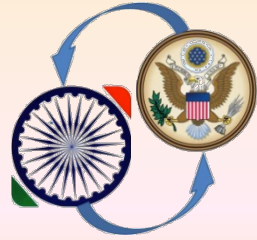


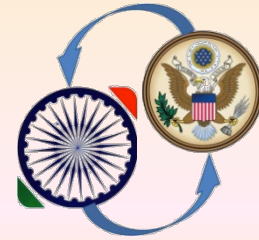
Catalysing inter-regional network-enabled collaboration ----- using US-India as an example

Jim Williams and George McLaughlin



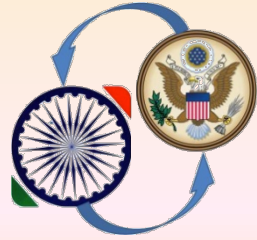
Motivation & Timing – a transformational opportunity

- emergence of India as a major player in the global economy
- stronger collaborative US-India engagement; joint statement by Pres. Obama and PM Singh on increased science collaborations
- implementation of significant high bandwidth connectivity between India and the US via shorter trans-Pacific route
- the implementation of the National Knowledge Network (NKN)
- existing research collaboration programs and potential new ones involving US and Indian researchers that are able to exploit the new connectivity to significantly enhance these collaborations



Raising awareness

- Good networks and cyberinfrastructure aren't enough
- Awareness raising of user communities to new opportunities
- Network professionals need understanding of real needs of user communities and ensure that the optimal engineering, protocols and performance attributes are in place in a way that provides intuitive user experience
- Identifying effective champions and using exemplars of effective network-enabled collaborations are powerful motivators
- Running tutorials and discipline-based presentations of what has been done and planning for what could be done with the new infrastructure helps to catalyze activities

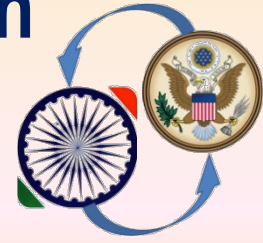


The Workshop

- To catalyze network-enabled collaboration between India and the US
- US support provided by the National Science Foundation
- Held in Delhi from 5th to 7th December 2010
- Bringing together researchers, network professionals and funding agencies
- A defined and manageable number of disciplines/topics for meaningful progress toward developing action plans
- One day of concurrent tutorials (6 half day sessions)
- Two days of intensive workshop presentations, panels and discussion
- See: <http://internationalnetworking.iu.edu/us-india-workshop>
- 104 participants from India, 22 from the US

Discipline topics covered – broad participation

5



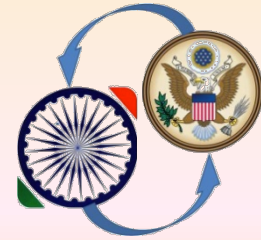
- Cyberinfrastructure, Networks and Advanced Communications
- Open Source Drug Discovery
- Cloud Computing for Scientific Research and Education
- Grid-enabled Cancer Research
- The Hubzero Platform for Scientific Collaboration
- Business Education
- Preservation of Collections
- Research and Education in Vision Sciences and Eyecare
- Open Access Resources and Dissemination of Knowledge
- Geosciences
- Climate Change, Weather Prediction and Observing Systems
- Astrophysics and Astroinformatics (possible exemplar demonstration)
- Bioinformatics (including Epidemiological and Clinical Research)
- Nanotechnology
- High Energy and Computational Physics



SA SIG @ World Bank 21st April 2011

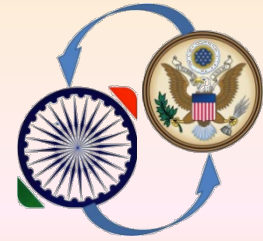


INDUS NETWORK ENABLED RESEARCH



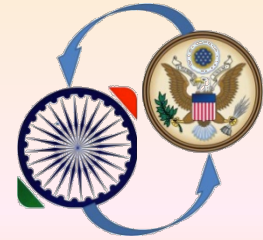
By the end of the meeting - quick results

- Very positive feedback
- Relationships established or strengthened
- Cross-discipline exposure seen as important to learning from others
- Strongly in favor of follow-up workshop to build on the outcomes
- Session leaders took responsibility for developing action plans
- Agreement to explore opportunities to show progress
- Workshop organizers undertook to develop the next steps



