NOTES

12:45-1:00pm - Welcome/Introductions/Agenda Review (Carol)

1:00-1:30pm ISTE/K20 Collaboration

Speaker(s): Don Knezek, ISTE CEO

Session Abstract: Donald G. Knezek, CAE, Ph.D., Chief Executive Officer of the International Society for Technology in Education (ISTE®) is a leader of innovation for transforming education with technology and recognized globally for his leadership in collaboration, planning and standards development. Dr. Knezek will discuss why ISTE’s Top Ten priorities for 2010 includes #7, provide high speed broadband for all, and why he believes the connectivity divide may be the most critical aspect of both the digital divide and the learning divide over the next decade. As a consultant to ministries of education around the globe, Dr. Knezek will also share his views on how the K20 community can effectively collaborate around high speed broadband to foster 21st skills and digital citizenship.

ISTE’s mission is to advance excellence in learning and teaching through innovative and effective uses of technology

21st Century Learning - what they suggest:

- Advocate for student learning
- Connect the educational technology community
- Provide thought leadership for digital-age schooling
- Corporate sector, they believe, is a legitimate partner with schools
- Do everything in partnership
- Shoulder to shoulder with the people in the trenches

ISTE’s Global Digital-Age Skills

They have developed standards not just believing in academic skills but in digital learning.

NETS in U.S. (National Educational Technology Standards)
SOL Australia

What we see happening is transforming learning environments

- Kids now have different kinds of talents
- “It is not the strongest of the species that survive and not the most intelligent; is it’s the one that is most adaptable to change.” Charles Darwin

ISTE has:
20,000 direct members
80 geographic affiliates
100 corporate members
20 special interest groups

Don spoke about the digital divide and the learning divide stating they are very connected.
Students don’t learn by listening to a lecture anymore but by creatively thinking - connectivity helps that.

ISTE is re-broadening the definition of technology where we now have moved to information and then to a communication technology. Now systems and designs are coming back to the forefront.

Internet2 in K-12 Student Learning

- Speed and robustness
- Connecting k-12/higher ed
- Alternative to commodity connection
- Global interfaces

Concerns about connecting to Internet2:
1. Cost: can they afford it
2. Infrastructure: do they have the equipment for it
3. Governance & Policy: what are the governing policies needed

Most exciting thing in the last year when traveling around, Don experienced the flat classroom where it is a great place to learn about on-line and geographically disbursed work teams.

Louis: Characteristic of this group is its diversity: K-12, higher ed, libraries, museums and all mostly driven by a largely volunteer effort.
Kaye Howe, Director, NSDL

Discuss areas of mutual benefits and how we can strategically align work of the NSDL and the Internet2 K20 Initiative

Kaye: More and more people are thinking globally that way. They are certainly pushing in this direction.

Tim Poe: This whole federate i.d. project will become so necessary because of all the different things we have going out there.

we have enormous fragmentation before we have collaboration.

Kaye: The amount of work involved in this is huge. We already see states starting but we need to work together and really collaborate on this. Looks like

Tim Poe: I admit I know very little about Internet2 and there is a lot that Internet2 could help at ISTE and we are willing to do that. Best Practices is great and wish there was a repository of projects (audience laughed - -there is one-MUSE).

Myron: About K-12 and higher ed collaboration. I've seen a lot on the network collaboration....was there more we should know?

Don: Professional development by enhancing teacher skills and actively working in their specialty is one area. There were facilities and resources at present-- universities can perhaps share it with students like the microscopes or arts areas. Clearly an area where we could mine this together.

1:30-2:00pm NSDL K20 Collaboration

Speaker(s): Kaye Howe, Director, NSDL

Session Abstract: Discuss areas of mutual benefits and how we can strategically align work of the NSDL and the Internet2 K20 Initiative

Carol: things we struggle with in K-20 - projects that we could be doing (like iLab) and yet we're not doing it or we need to do it more. We need to get the word out.

Louis: how can we engage better with NSDL? Are your communities engaged with NSDL?

Heather Weiss-Welch: we just brought it up (verbally) to our group and it is in the forefront of their minds now. We had a one-hour session specifically designed for math and science teachers. The Library of Congress and NSDL were some of the organizations represented. Each organization had 20 mins and we wanted to get everyone aware of what was available to them.

