

**Meeting Minutes**  
Ice Drilling Program Office Science Advisory Board  
March 21 & 22, 2012  
Arlington, VA.

**March 21, 2012**

Attendance:

SAB: Howard Conway (Chair), Ryan Bay, Ed Brook, Gary Clow, Karl Kruetz, Jill Mikucki, Ross Powell, Eric Saltzman

IDPO: Mary Albert, Alicea Bursey, Linda Morris, Joe Souney

IDDO: Charlie Bentley, Don Lebar

NSF: Henrietta Edmonds, Sonia Esperanza, Alex Isern, Julie Palais, Bill Wiseman

**Julie Palais (NSF Update):**

Julie announced that NSF will release the Ice Drilling solicitation this summer, since the current cooperative agreements for IDPO/IDDO expire in September 2013. No major changes are expected other than there will be one award, with subcontracts or subawards to be handled from the main award. Sonia Esperanza is the temporary program manager of Larissa, Wissard and PIG program. She will be on for about one year until there is a new program manager.

**Alex Isern (NSF Update):**

Alex announced that Karl Erb is retiring in two weeks; Kelly Faulkner will be acting in his absence. Lockheed Martin will be taking over for Raytheon as contractor in the Antarctic.

**Mary Albert (IDPO update):**

Mary thanked the SAB for working in advance of the meeting to start updating the Long Range Science Plan. Mary gave a powerpoint presentation that reviewed the purpose of IDPO/IDDO and gave an update on IDPO achievements in the past year.

**Linda Morris (Education update)**

As part of the IDPO update, Linda presented slides on the strategic objectives of IDPO/IDDO education and outreach efforts and accomplishments

- Suggestion from E. Saltzman: Add in more engineering focus to outreach.
- Linda responded that the new science standards are being integrated with engineering standards for teachers, and in her upcoming program for the National Science Teachers Association, she is featuring the links between science and engineering with Jay Johnson (IDDO engineer) and Gary Clow (borehole logging science) as the featured community speakers
- Alex Isern suggested: Linda Morris gets in touch with Jeanne Penacook for the engineering aspect. *Alex to provide contact info.*

- Linda Morris is working on an American Meteorological Society presentation at the AMS meeting (AMS diversity project for climate studies in Washington DC). 5/21-5/24. Julie Palais offered to help.
- Julie Palais suggested Linda Morris meets with Harrison Hove (media person for Antarctica)
- E. Brook suggested making movies & checking Youtube for existing industry videos.
  - Look for Bess Coffman's video on her work in the lab.
- Look into Google analytic software.

### **Charlie Bentley (IDDO update)**

Charlie gave a powerpoint presentation that highlighted drilling support to science projects in the past year

### **Howard Conway (SAB business) (no powerpoint)**

SAB membership rotation discussion:

- Eric Saltzman volunteered to rotate off SAB.
- Need to increase SAB diversity in member backgrounds
- Mary Albert suggested rotation of board to occur in June.
- Existing board to vote in new members, not a public vote (Saltzman)
- ICWG to foster younger scientists and SAB is for senior scientist (Saltzman)
- Sample allocation committee takes up majority of ICWG time (Kreutz)
- ICWG could become a working group of the SAB (Albert)
- Julie Palais suggests that the chairpersons for the working groups sit on SAB
- Should the SAB renamed? (Suggested by E. Brook)

Membership of working groups/subcommittees of the SAB:

The SAB agreed to make standing working groups part of its structure. The Borehole Logging working group and Subglacial working groups are to be added immediately, the Ice Core working group will be added after Karl has a chance to talk to the current ICWG members. Other standing working groups could be added in the future if needed. In addition, the SAB will have an option of creating temporary special short-term task groups to work on special projects or activities as needed. The SAB Terms of Reference will be updated to include identification of the working groups.