Follow-up survey – more detailed planning

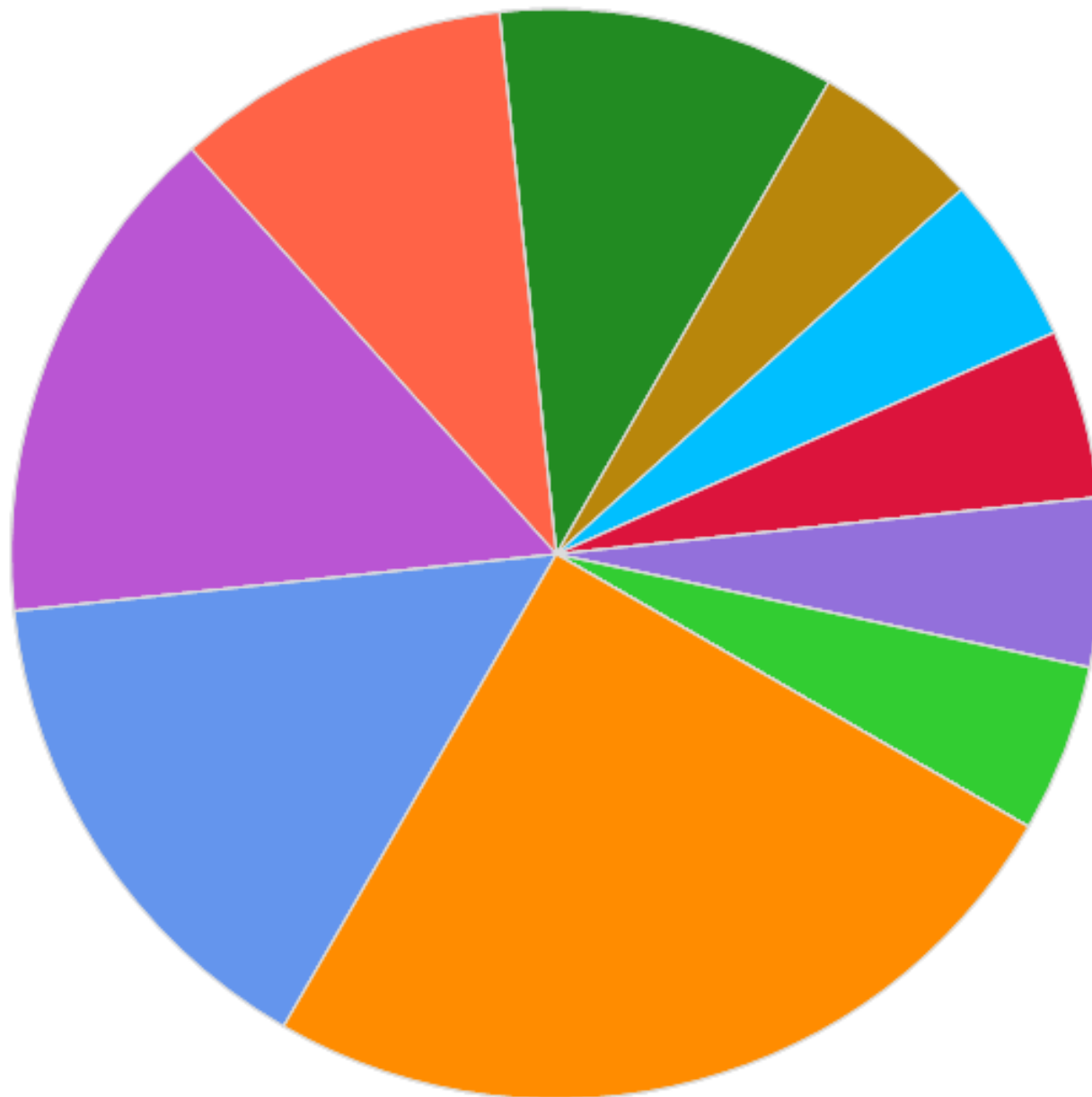
- Structured web-based survey was developed to help identify:
 - a number of potential exemplars that can be quickly put, in place with possible demos at the APAN meeting in Delhi
 - obstacles inhibiting uptake of network-enabled collaboration
 - assistance required to make things happen
 - suggestions from the researchers side
- Survey is at:
http://www.surveymonkey.com/s/indo-us_network-enabled_collaboration
- The survey was distributed to the session leaders, tutorial leaders and presenters (40 in all).