Kaye from NSDL: this is the eternal quest: all these wonderful resources and they are out there and invaluable to teachers. So many of these things overlap in K-20. School district portals where resources are where teachers can go to easily and more often. All of these wonderful resources and portals - - how do you get them to the teachers and classrooms? How do you get linked up to these resources and try to tie them to resources? All sorts of projects, STEM learning, in particular, all off in a corner. We need to get these trusted resources to leverage our reach. We are living in a world of abundance and still haven't figured out how to get this out to the people who need it. We need to keep working on it. We need to understand where teachers are, what their challenges are, and what the systems are they are working in. It is difficult because it's dictated in different ways like district by district and state by state. Our pathways are primarily set up to be audience-focused, like community colleges, middle schools - all discipline focused and STEM focused. They are in physics, chemistry, computational science and will provide a way to connect with higher ed.

Audience: An observation-- teachers have a limited amount of time. We found in NY the best way was to arrange it by curriculum rather than any other way. We are lacking - there is no repository where they can go to in K-20 at Internet2.

Kaye: Those packages of resources-- we are struggling with the mysteries of granularity. It is our experience that people sometimes go out and just need a video - we need to make sure that the metadata is not insufficient for them to find it. How do we do our own version of it?

Marla Davenport: In looking at some of the repositories like Infinity - this would be a great place to integrate our activities and we should add it in there as part of the curriculum.

Kaye: One of the important things for all of us it doesn't matter about Internet2, NSDL etc - what matters is that we create the resources that are useful to the teachers. Driving people, making things successful for them, is the important thing. How do we partner with each other so teachers don't have to go to all these different places. Even within Internet2, we're still divided.

Tim Poe: We need to be able to link to all these resources and repositories. When I go to buy music from iTunes or a movie from Netflix - it is right there. But we need the metadata to help us find that in the curriculum. Just to get to the resources that will help me in xxx subject and then lead to more resources.

Audience: maybe there should be an iTune university area?

Audience: Is Apple the place to do it or is it Google.

Tim Poe: I would hope all of them - think about these tags as a resource for video but also as a resource for finding what you need.

Kaye: The amount of work involved in this is huge. We already see states starting but we need to work together and really collaborate on this. Looks like we have enormous fragmentation before we have collaboration.

Tim Poe: This whole federate i.d. project will become so necessary because of all the different things we have going out there.

Kaye: More and more people are thinking globally that way. They are certainly pushing in this direction.
Nick Cross/Australia: In education Australia has invested in content and retained some control over intellectual property but their heart is to share as much as possible. The metadata exchange is really where other providers are coming together and honoring that metadata standard. The idea is to make it discoverable. It has to be sorted out to make sure you have access—to get the rights to have access to it.

Tim/UK: We are doing something in the NDRB (National Digital Resource Bank). At the moment, it is kicked off well. BECTA (?) which is used to set standards for metadata content, even though you don't have the right to use it yet, it guides you to how you can have the rights to use it eventually.

Kaye: The frustrating thing is that there are so many projects going on and we aren't communicating them. COMDA - went from this little group into this whole big piece where all they did was tumble over on each other.

Audience: There are 4 states who have cooperated together. Florida, Georgia, Kentucky, and North Carolina have an agreement somewhat on their metadata standards.

Kaye: Interesting research that too much choice paralyzes us all. A lot of research material came up that wasn't valuable to the teacher so to cut back (make it simpler) may be what we need.

Louis: not sure the commercial world does it any better either. It's hard to discover what you don't know. It's easy to find what you do know. For example, Project Gutenberg (online book catalog)-- I know there is something there that I haven't read and should - but what is it?

Audience: How do I gain entry into it?

James: Librarians are at their best when asked to help people define the information they are looking for and then help them find it. The library community represents a great largely untapped contributor to the collective efforts of the K20 Initiative.

Louis: The reference desk that comes to you rather than you going to the reference desk.

Judy Graves (Library of Congress): We started with electronic reference in 2001 at the Library of Congress. It was eReference and libraries across the U. S. are connected and there is a global reference now as well. I'm a teacher working in a library world - we are really in parallel universes. We both needed to be trained in technology. Libraries' funds were being cut and they had to do all this eReference on limited funds. You're talking about metadata - the Library of Congress is working on this issue right now.

