Actual distribution network is cheap.

1158 VT - Dony - you emphasized ^{non-advocacy} public info. already happening

- Issue of petrochemical industry development in Alaska, - people taking sides - current project being done by industry (they are doing snow job)

1202 How-Public involvement

1205 Dony - A Difficult challenge

1210

no prior experience, hard to gather information.
People need to extract it + present it.
Still no non-advocacy programs - need for
research

(Not lobbying for own group)

1228

Joe - It's been six months since irreversible
impact was begun (Reagan) isn't a mechanism
for dealing with it - Ovar Shell may or may
not come up w/ recommendations ~~with~~ in best
interests of states.

VF - Initial decision to go ahead w/ study
was done w/out public input.

1240

Joe - de facto decisions made
Have expertise readily accessible to
decision-makers so they can make informed
decisions - with the baseline data + banking
expertise. Support for scientific research
both pure + applied.

1250

Brian Rogers - how can public be made
aware -

Joe - assuming decision makers are involved -
research results will "fall out" into
public sector.

1267

Brian - what can we do?

JDC - also a function of scientists

Doug - cites training & background of scientists -
translation problem - got to be some
help in condensation & dissemination

JDC - "In a behaviourist"

End Tape

11270

Tape 2

C. A look at specific needs

START
0002

11:15

0019

Fran Ulmer - DPDP - on behalf of Gov's office

3 areas where research can be produced in timely
enough fashion for decision making purposes

ACST

Examine Problems in that relationship

- Effective communication ACST can bridge
that gap.

0063

Agency managers need to be educated in role
of science & research.

Research agenda more long range than 1 year

3-5 year plan of
ACST can build agenda for long range research

15

Present: Vic, Brian, Mitch

Fran

0089

- Impact of Federal cuts - research cuts

- Evaluate most likely cuts

Identify - have Gov's office work w/
Congress - not too late to identify
some research areas.

Legislature - must evaluate which Federal
cuts will be alleviated by state. (special
session?)

0120

- Technological Innovation: Role in economic
growth. Bridging technical gap.

0147

- Recent national concern for productivity:
ACST consider kind of work being done on nat'l &
Fed level - private & public sector working
together to bridge the gap.

0168

Brian - 3-5 yr. research plan - Council has
representation of private sector, public sector,
administration - do you mean those groups are
no longer represented on council as was orig. intended?

0193

Fran - Not enough consensus has developed.

Climate not provided for evolving a plan -

Council has large role & difficult assignment -
getting Legislators interested.

(12)

0205

- Brian - white wine developing 5 year plan
what about funding already identified
projects.

0220

Fran - Can't always wait until whole picture develops
Mitch - need to exercise common sense -
need to simplify for average person.

VF - To what extent does Gov's budget review
Committee look at research components
of budget

0248

Fran - a piece of each agencies budget

VF - any effort made to see interrelationships,
coordinate research
2. get U of A involved in
agency research.

0257

Fran
- B + M but must done with a comprehensive
view of research.

Council can identify

0267

AOGA - Rick Shaber - manager env. safety &
sex. for Sohio. 9 year resident (petroleum
head) These comments my own views

- 0414 George West (U of A) Vice President of - Affairs
 (Ray Burton out of country)
 U of A represents largest & most varied pool of scientific expertise in state.
 Only source of basic knowledge in Arctic science.
 Now research conducted through centers, by people in programs, on wide scope of issues.
- Research
 See Annual Report - Summary of hundreds of projects underway - Can provide data on which are Fed. funding.
- 0460 - Need for space, instrumentation, ^{new} programs - Faculty needs labs & office space. (60,000 more sq. ft.)
- 0471 (How much \$?)
 - Need for field ~~lab~~ bases in Arctic
- 0491 - Need for sophisticated instrumentation.
 Alpha Helix, electron microscope, etc.
 - Areas in which research is needed
 - soils, animal disease, water quality, volcanic & carbon dioxide research.
- Impact of Federal cutbacks
 Filling anticipated need: impact 14.3 million out of 3.5 million eliminated programs.

(15)

0288

Rich Shater - refers to Mrs Beasley
Forum of support for research

L P ~~R~~ C

(?)

- ABSORB - Beaufort Sea research

Link w/ Canadian research in oil spill
Technology.

0323

Current projects include examining impact of
discharge oil on shoreline / bowhead whale
population study.