Summary results

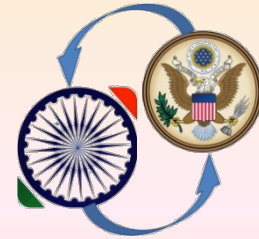
- More than 50% response rate, evenly balanced between US and Indian respondents and covering 10 of the 15 topic areas;
- 2/3 of respondents are engaged in some form of collaboration with the other country and almost all need high capacity networks;
- of those not yet involved in network-enabled research collaboration, all stated collaborators on the other side were yet to be identified with some not being sure how to exploit the new connectivity
- responses indicated several exemplars of network-enabled collaboration could be pursued, particularly in areas of astronomical transient event detection; preservation of collections; genomics; hazardous weather prediction and climate modeling; developing an Indian Nano-Hub; and collaboration on grid-based cancer research

Spread of survey responses by topic

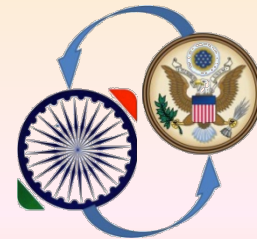


- Bioinformatics (including Complementing Epidemiological and Clinical ...)
- Cyberinfrastructure, Networks and Advanced Communications
- Astrophysics and Astroinformatics
- Cloud Computing for Scientific Research and Education
- Geosciences
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- Preservation of Collections
- Climate Change, Weather Prediction and Observing Systems
- Nanotechnology
- Open Source Drug Discovery
- Business Education
- Research and Education in Vision Sciences and Eyecare
- Open Access Resources and Dissemination of Knowledge
- High Energy and Computational Physics

Other feedback from participants (NSF talk)



- Respondents provided a wide range of feedback for enhancing collaboration
- Need publicity of collaborative programs; better dissemination of funding opportunities among scientists; lists of experts in fields of interest; lists of funding programs geared to facilitate network-enabled research
- Single point of contact or help to reach out to potential collaborators, more formal open calls inviting potential partners from both India & US;
- Pilot funding for collaborative projects that have promise. Some sort of annual event (alternating between the countries) that has success stories and tracks progress would keep momentum going
- A suitable committee should function over the net to encourage preparation of a work-plan, seek and consolidate report cards, help bug fixing and help meet well set performance indices



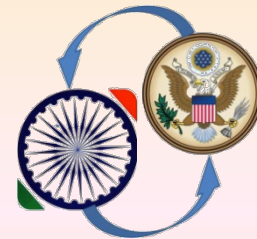
Next steps – being taken now

- Additional feedback was received on specific topics
- Further analysis will be undertaken by the workshop organizers prior to incorporation in the report
- Follow-up with and feedback to the topic leaders in India and the US will be an important step in the development of action plans to engender the uptake of network-enabled research collaborations, as will further discussions with and providing feedback to the funding agencies.
- A second workshop is tentatively planned for March 2012 in Washington, the format and topics will be determined by the outcomes and progress with action plans initiated at the Delhi workshop



Future Directions - Lower Mekong Initiative, Afghanistan and Africa

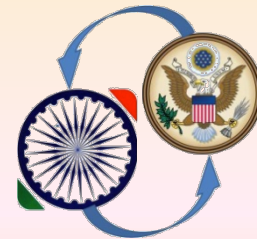
- Work has commenced on a similar program involving the US and the countries of the Lower Mekong in South East Asia (Vietnam, Cambodia, Laos and Thailand)
- Catalyzed by the State Department's Lower Initiative
<http://www.state.gov/p/eap/mekong/index.htm>
- Focus on environment, health, education and infrastructure
- Discussions with NATO and US Department of State about Afghanistan
- Possibility of a similar workshop in Africa



Indiana University would like to thank...

- Our colleagues at ERnet for their tireless efforts as local organizers
- The National Science Foundation under award OISE-0960487





<http://internationalnetworking.iu.edu/us-india-workshop>

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