Kaye: We've been talking to the Southern Regional Education Board - they're coming up with a Pathways problem that is getting students involved and I hope they get it (the funding). There is a huge group of partners there - the school librarians are an invaluable resource. But the members of American Library Association (ALA) feel set aside and unused by the teachers. Those helpers, publishers and librarians, - we need to learn how to inject their skills.

Audience: ALA worked with ISTE to establish the standards they now use. ALA has been pushing information literacy long before it was needed. The foundation is there and we all have to talk the same language.

Kaye: We're in a time of incredible frontier and it is truly overwhelming. It is a rich time, an abundant time but a confusing time. We are in an exciting time but we're in an untidy time as well - if you see the liberation of these students, these independent learners. When we were in school in third grade you were trapped in third grade but that isn't the case now. If you want to learn you can.

2:00 - 2:30pm - Statenets/K20 Collaboration

Speaker(s): Garret Sern, Government Relations Officer, Educause; George Laskaris, Executive Director NJEDge.Net, StateNets Chair (tent.)

Session Abstract: Discuss areas of mutual benefits, how we can strategically align work of Statenets/K20 Initiative

Carol: Our next agenda item is on StateNets. A couple months ago there were several of us on the phone about state nets, K-20 group and all cross paths and our talk today was about leveraging our groups. We're all in the same playing field, or on the same plane, but not talking to each other.

Garrett: George Tskaris couldn't be here so I'm speaking instead. George is the CEO of EDGE and state education networks. We have been working with NLR, The Quilt, Internet2, etc. UEN, videoconferencing services, identity management areas, working closely with the customers on the group. WISNET will be bringing people from all over the state.

State Nets is trying to provide a facilitator role between what you're doing on the ground and what EDUCAUSE and Internet2 can provide. We're hoping to bridge those silos.

Sherri NJ State Net: Definitely the state and regional networks coordinate to use high bandwidth but that's only one piece of it. We need to create a community within the state to ask every single school district in higher ed to re-create the wheel. Sometimes we need something a little smaller. We run a similar meeting for 2 1/2 days, which helps them to be local. There might only be one person doing your job where you are but if you suddenly have 50 schools together then pretty soon you find 50 people doing your same job.

Garrett: I'm coming in with a policy hat on. We know money is scarce especially at the federal level. We're finding State Nets community leaders are aggregators in many places. You need to be going to your state legislator to find your champion. MOREnet is a good example of this.

How many are hooked to the state and regional network? Only 5 raised hands. How many know the people in your state and regional network? Only 2 raised their hands (Tim Poe and Sherri from NJ)

Louis: There is an overlap with state networks and regional networks and the people in this room that work with them. One of the areas we could improve is the connectivity survey. That data got used for better or worse in the NTIA efforts. Lots and lots of people used the data for the BTOP. I wish it were more complete. I would be reluctant to use it without caveats. It's useful information at a certain level - we used NCES data which provided additional background information about the institutions connected via the SEGP program. We were just trying to get a sense of how institutions were connected and how it changed from a few years ago. Even then there were one or two states that opted out.

Garrett: National Broadband plan - we have that plan but we need to know where the connection is needed. It's a big problem now - we have other companies coming in and getting money - they're not interested in your needs but more the residential needs. Some of the struggles we're dealing with is that unless you have a BTOP grant you're not being treated seriously. Your individual stories are interesting and should be tied into the data - for policy makers, this is what we need. Has Jen Leasure had any conversations with this group?

What are your primary needs that your state/regional could provide?
Carol: The whole discussion about E-Rate is needed? Internet2 connectivity? That's a big one. I know in Texas our community colleges are really lagging behind in getting connected. That's really huge. That last round of BTOP grants they did recognize the lack at community colleges.

Garrett: I'll touch on that. Higher Ed and K-12 have not had the best relationship. Now it comes around that the administration gets it and are promoting community colleges. Now they see this as "now your promoting community colleges but E-Rate is higher ed competing with community colleges." We are trying to partner with them. The library community is really hurting. The big focus has been on the high costs. We've talked about raising the cap - one thing we've said in supporting community colleges, that more funds may be available.

Audience: More communities have been interested in working to the CAP. I know there are many interested in that and may be a great way to start.

