
**PALMER AREA USERS'
COMMITTEE (PAUC)
MEETING**

JULY 11-12, 2002
CENTENNIAL, CO

PALMER AREA USERS' COMMITTEE MEETING July 11-12, 2002

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Executive Summary

The annual Palmer Area Users Committee (PAUC) meeting took place on July 11-12, 2002 in Centennial, Colorado. Raytheon Polar Services (RPSC) hosted the meeting, chaired by Dr. Wade Jeffrey, in the new RPSC office. Dr. Maria Vernet was able to substitute for Karen Baker and Dr. Bill Fraser, who were unable to attend. Dr. Deneb Karentz, from the National Science Foundation (NSF) was also in attendance; other NSF Representatives participated via a video-teleconference link from their headquarters in Arlington, Virginia. A broad spectrum of RPSC staff were able to participate.

A closed Executive Session on the evening preceding the meeting provided a chance for the committee to review and prioritize topics for discussion.

The meeting began with a review of the 2001 PAUC recommendations and updates from the PAUC Chair, the RPSC Science Support Director, the Palmer Area Director, and the NSF Office of Polar Programs Executive Officer.

RPSC highlights included the appointment of Area Directors for the three USAP stations and the creation of a new Science Support Planning Group.

NSF highlights included potential budget increases for NSF/OPP and subsequent possibilities for increased grant funding.

Topics for discussion included Marine issues and reviews of each of the following RPSC divisions/departments: Science Support, Facilities, Logistics, Travel, Procurement, Health and Safety, and IT/Communications.

During the course of the meeting, the Committee developed 15 recommendations requiring further action. These recommendations, as well as presentation materials and summaries of associated discussions, are included in the following pages.

The PAUC terms for three committee members will expire this year. Dr. Jeffery will solicit PAUC nominations for three new members via Email. Thanks are due to the departing members (Rocky Booth, Bill Fraser, and Tad Day) for their valuable contributions to the PAUC over the past several years.

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Agenda

PALMER AREA USERS' COMMITTEE ANNUAL MEETING Centennial, Colorado

Wednesday, 10 July Holtze Hotel

8:00pm – 10:00 EXECUTIVE SESSION

Thursday, 11 July McMurdo Auditorium, RPSC, 7400 S. Tucson Way, Centennial, CO

7:00am - 7:30 CONTINENTAL BREAKFAST

7:30 – 8:45 Opening

- Introduction of attendees (10 min) Jeffrey, Edwards
- RPSC welcome and remarks (20 min) Dunbar, Farrell
- NSF welcome and remarks (20 min) Wharton
- PAUC: status of '01 Recommendations (10 min) Jeffrey, Edwards
- Discussion (15 min)

8:45 - 9:30 Marine

- Vessel status, including new equipment (10 min) Hickey
- Ship/Station issues (10 min) Hickey
- Workboat initiative (10 min) Detrich
- Discussion (15 min)

9:30 – 9:45 BREAK

9:45 – 10:45 Science Support

- Lab equipment update (10 min) Edwards
- Boating update (15 min) Edwards
- Weather data: preliminary comparison (10 min) Edwards
- UV program status (10 min) Booth
- Discussion (15 min)

10:45 – 11:45 Facilities

- Long range planning/projects (15 min) Morris
- Lab remodel status (15 min) Meredith
- New Science Technical Services building (15 min) Meredith
- Discussion (15 min)

11:45 – 12:45 BUFFET LUNCH

12:45 – 1:45	Logistics, Travel, Procurement	
	➤ Warehouse space/inventory reduction (10 min)	Navarro
	➤ Shipping sensitive cargo (10 min)	Navarro
	➤ Travel policies (15 min)	Nevins
	➤ New procurement processes (10 min)	Sucher, Wright
	➤ Discussion (15 min)	
1:45 – 2:00	Health and Safety Program (15 min)	Farrell
2:00 – 2:45	IT and Communications	
	➤ SatComm status (10 min)	Folger
	➤ Network Security (10 min)	Folger
	➤ Polar.org website feedback (10 min)	Edwards
	➤ Discussion (15 min)	
2:45 – 3:00	BREAK	
3:00 – 4:00	PAUC Business	
	➤ Acceptance of '01 Minutes (5 min)	
	➤ Review of membership (10 min)	
	➤ Set date for future meetings (10 min)	
	➤ New business (35 min)	
<i>Friday, 12 July</i>	McMurdo Auditorium, RPSC	
7:00am - 7:30	CONTINENTAL BREAKFAST	
7:30 – 8:30	Review and IT Wrap-up	
	➤ Review of previous day (30 min)	Jeffrey
	➤ Polar ICE status (10 min)	Holbrook
	➤ Discussion (20 min)	
8:30 – 10:00	Open Discussion and Meeting Synopsis	
	➤ Open discussion, identification of PAUC priorities	
	➤ Summary and review of recommendations	Jeffrey, Edwards, Scarboro
10:00	ADJOURN	

Actions/Recommendations July 11-12, 2002

RECOMMENDATION 1: PAUC (WADE JEFFREY) WILL SUBMIT A LETTER OF SUPPORT FOR OBTAINING A PALMER STATION AREA COASTAL RESEARCH VESSEL TO RPSC (ROB EDWARDS/STEVE DUNBAR) FOR FURTHER SUBMISSION TO NSF (KARL ERB).

RECOMMENDATION 2: RPSC (STEVE DUNBAR/JIM HOLIK) WILL REVIEW THE CURRENT VESSEL BERTHING-VAN GUIDELINES AND COORDINATE WITH THE PAUC TO IMPROVE THE BERTHING ASSIGNMENT PROCESS.

RECOMMENDATION 3: PAUC RECOMMENDS THAT RPSC INVESTIGATE THE POSSIBLE ACQUISITION OF A BRASH-ICE CAPABLE BOAT.

RECOMMENDATION 4: RPSC TRAVEL/LOGISTICS DEPARTMENTS (KELLY NEVINS/KEN NAVARRO) WILL CONTINUE TO EDUCATE AIRLINE REPRESENTATIVES IN AN EFFORT TO IMPROVE SHIPMENT OF SPECIAL CARGO. AIRLINE CONTACT NUMBERS WILL BE DISTRIBUTED TO GRANTEEES TO HELP WITH THEIR PRE-PLANNING AND SHIPPING.

RECOMMENDATION 5: RPSC (ROB EDWARDS) WILL SOLICIT INFORMATION FROM PALMER AREA GRANTEEES REGARDING HISTORICAL NAMES OF PALMER LANDMARKS (SHOALS/ROCK SITES/ETC.) FOR USE IN A MORE COMPLETE GIS MAP.

RECOMMENDATION 6: RPSC (ROB EDWARDS) WILL DRAFT AN AMENDMENT TO THE BOATING REGULATIONS THAT BETTER IDENTIFIES THE ULTIMATE AUTHORITY FOR SPECIAL-CIRCUMSTANCE BOATING ISSUES.

RECOMMENDATION 7: PAUC WILL REVIEW THE *RECOMMENDATIONS FOR PALMER STATION AQUARIUM AND SEAWATER SYSTEM UPGRADE* REPORT AND PRIORITIZE AQUARIUM AND SEAWATER SYSTEM IMPROVEMENTS/SUGGESTIONS FOR RPSC/NSF CONSIDERATION.

RECOMMENDATION 8: A WORKING GROUP (MARIA VERNET/ALISON MURRAY) WILL PROVIDE INFORMATION TO ASSIST RPSC IN REPAIRING/IMPROVING THE COLD ROOM/ENVIRONMENTAL SPACE. RPSC WILL REVIEW COLD ROOM/ENVIRONMENTAL CAPABILITIES AND PROVIDE SPECS/STANDARDS TO FEMC SO THEY MAY DETERMINE HOW BEST TO MEET THE WORKING GROUP'S CRITERIA DURING CONSTRUCTION/REMODELING EFFORTS.

RECOMMENDATION 9: PAUC AND OTHER PALMER AREA USERS WILL REVIEW THE RPSC INVENTORY SPREADSHEETS AND ADVISE KEN NAVARRO OF ANY ITEMS THAT MIGHT BE CONSIDERED FOR RETROGRADE

OR DISPOSAL. TENTATIVE PLANS ARE TO RETRO THESE ITEMS (ALONG WITH ITEMS FROM PALMER STATION) IN JANUARY 2003.

RECOMMENDATION 10: PAUC (WADE JEFFREY) WILL SUBMIT A PRIORITIZED LIST OF CAPITAL EQUIPMENT REQUESTS TO RPSC (ROB EDWARDS) FOR POSSIBLE ACQUISITION AS FUNDS BECOME AVAILABLE.

RECOMMENDATION 11: PAUC ASKED THAT NSF (HARRY MAHAR) CONTINUE TO INFORM THE PAUC ABOUT CHANGES TO THE PQ/TRAVEL APPROVAL PROCESS FOR FOREIGN USAP PARTICIPANTS.

RECOMMENDATION 12: RPSC (ROB EDWARDS) WILL PROVIDE THE PAUC WITH A CURRENT RPSC TELEPHONE DIRECTORY. HE WILL ALSO REVIEW THE PAUC AND PALMER AREA USERS' DISTRIBUTION LISTS TO ENSURE ALL CURRENT MEMBERS ARE LISTED.

RECOMMENDATION 13: RPSC (ROB EDWARDS) WILL PROVIDE PAUC (KAREN BAKER) AND OTHER INTERESTED USERS WITH PALMOS METEOROLOGICAL DATA FOR COMPARISON WITH SYNOPTIC OBSERVATIONS. MARIA VERNET WILL INVESTIGATE OPTIONS FOR LONG-TERM COLLECTION OF SEAWATER PARAMETERS, WHICH SHE WILL REPORT TO PAUC (WADE JEFFREY) FOR FURTHER RECOMMENDATION TO RPSC AND THE NSF.

RECOMMENDATION 14: RPSC (ROB EDWARDS) WILL INVESTIGATE COSTS AND FUNDING POSSIBILITIES FOR A BATHYMETRIC SURVEY OF THE PALMER STATION BOATING AREA TO BE PERFORMED DURING THE 02-03 SEASON.

RECOMMENDATION 15: PAUC (WADE JEFFREY) WILL REVIEW AND PROVIDE TO RPSC (BOB FARRELL) A LIST OF RECOMMENDED SHORT- AND LONG-TERM PRIORITIES FOR PALMER STATION.

Welcome, Review of Agenda, and Round-Table Introductions

Wade Jeffrey (Chair) and Rob Edwards (Palmer Station Lab Supervisor) welcomed Committee members, NSF representatives (video-conference link to Arlington, VA), and RPSC staff members. Following reviews of the day's agenda and the May 31, 2001 Action Item status, Dr. Jeffrey turned the meeting over to Steve Dunbar and Bob Farrell for an RPSC update.

RPSC Update

Steve Dunbar, RPSC Director, Science Support, reviewed RPSC organizational changes and the April 2002 office relocation to 7400 South Tucson Way.

Mr. Dunbar also noted the following items:

RPSC will recruit a new Deputy Director, Science Support, to fill the vacancy created when Mr. Dunbar was named Director.

An Area Director will be appointed for each of the three Antarctic stations. The Area Directors' authority to align the goals of all divisions will allow them to better support the USAP mission.

RPSC is striving to reach and maintain its goals of continuously improving processes, protecting the unique and fragile Antarctic environment, and providing all USAP participants with a safe and healthy work environment.

As directed by NSF, a Planning Group will be hired by RPSC to better support grantees traveling to Antarctica. The Planning Group, comprised of six experienced personnel, will be in contact with funded PIs and grantees from the outset, working with them on Science Information Packet (SIP) issues, procurement requests, writing the Research Support Plan (RSP), and following through to the season-end Outbriefs.

Brian Stone noted that the main idea is to develop a continuous planning system that will provide information and support for the long term. RPSC recognized the need for these planners to work year-round in the Centennial office to provide this continuous support. Mr. Dunbar will provide PAUC members with a copy of the job description, and the science community will be solicited for applicants.

Bob Farrell has been named the Palmer Area Director. He reported that last year's activities on the Peninsula side, both science- and RPSC-related, were extremely successful.

National Science Foundation Update

Bob Wharton, NSF/OPP Executive Officer, welcomed PAUC members and added that the NSF appreciates the User Committees' time and effort in making recommendations to RPSC and the NSF.

Dr. Wharton noted that the OPP budget for the next fiscal year is still in Congress. It is anticipated that the budget will be finalized after the November elections. As of this date, the NSF/OPP anticipates approximately \$300 million for FY03, which is 2% more than last year, or a \$6 million increase.

Positive indications from Congress suggest that there may be increased budgeting for OPP over the next five years. If the budget is increased, NSF is considering increasing the size of grant funding and/or extending the duration of grants to 5-year cycles.

Actions/Recommendations Status Report: PAUC meeting 5/31/01-6/01/01

RECOMMENDATION 1: PAUC (Tad Day) will submit a Palmer Station Workboat report for Dr. Karl Erb's use in future discussion with the NSB.

RECOMMENDATION 1a: PAUC (Bill Detrich) will work up a scenario for workboat usage in the Palmer area based on historical USAP vessel usage and scientific need. Bill Detrich will provide presentation and information to ARVOC at their next regularly scheduled meeting. Based on additional input from ARVOC, PAUC (Tad Day) will submit a Palmer Station Workboat report to Dr. Karl Erb for Dr. Erb's use in future discussions with the NSB.

CURRENT STATUS: Dr. Detrich's workboat proposal received no support from ARVOC. Dr. Detrich will review the situation during the upcoming annual meeting.

RECOMMENDATION 2: PAUC will continue to study the possibilities of the genome center.

CURRENT STATUS: Unknown.

RECOMMENDATION 3: RPSC will periodically update the Punta Arenas warehouse inventory lists (both support operations and science equipment). Brien Borden will provide PAUC with the science equipment inventory list for their review, to help determine what items, if any can be considered obsolete. RPSC and NSF can then take steps to dispose of obsolete items stored in the warehouse either through NSF disposition policy or by return to grantee's home institution.

CURRENT STATUS: Ken Navarro, RPSC, has reviewed the warehouse inventory and will present to PAUC any Palmer science equipment being considered for disposal.

RECOMMENDATION 4: RPSC will work to develop clothing issue web site. Initially the web site may be a clothing list with description. Clothing pictures with descriptions may be added to the web site as time/costs allow.

CURRENT STATUS: Unknown.