Benefits of basic research accrue to society
generally - public should pick up cost.

mapping, weather data, hydrologic + oceanographic
+ geo-hazard info.

0350

Rich Shater -

Attempt may be made to shift economic
burden to oil companies. Gov't should expand
our knowledge - State can take a role in
sponsoring research projects w/ best benefit
to Alaskans

0397

0390

End Rich's presentation.

UF - What is extent to which this kind of work
is ~~copyright~~ proprietary?

0400

RS - Usually info is eventually released -
sometimes immediately

0408

End Rich

- 0665 Neil: ^{prioritizes}
legislators ACST → dissemination
- 0671 - Mitch - U of A more qualified to do that than ACST.
- 0695 Brian - Council to identify research needs - U of A folks carry out research
if money goes ~~into~~ directly to scientists it will end up being spent on their specialties (their priorities necessarily linked to areas of expertise)
- 0693 Mitch - cannot see benefit
- 0694 Brian - Council also identifies needs
- ~~Mitch~~
0700 - VF often takes ^{external} pressure - cross-fertilization
This is part of ACST role
small grant program encourages alternative solutions to small problems
- 0729 Brian - Agencies have developed research components - ACST may orchestrate some of these independent efforts -
designate appropriateness of agencies

0745

Brisen (cont)

roles of basic research - what good does it do!?! Example of rapid development of telecomm. in state due to 1950's investigation of atmospheric disturbances.

0766

- Mitch favors "experts" per se. (Acknowledges value of individual creativity - but prefers a big "think-tank" as vehicle.

0777

12:10

~~George~~ West - University is a "think-tank" but they don't have a broad perspective (ALST)

0798

Wayne(?) Meyers, WAMI - Health + Medicine
No health related think-tank -
it will take front end money to develop nucleus of expertise.

Background - Federal funds were formerly abundant during Alaska's territorial status. Fed presence of GAs have been withdrawn - not a Federal priority.

Arctic Health Research Center - cloaked by Feds in 1964 - state ^{UGA} was going to pick up slack but UGA hit mgmt problems & state spent money on petroleum presence preparation.

(22)

0831 W. Meyers

In addition to identifying research needs you need nucleus of expertise (H & D) to determine if time + state of art permit specific efforts.

Science projects - improving science education
NSF - Fed grant - limited longevity.

0856

"Closet researchers"
Dr. Stiller - DHSS

Robert Grouse

Anchorage center for disease in Lower Yukon
"serum hepatitis" - liver cancer - Lower Yukon +
Kuskokwim - interdicted from research perse -
They gather data - stretch the limitation.
Applied U.S. basic research -

0877

Short term return - Alcoholism research

- 16 million per year

0889

Office of Alcoholism awareness on new perspectives
genetic perspective. Example of suggestive area
for basic research we are not in position to
move forward with these. Sociological & Anthropological
perspectives not sufficient, however.

0918

Real Health - Sics. Delivery

24

1008

relevant dialogue

1030

W. Meyers

1040

v.f. suggests body to do onsite research.

1053

WAMI force an educational thing, costs borne by state - states keeping dollar commitments. Some decline in Washington

Not germane to discuss ins & outs of WAMI at this time!!!

1067

1070

1:40

End Wayne

1080

re: Economics - Lee Gorsuch ISEK Director
Post-ANCSA period as a genuine social experiment.
Extensive endowment of natural resources -

Can it be translated into a way of life which translates into people being better off than before -

1106

- Lee - Alaska in a period of experimentation

Legislators might share scientific approach -

Draft legislation - compile data - subject it to analysis - Bridging common gaps

Ex: Housing Mortgage Assistance Program
+ determining success of programs

23

0922

W. Meyers

Need for recruitment of rural & native students for health care research.

0933

Seasonal studies on health factors
Hypothermia studies, Arctic industrial
medicine, high latitude populations highest
incidence of gonorrhoea in Northern U.S.

0953

Dr. Barton appointing group to prepare
recommendations for 10 year priority
plan for health research - (MAY) ^{Report} 9-81,
3-82

W. Meyers states own recommendations
of where centralized activity will be, links, role
of telecommunications & rural components.

0961

End Wayne.

0967

~~W~~ Mitch - how many years studying gonorrhoeal/alcoholism,
cellulitis fever

W. Meyers - fetal alcoholism - 1973, 1975 - acknowledged
little research on it in Alaska - Natives are
more prone - a grudging acquiescence of this - that is state of the
art.