Louis: I think some of what you're expressing is ancient history where certain parts of higher ed was putting K-12 under the bus. But times have changed. There's a whole community of Museums who didn't make it either. There is a potentially significant social role to play in education. Times have changed the overall funding and we need to talk about that and also raising the amount of the CAP - it doesn't serve the needs even now.

Garrett: The community is starting to coalesce around UCANN with NLR and Internet2. But we want to use this as a stepping stone for collaborative efforts. I think we're realizing now that it's sink or swim together. BTOP is like the conversation corps back in the day - but we need idea generators and that's the message that we need to get that message out to Congress. We need to be thinking long term. Jobs are the issues now but we need to think broader.

Louis: Whether or not the UCANN proposal is successful. It may be the moment to start the conversation. What might we do collectively as a community? Are there pieces of this that K-20 could work on?

Carol: We eluded to it many times - though we never formally brought those groups together in a room to have those discussions. So maybe we need to bring those groups together at the table. What can we do to leverage the interests together today?

Garrett: Will try to do something like that together.

Allen: What's the relationship between EDUCAUSE and ISTE?

Garrett: Our primary focus has been on broadband. I know Hillary Goldmann --right now we're trying to build on those relations.

Carol: One of the issues we're working on - part of our issue has been this communication. Don said he really needs to do his homework about Internet2. That's our issue - I know that the people in my State would have a voice at COSIN and ISTE but they don't know what Internet2 knows and does. How do we raise awareness about Internet2 in our communities?

Garrett: State nets have the same issue. They don't care where it comes from but they need to know what to do with it. If they raise their heads and say they do this — AT&T will say we can offer the connection cheaper. Internet2 - we can provide more - dedicated services and more other services.

Garrett: Many state nets are trying to figure out how they can collaborate - Michigan, Missouri and Utah - where the state networks can provide that platform

Louis: Just bringing the groups together may help.

Emilie: A parallel can be drawn with the Internet2 Health Sciences community (hospitals, doctors, nursing associations, clinics) with the distributed group. You may get some lessons learned from Mike McGill and see how they have been doing in that arena.

Louis: Money is a big motivator.

Garrett: Statenets history - it was under EDUCAUSE but has spun off again and we are looking to collaborate more closely with The Quilt.

Larry: One of the things I get push back at the state level - is there a mechanism established where universities and colleges can make information available so they can interact through multi-casting. There is a lot of educational events and content that we're missing out on.

Garrett: Will be happy to pass it along and get back with you.

Audience: There isn't a concerted effort to advertise it or archive it many of these events. Research Channel doesn't do any active push but I think they have some active content available but you have to go and find it.

Garrett: We're trying to save our members money, the next step will be in the community colleges. That may be where we have the next connection.

2:30 - 2:40pm - Break

2:40 - 2:50pm - Mega Jr. Update

Speaker(s): Kim Owen

Session Abstract: An update on what's new in the evolving world of the Megaconference events.

Kim B./Kim O: Megaconference Jr.
- online collaborative tool for music
- wanted them to focus more on specific areas this year
- big thing this year is to get Smithsonian: take a chair and decorate it according to the country they are from

Suggestion from Nick Cross/Australia: The timing of the conference might be better. Australia starts the first part of their school year in February. Just think about it when setting the date.

Some stats from the most recent Megaconference Jr.:
49 VJs (video jockeys)
72 concurrent viewers
993 total connections throughout the year
--This effort is a great opportunity for people to recognize what they can do with Internet2.

2:50 - 3:00pm - Remote Instrumentation Working Group Report

Speaker(s): Remote Instrumentation working group
Session Abstract: Report from Remote Instrumentation working group

Goal: increase awareness and use of advanced network-enabled remote instrumentation and data visualization resources within the Internet2 K20 communities.

Accomplishments
1. establish definitions/goals
2. currently developing an inventory of resources and contacts for a set of telescopes, virtual labs, web cameras, sensory rays

Pilot program, maybe in the fall, to find out what works well and making engagements with K-12, community college, some higher ed, libraries and museums.