RECOMMENDATION 5: PAUC (Tad Day) will solicit comments from the science community on how well the RPSC web site is meeting their needs, i.e., is the information useful, are there other topics/items that need to be on the site, etc. PAUC will provide RPSC with comments from the science community.

CURRENT STATUS: This type of information is often received during outbriefs. Additionally, RPSC maintains the “Palmer User” email list and thus can solicit these kinds of comments directly. RPSC will report on any user feedback during the PAUC annual meeting.

RECOMMENDATION 6: RPSC Travel Department will work to provide clearer instructions to grantees for international travel. Travel issues of PAUC concern include: policy for ticketing foreign grantees, travel itineraries/restrictions, self-ticketing policy, reimbursement issues, excess baggage. PAUC requested that a written policy from RPSC detailing ticketing procedures be made available to grantees.

CURRENT STATUS: A clear statement on foreign participant ticketing has been received from the NSF and will be distributed to the PAUC.

RECOMMENDATION 7: RPSC (Steve Meredith) will make available to PAUC the 60% completed BioLab design plans by the end of the PAUC meeting June 01, 2001. All suggestions/input from PAUC regarding the BioLab plans must be submitted to Steve Meredith no later than July 01, 2001. Steve will be available to discuss any grantee BioLab suggestions following his site visit (estimated date of return to RPSC June 19, 2002).

CURRENT STATUS: PAUC comments on 60% design were sent to FEMC. 100% design was submitted to NSF and approved for construction. The remodel is currently underway at Palmer Station.

RECOMMENDATION 8: RPSC will provide PAUC with an updated written description of data provided by PALMOS, covering parameters, formats, and accessibility. RPSC will maintain synoptic sea ice coverage observations.

CURRENT STATUS: PALMOS was not installed in June due to shipping delays. The system was installed and running by 30 Nov 2001.

RECOMMENDATION 9: NSF (Pat Smith), RPSC (Dale Abel) will draft a plan to better explain to PAUC/grantees the new email policies/network security issues, including a schedule for implementing changes.

CURRENT STATUS: RPSC IT will cover network security issues in the upcoming annual meeting.

RECOMMENDATION 10: PAUC (Tad Day) will solicit the science community to help determine how the GIS might best be used at Palmer Station, i.e. boating navigation, safety, field work, etc. This information will assist Kelly Brunt (RPSC) in providing GIS products and applications at Palmer.

CURRENT STATUS: (Similar to recommendation 5) This type of information is often received during outbriefs. Additionally, RPSC maintains the “Palmer User” email list and thus can solicit these kinds of comments directly. RPSC will report on any user feedback during the PAUC annual meeting.

RECOMMENDATION 11: Biospherical, Inc. (Rocky Booth) will provide PAUC with an update on availability of data/services from the UV monitoring network by September 1, 2001. Tad Day will distribute update to the science community.

CURRENT STATUS: Unknown.

RECOMMENDATION 12: PAUC Chair (Tad Day) will solicit nominations for new members to replace those with expiring terms. Tad Day will continue as ex-officio member, Bruce Sidell will continue as active member for two more years. Tad Day will conduct electronic balloting

and report election results to PAUC/RPSC/NSF for three new PAUC members, including a chairperson

CURRENT STATUS: Completed.

RECOMMENDATION 13: PAUC will review the COC DRAFT and submit any changes/suggestions to RPSC (Rob Edwards/Ken Doggett) by June 22, 2001 for consideration when RPSC finalizes the COC.

CURRENT STATUS: Comments were received and forwarded to the NSF. A final version of the COC was completed for the 01/02 season.

RECOMMENDATION 14: PAUC (Tad Day) will solicit from PAUC and the science community additional recommendations for capital equipment items and conduct a ballot to prioritize the list.

CURRENT STATUS: Completed.

RECOMMENDATION 15: PAUC (Chuck Amsler) will review the Diving SOP draft and will work with Rob Robbins, Diving Coordinator RPSC, in the completion of the final SOP.

CURRENT STATUS: Unknown.

RECOMMENDATION 16: RPSC (Rob Edwards) will complete additions to the Boating Regulations with review from the PAUC (Bill Fraser). The Boating SOPs will be finalized by mid-August and in place for 2001-2002 season start.

CURRENT STATUS: SOPs are in place, special considerations to the regulations are still under review.

RECOMMENDATION 17: PAUC (Bill Fraser) will solicit from the science community ideas/suggestions on the most appropriate jacket colors for work in the field. Survey results will be provided to RPSC.

CURRENT STATUS: Bill Fraser, Steve Dunbar, and Brian Stone reviewed color options.

RECOMMENDATION 18: RPSC will continue to work with the NSF on crane options for Palmer Station. The NSF and RPSC renovation teams will have more information following the Palmer Station site visit in June 2001.

CURRENT STATUS: Unknown. Independent pier renovation study did not include specific crane/boat hoist recommendations.

RECOMMENDATION 19: PAUC (Tad Day) will provide a list of recommended items (general use and recreational items) for possible acquisition as inventory stock at Palmer Station. RPSC (Rob Edwards) will assess the current supplies (e.g., sewing supplies) on station and may re-supply some items before season start.

CURRENT STATUS: Additional general-use and recreational items were provided on Station. (See Recommendation 5 regarding solicitation of information.)

Marine

Al Hickey, RPSC Marine Superintendent, reported both vessels are in dry dock for scheduled maintenance and upgrades.

Improvements include the following additions:

A SIMRAD bathymetric system on the R/V NATHANIEL B. PALMER (NBP)

A new moon pool on the NBP

A new DAS system on the R/V LAURENCE M. GOULD (LMG) which will allow the LMG to be more compatible with the NBP system

Improved computer equipment and furniture in the LMG Chief Scientist's office

Safety upgrades aboard the LMG include the following changes:

Railings for the outside ladder from 01 deck to 02 deck have been raised

The gangway to 02 deck has been widened, and the incline isn't as steep as before

The spring release pressure on the door at top of stairs leading down to the hold has been decreased, and the entry platform has been widened

The Markey Technician is scheduled to overhaul the winches, including repairs to the Dush 6 winch

The NSF has approved funding for a new winch for the LMG

New outboard Yamaha 4-cycle motors have been purchased for the Zodiacs

In response to Al Sutherland's inquiry about the status of past plumbing problems that occurred in extreme cold, Mr. Hickey reported that plumbing has been replaced with a higher quality product that is better insulated.

Ship/Station Issues

Mr. Farrell and Mr. Hickey reported that there were no significant ship-to-station conflict issues last year. However, several committee members noted there had been at least one instance of disagreement regarding Palmer passengers transiting north. Since the implementation of the *Interaction of USAP Research Vessels and Research Stations* document, drafted and approved by PAUC in June 2000, station/vessel interactions have steadily improved.

Workboat Initiative (now referred to as Coastal Research Vessel)

The Coastal Research Vessel has been discussed at length during previous PAUC meetings, and there are numerous supporting reports to substantiate a need for this type of vessel in the Palmer Station area. Bill Detrich made a presentation to ARVOC in October 2001 and asked for their support. As there was no consensus from ARVOC, the PAUC asked NSF and RPSC how to proceed with this coastal research vessel initiative.

RECOMMENDATION 1: PAUC (WADE JEFFREY) WILL SUBMIT A LETTER OF SUPPORT FOR OBTAINING A PALMER STATION AREA COASTAL RESEARCH VESSEL TO RPSC (ROB EDWARDS/STEVE DUNBAR) FOR FURTHER SUBMISSION TO NSF (KARL ERB).

Marine: Vessel Accommodations

Dr. Jeffrey asked for RPSC clarification regarding the disembarking guidelines for vessels upon return to port. Mr. Dunbar explained that, due to RPSC and ECO potential liabilities, all non-Marine Operations RPSC employees are required to disembark the vessel on the day the ship arrives in port. If the ship clears customs after 2100 local time, disembarkment may be delayed until the following morning.

Grantees are allowed to stay aboard for one night after the ship arrives in port if they so choose. This will give the departing grantee time to finish any last-minute tasks before heading north.

PAUC members discussed the berthing-van accommodations aboard the LMG, resulting in the following comments:

If someone sails on a lengthy cruise, it is unreasonable to ask him or her to move from a cabin to a berthing van to accommodate a short 4-day transit.
Some berthing van users reported they experienced no discomfort sleeping in the vans. Actually, in some sea conditions, the ride was better in the van.
Perhaps stronger tie-downs would help stabilize the vans in high seas.
A clearer guideline on who is assigned to the berthing vans and how this is determined would help to alleviate questions or problems.
The berthing vans have been instrumental in supporting science and Palmer Station Operations and they will continue to be used on an as-needed basis.

Following discussion, it was determined there is no easy solution to berthing van use. Mr. Dunbar asked that PAUC members and other van users submit their views to RPSC for further study.

RECOMMENDATION 2: RPSC (STEVE DUNBAR/JIM HOLIK) WILL REVIEW THE CURRENT VESSEL BERTHING-VAN GUIDELINES AND COORDINATE WITH THE PAUC TO IMPROVE THE BERTHING ASSIGNMENT PROCESS.

Brash-Ice Capable Boat

PAUC members discussed the possibility of acquiring a brash-ice capable boat for use in Palmer Station area. Mr. Edwards noted that funds are not available in FY03. PAUC members asked that information be gathered on various sizes, associated costs, etc. so

that, when/if funds become available, a practical request might be submitted to the NSF for consideration. Mr. Dunbar suggested that the pier rebuild and crane options should be taken into account when investigating brash-ice capable boats. Mr. Edwards added that the Boating Coordinator might draft a preliminary study during his time in the office.

RECOMMENDATION 3: PAUC RECOMMENDS THAT RPSC INVESTIGATE THE POSSIBLE ACQUISITION OF A BRASH-ICE CAPABLE BOAT.

Travel

(Note: this section was moved forward in the Agenda due to RPSC scheduling conflicts.)

Kelly Nevins, RPSC Supervisor, Travel Department, reviewed the following guidelines for deploying grantees and noted that she is available to answer grantee questions.

GENERAL

All tickets for USAP Participants will be issued from and returned to the same city, unless otherwise approved by the DSG Manager or the NSF Program Manager.

Personal travel is not considered when purchasing a ticket with government funds.

The FAR states that a government contractor must use a U.S. Flag carrier, except in certain instances listed in the government regulations. Consequently, all deployments to Chile will be on a U.S. Flag Carrier, except in extraordinary cases when all carriers are booked full and an individual must deploy on that particular date. In this case, alternative carriers will be investigated and used, if practical. RPSC Travel will manage USAP Participants so they can be booked on a U.S. Flag Carrier, by possibly moving the participant forward or backward of a desired deployment date. In cases where it is not feasible because of programmatic reasons, RPSC will book them expeditiously.

NSF agrees that the ticketing policies should be flexible enough to handle most situations. RPSC will diligently attempt to get the lowest reasonable fare for the government; however, RPSC will also strive to meet an individual's programmatic requirements.

Round-trip tickets for USAP Participants are one of four types:

2-month excursion fare: Ticket is valid for a maximum of 2 months. These tickets are being purchased for USAP Participants who plan to be deployed for less than 2 months.

3-month excursion fare: Ticket is valid for a maximum of 3 months. These tickets are being purchased for USAP Participants who plan to be deployed greater than 2 months, but less than 3 months.

6-month excursion fare: Ticket is valid for a maximum of 6 months. These tickets are being purchased for USAP Participants who plan to be deployed greater than 3 months, but less than 6 months.

12-month coach fare: Ticket is valid for a maximum of 12 months. These tickets are being purchased primarily for USAP Participants who will be deployed to Antarctica for longer than 6 months. Due to the high cost of these tickets, they are being purchased only when necessary to deploy personnel on a specific time schedule or if other class fares are not available.

Grantees

Grantee tickets will be issued from Airport Of Departure (AOD) to Chile and return. This ticket is typically an excursion fare ticket that requires a 14-day advance purchase. The date deploying from AOD or U.S. Port of Embarkation to Chile cannot be changed. If a situation occurs where the date must be changed, the ticket has to be cancelled and re-issued. The additional cost of the ticket may be significant. The additional cost of the ticket may be significant and is the responsibility of the Grantee, unless for approved programmatic reasons. All change requests must be in writing to the Travel Supervisor and approved by the NSF.

All tickets for Grantees will be issued from and returned to the same city, unless otherwise approved by the NSF.

Grantees will be ticketed on their requested departure date as reflected on the submitted TRW (Form PA-A-100b). If the U.S. Flag Carriers are fully booked on that particular date, and RPSC cannot move an RPSC employee to another day to accommodate the Grantee, RPSC will request the Grantee to move either forward or backward to a date where a seat is available. If the Grantee insists on traveling on a date that requires an upgrade, RPSC will accomplish the upgrade with approval from the NSF. If the Grantee insists on traveling on a fully booked date, RPSC will arrange for an alternate foreign flag carrier if the requirements of the FAR for unavailability of U.S.-flag carriers are met.

Grantee/PI ticketing from abroad: This applies to all Grantees, whether identified in the proposal stage or later. The DSG will not issue tickets with originating travel from outside the United States unless specifically approved in advance from the NSF. ESP has been updated to provide identification of international ticketing requirements. The Participant is to provide their own ticketing from their home to their PIs institution stateside. The DSG will provide ticketing from the home institution to the international Gateway City (Punta Arenas, Chile). If, in the opinion of the DSG Manager or the Travel Supervisor in the absence of the DSG Manager, it is in the best interest of the USAP and the Grantee for the DSG to provide ticketing from a U.S. city other than that of the home institution, such ticketing may be approved. The ticket cannot be at a greater cost than it would be from the home-institution city. If a Grantee insists on flying via a different airline carrier than that being identified by RPSC, a cost comparison will be run. If there is no increase in cost, the ticket may be purchased as long as the Grantee understands that they will be responsible for all related change fees, whether for programmatic or personal reasons. Other carriers do not have the same flexibility as the RPSC issued tickets, and are therefore discouraged.

Redeployment Procedures

General

Employees, Grantees and all USAP personnel issued tickets by RPSC may take personal time upon return from Antarctica. Tickets were purchased for business travel; therefore the participant must make all changes for personal travel by contacting a travel agent or the airline directly. Change fees and any other additional costs are the responsibility of the traveler. RPSC issued tickets utilizing American Airlines may call Meeting Services at 1-800-433-1790 to make changes for personal reasons.