0992

Mitch - what are we doing to counteract
gonorrhoea - education - what is your intention

0997

W. Meyers - Public info programs, immunization
programs emerging - some improvement witnessed.

(19)

\$ 50 million

0558 7.4 million in salaries (96 professors) & admin too
Will impair all research.
Need for long term commitment to research & scientific development on part of state etc.

0578 Brian - How can public be made more aware?

0580 - ~~David~~ ^{George} West - Translating into to public

0589 - Brian - suggests Through U of A we "pick up what we've lost".

0603 Mitch - What part of U of A research has been transmitted to benefit of people.

0611 - ~~David~~ West - cites caribou - reindeer disease work & breakthroughs

Mitch - Is there relationship between U of A group Science Council & ACST? Couldn't U of A do function of ACST. Mitch stresses need for relationship between U of A & ACST & PEOPLE (results) - Is this not duplication.

0645 ~~David~~ West - let Neil Davis respond. Some money comes to U of A through ACST.

Neil Davis

0651 - Science Council cannot do research itself. Council is in role of policy issuer, ~~to~~ entering contracts, granting funds

(12:00)

(25)

1124

Lee

Legislative goals are subject to empirical analysis but we lack data acquisition + analysis + application to data.

Hydroelectric experimentation / Education

little objective assessment of programs into which money has been put - little evaluation, analysis + feedback to legislature + "mediary".

1146

PCF proportions, continuity, feedback

↓
of effort
to
output
↓
delivery
to
evaluation

approach to
research + eval.
has to be continuous
consider multiple
year funding

Re: Mr. L. R. Roca
McLornell
lack of feedback into
decision making /
political processes

Step up

provide

we can give

ISER - Social + Economic Sciences will be most drastically affected - 75% of funds Fed - NSF being totally reduced 25%.

Fearful of inability to provide analytic tools in the future

1188

More spent on animals than demography

Hearings on the Role and Status of Science and Technology in Alaska before the Senate and House State Affairs Committees

A. Overview of Alaska Science and Technology: A Panel Presentation

9:00 a.m. American Assn for Advancement of Sci + Tech
Alaska and U.S. Arctic Science Policy - D.M. Hickok, AAAS, Alaska

9:10 a.m. Arctic Env + Data Center
Who is Involved in Alaska Science; Areas of Greatest Emphasis - L. Underwood, University of Alaska

9:20 a.m. Findings of Alaska Council on Science and Technology Hearings on the Status and Direction of Federal Science in Alaska - W. Parker, ACST
special counsel to ACST

9:30 a.m. Priority Needs and Other Issues connected with Science in Alaska - T. Neil Davis, ACST

(NOTE: The full text of reports on the above will be available; presentations will be summaries)

9:40 a.m. Questions and Dialogue between Legislative Members and the Panel

10:00 a.m. Break

B. Public Interest in Science and Technology in Alaska

10:15 a.m. Statement from the Press Joe LaRocca, Doug McConnell

10:35 a.m. Questions and Dialogue between Legislative Members and the Press Representative

C. Science and Technology Needs and Priorities: 10 Minute Presentations by Government, Industry, and Public Witnesses (with filed statements). There will be 5 minutes for committee dialogue with each witness.

10:45 a.m. State of Alaska - Governor's Office Fran Ulmer

11:00 a.m. Oil and Gas Industry - AOGA Representative Rick Shafer

11:15 a.m. University of Alaska - J. Barton, President George West

11:30 a.m. Sealaska Corporation - B. Mallot, President

11:45 a.m. Health and Medicine Community - W. Meyers, WAMI

12:00 a.m. Resource Economics - Lee Gorsuch, Director ISER

12:15 p.m. Fisheries Industry - Steve Penmoyer, ADF&G
written only

12:30 p.m. Agriculture Industry - Charles Logsdon, Agresources

12:45 p.m. Coal Industry - ~~Cate McFarland~~ Placer Annex Phil Holdsworth

1:00 p.m. Mineral Industry - ~~Dave Heatwole~~ Anaconda Tom Crawford

1:15 p.m. Energy Center - Gordon Zerbetz, Director

(0226) Gordon-

(0270) Vic & Brian question basic assumption of goal-based research - concern w/ reduction of basic research - we are living off old basic research discoveries.
Concern that this is happening on a national level.