James the project team is conducting a brief survey of the instrument owners to better understand what they offer and how (and if) it might be extended to the K-20 community. Here's a flavor for the type of information we're collecting.
- key contact, title, organization, etc.
--browser based application? Schedule it?
--How do users connect to this resource, etc.
--current outreach efforts associated with your resource
--other resources available that K20 initiative should be aware of

Jason Zurawski has been helping the team discover remote instrument resources from within the Internet2 research community.
--also interacting with international resources
--many are really big international projects but they still have time for the little guys
--of the big ones I found, the LHC will eventually offer access to the instruments they are providing.
--LLST - (Large Synoptic Survey Telescope) a huge telescope in Chile
--eVLI (Electronic Very Long Baseline Interferometry) project in Australia
--Terragrid

We look forward to hearing what they have to say when the survey details come in.

Kim: The project that connected schools in this one state (?) step by step until they were all connected. They were Internet2 members but didn't know what Internet2 has to offer.

James: any questions/comments?

Allen: I had a side conversation with Kemi as he tried to grow his network, the school network demand was growing and he was having trouble growing the supply side. Difficulty was with equipment, non-disclosure agreements. He wanted the granting agencies that if someone was getting 1/2 million worth of equipment they committed to make it available. Maybe this is something that Internet2 could lobby on their behalf.

Louis: In addition to doing an inventory of the equipment, maybe we should also inventory the software out there? Many of these remote instrument owners will be interested in finding regional partnerships rather than offering access to the whole world. When the instrument is not being used by the students because college is out — maybe it could be accessible. Time zones etc. will also play into it.

Tim: As you scale this up, what challenges emerge? Some lessons learned will be important to collect in this effort.

Jeremy: We looked at creating our own instrumentation, had the space, had the equipment but needed some help on the troubleshooting. Maybe a developer's toolkit may be an outcome of this organization. Do we buy this camera, weather proofing box, the software, - what should I buy? Maybe making this available would be helpful.

(Missed some of the comments from Tim Poe)

3:00-3:10pm - K20 Collaboration Working Group Report

Speaker(s): K20 collaboration working group
Session Abstract: Report from K20 collaboration working group

Larry: What we've discovered so far.... We tried to figure out a way to start integrating K-12 and K-20 to work together to come up with a topic that's of interest nationwide. Several projects came from this.

Immigration and Human Movement : program that identifies immigration, history of immigration and future immigration. Came up with a dozen panels of experts who will come up with resources.

Jeremy: We need to know how to do this and how to do this collaboratively. We need multiple people from multiple states. What web-based resources are out there? Getting the word out. And getting resources for all of us.

Within NY State - let's all work together; how do we take advantage of high bandwidth?

Virtual Global Summit Project: when you package it properly then you get cooperation. Come up with some long term projects that will take root. Like "Listening to Elephants" - partnering with some of the zoos. Try to collaborate with Internet2 - how does the work flow, how to help them develop the framework for the projects.

Larry Gallery: what we found was spring was not a good time. Probably the best time to do this is to start the idea in the spring, get the teachers involved, and roll out the project in the fall.
3:10-3:30pm – K20 Communication Strategy

Speaker(s): Carol Willis, All

Session Abstract: Discuss our top K20 communication goals and how to shape an appropriate communication strategy around them.

Larry: This year a group got together to get the ball rolling but we’re looking for some more folks - need some new ideas and want to get the momentum going. Please get in touch with us and let us know what you want to do. Border cities, sanctuary cities — and the like.

3:30-3:50 – Muse Development Update

Speaker(s): Muse development team

Session Abstract: Federation of Muse, K20 Identity Service Provider scoping study, progress on K20 “groups” functionality.

3:50-4:00 - OPEN

4:00 - USFS/NPS Update

Speaker(s): Ray Ford, Univ of MT; Christian Todorov/Marianne Smith, Internet2; Kim Owen, Randy Stout

Session Abstract: This discussion will update the K20 Community on the NPS collaboration and USFS Pilot membership site activities, describe items included in the MOU between these organizations and the local RON or connector that is planning to support a local site, and how all of these initial activities impact potential membership categories in Internet2.

Randy: At an Internet2 meeting we had a brief clip, or teaser, about a program we were doing with our parks service sites. In Topeka we had a national historic site - learned about distance learning, point-to-point video conferencing, how they could extend their outreach. We had primary sources, the first persons involved. Eight classrooms connected and eight points where first hand primary sources would tell their story about how the decisions affected their families and their life. 1954 a decision like Brown vs Dept of Education, for example. Individuals who told their story were seniors, people who have been active in the community organizing and committed to educational equity. It was very interactive and they had an opportunity to talk to them afterwards. We put together another series - we did a session every Monday, Tuesday, Wednesday, Thursday and we reached a lot of students. In one case there were 10 classrooms connected, on 2 of the sessions, one of the sites had 130 elementary students. We really reached a lot of students and they asked a lot of good questions. The National Park Service folks are asking us how to become more of an affiliate to Internet2 and gain access to these communication channels. They asked us advice about their video conferencing infrastructure and help connecting their classrooms.