Additionally, the RPSC website contains additional information pertaining to changes for personal reasons.

PLEASE NOTE: These tickets have an expiration date of 2 months, 3 months, 6 months or one year. The traveler is responsible for checking with the airline to find out the rules of their ticket.

The following options are available (at the individual's own cost):

A "side" trip can be made from Chile to a vacation destination, then back to Chile for redeployment.

Any traveler, on personal time, choosing to re-deploy after the maximum validity of the ticket will be personally responsible for any additional costs. If the maximum stay ticket has expired it must be upgraded within one year of issue at the traveler's own expense. All change fees and added costs will be the responsibility of the participant.

AGUNSA will only make changes for business travel. All programmatic travel changes should be worked out at Palmer Station by the Station Manager or on the vessel by the Marine Projects Coordinator (MPC) before the individual arrives in Chile. This includes obtaining appropriate approvals. Once exceptions and alternatives to travel plans are known, they should be transmitted to AGUNSA in Chile in time to make suitable arrangements, if possible. AGUNSA will not provide travel services for personal travel.

If it is necessary to upgrade tickets for programmatic reasons, AGUNSA will reissue the original tickets.

If it is necessary for a person to travel on a Foreign Flag Carrier, then the original ticket will be returned to the RPSC Travel office in Denver for a refund.

Excess Baggage: If an individual is entitled to excess baggage, AGUNSA will provide an MCO coupon for Punta Arenas-Santiago-(Miami or DFW)-AOD. If the individual elects to take an alternative route, this MCO can be applied to the alternative route. However, any additional excess baggage charges, such as subsequent legs of a stopover or alternative route, are the responsibility of the individual.

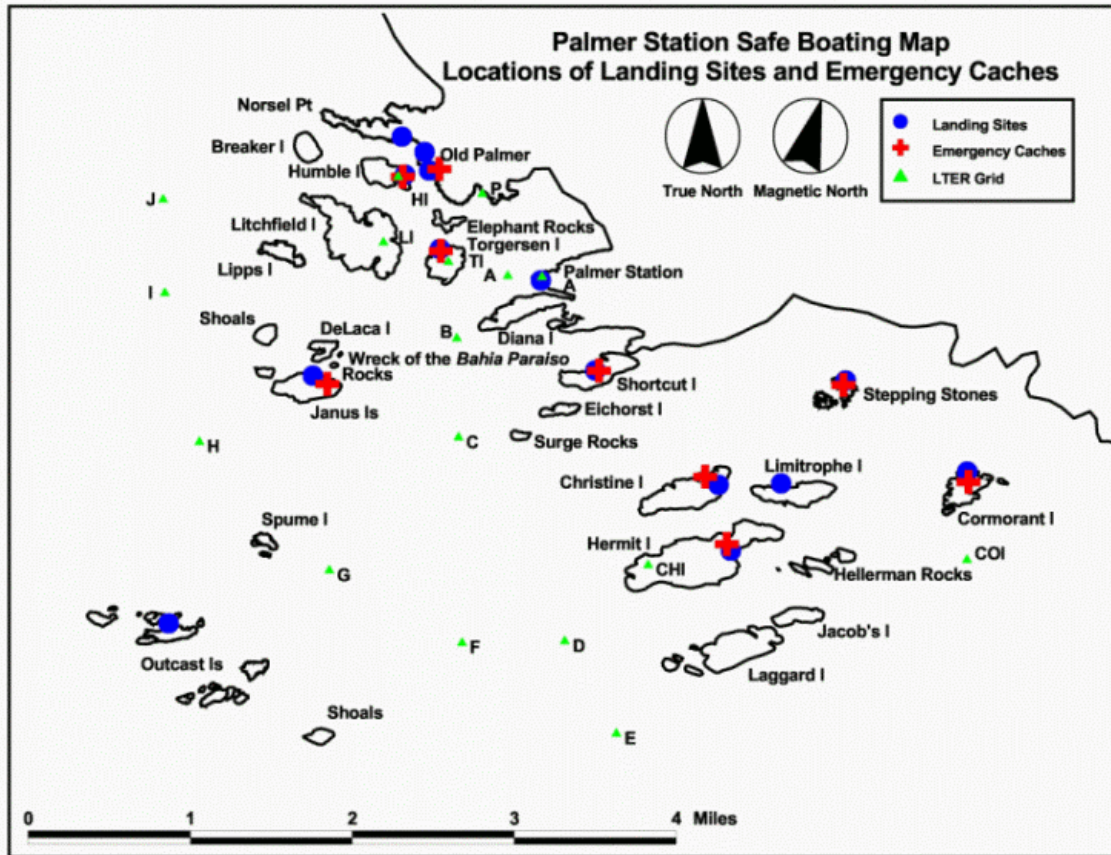
The group discussed difficulties experienced in the past with transporting cargo (such as liquid nitrogen dry shippers) through the airline system. Mr. Navarro stated that he is available to work with grantees in preparing their paperwork to ensure prompt shipping. Bruce Sidell added that informing the airlines prior to shipping has worked well for him. Principal Investigators/grantees should use the packing/shipping forms provided by RPSC (Ken Navarro) to properly identify the cargo for the airline personnel.

RECOMMENDATION 4: RPSC TRAVEL/LOGISTICS DEPARTMENTS (KELLY NEVINS/KEN NAVARRO) WILL CONTINUE TO EDUCATE AIRLINE REPRESENTATIVES IN AN EFFORT TO IMPROVE SHIPMENT OF SPECIAL CARGO. AIRLINE CONTACT NUMBERS WILL BE DISTRIBUTED TO GRANTEES TO HELP WITH THEIR PRE-PLANNING AND SHIPPING.

Boating Update

Mr. Edwards reported that Doug Fink is the newly hired Palmer Station Boating Coordinator.

In the process of developing and improving new Palmer Station GIS maps, Mr. Edwards noted that Kelly Brunt (RPSC) will amend maps to include names of areas not already noted on the map shown below. Grantees are asked for their input regarding historical site names and scientific study areas. This will, in turn, allow for improved GIS maps that show bottoms, dive sites, traps, etc. Grantees and RPSC staff will have access to these maps in planning field excursions.



RECOMMENDATION 5: RPSC (ROB EDWARDS) WILL SOLICIT INFORMATION FROM PALMER AREA GRANTEES REGARDING HISTORICAL NAMES OF PALMER LANDMARKS (SHOALS/ROCK SITES/ETC.) FOR USE IN A MORE COMPLETE GIS MAP.

Mr. Edwards distributed the Palmer Station Area Zodiac Regulations for PAUC review and discussion, noting that NSF approval has been given to everything, except the special consideration to exceed boating limits.

**PALMER STATION AREA
ZODIAC REGULATIONS**

A. INTRODUCTION

The **Director, Office of Polar Programs**, National Science Foundation, has the ultimate responsibility for safety of operations, including boating at Palmer Station. The Station Manager, Palmer Station, has on-site responsibility. The **Station Manager (SM)** shall see that boat-oriented science programs receive the maximum support consistent with the following instructions.

Use of boats at Palmer Station occurs first in conjunction with science, station-related work, or rescue operations. Secondary or recreational boating is possible only as long as there is no impediment to the above activities.

(Introduction, cont.)

Boating regulations are provided as guidelines to be observed while exercising common sense and responsibility during operation of Zodiac inflatable boats at Palmer Station. Due to the severe weather, sea, and ice conditions, boating operations are strictly regulated. Boating I and II training courses are held on station for all personnel involved in boating. Instruction will be given by the **Boating Coordinator (BC)** or an alternate designated by the Station Manager (SM). The **Comms Tech (CT)** or a designated station watchstander will monitor field party communications, including all boating activity. The **SM and BC**, in consultation with the **Station Science Leader (SSL)**, will regulate boating as weather and other factors dictate.

Training courses are outlined in the Standard Operating Procedure for the Boating Coordinator. Only those who have successfully completed **Boating I** (including Island Survival training) will be allowed to travel as passengers in boats. Completion of **Boating II** is required to become a boat operator. The Boating II course will be tailored to the field party's requirements, but will, at a minimum, include proficient boat handling, safe island landing, and man overboard drills. While Boating I and II will be required of all personnel every season, an abbreviated course may be offered, subject to the approval of the SM and BC, for returning grantees with extensive boating experience.

The SM may impose special conditions or rescind boating privileges according to boating skill level and ability to follow regulations. Boating at Palmer Station is safe if common sense and foresight are used.

All boating operations at Palmer Station occur within the guidelines of the Southwest Anvers Island and Vicinity Multiple Use Planning Area, requirements of the Antarctic Conservation Act, and the following NSF-approved regulations. Because of the unique environment around Palmer Station, first-time operators are strongly encouraged to go boating in the company of experienced personnel until they acquire familiarity with the area.

B. REGULATIONS

- a. Minimum boating party is **two trained operators**. Additional persons must have passed Boating I. Maximum loads, including operators, are six persons in a Zodiac Mk III or an F-470, ten persons in a Zodiac Mk V.
- b. Normal operations occur only within **established geographic limits** (roughly two nautical miles from Palmer Station, see included map). Special consideration for operations beyond this limit must be addressed by the SM, BC, and SSL. Approval will be subject to the scientific requirements, the experience of the field party, and the weather of the day under consideration for such exception.
- c. Normal operations will cease during **sustained winds above 20 kts** or other extreme weather conditions. Special considerations for operation in the local Arthur Harbor area during winds 20-30 kts will be addressed by the SM, SSL, and BC.
- d. Normal boating operations may occur only during **sufficient daylight** (approximately one hour after sunrise to one hour before sunset) unless special provisions are made with the SM to extend those hours.
- e. No one shall operate a boat while under the **influence of alcohol** or while impaired in any manner.
- f. All personnel must have **proper attire**, including zipped float coats (with beaver tail in place) or Mustang suits. For safety reasons, the use of water resistant wind pants is required, except when wearing a Mustang suit or when transiting to vessels in Arthur Harbor. Extra gloves, a hat, socks, and long underwear are required for all personnel in case of accidental immersion. A dry bag will be provided by the BC to keep these items dry.
- g. Proper check out procedure includes **signing out on the blackboard** and **informing the SM or BC** of the field plan before boarding the boat. If the SM or BC cannot be located, the CT or designated watchstander can be notified.
- h. The BC is responsible for **general maintenance** and daily readiness of boats and motors, including the availability of safety equipment.

- i. Operators are responsible for informing BC of any **maintenance or mechanical problems** encountered during daily boating operations.
- j. Operators must ensure **safety gear** is aboard and properly stowed during daily operations.
- k. Parties must follow **accepted radio protocols** with Palmer Comms; including the carrying of two submersible radios, providing departure/arrival notices, providing check-ins when changing destination, and continual monitoring of Channel 27 even when ashore on islands (except in exceptional circumstances requiring SM approval).
- l. Boats must maintain a **safe distance from icebergs and glaciers**; at least three times maximum height, and greater than 300 m from all actively calving ice faces. Extra precaution should be maintained when maneuverability is restricted by brash ice.
- m. Boats must **never interfere with wildlife**.
- n. Operators must **reduce boat speed** under any conditions of high winds, heavy seas, and brash ice.
- o. Operators are responsible for **safe boat landings** and properly securing equipment while ashore. When possible, established island landing sites should be utilized.
- p. In the **event of any emergency** such as man overboard, accident, or mechanical failure,
 - **Palmer Comms must be notified** promptly by radio.
 - Boats should **be prepared to lend assistance** without jeopardizing their own safety, as directed by Palmer Comms.
 - Boating parties should **minimize any radio traffic**.

C. SUPPORTING MATERIAL

Radio Protocols: Ensuring that station personnel are fully informed of planned field activities greatly increases the likelihood of success should a SAR response be necessary. Orientation on proper radio procedures will be given by the BC or CT. All field parties must carry two submersible radios. Radios should be kept with assigned persons whether afloat or ashore. Boating parties should schedule their return such that there is sufficient daylight and staff available to mount an effective SAR operation should they be overdue. A SAR alert will be called anytime parties are greater than 30 minutes overdue and have not made radio contact.

Communication is key to the appropriate response to any emergency. Even if you can respond safely to an emergency situation, communication with station staff raises the level of awareness, and encourages a greater margin of safety should a bad situation unexpectedly become worse. It has been repeatedly demonstrated that extreme emergencies are often the result of the unexpected compounding of minor accidents. The fastest response to an emergency may often be from other field parties. However, great care must be taken in such a response to not further endanger additional personnel. In all emergency situations, extraneous radio traffic should be curtailed to avoid interference with the response.

Clothing: Although Zodiac boats are very safe and stable platforms, under rough conditions they can be very wet for all passengers. Falling out of the boat into cold ocean water is one of the more likely accidents to occur during boating operations. In either case, hypothermia is a likely result. Proper clothing will greatly reduce the rate of heat loss from the human body. For this reason all personnel must have extra clothing (hat, gloves, socks, and long underwear) available in case of immersion

Weather Conditions: The SM, BC, or CT will keep abreast of current weather conditions as recorded at Palmer Station. Upon indications of changing weather or brash ice conditions, all boating parties will be informed over Channel 27. Likewise, boat operators should keep Palmer Comms informed of changing conditions at their current location. Experienced personnel at any location should not hesitate to share their assessment of indicated conditions with the SM, BC, or CT. The response of boats to wind and waves depends greatly on speed, size, loading, direction of travel, and location. The SM, with consultation of the

SSL, BC and experienced operators will make a judgement of appropriate boating operations for existing conditions.