- Brook moved to accept 2011 meeting minutes Saltzman seconds, accepted

### **Howard Conway and Group (updates and new community input to Long Range Plan)**

- Open group discussion, no powerpoint
  - Each person needs to look over and edit their portion of the long range plan (LRSP)
  - Intermediate logging winch described as 1km; should be revised to 1.5km to match Intermediate-depth drill specifications.
  - IPICS meeting and overview (Brook)
    - Site selection to be determined at the France (IPICS) meeting
    - Logistics group representative may need to attend
  - Climate (Brook)
    - Has editorial comments, no major changes to the section

- Ice drill to go 100 meters, Tanner Kuhl thinks it's doable
- Dirty ice drill needs to be compact but needs to go deeper
- Whole season dedicated to replicate coring
- Add ideas/suggestion to planning matrix
- Glacial dynamics and history (Conway)
  - Hot water drill for the community for glacial dynamics
  - Add depth requirements for this drill to LRSP (1km-1.5km)
  - Drill that can recover basal debris
- Suggest drill ice core near Mt. Resnick to see if it's a source of volcanic tephra (Palais)
- Sub-glacial geology has been moved to sub-glacial geology sediments

### **Sub-glacial geology (Powell)**

Ross gave a powerpoint presentation that gave an overview of geological sampling and drilling for access to such things as subglacial hydrological systems, till, bedrock geology, exposure dating, sedimentary record, and grounding zones, including the WISSARD project

### **Cryobiology Updates (Mikucki)**

Jill gave a powerpoint presentation that covered WISSARD updates, environmental evaluations and clean access, and an overview of future directions for the community, including sampling at Ellsworth and Vostok and the Ice Mole.

- Jill recommended a central clearing house of equipment to improve International Collaborations.
  - Would help technology component of IPICS to grow (Albert)
  - IDPO should contact different countries with ice drilling equipment to start up clearing house of information to add to the Icedrill website. (Palais)
  - British working with Schlumberger to redesign access drill.
  - Currently needing funding.

### **Ice as a scientific observatory (Bay)**

Ryan gave a powerpoint presentation of updates from the physics community and Ice Cube results status, low energy physics experiments including PINGU and other projects, and hot water drilling considerations for low energy physics and high energy physics.

- Lighter weight hot water drilling should collaborate with IDPO/IDDO since there is a broader need within the community (Albert)
- Borehole logging for hole assessment with camera

### **Status of Winches (Souney)**

Joe gave a powerpoint presentation with an overview of the status of various logging winches.

- Ryan Bay is the lead scientist for the intermediate logging winch development project. Any clarifications/modifications to science requirements need to be coordinated through IDPO. IDDO will identify issues and opportunities arising from the science requirements that significantly impact function, cost or associated logistics on the winch, issue resolution will be coordinated with IDPO for update and approval of science requirements. (Albert)

- IceCube 2,000 m logging winch will be signed over to IDDO for community use within 1-3 years, after current WISSARD use (Albert, concurrence by Esperanza)

### **Borehole Logging (Clow)**

Gary Clow gave an update on the WAIS Divide borehole logging projects, other logging projects, and community challenges.

- J. Mikucki suggested a matrix for how much borehole time each logging tool needs
- R. Bay suggested having peer reviews of logging instruments and pressure tests of tools
- A. Isern pointed out that the Blue Ribbon panel is really hitting on this.
- J. Palais suggests creating a model for drilling/logging program
- G. Clow suggests budgeting for winch operator(s)
- Protocol for marking any boreholes to find them for future use
- Blocked borehole
  - What to do to reopen? This should be added to LRSP
- Need fishing tools for lost logging equipment
- Add more complete information on borehole logging to LRSP
- E. Saltzman suggested a logging program similar to ARGOS
- Long-term logging plans beyond 2014-15
- Needed Long-Term Resources
  - Community logging tools (e.g. high-precision azimuth tool)
  - Logging tool test facility
  - Winch operators
  - J. Palais suggested inventory clearing house on Icedrill web site
  - A. Isern suggested we contact Borehole logging group at Lamont-Doherty for tool testing facilities. A. Isern will get contact information for IODP person to G. Clow.