Kim: Centennial is coming up in the National Park Service and they've been dependent on people coming to them. Many of them come to the classes and will bring all the materials. So how can they be more effective instead of driving. The US Forest Service has a lot going on and they will be transferring a lot of data and making use of that. How do we address those sites with the Internet2 connections?

Marianne Smith (Internet2): The US Forest Service approached Internet2 - as a call from the special assistant from the deputy of the CIO on how to better serve their researchers. They found out about Internet2. The Forest Service has more research sites than any other agency - many aligned with university campuses. Wherever you see forest curriculum you'll see a forest service involved. Robin and her colleagues got excited at SMM 09. Internet2 would connect with them on a smaller location (including Puerto Rico) and they determined that the Montana Fire Research Center is the largest and that's one of the ones they really wanted to tap into. We brought Ray Ford in as they were not located too far from the University of Montana. Christian did a good job researching where these locations were on campuses and they could hook right up and do their research. Ray started to engage with the forest service folks - this is the one site where there has been some substantial progress.

Ray: You will learn what it's like to deal with some of these folks. It's a pilot project, it's going to address designated test sites not all forest service sites. We're only walking this very carefully as Internet2 will provide National Transport Infrastructure, use the network infrastructure and it can't co-mingle the traffic with other's traffic.

The research labs are very separate from the people that run the National Forest Service. If you have a friend at the national park, get them to show you where they are on the org chart - if they're a research lab they probably are connected to a university and have a contract. The individual National Forest units are working with trees and protests and other things. So work with the research labs directly. The pilot project is going to take the path of least resistance - find the closest school of forestry and there will be a two-way interaction with them. When the students leave, then people come from all over the country to run training programs. How you use an ax to extensive fire modeling, for example. They hire the students and we hire their researchers as instructors. As a researcher - you develop a project and get a friend and then you just do it. There is a Master Contract, managed by the School of Forestry (at his school), so this is a streamlined process directly with them.

Why Missoula? Christian called and asked about the School of Forestry. We have Region 1 Headquarters - the smoke jumper center, and the Fire Sciences Lab and their research labs. As a computer science faculty member, I have been on committees with each of those labs starting in the early 1990s - these are PhDs that do fire modeling. The big fire modeling office is in Boise, Idaho.

The Project Timeline is longer than Internet2 envisioned. For 20 years we've been trying to figure out how to do this. The CIO, the Deputy CIO of Fire Service all came to Missoula and met with the Dean of Forestry - now we can we have fiber lift to Seattle, WA - We actually met in the bar downstairs with some DC folks to talk it over. Now 14 months later we now have a specific plan on doing this. We now have some pilot sites. I assume similar work to Missoula's is going on in Puerto Rico. We now have project managers from the Forest Service from this office and that office — now it's really going to happen. So for the first time we actually see it on paper. They're testing it and they hope to have this done by June or July - the Northern Tier summer meeting is in June - the Fire Labs Manager, Colin Hardy, has been approved to go to the meeting and talk about it in public. May not sound like much but it is a big deal when you're dealing with various agencies.

The Forest Service is going to buy a 10 gig connection. Puerto Rico is buying a 1Gb connection. Internet2 will manage the long haul. Once we get them connected we'll be doing low tests. Getting this done by July 1 is a big deal as the fire season is ramping up now. They hope to transfer data, especially maps. Hope to sign the contract soon for a contract completion target July 1, 2010. This only took 20 years or maybe only 20 months depending on whose timetable you look at.

The problem with the National Park is the larger the park (Yellowstone and Glacier), the more magnificent the bureaucracy is around it. So if Harvard wants to do research in Yellowstone, they go to DC. Everyone wants to get into Yellowstone to do research.
How much of this translates to your situation?