Natural hazards:

- **Glaciers and icebergs** may calve unexpectedly, and icebergs also can turn turtle when their equilibrium is disturbed. There is danger both from large waves and broken pieces of ice. Ice under pressure can shatter explosively on contact with water, sending shrapnel over a very large area. Therefore, extreme caution must be exhibited and adequate distance maintained in the vicinity of glacier faces and icebergs.
- **Leopard seals** pose a potential problem in that they are large and may be aggressive. They have been known to bite and puncture Zodiac air tubes. **Whales** should not be approached closely, but rather allowed to come to you. Interactions involving whales are legally governed by the Marine Mammal Act and the Antarctic Conservation Act. Specific guidelines are available from the SM.
- **High winds and heavy seas** can easily upset the inherent stability of Zodiac boats, especially while planing at high speed. Flipping a boat and dumping all occupants into the water is one of the most dangerous accidents that might happen. **Brash ice** can rip boat fabric, and destroy propellers and motor lower units, leaving a collapsing boat dead in the water. Operators should be aware of weather conditions; especially sudden changes in wind direction, falling barometer, reduction in visibility, increases in wind speed, and movement of brash ice.
- **Island landings** are one of the most likely causes of boating accidents in the Palmer area. Proper techniques will be demonstrated during training. Be certain to tie the Zodiac to a secure point at any landing site, including the Station mooring area. Zodiacs are moored with the bow toward the landing areas both at the Station mooring area and at other sites. Particular care must be taken when mooring away from Palmer Station. When the boat is tied at the landing site, always tilt the engine up to prevent shaft and propeller damage in shallow water. Pay out a significant portion of your mooring line and allow the Zodiac to free float unless conditions require a tight line so that the boat does not wash up on a nearby shelf. Tie the bow line securely using a Bowline knot. Use extreme caution in selecting a landing site so that a heavy surge does not overturn the boat or strand it high on the rocks. The boating map shows recommended landing sites on most accessible islands. Keep in mind that under some conditions and at some locations, having a stern anchor that helps moor a boat slightly offshore in deeper water is the best option. The BC will demonstrate this procedure during the boating handling part of the training.

NOTE: the following special considerations are draft only, awaiting review by PAUC and the NSF. **Special considerations** may be given to extending Zodiac operations beyond described geographic and weather limits for scientific purposes only. **Under conditions of sustained 20 – 30 knot winds, with the concurrence of the Boating Coordinator and the Station Manager, experienced boaters may transit to Old Palmer, Humble Island, Torgersen Island, and vessels lying in Arthur Harbor. Under good weather conditions, the extended geographic** area that may be accessed extends along the southwest coast of Anvers Island, and includes Biscoe Point to the southeast, the Joubin Islands to the west, and the Dream/Cape Monaco Island groups to the northwest. Access to the Joubin Islands and the open water between these islands and Palmer Station may only occur when a USAP-chartered vessel is within a range conducive to SAR operations. The other areas may be accessed provided the following factors are reviewed in a timely manner by the Field Team Leader, the Station Science Leader, the Station Manager, on-site NSF Representative (if present), and the Boating Coordinator:

- **Experience** of boating party, including boat handling abilities and familiarity with local area.
- The specific **destination**, considering that near-shore areas are more protected; some areas require ACA permits

- The **field plan**, including the duration, the type of activity and equipment (including Zodiac type) being used; big vs. little boats, total weight and speed, gear in the water which will restrict mobility and response time
- Present and projected **weather and ocean conditions**; including visibility, winds, barometer, temperature, swell height and type.
- Generally, all of the reviewing personnel must concur that the activity can be accomplished **without unreasonable risk** to the field party or the Ocean SAR team, however, ultimate authority for this decision resides within the NSF representative or in their absence, the Palmer Station Area Director.

Operator's Responsibilities: All operators will be responsible for common sense application of their own abilities and condition to safely operate boats. The SM has the authority to limit an individual's activities to ensure safe boating. The operators will be responsible for the field team's safety by checking equipment and ensuring the adherence to boating regulations.

BC Responsibility: The duties and responsibilities of the Boating Coordinator are outlined in the Boating Coordinator Standard Operating Procedures. Primary responsibility for boat condition and maintenance rests with the BC, including proper air pressure, reliable motor operation (both primary and spare), maintenance of safety gear, as well as all associated record keeping. Common sense dictates that individual operators should determine that a boat is ready for safe operation before departure, and work with the BC to correct any problems found. With the number of field parties and level of activity during good boating weather, operators can greatly assist the BC by communicating equipment problems, current boating conditions, and any outstanding issues.

Boat Equipment: The following equipment is required:

Main and backup engines

Greater than one and one half tanks of fuel

Two paddles

One bailer

One mooring line

Two submersible radios

Boating area map

Radar reflector

Sea Anchor

One emergency kit containing the following items:

Sleeping bag

Engine ignition tools

Spark plugs

Shear pins

Spare fuel line

Compass

Signal flares

Matches

Air pump and hose

GPS units will be available for all research parties

RECOMMENDATION 6: RPSC (ROB EDWARDS) WILL DRAFT AN AMENDMENT TO THE BOATING REGULATIONS THAT BETTER IDENTIFIES THE ULTIMATE AUTHORITY FOR SPECIAL-CIRCUMSTANCE BOATING ISSUES.

Committee Members' recommendation is to state that "while all reviewing personnel must be in agreement regarding final decision in a special circumstance situation, final authority rests with the NSF Representative, or in their absence, the Station Manager."

(Section to be amended is lifted from Zodiac Regulations and shown below.)

NOTE: the following special considerations are draft only, awaiting review by PAUC and the NSF. Special considerations may be given to extending Zodiac operations beyond described geographic and weather limits for scientific purposes only. Under conditions of sustained 20 – 30 knot winds, with the concurrence of the Boating Coordinator and the Station Manager, experienced boaters may transit to Old Palmer, Humble Island, Torgersen Island, and vessels lying in Arthur Harbor. Under good weather conditions, the extended geographic area that may be accessed extends along the southwest coast of Anvers Island, and includes Biscoe Point to the southeast, the Joubin Islands to the west, and the Dream/Cape Monaco Island groups to the northwest. Access to the Joubin Islands and the open water between these islands and Palmer Station may only occur when a USAP-chartered vessel is within a range conducive to SAR operations. The other areas may be accessed provided the following factors are reviewed in a timely manner by the Field Team Leader, the Station Science Leader, the Station Manager, on-site NSF Representative (if present), and the Boating Coordinator:

Facilities

Steve Meredith, RPSC Engineer, and Ric Morris, RPSC Director, FEMC, reported on the Palmer Station Facilities, Engineering, Maintenance, and Construction activities for 2002, including plans for the proposed science facility at Palmer Station. RPSC plans for the new building to encompass T5, VLF/Clean Air, and CTBT activities in a 1,440 square footprint.

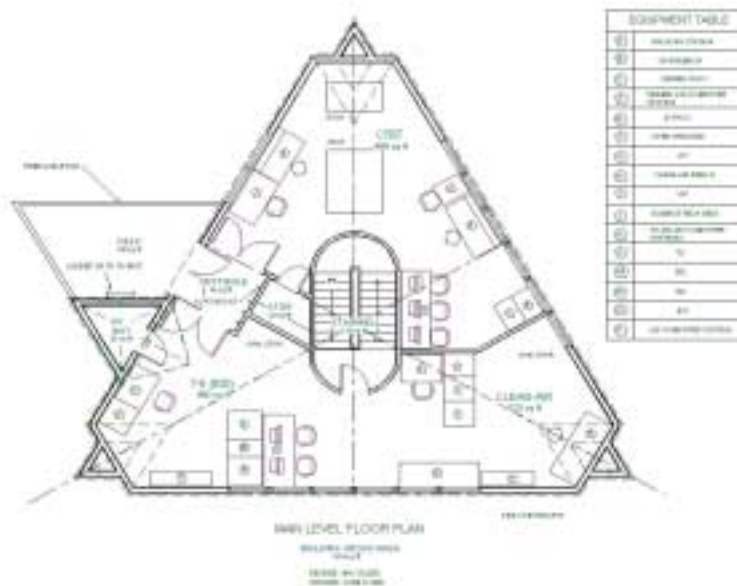
Doug Miller, RPSC Engineer, is working with FEMC and grantees to coordinate the instruments' relocation from the old facility to the new. Rocky Booth requested that the BSI instruments run parallel for two months to make sure they are functioning properly. Mr. Booth will contact Mr. Miller with his request.

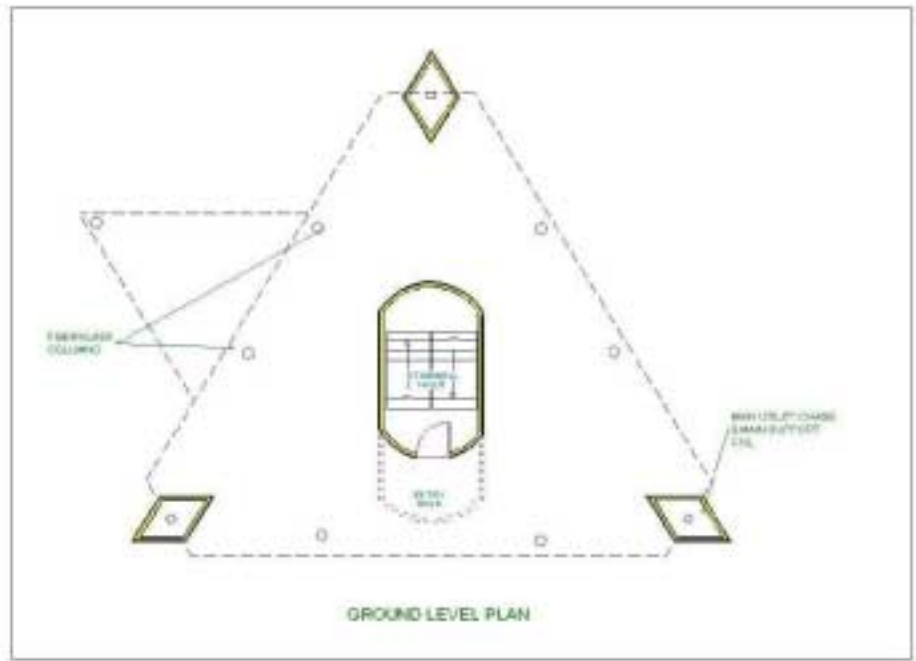
Science Facility Design:

T-5 Building 660 sq. feet
 VLF/Clean Air 180 sq. feet
 CTBT (new) 600 sq. feet
 Building size: 1,440 sq. feet

Construction Schedule:

Start Drawings: July 8, 2002
 Complete Drawings: October 8, 2002
 Materials arrive at Palmer April 2003
 Construction April 2003
 Complete Construction June 2003



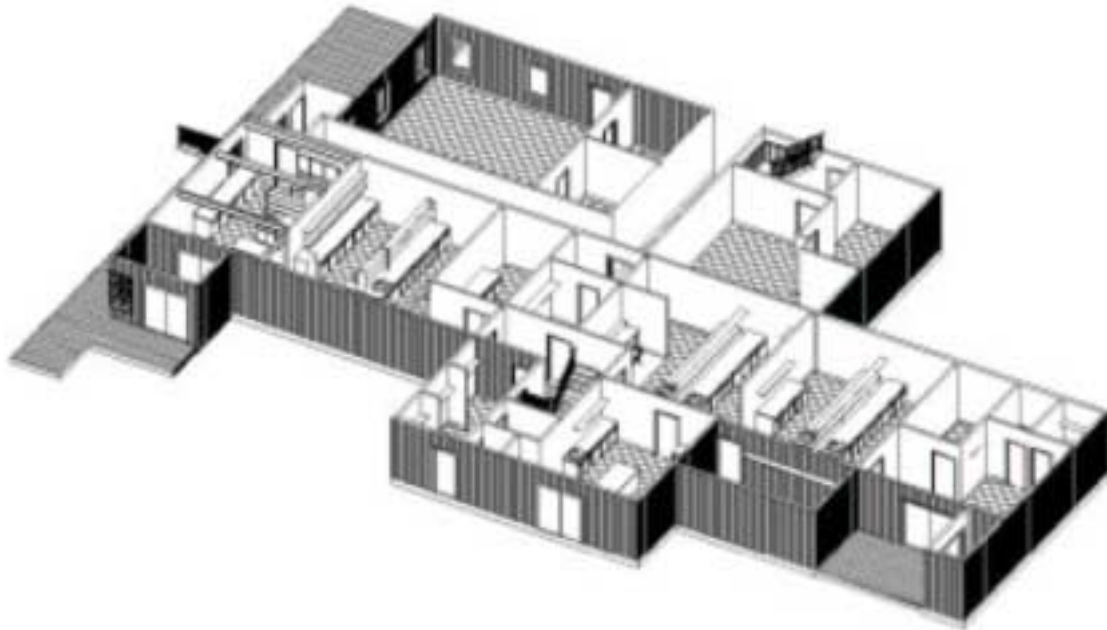


Science Facility Renderings

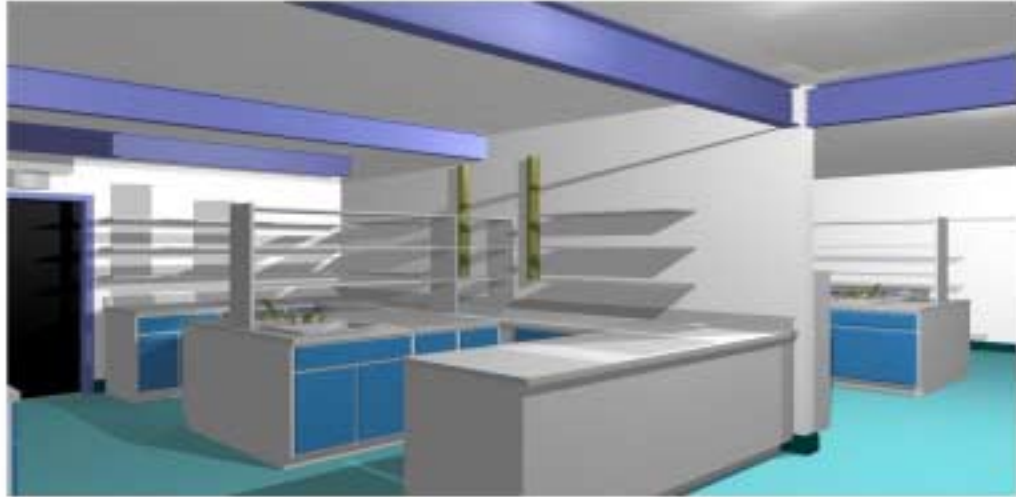


Mr. Meredith and Mr. Morris continued with an update on the progress of the BioLab remodel project.

Following are a 3-D model floor plan, and two conceptual renderings of the BioLab building.



BioLab Renderings



BIO Lab UPGRADES LAB #1



BioLab Upgrades Construction Schedule:

BioLab Upgrades, First Floor: construction began April 2002
Current Level of Completion: 65%
Completion Date: September 27, 2002

Mr. Morris discussed the Palmer Station FEMC Long Range Plans regarding the station pier, seawater intake, and aquarium.