### **Status of Intermediate Depth Drill (Souney)**

Joe gave a powerpoint presentation on the status of the Intermediate Depth Drill and the Rapid Access Ice Drill development projects

- Mark Twickler is IDPO liaison for Intermediate Drill and first science use (Albert)
- J. Palais would like regular updates on the Intermediate Drill project (Palais)
- Over view of progress of building and plans for the IDD thru 2015-16 field season
- Albert should contact Goodge to urge submission of RAID proposal soon (Isern)

### **Deep Drilling Update (Brook) (no powerpoint)**

- Goal to get 1myo ice, the oldest ice
  - International interest
- After WAIS divide use DISC for oldest ice retrieval
- No date/field season has been chosen
- Eemian project for E. Saltzman at South Pole
- Questions about ice flow and origin of ice at the South Pole
- What are the upcoming projects that the DISC drill could be used for?
- M. Albert suggested virtual workshop on next uses of DISC drill

- J. Palais suggested workshop in at IPICS meeting to get Int'l input
- H. Conway suggests that E. Brook set up a sub group to get together on this
- M. Albert will note years of refurbishment of DISC drill in the LRSP planning matrix
- Drilling fluid for cold conditions (IDPO to fund contract for this, this year)
- E. Brook suggests contacting Int'l groups work on this fluid to avoid overlap
- Cold storage options, NICL almost at capacity, J. Palais to advise
- M. Albert suggested an NSF research solicitation to use currently stored ice

### **Consortium Discussion (E. Saltzman/M. Albert)**

Eric gave a short oral review of the COINCIDE white paper. Mary gave a powerpoint presentation on the basics of nonprofit corporations and their function. This is not official IDPO business but capitalizes on interdisciplinary expertise present.

- Sustainability for the community is hugely important (J. Palais)
- Institutional funds would give it the ability to do Hill visits (A. Isern)

-Group discussion on what activities should be considered:

- Drilling services
- Ice core storage
- Data management
- Science coordination
- Science outreach (suggested by Linda Morris)
- Science management

-E. Saltzman will meet with NSF management in the Spring to discuss this further

-Pros and Cons discussion (E. Brook)

- More control over essential personnel
- More control over funding/contracts etc, increased flexibility.
- Continuity
- NSF would be relieved of management issues and allowed to focus on the Science
- Possible shortfall of committed, qualified Board members
- Universities need to be very vested in this for it to succeed
- Bylaws must be carefully established to ensure long term success

-Adjourn at 5:05 pm for the day

Friday, March 22, 2012

SAB: Howard Conway (Chair), Ryan Bay, Ed Brook, Gary Clow, Karl Kruetz, Jill Mikucki, Ross Powell, Eric Saltzman

IDPO: Mary Albert, Alicea Bursey, Linda Morris, Joe Souney

IDDO: Charlie Bentley, Don Lebar

NSF: Henrietta Edmonds, Sonia Esperanza, Alex Isern, Julie Palais, Bill Wiseman

### **Roosevelt Island (Conway)**

Howard gave a powerpoint presentation on the Roosevelt Island international project, including infrastructure, drilling operations, planning, and lessons learned.

- Make field activities more transparent (Saltzman)
- Roosevelt Island vs South Pole projects compare and contrast (Lebar)
- Record current plans/practice to preserve for transition period

### **Consortium (Saltzman, general group discussion) (no powerpoint)**

Items to be added to the document

- Explicitly include science management
- Outreach and Education
- Camp design and setup
- Need better consortium name/branding
- Bylaws and other documents will need the ability to grow and meet new changes
- Science to be covered: Ice core drilling, sub-glacial, site surveys, borehole logging
- Consortium for Polar Science (title suggested by L. Morris)
- What will the consortium encompass? Still an open question
- E. Saltzman will discuss consortium with NSF and will report back
- Need to show how this differs from ARCUS.