Frequently a justification for research can only appear after the fact.

(0290) VF the need to balance immediate needs w/ long range view.

(0301) VF Thanks all - Imp. of addressing those who are not already advocates!

Response to science -

Hopes this is an awakening to total scientific need rather than being sold on specific needs packages

ACST a good vehicle

27

1190

Need to use resources to improve quality of life.

1201

Mitch - we are not using vehicles in place in an effective manner
What about Reagan's economic recovery plan
How are we viewed by lower 48?

1206

UF - The extent to which we can use social & economic science research to alleviate current problems.

1245

Reemphasize need for portion of funding for evaluative & developmental programs
Mitch left.

~~1252~~

Charles Logsdon → ^{Ag resources} Agriculture

1272

- Starvation & malnutrition lower worldwide than ever despite higher population
a tenuous situation - a bad crop year could have great political implications.

1297

Charles - Numbers of Federal & State scientists in field. State to state comparison of # of ag scientists.

1302

Who is involved in ag. research

Contract negotiations rather than creation of separate research division.

1323

Cites different groups which have research needs from state agencies to ARRL, to ^{CFAB} + private corporations.

Farmers not only beneficiaries - marketing, processors & consumer

1338

Increased Alaskan production may be regarded as an intrusion. This situation should be examined & met.

1348

Concentrate research in University for the most parts Technology transfer needs support -

Fed budget cuts - cites agencies & programs affected.

1360

Key of Ag Block - Alaska maybe part of Federal Omnibus (grant?).

Overview of Ab situation - state Ag. establishment has marked goals & objectives - personnel & \$ for working on it may be provided !!

1385

VF Area of particular interest this year Ab - especially monitoring feedback

1393

Loysdon - agrees

29

1394

Phil Holdsworth
Coal industry - Plaver Annex
current status. written by Cole McFarland

1:10

- Fire sampling, analysis - Fairbanks U.S.A
program should be expanded.

1410

Arctic Research Center - environmental quality
preservation

Difference between coal resources + reminable
coal. (recoverable).

1438

Alaska's coal must compete in world markets

1. Imp. of gathering data
2. expansion of sampling to define coal quality
+ characteristics.
3. expansion of current state program of compilation
of data base through aerial mapping + interpretation
4. Continued participation by state (DNR) for
pullman to supply rural locations.

Mineral Industry

Tape 3

0020

- Tom Crawford - Anaconda lawyer
- Hardrock mining U.S. currently reliant on
foreign sources.

Platinum, Chrome, Nickel in Alaska.

Known deposits in USSR / Yukon. NO
incentive for Alaska. Exploration has been
provided.

Currently known deposits \$54 billion value

(30)

center jammed
the numbers are a guess now

6075 ?
(11)

Tom Crawford -

expense & time consuming nature of
scientific research - number of publications
not equatable w/ increase in knowledge.

Field mapping should be primary thrust of
states program in minerals

0120
(53)

Aerial mapping - Review of existing
stuff

Placer mining - research on decreasing
turbidity

Challenges posed by Alaskan environment -
engineering hazards & info should be provided -
UgA!

6870
(79)

End Tom

0180
(90)

Gordon Zerbetz - Ex. Dir. Alaska Energy
Center - former comm. of APUC.

Consensus acquired at AEC Board meeting.

RelD difficult to tell if people are talking about

(0123)

same phases of product development

Research should respond to needs not just generate knowledge to fill gaps.

Research + development -

Fed cutbacks may not be primary concern - rather Alaska's wealth + resultant decrease in funding by Fed's.

Thrust of Center's work:

Identify statewide research capability

(0170)

Oppose concept of percentile ^{budget} approach to research.

Relevance of research is stressed - Association of research + need.

(0189)

Brien - What about research in general - a lot of major gains in basic research ~~are~~ were not anticipated. It sounds like AEC is saying "cut out basic research"

(0212)

You were speaking to your own research needs? Brien questions if it is possible to know of a "pay-off" (specific) before beginning.

SUBCOMMITTEE

ON

ALASKA'S

FUTURE

July 29, 1981

M E M O R A N D U M

TO: All Legislators
FROM: Sen. Vic Fischer *Vic*
RE: Forthcoming seminar

Terry Stimson and I are putting together a workshop to discuss some issues of Alaska's relationship to the nation and the world. The focus will be on Alaska's future and the trends and external developments that will effect the economic and political environment in which Alaska's development occurs.