Pier:

The NSF has asked consultants to study and report back on pier options. Because pier options are expected to be fairly expensive (\$5-6 million), the upgrade is dependent on funding. Considerations when planning for the pier include boating needs (how to put in and take out Zodiacs), water depth required for the LMG, stronger mooring, and a larger working area alongside the vessel.

NSF (Frank Brier) will advise FEMC how to proceed with pier options after it's determined which option the NSF approves.

Sea Water Intake:

Mr. Morris reported that the aquarium piping has been reworked and that this appears to have resolved the air leak problem.

PAUC members were asked to review the working group report "*Recommendations for Palmer Station Aquarium and Seawater System Update*" dated September 1, 2000 and prioritize the recommendations for RPSC/NSF consideration when funds become available for aquarium improvements.

The report follows:

Palmer Area Users Committee Working Group Report: Recommendations for Palmer Station Aquarium and Seawater System Upgrade

1 September 2000

Working Group Members: Chuck Amsler (chair), Bill Baker, Lisa Crockett, Langdon Quetin, Bruce Sidell

The working group gratefully acknowledges input from the following Palmer Station users: Sid Bosch, Bill Detrich, Katrin Iken, Deneb Karentz, Jim McClintock, Robin Ross

Document Format:

- I. Aquarium Building, Interior Seawater Tanks, and Distribution System
 - A. Deficiencies of current configuration
 - B. Advantages of current configuration
 - C. Recommendations for reconfiguration

- II. Exterior Seawater Tanks
 - A. Deficiencies of current configuration
 - B. Advantages of current configuration
 - C. Recommendations for reconfiguration

- III. Seawater Intake
 - A. Recommendations for reconfiguration

I. Aquarium Building, Interior Seawater Tanks, and Distribution System

A. Deficiencies of current configuration

1. Tank arrangement is relatively rigid and difficult to customize for specific needs.
2. Flow control valves are located high and, often, above somewhat difficult to access spots.
3. There is very little space between tanks, particularly when the circular tanks are covered in whole or half. Combined with the plumbing arrangement, this makes it difficult to access the backs and sides of tanks for experimental manipulations.
4. There is relatively little space between the circular tanks and lab bench spaces on the periphery of the room. This can cause access problems when multiple users are present and some or all need to move around a lot.
5. There is no control of seawater temperature. This is a particular problem in maintaining organisms from deeper water and during periods of high surface water temperatures.
6. There have been a number of instances of widespread animal die-offs with no cause definitively identified.
7. The aquarium competes with RO water and domestic plumbing needs for seawater. This has resulted in requests from support personnel for aquarium flow rates to be decreased. It may also be a reason that flow rates to aquaria can vary.
8. No control over room photoperiod.
9. There have been instances of blockage caused by sand that had leaked from the filters.
10. Some of the smaller rectangular tanks are positioned high off the floor making manipulations or observations in them difficult. The metal support stands for these tanks are not in good repair.
11. The large circular tanks have white interiors. This is ideal for some organisms (e.g., krill) but detrimental for deeper water organisms such as some fish that are adapted to dark environments.

B. Advantages of current configuration

1. There are three or more of each individual seawater tank design available. This can be critical for experimental designs that require replication in tank number.
2. There are a variety of tank designs available including both circular and rectangular tanks.
3. Both filtered and unfiltered seawater are available.
4. The medium and larger tanks have drains in the bottom to facilitate cleaning (unlike many such tanks at McMurdo). In addition, the circular tanks use (modified) Venturi drains, which are highly effective at sweeping debris off the bottom surface.

C. Recommendations for reconfiguration

1. The design should be flexible. It should allow the specific type and number of seawater tanks to be configured based on the needs of the groups on station at any given time. It should be designed with recognition that more than one group may require 2, 3 or more of a particular tank type and size at the same time. Consequently, although all of the following would not be available simultaneously, the system should be able to accommodate:
 - a. At least six (to eight) or more of any of the rectangular tanks (either of the current sizes; additional tanks of both sizes will need to be purchased). Lesser numbers of the other rectangular tank size and at least 1 or 2 circular tanks should be concurrently available. To the extent that stability issues allow, it should be possible to have at least some of either rectangular tank design potentially accessible from a comfortable working height.
 - b. At least four or more of any circular tank design such as those currently in the facility. Several rectangular tanks should be concurrently available.
2. The metal stands currently utilized for the rectangular tanks should be replaced with fiberglass or other seawater resistant material. These stands should be designed such that they can be taken apart and stored when not needed as part of the flexible aquarium configuration.
3. The engineering design should minimize the potential for tank damage during both movement and storage.
4. To accommodate the flexible tank configurations, the seawater should continue to be distributed from above. However, flexible and opaque tubing should run from overhead valves to another valve that can be mounted on the edge of an individual tank. Flow control could be performed with this lower and easily accessible valve. Although the hard-plumbed seawater lines will likely

- still run centrally, some system of overhead supports or hangers should be available so that the tubes running to individual tanks can be run laterally as needed to keep them from interfering with access between the tanks.
5. The white circular tanks (6-foot diameter) that are currently being used should be retained in the new aquarium. In addition, three or four 6-foot diameter tanks of a dark color should be purchased and available. The dark green color that it typically the manufacturer's default is acceptable.
 6. In the event that the engineer or architect designing the flexible configuration system believes that a smaller (3, 4, or 5 foot diameter) round tank would be beneficial (e.g., would fit somewhere when a 6-foot diameter tank would not in a design such as described in section I.C.1.a and thereby provide a round tank in a situation where one would not otherwise be available), the working group believes that it could be of use in some applications. We would then support the addition of such a tank and recommend that it be white. However, the working group suggests that purchase of such a tank be a lower priority than acquisition of additional rectangular tanks (of both current sizes) and of 6 foot dark color tanks. Any smaller round tank need not be replicated for experimental design purposes.
 7. The seawater lines should be insulated to reduce temperature increases.
 8. Insulation should be available if needed for individual seawater tanks.
 9. Seawater chilling devices should be available for individual seawater tanks. Dr. Bruce Sidell has researched these and should be consulted directly for suggestions on appropriate chilling devices.
 10. Both filtered and unfiltered seawater should remain available.
 11. Plumbing should be schedule 40 or schedule 80 PVC. We defer to the engineers on the size specified for particular parts of the system but suggest that any schedule 40 used, particularly around valves at the "tank end" of the system, be well braced to prevent breakage during use. The backbone of the system should be glued but threaded pipe could be used for distribution to individual tanks if it facilitates design of a flexible configuration system.
 12. To help determine water quality parameters that might be correlated with animal die-offs, the system should be monitored and recorded continuously. These parameters should include but not necessarily be limited to temperature, flow rates, oxygen concentration, salinity, and turbidity if monitoring hardware for those specific parameters is available. We suggest that appropriate hardware may be available off the shelf from aquaculture industry suppliers as these kinds of parameters are commonly monitored there. This monitoring system should tie into the station alarm network. **Note:** The working group stresses that this system is being suggested because we believe that low-maintenance hardware is available. We recommend such equipment be operated and maintained by science support personnel **if and only if** it does not place significant additional burdens on the support personnel at current staffing levels, does not require additional staff, and does not necessitate elimination of any current science support activities. If more elaborate monitoring equipment exists, for example to record levels of potential naturally occurring toxins, it should be available for science projects who wish to operate it themselves.
 13. Any new circular tanks should have drains in the bottom (as opposed to only on a side and near the bottom) to facilitate cleaning. Venturi drains of a hydrodynamic design superior to those in the current circular tanks are available. These are removable so that more standard standpipe or other drain designs can be utilized as is preferable in use with some organisms. We recommend new circular tanks have these superior but removable Venturi drains.
 14. The room lights should have the option of being controlled by a photoperiod timer. The working group recognizes that use of such a timer may be impractical or unnecessary under many circumstances. However, there are some times when it could be both practical and useful. Since simple on/off timers are quite inexpensive, we suggest that at a minimum one (or more as required by the wiring) be installed. Ideally, but at lower priority compared to our other recommendations, somewhat more elaborate timers with motor driven potentiometers that allow lights to slowly come on and go off over a variable period would be used instead.
 15. Plumbing and shelving for a number (5 to 15) of small (e.g., 20 to 30 gallon) aquaria along one side wall of the aquarium building would be useful. In keeping with a flexible design, the aquaria should be removable and the shelving able to be used for purposes as is currently done.

16. Ultraviolet sterilizers have been utilized in the past to deal with fungal contamination in the seawater system. A capability for UV sterilization of the filtered seawater should exist but is not needed on a routine or continual basis.

II. Exterior Seawater Tanks

A. Deficiencies of current configuration

1. Only unfiltered seawater is available.
2. Subject to freezing during colder months. This is true of both the pipes and the tanks themselves and has been a serious problem for some projects.
3. There is some shading of the tanks by the aquarium building. This is a problem for experiments that require natural solar irradiation.

B. Advantages of current configuration

1. The plumbing maximizes solar exposure by keeping shadows from it to a minimum.
2. Provides larger holding tanks than indoors. This facilitates maintaining animals at lower densities or in greater numbers.
3. Facilitates experiments that require natural solar irradiation.

C. Recommendations for reconfiguration

1. As with the interior tanks, flexibility in configuration is an asset. However, a flexible configuration including the largest outside tanks might be impractical.
2. Ideally, all tank designs utilized inside should be able to be accommodated outside too as necessary. This would allow at least some tanks not being used in the interior configuration to still be available. The deck area on the garage door side of the aquarium building would likely be the most practical area for this but the garage door itself should not be blocked.
3. Any modifications should continue to keep shading of tanks to a minimum.
4. If modifications to the deck are being considered, moving tanks further from the building would be an asset for experiments that require minimum shading.
5. Any modifications to piping (insulation, heat tape) and aquaria (insulation) that would minimize freezing in cold months would be helpful. However, it is essential that any heating system employed be very carefully controlled so as not to raise the seawater temperatures above ambient while keeping it from cooling below freezing. An ideal design would be one that was well enough insulated to prevent freeze up without the necessity (and concurrent risk) of external heat.
6. It would be advantageous to have filtered seawater available but this is not a high priority item.

III. Seawater Intake

A. Recommendations for reconfiguration

1. Increase total flow to prevent restrictions on aquarium use.
2. Increasing the depth of the seawater intake could reduce variations in salinity, temperature, turbidity, and perhaps other parameters. This should be seriously considered. The working group suggests that the LTER be consulted for CTD data. These data should be utilized to objectively determine what depth, if any, would result in significantly more stable seawater temperature and salinity while still being practical to construct and deploy.
3. If a deeper intake is deployed, keeping the end well off the bottom will become even more important than at present. The bottom becomes much siltier at only slightly greater depths than the present intakes.
4. If possible, the intakes and other seawater system components should be designed so that they can be cleaned mechanically ("pigged") to decrease biofouling. We recognize that for the intakes this probably would only be possible if divers were on station. Even if this were not necessary because of flow restrictions, it could increase water quality as past problems could be due to biofouling in the pipes.
5. There should continue to be two intakes and these should be spaced as far apart as possible. Each should alone be capable of handling all station seawater needs.

6. Sand filter designs that minimize the potential for leakage of sand into the seawater system should be employed.
 7. The station needs a backup seawater intake system that can be deployed if the two main lines are damaged and divers are not on station to make immediate repairs. We suggest that, among other potential designs, RPSC consider smaller diameter, flexible (or not) piping that could be deployed from the surface or through landfast ice.
 8. The intakes should be designed to maximize the ease of underwater maintenance and repair. This would probably be most cost effective anyway and would make it more likely that a science group diver could make adequate repairs in an emergency situation.
 9. The working group recognizes that a number of engineering solutions for protecting the intake lines have been proposed in the past. We would welcome the opportunity to comment on any specific engineering proposals for new intake lines.
-

RECOMMENDATION 7: PAUC WILL REVIEW THE *RECOMMENDATIONS FOR PALMER STATION AQUARIUM AND SEAWATER SYSTEM UPGRADE* REPORT AND PRIORITIZE AQUARIUM AND SEAWATER SYSTEM IMPROVEMENTS/SUGGESTIONS FOR RPSC/NSF CONSIDERATION.

RECOMMENDATION 8: A WORKING GROUP (MARIA VERNET/ALISON MURRAY) WILL PROVIDE INFORMATION TO ASSIST RPSC IN REPAIRING/IMPROVING THE COLD ROOM/ENVIRONMENTAL SPACE. RPSC WILL REVIEW COLD ROOM/ENVIRONMENTAL CAPABILITIES AND PROVIDE SPECS/STANDARDS TO FEMC SO THEY MAY DETERMINE HOW BEST TO MEET THE WORKING GROUP'S CRITERIA DURING CONSTRUCTION/REMODELING EFFORTS.

Other improvements to Palmer Station included the following items:

Upgrade to the scullery area floor
Design completion for the ventilation in the bedrooms
Construction of the platform for the Earth Station has begun

Logistics-Warehouse Space/Inventory Reduction

Work has started and is continuing in the Punta Arenas warehouse, per Ken Navarro. The following pictures demonstrate improvements to-date at the Punta Arenas warehouse. Mr. Navarro noted that the Peninsula Clothing Distribution Center is being modeled after the Continental Clothing Distribution Center in Christchurch.

In the process of cleaning up the warehouse area, Mr. Navarro drafted an inventory spreadsheet that will be used to retrograde items from the warehouse back to the United States. PAUC members are asked to assist with the warehouse effort by identifying items that can be returned to home institutions or thrown away.

RECOMMENDATION 9: PAUC AND OTHER PALMER AREA USERS WILL REVIEW THE RPSC INVENTORY SPREADSHEETS AND ADVISE KEN NAVARRO OF ANY ITEMS THAT MIGHT BE CONSIDERED FOR RETROGRADE

OR DISPOSAL. TENTATIVE PLANS ARE TO RETRO THESE ITEMS (ALONG WITH ITEMS FROM PALMER STATION) IN JANUARY 2003.

Mr. Navarro also discussed how the grantees might more successfully ship “keep chilled/frozen” cargo. Blue ice is now more readily available in Santiago, Chile, and Mr. Navarro is available to provide information and assistance to all grantees requiring these types of shipments.