### **Scientific Advisory Board (Conway) (no powerpoint)**

- Rotation of members
- SAB has no oversight powers
- SAB can act as a sounding board for concerns
  - IDPO does oversight of IDDO
- Persons leading current projects may not be best for the board (time constraints)
- Three people to rotate off the SAB
  - One year left on the IDPO/IDDO cooperative agreement before competition
  - E Saltzman volunteered to rotate off
  - Suggested that Dorthe Dahl-Jensen rotate off
  - Suggested that Sridhar rotate off, to be replaced with another geophysicist
  - Send solicitation out for new members (H. Conway)
- Try more virtual meetings (H. Conway)

### **Summary items (Conway)**

- H.Conway to reach out to the community for Hot Water Drill needs
- E. Saltzman would like cost estimates of building vs. deploying of drills (D. Lebar)
- E. Brook suggested that chairs of subcommittees SAB members (ex-officio)
- Any problems with replicate coring? This will be reviewed in IDPO's 3/26 engineering review meeting in WI.

Move for adjournment by Eric Saltzman at 11:25am, seconded by Howard Conway.

***Meeting adjourned.***

### **Action Items (Short Term):**

- \*Julie Palais would like copies of the presentations –A. Bursey
- \*Send out call for nominations/volunteers for the board - Conway
- \*SAB membership rotation/list of SAB members to rotate off - Conway

- \*Create email to community on items to be covered (E. Saltzman); due 3/22
- \*High-level summary that merges drilling and long-range science plans - Albert
- \*R. Bay to send winch modifications to M. Albert for Science Requirement mods
- \*R. Bay teleconference with G.Clow, J. Severinghaus, and M. Albert to discuss logging timetable
- \*Add protocol to LRSP for blocked boreholes – R. Bay
- \*Alex Isern to get IODP-Lamont contact info for Gary Clow for tool testing facility
- \*Regular updates on IDD for Eric Saltzman and Eric Steig – M Twickler
- \*Contact John Goodge RE: RAID proposal submission soon – M Albert
- \*Set up SAB sub group to discuss future uses of DISC drill – E. Brook
- \* Note years of refurbishment for DISC drill in the LRSP planning matrix – M Albert
- \*Updating science plan, add borehole logging to executive summary (E. Brook)
- \*Planning matrix updates - M. Albert with input from all
- \*April 1, LRSP edits from SAB due to Howard Conway
- \*Subcommittee on borehole logging – Bay & Clow
- \*Identify SAB working groups and post to web – Bay/Clow and Mikucki/Powell - Souney
- \* ICWG identified as SAB working group after current ICWG members are notified - Kreutz
- \*Subglacial, borehole logging, and ice core working groups to be identified with roles, etc in SAB Terms of Reference (J. Mikucki and M. Albert)
- \*Send out email via listservs for members for a subglacial working group – Powell/Souney
- \*Send out email/solicitations for members of working groups under the SAB (J. Souney)
- \* Saltzman would like cost estimates of building versus deploying of DISC drills (D. Lebar)
- \*Create online module for outreach – Morris
- \* Revise COINCIDE document to current vision of the consortium and meet with NSF - Saltzman

**Action Items (Longer Term):**

- \*Create drilling inventory clearing house on Icedrill – Twickler/Souney
- \*Borehole logging vetting process to be discussed amongst Ryan Bay, Gary Clow and Mary Albert, then circulated amongst borehole community for review
- \*Pending outcome of NSF response to consortium from Saltzman trip, form small working group to work on consortium, vision, name, bylaws, etc – Saltzman/Albert

*NOTE: A PDF portfolio of all Power point presentations has been created and posted on the SAB area of the Icedrill website. To use the portofolio you will need Acrobat, and to access the each presentation there is an “open file” button mid-top right of the screen. Select the open file option to view the selected presentation.*