We anticipate that this workshop will occur in September. If you are interested in additional information as arrangements proceed, please advise:

Laura Fleming
c/o Fischer
511 West 4th Ave., Ste. 5
Anchorage, Ak. 99501
(907) 278-3654

MEMORANDUM

TO: Senator Victor Fischer

FROM: Gordon Harrison

SUBJECT: Legislative workshop "The Potential of Policy"

DATE: November 12, 1981

You have requested written comments from me regarding a summary of the recent workshop "The Potential of Policy". I had prepared a summary statement to present at the end of the final session but as you will recall, an animated discussion had begun toward the end of the day that would not be laid to rest, and it consumed the time set aside for my remarks. Now, with a transcript of the proceedings available, these remarks seem inappropriate. Instead of writing down my earlier summary (which attempted to restate the essential points of each speaker, among other things), let me here offer some general comments about the workshop and the subject of legislative planning in general.

As I perceived it, there were two objectives for the workshop---one was explicit and the other was implicit. The explicit objective was stated by Senator Stimson in his introductory remarks, namely, to recommend procedures that will enable the legislature to identify and address policy issues when they are still somewhat distant, and do not have the urgency of a crisis. The other objective was implied by the presentations of many of the people requested to prepare papers (for example Ylvisaker, Tussing, Cooley, Wilson, Holthaus, Mitchell)---namely to identify trends shaping Alaska's future and the policy issues likely to emerge in the years ahead. Thus, the workshop set out with a closely related but distinct set of purposes: one dealt with procedure (what mechanism can best deal with future issues?) and the other with substance (what is the future of Alaska?). John Havelock indicated early on that the discussions scheduled for the first day were intended to explore the substantive question, and the discussions scheduled for the second day were to seek an answer to the procedural question.

Despite Mr. Havelock's best efforts at steering the workshop, it simply did not want to leave the substantive question. We never did get to the matter of legislative procedures. I certainly do not believe that the workshop failed as a result. Indeed, I am not sure that this particular group of people were very well equipped by experience and training to deal with the matter of legislative mechanisms, and that their recommendations might not have been useful to the legislature in any case. On the other hand, these people were fascinated with, knowledgeable of, and eager to talk about Alaska, its problems and prospects for the future. About this

there was much wisdom and insight expressed.

My own response to the two days of discussions about Alaska's future is the fear that Alaskans may be steadily moving away from, rather than toward, a common vision of the "good society" for Alaska. Although I have no first hand knowledge of the time, my impression of the early period of statehood was that Alaskans shared to a high degree a consensus and optimism about their future. The major issue that separated people before and shortly after statehood was whether Alaska was financially prepared for statehood. This was primarily a concern of the propertied interests, who feared increased taxation. The majority of people, however, urban and rural, shared a common resentment against federal management and a common idealism and enthusiasm about the possibilities of self-government through statehood.

At the present time there appears to be a number of very deep and divisive conflicts among Alaskans. These have resulted from population growth and oil wealth. The urban/rural split, about which Don Mitchell and others spoke so eloquently, seems to be the most serious of these conflicts. It has several dimensions. One concerns an equitable division of public wealth from Prudhoe Bay; another concerns land use, mainly conflicts between subsistence and recreational uses of fish and wildlife.

The conflict between development and conservation, which has become something of a cliché these days, is still very profound. This conflict arises anew with every development proposal, including offshore oil leasing and onshore mining and petroleum development. The question of whether to build a petrochemical plant in Anchorage, for example, is an issue that could split Alaska's largest city into warring factions.

Another fundamental cleavage among Alaskans today is over the legitimacy of state and local government authority in general. The widespread optimism of twenty years ago about the ability of state government to promote development and the general welfare of Alaska's citizens has turned to disillusionment and widespread pessimism. The Libertarian and other "fringe" political parties that question the basic scheme of things are making significant advances.

I raise this matter of polarity in Alaska society because it relates to an underlying theme of the workshop discussions, that Alaskans in general and the legislature in particular need a "vision of the future." It is only with a uniform view of the goals of our society that long term governmental policy can be developed, and the success or failure of policy be measured.