Hobos (temperature monitors) are still being used with grantee samples. Mr. Navarro reminded the PAUC that these Hobos should be returned to RPSC for reuse. Other improvements to sample shipping process is the addition of a chain of custody form:

Science Sample Chain of Custody

TCN: _____ Please circle the appropriate method of shipping:

KEEP FROZEN at _____ degrees C

KEEP CHILLED

Receipt and Condition Acknowledge:

DATE	FULL NAME	SIGNATURE
------	-----------	-----------

Shipment not OK, please notify:

Lee Degalan- NSF Contractor Representative	Rebecca Shoop – Supervisor, Peninsula Logistics
(805) 985-6851	(720) 568-2239 direct
	(303) 884-5154 cell

Port Hueneme is available to ship “keep chilled” items but the delivery times or possible delays may cause problems. Therefore, this may not be the best method of shipping chilled items. Ken Navarro and several other RPSC employees recently visited Port Hueneme to review the shipping system and to learn how to provide better communication and service between grantees and Port Hueneme.

In response to Maria Vernet’s question “how can the Principal Investigator circumvent or improve radioisotope shipments to Punta Arenas”, Drs. Jeffrey and Sidell gave Dr. Vernet some insight into how she might ship radioisotopes through her home institution. Mr. Navarro added that he will be attending a training class in the near future and may have additional information for Dr. Vernet regarding radioisotope shipments.

Warehouse #2



Exterior View- Clothing Storage



Secured Storage



Secured Storage



Clothing Return Counter



Field Gear Storage



Reefer Van



Haz Locker



Procurement

In Julie Wright's absence, Cara Sucher discussed recent changes to the Purchasing Department.

The newly created Acquisition Specialists Group (ASG) was a result of the Process Improvement Sessions at RPSC last season. The ASG will assign representatives to work with defined focal groups such as Science Support, FEMC. The ASG staff will obtain quotes, place the initial order, expedite, and follow through until delivery is made. Julie Wright is Science Support's ASG representative. By consolidating procurement tasks and assigning a representative to each division, it is anticipated that the entire procurement process will be improved.

In addition, Ms. Sucher maintains a tracking spreadsheet in an effort to resolve or head-off any problems with SIP-requested items. A procurement report is sent to the PIs six weeks prior to deployment to inform and alert of any potential problems.

Capital Equipment

Mr. Edwards and Ms. Sucher discussed past and future Palmer Station capital equipment acquisitions. Mr. Edwards added that PAUC and Palmer Station grantees' input on capital items requests/suggestions is central to the acquisition process for Palmer Station.

Mr. Dunbar and Mr. Stone suggested that a capital equipment depreciation report would be useful information in determining capital equipment life cycles and in scheduling replacements for old equipment. This type of 5- to 10-year depreciation plan could be used when prioritizing and developing the budget.

Acquisitions 1998-2000	Acquisitions 2001-2002	Proposed Acquisitions 2002-2003
NIKON E800 Research grade microscope w/epifluorescence, phase contrast and DIC Capabilities	Agilent 6890 Gas Chromatograph (on loan from Cray Lab)	Millipore Milli-Q Gradient/RO Type 1 water purification system
SONY DXC-390 CCD Color Video camera attachment for NIKON E800 Microscope	Thermohybrid PCR express sub-ambient thermo cycler	Shimadzu total organic carbon analyzer model TOC-5000A
Agilent 1100 HPLC with extensive inventory of spare parts	REVCO-20 upright freezers (2 each)	Separation Engineering Soluble organic separator
Gilson FC204 Automated fraction collector	REVCO -5.5 cubic ft. refrigerators (2 each)	Bio-rad D-code system for denaturing gradient gel electrophoresis (DGGE)
SPEX Fluoromax-2 scanning spectrofluorometer with DNA quantification capability	Apochromat Lens with DIC capability for NIKON E-800 microscope	Virtis or Labconco freeze dryer
Perkin-Elmer Lambda 40 UV-VIS spectrophotometer		
Savant AES290 integrated speedvac system		
Chelsea Fast Repetition Rate fluorometer		
Beckman XL-80 Ultracentrifuge (replacement)		

RECOMMENDATION 10: PAUC (WADE JEFFREY) WILL SUBMIT A PRIORITIZED LIST OF CAPITAL EQUIPMENT REQUESTS TO RPSC (ROB EDWARDS) FOR POSSIBLE ACQUISITION AS FUNDS BECOME AVAILABLE.

Health and Safety

Bob Farrell, Palmer Station Area Director, reported on Palmer Station safety statistics and on the efforts of station personnel to prevent accidents. With improved safety awareness and the implementation of a safety point system, statistics have greatly improved. Plans are to continue the safety program throughout the year.

Harry Mahar, NSF Safety and Health Officer, described the medical clearance requirements for foreign USAP participants. Recently, each participating country submitted their clearance standards to the NSF. In an effort to arrive at a partnering plan, this issue will be discussed further at the SCAR meeting in Shanghai, China. NSF (Harry Mahar) will have more details on medical clearance reciprocity between countries later in August.

RECOMMENDATION 11: PAUC ASKED THAT NSF (HARRY MAHAR) CONTINUE TO INFORM THE PAUC ABOUT CHANGES TO THE PQ/TRAVEL APPROVAL PROCESS FOR FOREIGN USAP PARTICIPANTS.

SatCom Status

Lora Folger, IT Comm Supervisor, reported the schedule for SatCom at Palmer Station.

- July 10 Installation of platform and RF Shelter
- August 2 Installation of antenna, radome, and equipment
- September 1 Link Testing
- September 15 System operational

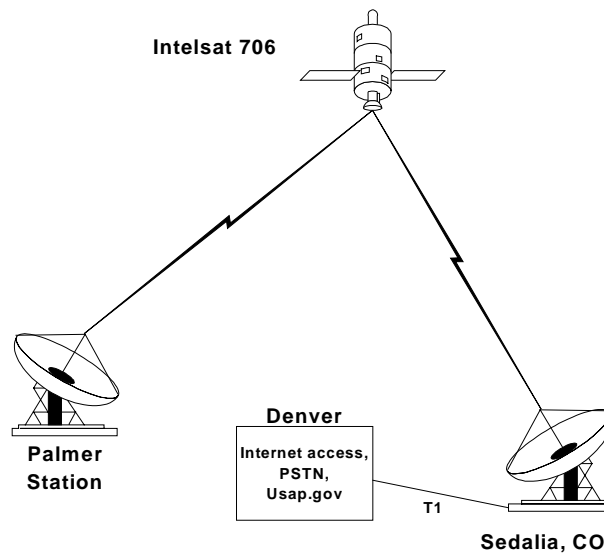
SatCom site on July 10, 2002



System Overview and Comparison

LES-9	New System
Two 7-hour windows	24X7 Connectivity
38.4 Kbps	384 Kbps
Service ends – October 1, 2002	Tested up to T1 (1.544 Mbps)
	VoIP phones
	Telemedicine

WAN Diagram



Location



4.9M Antenna



26 ft Radome



Palmer Station



Network Security

Ms. Folger presented information (below) on Information Security. Pat Smith added that Tim Howard, RPSC Information Security Manager, is currently at Palmer Station and is working to develop information security that will meet the Federal Information Systems requirements. Mr. Smith asked the PAUC for input on how or if this security process might impact their research.


<p>WHY INFORMATION SECURITY? Information Security is Mandatory for Federal Information Systems.</p>	<ul style="list-style-type: none"> ➤ GISRA- Government Information Security Reform Act (2001) ➤ OMB A-130 Policy for management of federal systems ➤ 40 U.S.C 1441 Information Technology Reform Act
<p>WHY ARE WE HERE?</p>	<ul style="list-style-type: none"> ➤ Information Security is an existing federal government requirement with renewed emphasis ➤ Federal government requires mandatory periodic training for all users of federal IT systems, including contractor personnel and science grantees ➤ Annual training supplemented by periodic reminders keeps us aware of the major security issues and this briefing satisfies your training requirement ➤ We need science grantee input to write effective policies and procedures
<p>BASIC ELEMENTS OF INFORMATION SECURITY</p>	<ul style="list-style-type: none"> ➤ Information Security is: <ol style="list-style-type: none"> 1. Confidentiality – Protect our personal information from unauthorized access or disclosure 2. Integrity – Protect information from being changed inadvertently or by unauthorized people 3. Availability – Protect information resources so we can use them when we need them ➤ What do we protect against? <ol style="list-style-type: none"> 1. External Threats – Natural disasters (flood, storm damage, fire); Criminal events (robbery, arson); Information-focused attacks (hackers) 2. Internal Threats – Accidental loss or change of data; Fraud, Waste and Abuse; Disgruntled users; Unethical behavior
<p>USAP INFORMATION SECURITY CONSIDERATIONS</p>	<ul style="list-style-type: none"> ➤ USAP network is: <ol style="list-style-type: none"> 1. A federal government network- target for hostile activities. 2. An open network to support science mission – vulnerable to attack 3. Integral to station safety, morale and quality of life ➤ Network intrusions can: <ol style="list-style-type: none"> 1. Place safety of station residents at risk 2. Create havoc with science data 3. Could allow intruders to move to other government networks 4. Could undermine public confidence in NSF

What are we trying to protect?



- **Bandwidth – our scarcest resource**
- **Privacy Act information**
- **HIPPA information such as medical records and reports**
- **Science and Proprietary information**
- **Military airlift schedules; DV/VIP activities - OPSEC**

<p style="text-align: center;">USAP Information Security Policies</p> <p>5000.1 USAP Information Security Program 5000.2 InfoSec Organization & Admin 5000.3 Program Information Categorization 5000.4 Security Risk Management 5000.5 Information Security Architecture 5000.6 Acceptable Use 5000.7 User Access 5000.8 Security Auditing 5000.9 Security Training & Awareness</p>	<p>5000.10 Personnel Security 5000.11 Physical Security 5000.12 Security Incident Management 5000.13 Contingency & Disaster Planning 5000.14 Virus Protection & Detection 5000.15 Security Configuration Management 5000.16 Certification & Accreditation 5000.17 Non-USAP Systems</p>
<p style="text-align: center;">INFORMATION SECURITY PROGRAM</p>	<ul style="list-style-type: none"> ➤ Policies and Procedures – the policy process includes comments from science community ➤ Information Architecture – Establishes standards for IT; phase-out legacy equipment and applications that present unacceptable security risks ➤ Certification and Accreditation – Assess sites, systems and applications to identify and mitigate risks ➤ Awareness and Training – Help users understand their role in protecting the infrastructure
<p style="text-align: center;">USER RESPONSIBILITIES</p>	<ul style="list-style-type: none"> ➤ Protect Confidentiality of our information: <ol style="list-style-type: none"> 1. Protect sensitive information 2. Use passwords properly 3. Log off/password screen savers when leaving your system ➤ Protect Integrity of our information <ol style="list-style-type: none"> 1. Use passwords properly 2. Ensure your information is backed up 3. Use anti-virus software to check items before installing 4. Use only authorized software ➤ Protect Availability of our information resources <ol style="list-style-type: none"> 1. Use the infrastructure for acceptable purposes

	<p>only</p> <ol style="list-style-type: none"> 2. Take proper care of equipment 3. Use only authorized software 4. Use anti-virus software to check items before installing 5. Know what to do in an emergency or disaster situation
<p>Password Tips  2#gluvsHelp D@rkg066Le\$ R3dc0@t th1Kpant\$</p>	<ul style="list-style-type: none"> ➤ Change your password regularly ➤ Use strong passwords (8 characters, mixed characters) ➤ Protect your password – NO sharing
<p>PROPOSED ACCEPTABLE USES OF USAP IT RESOURCES Acceptable Uses – Not to interfere with mission; Subject to risk assessment; NSF may supersede at any time</p>	<ul style="list-style-type: none"> ➤ Personal telephone/fax use ok – user may pay charges ➤ Personal email use ok – not to interfere with mission ➤ Personal internet use ok – not to interfere with mission ➤ Recreational web browsing ok – not to interfere with mission; no downloads of prohibited material ➤ Instant messaging ok – reasonable use ➤ Personal encryption ok – user may be asked to share key to support investigations ➤ Third party software ok – user to run antivirus checks and must have license ➤ Email lists ok – provide unsubscribe info to station IT ➤ Personal business – limited to activities ok ➤ User has the responsibility to read the entire policy – will have to sign an agreement for account access
<p>PROPOSED PROHIBITED USES OF USAP IT RESOURCES Prohibited Uses – Users may not engage in prohibited activities</p>	<ul style="list-style-type: none"> ➤ No illegal activities ➤ No adverse activities ➤ No classified information ➤ No downloading pornographic, sexist, racist or threatening material ➤ No email chains, or email broadcasts ➤ No personal servers for email, web, ftp, telnet, or similar applications – all project servers must be in SIP and NSF approved ➤ No chat room or newsgroup participation from usap.gov ➤ No political campaigning ➤ No network gaming activities ➤ No personal e-commerce or non-program business activities ➤ No network monitoring tools ➤ User has the responsibility to read the entire policy – will have to sign an agreement for account access

<p>The USAP Banner- “This is a National Science Foundation federal government computer system. Users should be aware that they have no expectation of privacy when using NSF-provided computers, access to the Internet, or electronic mail systems. Files maintained in NSF computers, including electronic mail files, may be reviewed by NSF officials who have a legitimate reason to do so when authorized by the Director or Deputy Director, or by the Inspector General.”</p>	<ul style="list-style-type: none"> ➤ NSF standard banner – deployed on all information systems attached to USAP infrastructure ➤ Deployment brings USAP into compliance with NSF and federal directives ➤ No expectation of privacy – government may access what users might consider personal communications ➤ USAP approach – not normally monitoring people, but do monitor network activity
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<p>INFORMATION SECURITY CONTACTS</p> <p>Questions, comments, concerns? Contact: The USAP Help Desk: helpdesk@usap.gov Your station IT Manager RPSC Information Security Mgr. Tim Howard, 301.794.5325 timothy.howard@usap.gov RPSC IT Director Steve Toth, 720.568.2006 steve.toth@usap.gov NSF/OPP Technology Director Pat Smith, 703.292.7455 pdsmith@nsf.gov NSF/IG Hotline: 703.292.7100 oig@nsf.gov</p>	<p>Station IT Managers:</p> <p><u>McMurdo</u> Cleve Cleavelin, 720.568.2062 Cleve.cleavelin@usap.gov</p> <p><u>South Pole</u> Bill McAfee, 720.568.2048 Bill.mcaffee@usap.gov</p> <p><u>Palmer Station</u> Lora Folger, 720.568.2095 Lora.folger@usap.gov</p> <p><u>Research Vessels</u> Dave Leger, 720.568.2164 Dave.leger@usap.gov</p> <p><u>Denver</u> MaryBeth Schomas, 720.568.2222 Marybeth.schomas@usap.gov</p> <p><u>Christchurch</u> Bruce Holm, 011.643.358.8139 Bruce.holm@iac.org.nz</p>
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<p>HOW WILL THIS AFFECT THE SCIENCE USER?</p>	<ul style="list-style-type: none"> ➤ On a government network, rules of use are more restrictive than your home institution ➤ Some activities, such as servers, will be more closely managed than in the past ➤ SIPS take on a greater importance in defining requirements; if it isn't in the SIP, you may encounter a delay at the station ➤ Policies bring a standardized process for change, which should eliminate surprises ➤ Firewalls protect the infrastructure; rules can be set to allow science activities to occur across the Internet
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	<ul style="list-style-type: none"> ➤ Standards and architecture will help you connect to the network with minimal delay ➤ Cautiously Implementing secure services, such as SSH instead of telnet, and Secure FTP protect science and network resources from intrusion
<p>SUMMARY</p> <p>Information security protects the confidentiality, integrity and availability of our information and information resources</p> <p>Information security strengthens our infrastructure to ensure bandwidth is available to support science and operations mission</p> <p>Information security ensures that the free flow of information continues among authorized users in the program</p> <p>Poor security puts lives and science mission at risk</p> <p>Strong passwords strengthen security</p> <p>Know the USAP Acceptable Use policy and follow it</p> <p>Know who you go to for help, advice or problem reporting</p> <p>Information Security affects all users, not just IT; we are ALL responsible</p>	

Polar.org now usap.gov

Dave Leger, RPSC Manager SSS, IT, advised PAUC that the network address “polar.org” is being phased out and the new web address is “usap.gov”. Because the master portal is a government address, we are subject to the same regulations and guidelines as other government agencies.

