NSF - USAP Communications Workshop

Better Communications, Technology Development: Empowering ‘Smaller’ Science in Antarctica

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Personal Perspective

• Smaller projects
• Low ratio of “Geeks” to “ - Ologists”
• Traditional ‘Linnaeus’ model
• Frequently labor-intensive
• Proportionally high support requirements
• Human limitations
Postulate

- Technology empowers science
- Not all Grantees are ‘tech-savvy’
- Not all Grantees have tech resources
- Infrastructure and Instrumentation make things possible …

**IF**

we can get the message and the hardware out
Some things remain the same … 1911
Some things remain the same … 1951
Some things remain the same … 1971
.. but technology creeps in
Setting up … Internet and WiFi
Outdoor Testing
Pre-Configured, Into the Field
Setting up 802.11 at Lake Bonney Camp
Live, Steerable Webcam at Bonney
Live Webcam at Hoare
‘ROMEO Project’ – install a year-round Live, Steerable, Underwater Webcam
Field Camps: upgrading technology

*PV power*: electrically and environmentally clean

*Network access*: RJ45 jack to the outside world
Grantee Technology can also improve …

.. it just takes motivation, time, money, and capabilities
Challenges

• Make Grantees realize what’s possible
• Make Grantees dream about what they could achieve in their research
• Offer Grantees tech counseling and tech resources
• Continuously work on Infrastructure and Instrumentation to make things possible
Telescience and Remote Reporting

- Complement infrastructure of existing field camps and human deployment:
  - more data / less occupancy
  - less logistics, cost, risk

- Enable science under conditions that would be difficult, risky or costly for humans:
  - year-round installations
  - remote, unsupported locations
Specific Comms Suggestions: McM Area

- More bandwidth CONUS - McMurdo
  - *Enables* **telescience**
  - ‘Wow! – I didn’t know you could do that!’ starts grantees thinking of new science
- 802.11 cloud in town
- 802.11 service in wider area
- IM, webphones
- Tech consulting & resources
Specific Comms Suggestions: General

• Iridium data transmission
  - Enables remote reporting
  - ‘How do I make it work?’

• Tech consulting & resources