The legislature is broadly representative of our society, and it will have a common vision of Alaska's future only to the extent one exists in society as a whole. Because I sense that Alaskans are moving away from, rather than toward a consensus of the "good society" I fear that the legislature will find it very difficult to set long term policy goals by means of a rational

planning process. Thus, my foregoing observations relate to the question of legislative procedures and mechanisms for policy planning, because the form that these take must reflect the political realities of the legislature and the state. A planning agency that serves a legislature with a high degree of consensus on major policy issues would be much different from one that served a legislature with little consensus. My own view is that there is little consensus about major issues in Alaska, and that for a legislative planning mechanism to be useful and effective it must attempt to accomplish only what is possible within the situation. An Alaska legislative policy planning agency would fail if it set about its business on the presumption that plans could be developed and implemented like they are in the executive branch, where in contrast to the legislature, a single and coherent vision of the future needs to be held by only one person, that is the governor.

The questions of an appropriate planning mechanism for the legislature, and I am sorry that it never received much discussion at the workshop. An excellent point of departure for consideration of the problem was the presentation by John Rasmussen of Batelle. Rasmussen's concept of a Pacific Northwest Forum is one that is readily adaptable to Alaska. It appeals to me because 1) it is issue oriented (that is, each forum would concentrate on one specific problem, rather than cast around in search of problems and future policy issues); 2) it would draw on people with expertise and responsibility for the issue at hand; 3) it would include labor and industry as well as other interest groups, the university, and government; 4) it would bring different levels of government together (state, federal and local); 5) it would not be an extension of the legislature, but rather an independent body with its own director and staff.

It seems to me that another workshop would be very valuable that focused exclusively on the question of procedures and mechanisms. It would include people with relevant interests and experience, including people with knowledge of legislative planning bodies in other states. This is, however, the subject of another memorandum. I will be pleased to discuss it with you in the future at your convenience.

M E M O R A N D U M

TO: Senator Terry Stimson
FROM: Gordon Harrison *gsh*
SUBJECT: Legislative workshop "The Potential of Policy" *gsh*
DATE: November 12, 1981

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Senate Committee on State Affairs

Vic Fischer, Chairman • Pouch V • Juneau, Alaska 99811 • (907) 465-4954

Official Business

Tentative Agenda

The Potential of Policy

A Legislative Workshop

To identify long term trends and national and international forces influencing Alaska life and explore the potential for Alaska policy influence on the future.

Moderator: John Havelock Reporter: Gordon Harrison

Wednesday, September 2

12:00 noon	Introduction: Senator Terry Stimson: the Objectives of the Committee
	Luncheon session:* Paul Ylvisaker: "Prospects for Change" - an overview of national and international social, political and economic trends in the 80's and 90's
1:00-1:45	Discussion
1:45-2:00	Break
2:00 p.m.	Session I The Dynamics of the Alaska Resource Base
	1. Arlon Tussing: The context of Alaska petroleum development
	2. Richard Cooley: Alaska resources in the context of environmental trends
2:40-3:20	Discussion
3:20-3:30	Break
3:30 p.m.	Session II National and International Social and Economic Trends
	1. Blenda Wilson: The evolution of education and human development programs and philosophies
	2. John Rasmussen: Trends in regional cooperation
4:10-5:00	Discussion

* Both luncheons will be working sessions with discussion to follow each luncheon presentation

(over)

Thursday, September 3

9:00-11:45 Roundtable (small group) discussions: Assignments to be announced

12:00 noon Luncheon: Tom Dinell: "Prospects for Policy: Alaska and Hawaii in the Pacific Rim Context"

1:00-1:45 Discussion

1:45-2:00 Break

2:00-2:40 Session I: The Character of Alaska Society

1. Don Mitchell: Evolution of the two Alaskas: the urban/rural dichotomy
2. Gary Holthaus: Reflections on the polytonal nature of Alaska social interests

2:40-3:20 Discussion

3:20-3:30 Break

3:30-4:00 Session II: The Prospects and Limits of Policy
A Panel:
Stephen Reeve: Resource Management and Planning;
James Souby: Refining the Executive Branch Role;
Jamie Love: Structural Issues in State Policy Development and Implementation

4:00-4:40 Discussion

4:40-5:00 Workshop Summary: Gordon Harrison



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Official Business SUBCOMMITTEE ON ALASKA'S FUTURE SENATOR TERRY STIMSON, CHAIRMAN

September 2, 1981

THE POTENTIAL OF POLICY -- A Legislative Workshop

Notes and transcriptions of Day 1 -- on the Potential of Policy