It was noted that obtaining RPSC contact phone numbers from the website is difficult and a request was made for a more easily accessible directory.

RECOMMENDATION 12: RPSC (ROB EDWARDS) WILL PROVIDE THE PAUC WITH A CURRENT RPSC TELEPHONE DIRECTORY. HE WILL ALSO REVIEW THE PAUC AND PALMER AREA USERS’ DISTRIBUTION LISTS TO ENSURE ALL CURRENT MEMBERS ARE LISTED.

(Note: the following two sections were pushed back from the original agenda.)

Weather Data

Mr. Edwards reported that the construction and completion of the Palmer Station weather station occurred later than scheduled due to shipping delays from CONUS. When the equipment was received at Palmer Station, Mr. Edwards began the initial equipment construction and the weather station was placed onto a 10-meter tower. Sheldon Blackman, Marine ET, completed the project and connected the weather station to the

server. With the new weather station operational, it is possible to obtain eleven parameters: present weather, visibility, wind speed, wind direction, light (PAR), precipitation, temperature, cloud heights, and snow depths. Efforts will be made to test the data to ensure accuracy. Rocky Booth volunteered to help assess the weather data and noted the information, especially the cloud data, could be a good addition to his Antarctic UV monitoring data. Preliminary comparisons of barometric pressure and temperature data with synoptic observations indicated that the equipment was reporting accurate data.

UV Monitoring

Rocky Booth reported on Biospherical Instruments activities occurring over the past year and noted that Jim Ehramjian, BSI representative, is presently working at Palmer Station.

Mr. Booth noted that Germar Bernhard has been named to sit on a U.N. Environmental panel. Mr. Booth will report back to PAUC on environmental issues arising from the panel sessions.

BSI News

- New interactive data access website has been implemented with graphical output optics
- Final data for McMurdo and South Pole up to January 2002 are now available. Final Palmer data up to today should be available within 30 days
- Real-time GUV UV data will be available soon, at least on-site
- “Student’s Guide to ozone and UV” is now online

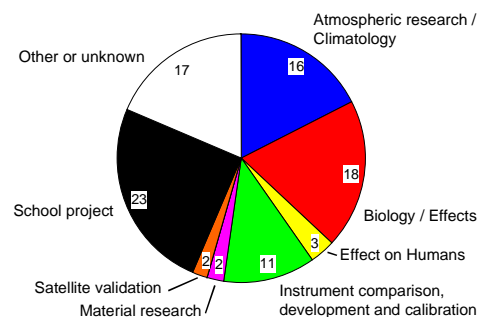
Data products available on-line

- Full resolution spectra from 280 – 600 nm
- Time-series of spectral measurements at selected wavelengths
- Databases with spectral integrals (e.g., UV-B, UV-A) and biologically weighted irradiance for various action spectra
- Databases with daily doses of special integrals and biological doses (NEW)
- Databases for quality control
- Graphs [previously created or “custom made” via web-interface (NEW)]
- TOMS ozone data (courtesy of NASA)

Users of NSF UV Network Data

550 registered users in total

92 registered between May 2001 and July 2002 (35 were using the new interactive interface)



The chart shows interests of recently registered users.

Data availability via CD-ROM and/or in Internet

Final data:

McMurdo: 12/13/89 – 01/22/02
 Palmer: 03/14/90 – 07/10/02 (available within the next month)
 South Pole: 01/31/91 – 01/13/02
 Ushuaia: 10/28/92 – 01/01/02
 Barrow: 02/01/91 – 10/18/01
 San Diego: 10/28/92 – 08/14/01

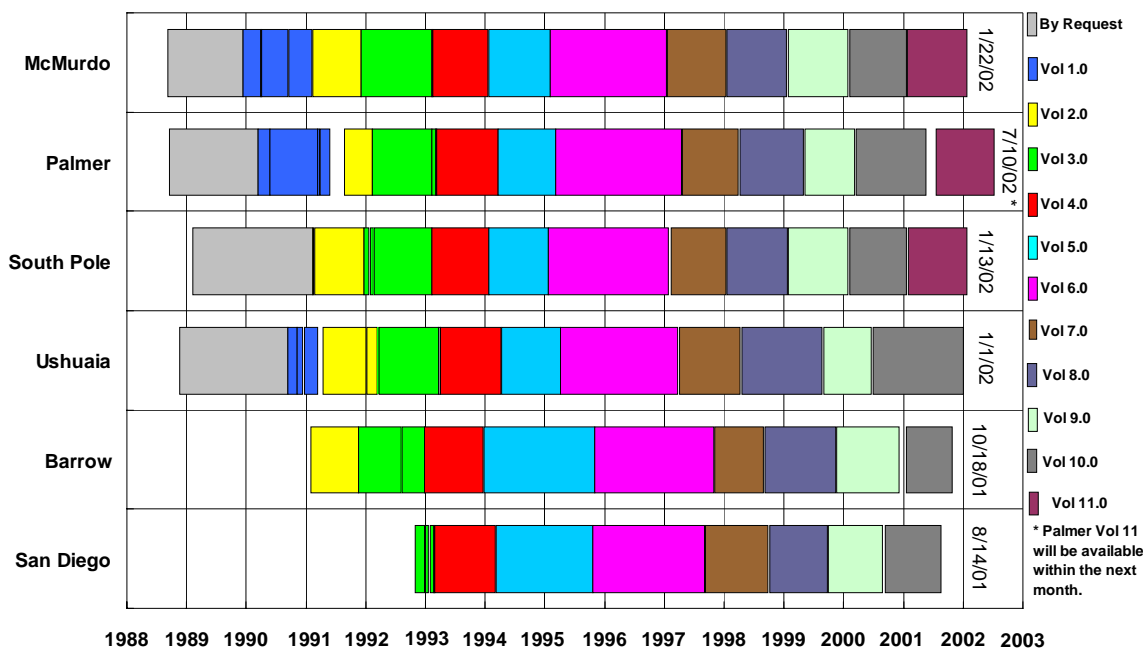
Preliminary data:

Updated weekly for all sites

Number of available spectra as of July 2002 (final and preliminary):

McMurdo: 130310
 Palmer: 122788
 South Pole: 117384
 Ushuaia: 128756
 Barrow: 135020
 San Diego: 121455
 755713

Data Availability Final Data



New Web-interface for data retrieval

http://www.biospherical.com/nsf/login/Welcome.asp - Microsoft Internet Explorer

File Edit View Favorites Tools Help

NSF Polar Programs UV Monitoring Network

Welcome NSF Data User!

Please select from the following menu. (You can always return to this page by choosing [Data/Report](#) from our navigation bar to the left.)

- **Account Administration**
Allows you to change your password, update contact information, and track the progress of your data requests.
- **Overview of Available Data**
Get an overview of available data sets and quality control procedures.
- **Access data and network operation reports the classic way**
 - **Download individual data files from our ftp site**
Use this link to download data the "classic" way. Data is organized by Volumes as published on CD-ROM.
 - **Download Network Operations Reports**
Reports are provided in Adobe PDF format and cover the years 1997-2001.
 - **View pre-generated graphs of UV irradiance levels at all sites**
 - **Austral Updates**
 - **Boreal Updates**Graphs are updated weekly and provide an easy way to track, for example, the effect of the ozone hole on recent UV levels.
 - **Download preliminary data from austral and boreal sites.**
These data cover most recent measurements and are not yet available on CD-ROM or our ftp site.
 - **Order data on CD-ROM and hard copies of Network Operations Reports**
Consult this page if you need a large data set that may be cumbersome to download via the Internet. CD-ROMs are currently available for the years 1991-1998.
- **Access data with our new interactive retrieval system**
 - **Graph data for a user-selectable period and site**
Data is based on the contents of our Databases 1, 2, 3, and "DailyDose", covering the complete period of network operation.
 - **Download a subset of data from our databases**
Data is based on the contents of our Databases 1, 2, 3, and "DailyDose", covering the complete period of network operation.
 - **Download full-resolution spectra for a given period and site**
Composite-scans for the selected period will be "zipped", and a zip-file provided for download.

We also encourage data users to fill out our **"NSF-UV Survey"**. Your feedback is important to us, and will help us to improve our service.

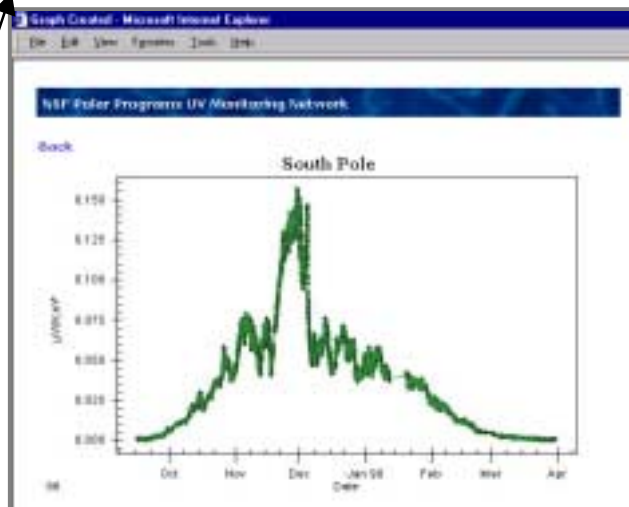
Home | Sites | Instruments | [Data/Report](#) | Presentations | References | Links | Contact Us
BSI Home | Top of Page

Biospherical Instruments Inc.

→ General information and account administration

→ Access to ftp site, operations reports (PDF), weekly updates, ordering of CD-ROMs and report hard copies

→ Interactive retrieval system



Information for Students and Teachers

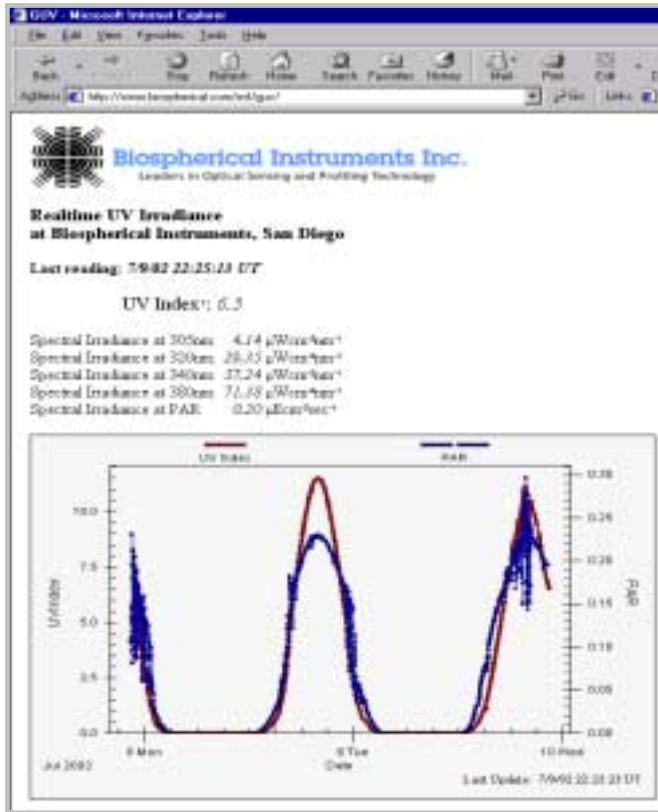


Guide is part of a curriculum at Kennesaw State University:

“... Thank you so much!! You have just saved me a lot of time and effort. These three experiments are exactly what I had in mind for my students. Instead of sifting through all of the data and snipping out the parts for my students to use, I can just use your Request Form interface to let them do it themselves...” John Pratte, Kennesaw State University



Real-time GUV UV data



Real-time readings of **UV index, PAR, and spectral irradiance at 305, 320, 340, and 380**

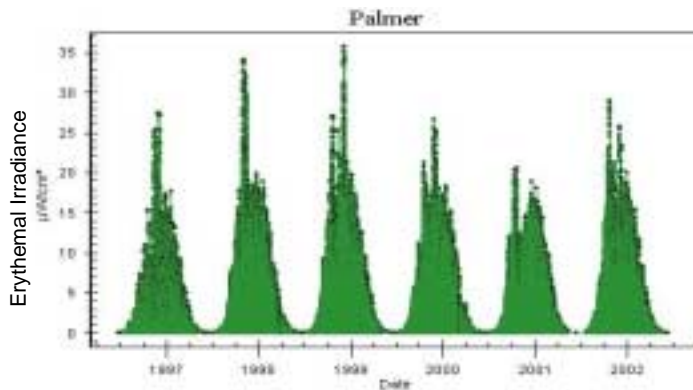
Readings during last two days (updated in intervals of one minutes)

Update on recent UV levels

The **highest UV levels** on record observed at McMurdo, Palmer Station, and the South Pole occurred in the **austral spring of 1998**.