Christian: I’d like to amplify one point that goes back to the distributed architecture. We ran into the left hand/right hand problem where two sides didn’t communicate well. Ray, being modest, provided a detailed outline of what it would take, estimated costs, and it was very actionable information that the Forest Service could use. As you approach these large agencies, it is a good idea to reiterate the story to someone new because you don’t know the mechanism working behind these agencies and you might hit upon the right person at the right time to get the job done. So again the amount of detail Ray put together was a significant contributor to getting this moving along.

Audience Question: What’s the cost associated with it?

Ray: Here’s what you have:
Leasing fiber: cross-town, long haul Internet2 access point
Temporary contract with Internet2 for the 10 Gb
40 research labs with 100s and 1,000s of sites connected with T1s paying 1961 prices.
We have the CIOs interested - people in the middle may make it happen or drag it along. Probably they’re spending tens of millions of dollars for T1s so this ½ million dollar pilot site expense is nothing to them. Internet2 will give them the connection under this pilot program and then look at a connection fee if it works out for them.

With the 10Gb connection they will have their own routers and switches and will manage their connection. They will just become a fairly decent sized university overnight. They will have a connection not unlike another university. Their traffic will not co-mingle with anyone else’s. They have a level of responsibility to manage their own service just like a university. This is a model - you do a project with the Park Service and what makes them unique is that they are located all over the place and this will stress the Internet2 membership model. When they want to connect 42 research labs, then they will talk to Internet2 for the participation fee part.

Kim: What are the take aways - this is an awareness session. Yes it is content providers but a much bigger picture. If you're in contact with local sites in their areas, this is a grass root effort.

Ray: If you have a forest service research lab - contact Ray, Marianne or Christian and let us contact them on your behalf. Generally people are okay with this in the Forest Service but any other connections will be thru whatever channels currently exist.

Louis: 4:46 == It's been a long day. Thanks to those who stayed with us for 10 hours today. We had a great morning and some great conversations this afternoon. We hope to continue the conversations afterwards. Next call is Tuesday, June 15th. Look for call details and an agenda via the K20 listserv.

**ACTION ITEMS**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Action Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISTE</td>
<td>Establish a working relationship with Hilary Goldmann. e.g., serve as a resource when ISTE is asked about I2 matters and its impact on K12.</td>
</tr>
<tr>
<td></td>
<td>Coordinate a meeting with ISTE’s strategic initiatives director, Lynn Nolan, to explore how K20 and ISTE can work together. K20 to collaborate with ISTE in developing standards for use and integration of R&amp;E network resources in the K12 classroom. Include standards to be incorporated into NETS standards (for students, teachers and admins). Request adoption of these standards by ISTE.</td>
</tr>
<tr>
<td>NSDL</td>
<td>Research different solutions for identifying and tagging digital resources. Talk with SEDL, ALA, multi-state solutions, ISTE, etc. to determine if there is a standard that K20 wants to adopt for resources created by K20 projects. Goal: make it simple for teachers.</td>
</tr>
<tr>
<td>Library of Congress (LoC)</td>
<td>Meet with Judy Graves to learn about the Library’s metadata research. Report findings to K20 members. Establish a close working relationship and maybe identify potential K20 collaborative projects with the Library of Congress. Does LoC now offer programs specifically for student audiences? In the past their work has targeted teacher professional development. Maybe K20 could request LoC consider adding some pilot student-focused events?</td>
</tr>
<tr>
<td>StateNets</td>
<td>Coordinate a f2f meeting between StateNets and K20 to explore ways to collaborate.</td>
</tr>
<tr>
<td>Remote Instrumentation</td>
<td>Continue to identify resources and research models of sharing with the K12 community. Develop a letter of support from I2 K20 for any university seeking grant funds for instruments that could be shared with K12.</td>
</tr>
<tr>
<td>K20 Collaboration and national resources</td>
<td>Research the possibility of connecting National Parks and US Forest Service sites. Meet with the I2 pilot team that is working with the USFS to present short demonstrations that highlight work done for the pilot and to create interest among those who want to collaborate with these agencies. Research the possibility of developing a standard scheduling application that can be used by any entity offering remote instruments for the K12 community. Schools would link to the I2 K20 site to register for use of an instrument. Explore the issue of sustainability for these sites as they develop outreach programs (reference to current Remote Instrumentation activities).</td>
</tr>
</tbody>
</table>