UV levels in 1999, 2000, and 2001 were generally lower at network sites*. However, the record-size ozone hole in 2000 led to enhanced UV levels at all austral network sites during September and October (when absolute values are low), and **some extreme events at Ushuaia during October 2000**.

* This does not imply that that recovery of the ozone hole has started. For example, maximum ozone hole area and total ozone mass deficiency were higher in 2000 than in 1998.



Plot created with web-interface

PAUC Business

Minutes, May 31- June 01, 2001

The May 31, 2001, PAUC minutes were approved with two minor changes requested from PAUC members. The changes are title correction for one board member and attendance change for one board member.

PAUC members and term limitations

Dr. Jeffery will solicit PAUC nominations for three new members to replace members with expiring terms. (Rocky Booth, Bill Fraser, and Tad Day) Solicitation and election will be via email.

Member	email	phone/fax	Term	Discipline/Affiliation
<u>Dr. Wade Jeffrey, Chair</u>	Wjeffrey@uwf.edu	850-474-2472 850-474-3130	30 Sept. 2004	Biology/ University of West Florida Center for Environmental Diagnostics and Bioremediation, Bldg. 58 Room 52A, 11000 University Parkway, Pensacola, FL 32514
<u>Dr. Charles (Chuck) Amsler</u>	amsler@uab.edu	205-975-6097 205-975-5622	30 Sept. 2003	Biology/ University of Alabama at Birmingham, 1300 University Blvd., Campbell Hall 367, Birmingham, AL 35294- 1170
<u>Dr. Karen Baker</u>	karen@icess.ucsb.edu	858-534-2350 858-534-2997	30 Sept. 2003	Biology/ Scripps Institution of Oceanography, University of California San Diego, La Jolla, CA 92093
<u>Mr. Charles (Rocky) Booth</u>	booth@biospherical.com	619-686-1888 619-686-1887	30 Sept. 2002	Aeronomy-Astrophysics/ Biospherical Instruments, Inc., 5340 Riley Street, San Diego, CA 92110
<u>Dr. Thomas (Tad) Day</u>	tadday@asu.edu	480-965-8165 480-965-6899	Ex-officio member one- year	Biology/ Dept. of Plant Biology and the Photosynthesis Center Life Sciences, E-218 Arizona State University, Tempe, AZ 85287-1601
<u>Dr. H. William (Bill) Detrich</u>	iceman@neu.edu	617-373-4495 617-373-3724	30 Sept. 2004	Biology/ Northeastern University, Dept. of Biology, 414 Mugar Hall, 360 Huntington Ave., Boston, MA 02115
<u>Dr. William (Bill) Fraser</u>	bfraser@3rivers.net	406-842-7442 406-842-7442	30 Sept. 2002	Biology/ Polar Ocean Research Center, P.O. Box 368, Sheridan, MT 59749

Dr. Alison Murray

alison@dri.edu	775-673-7361 775-673-7485	30 Sept. 2004	Biology/ Desert Research Institute, Earth and Ecosystem Sciences, 2215 Raggio Parkway, Reno, NV 89512
bsidell@maine.edu	207-581-4381 207-581-4388	30 Sept. 2003	Biology/ University of Maine, School of Marine Sciences, 5741 Libby Hall, Orono, ME 04469-5741

Dr. Bruce Sidell

Next PAUC Meeting Date

The next regularly scheduled PAUC meeting will be the third Wednesday in July, July 16, 2003. Location and other specifics are to be determined.

Friday, 12 July

Review of Yesterday' Session and IT wrap-up

Dr. Jeffrey began the meeting with the Action Items draft from yesterday's meeting. PAUC members were asked to submit capital equipment requests and recommendations to RPSC as discussed during yesterday's meeting (see page 36).

Collection of long-term environmental database

RECOMMENDATION 13: RPSC (ROB EDWARDS) WILL PROVIDE PAUC (KAREN BAKER) AND OTHER INTERESTED USERS WITH PALMOS METEOROLOGICAL DATA FOR COMPARISON WITH SYNOPTIC OBSERVATIONS. MARIA VERNET WILL INVESTIGATE OPTIONS FOR LONG-TERM COLLECTION OF SEAWATER PARAMETERS, WHICH SHE WILL REPORT TO PAUC (WADE JEFFREY) FOR FURTHER RECOMMENDATION TO RPSC AND THE NSF.

Topography (Depth and Bottom Characterization) Survey within two miles of Palmer Station

RECOMMENDATION 14: RPSC (ROB EDWARDS) WILL INVESTIGATE COSTS AND FUNDING POSSIBILITIES FOR A BATHYMETRIC SURVEY OF THE PALMER STATION BOATING AREA TO BE PERFORMED DURING THE 02-03 SEASON.

Polar Ice

Scott Holbrook, RPSC Senior Software Architect, reported on the POLAR ICE web-based data collection and dissemination system being developed to replace the Electronic

Support Plan (ESP). NSF and RPSC recognize the limitations of ESP and the need for a more effective system that will better support Antarctic research. The POLAR ICE team began collecting requirements information in February 2002, and hiring and planning began in May 2002. Development rollouts are shown in the timeline below.

POLAR ICE Overview

- What is POLAR ICE?
 - Participant On-Line Antarctic Research Information Coordination Environment
- “Next-Generation Software for the 7th Continent”
- A Web-based data collection and dissemination system
- Designed to capture and administer all relevant support requirements for scientific research in Antarctica
 - Captures all data currently captured in ESP – and more
 - System administration and data maintenance accelerated
 - More robust reports to fit business needs
 - Flexible data manipulation to support On-Ice usage
 - Target Audiences
 - Grantees, RPSC, NSF
- POLAR ICE represents a paradigm shift
 - Client-server replicated application to Web-based architecture
 - No longer will users download packaged software applications
 - Accessible from any Internet-connected computer
 - Interoperable with all browsers
 - POLAR ICE provides administrative functionality
 - Latency of report data has been problematic
 - Inability for Work Center personnel to update records
 - Creates support issues to keep inventories current
 - No system rebuild/redeploy required when changes occur

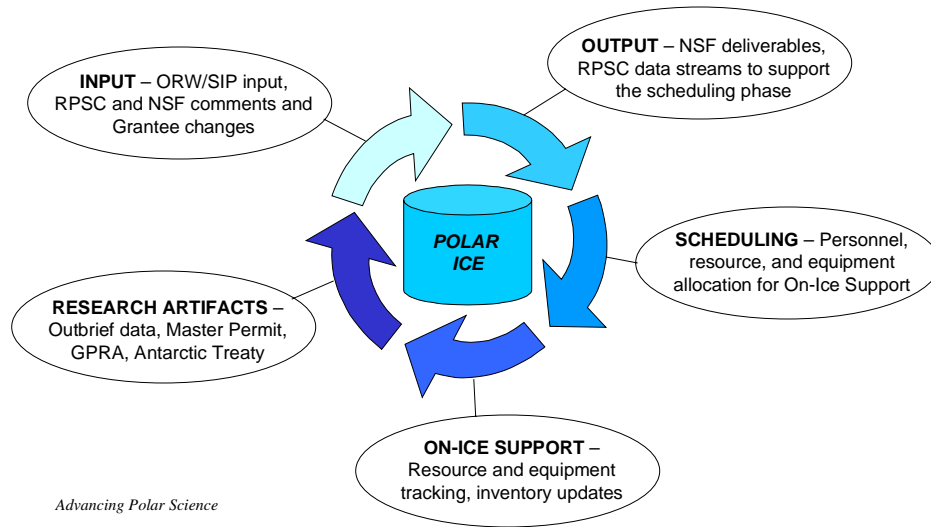
POLAR ICE Vision

- POLAR ICE addresses the user experience
 - The user views the software as a Web service
 - This is a primary design goal for both interface and flow
 - Currently migrating ESP users to a Web interface
- POLAR ICE is based on the entire planning process lifecycle
 - All phases are supported
 - Extensible for process modification



PLANNING PROCESS SUPPORT

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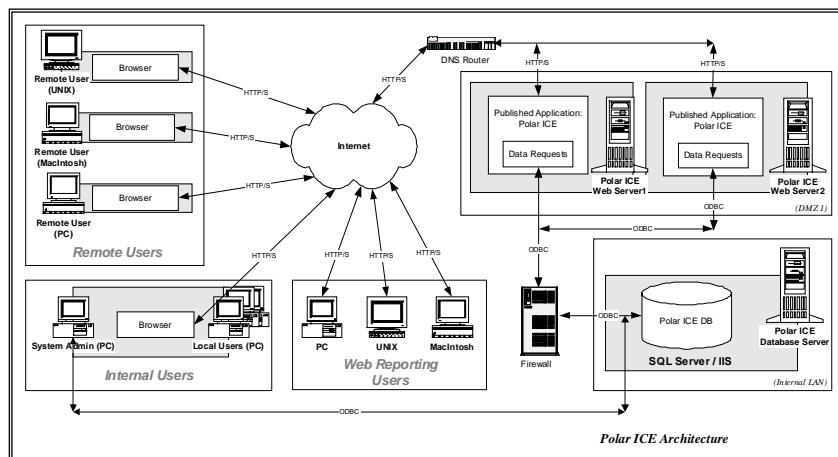
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POLAR ICE Overview 6



HARDWARE ARCHITECTURE

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POLAR ICE Overview 7



SOFTWARE ARCHITECTURE

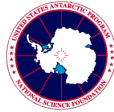


- **Three-tier architecture**
 - Allows for optimum system access time
 - Promotes overall system scalability
 - Multiple systems used to develop all layers

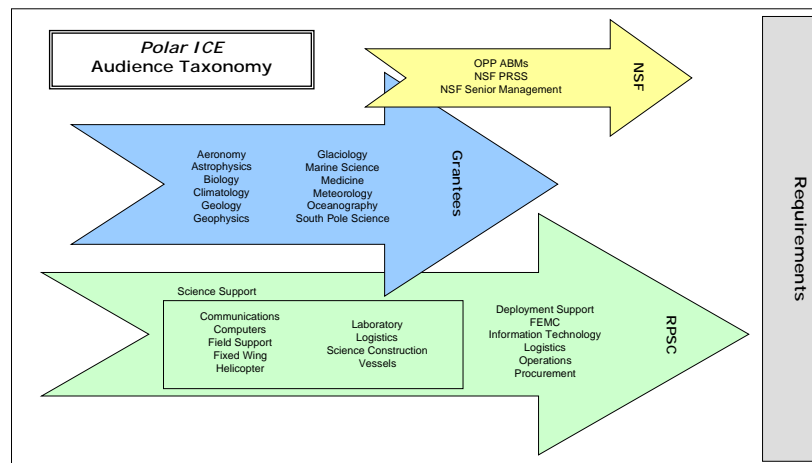
Layer	Functionality	System
Presentation	User interface and input/output	HTML
Application	Business rules and system logic	Cold Fusion / ASP / XML
Data	All system data sources	MS SQL Server 7/2000 MS IIS

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POLAR ICE Overview 8



AUDIENCE TAXONOMY



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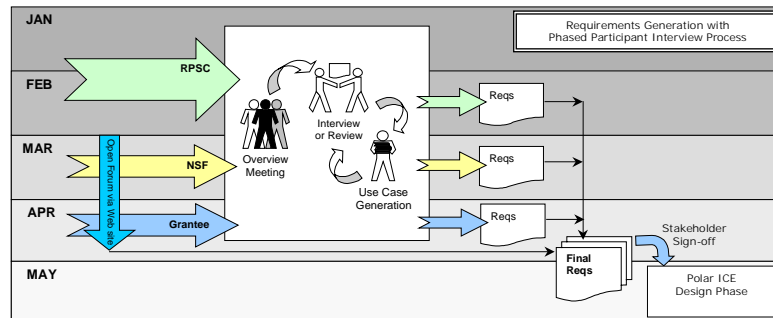
POLAR ICE Overview 9



REQUIREMENTS INTERVIEWS

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- **Phased interview approach**



- **Focus on the planning process role**
- **Required system entry points**
 - Input/output needs, reporting requirements, document review

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POLAR ICE Overview 10

Baseline Requirements

- **Grantee Requirements**
 - Stable system with reliable access to input, update, and review all ORW and SIP information electronically
 - Available to multiple collaborative Grantees
 - Proprietary information is protected
 - Improved interface and connectivity
- **RPSC Requirements**
 - Ability to view, add, modify, and delete inventory items
 - Ability to view real-time data on ORWs and SIPs
 - Support for creating the final RSP
- **NSF Requirements**
 - Derive electronic reports including PI contact information
 - Monitor the progress of ORWs and SIPs
 - Ability to view and compare projected with actual seasonal support
 - Support annual budgeting and funding decisions

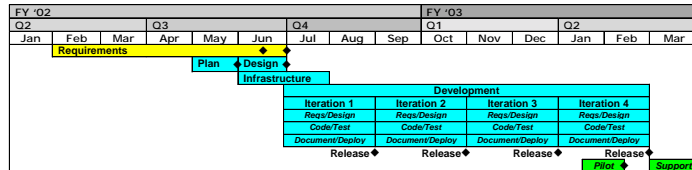
Sample User Interface



Timeline Implications



- RPSC:



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POLAR ICE Overview 13

- Simpler User Interface Driven by Grantees
 - Each ORW/SIP section has tabbed sections
 - Simplifies Data Input
 - Reduces Errors in Finding Requirement Location

Polar Ice Summary

- Web-based environment provides advantages over the current client-server architecture
- Single point of interaction for grantees, the NSF, and RPSC
- Integrate with existing RPSC data streams
- System architecture is scalable and extensible
- First step to integrated support environment
- Future goals
 - Automated services
 - Wireless data access

PAUC Priorities for RPSC Consideration

The PAUC discussed long-term and short-term priorities for Palmer Station. PAUC consensus is that the pier is the long-term priority. While the aquarium, local area bathymetry, environmental parameter data acquisition system, and other issues were discussed as possible short-term priorities, it was determined that Wade Jeffrey and Bob Farrell will continue to finalize a short-term list of priorities for RPSC.

RECOMMENDATION 15: PAUC (WADE JEFFREY) WILL REVIEW AND PROVIDE TO RPSC (BOB FARRELL) A LIST OF RECOMMENDED SHORT- AND LONG-TERM PRIORITIES FOR PALMER STATION.

There being no further business, the meeting adjourned at 10:00AM.