**Internet2 Working Group Discussion – September 9, 2015**

Attending:

James Werle, Kemi Jona Northwestern ilabs project, Sue Schmidt, Kim Owen (N Dakota State), Ashley Walter Northwestern, ilabs project, Ann Zimmerman, OAR.net

Notes:

Focused on: reignited interest around remote instrumentation and how landscape has changed – what is out there these days – internationally as well – and did a bit of surveying work – fruitful conversation with GoLabs – informal survey and yielded some results from that – 5 to 10 new resources and will keep pounding on survey – what is out there and within each effort interest in working broadly with K20 community to increase access to those resources. Second parallel centers around NANSLO and work that we’ve been doing. Matured considerably over last six months or so. Scheduling layer enabling labs all over world to become NANSLOized. Moving toward Kemi’s vision around warehouse of instruments that could be scheduled and be made available over networks and charge for service for sustainability purposes.

Kemi – Seeing NANSLO as an opportunity for iLabs to integrate in some way and make your lab resources available – would that be helpful for your strategies to make it more sustainable? Be able to charge for them – recover your cost – is there a market in K12 and in college space – would NANSLO like environment be helpful toward your efforts and others? Excellent questions. Short answer is yes to exploring any type of partnership that would sustain our effort and broaden impact individually or collectively. Exciting to explore – excited about growth of number of labs and instruments – couple of differences – very focused on middle and high school students as opposed to higher ed – not exclusive limitation – working at Thompson Rivers with undergrads so open as well – hasn’t been focus of our work – question with respect to marketplace – don’t know answer and would be worth exploring – market segments are difference in higher ed and K12 – look at that thoughtfully – any real likelihood – higher ed tends to be more distributed – individual faculty decision – buy textbooks and labs too versus in schools – different dynamic – James (NANSLO akin to booking on a flight complexity) – commonality is all trying to get on the airplane with different purposes – market may have unique purposes and needs but all need to get on labs commonality – what each of these market segments could bear will vary and how they purchase will vary greatly – differing degree of interest – assuming was a market and NANSLO could serve that market IF we can gather enough critical mass of interest to meet unique needs and make them available and at a price point they can afford – end goal bring additional instruments toward NANSLO and get additional instruments into NANSLO

Kemi – that direction makes a lot of sense and lots to learn as we go down that path – push boundaries – time is catching up – tremendous enthusiasm from the teachers – collaboration in addition to financial is push to make our tools easy to use by teachers so they can quickly adapt without being technical programmers and support typical cycle of teacher assigning a lab to a group of students, getting their results submitted electronically, and being able to provide feedback (formative) along the way – dothem multiple times versus one time – feedback is super time consuming – quick and effective and easy as possible – adding capabilities to help instructor understand what they’ve been doing, patterns of misconceptions to help them lead class discussion by aggregate data – unlike traditional labs, we can harvest data that students are putting into system and giving teachers results in ways not possible. iLab Studio.org to reflect studio element. Added a new life science lab that has live organisms and has been a tremendous feedback from teachers as micro organisms is difficult for them. Share credentials – you can create your own account “Login” – help page and walks you through steps to go through to see everything – demo account can be emailed to us. Share with our working group – yes. Another piece we have added is supporting higher ed faculty on broader impacts, outreach work – to fulfill NSF grant – reporting tool whose instrument it is to generate a report of all of usage, students, number of hours, map, to include in annual reporting – encourage faculty to put it online and benefit from reporting capabilities – feedback – had couple of users like reporting. Every possible combination of what we can pull of annual report. Broader impact tool – is there a link to that? Two ways – reporting feature more for our partners if they donate an instrument – teacher/user/admin level – don’t share all data for everything because a lot of users have privacy issues, e.g. lab journal – check on answers, what experimental design was, results -- broader impacts have to be careful to remove student data – when it happened, what schools are they from, etc. – automated reporting feature would be valuable to faculty – incentive for additional folks to connect and broadly available if fulfill NSF requirement to have data

Other opportunities? Interesting points of intersection on how or if we could integrate various instruments into NANSLO – may be some interest there – possibly if interest Rick mentioned a funding opportunity to move this forward, e.g. ICOR grant from NSF to fund different business models that have already proven their value – make them more sustainable – NANSLO has proven itself, iLabs have proven itself – perhaps we are at a point for scalability to take step forward – would ICOR grant be a vehicle where we could work together –Primary goal is to foster entrepreneurship.

KEMI – applied for one but limited funding but also force you to do a lot of work with their commercial advisors – sounds like consultants replicating what go

James – focus might be with integrating iLabs into NANSLO – find funding to accomplish that goal; KEMI – chicken & egg problem – need the labs to be robust enough as K12 need bundles for whole course where higher ed might be different; SUE – similar in higher education based on the business plan being developed for NANSLO; JAMES – maybe go over funding to build up offerings or both – viability – create guide post for partnerships to align with strategic direction, bundle and offer under NANSLO to help NANSLO get to critical mass and leverage platform in classroom environment, use Internet2 institutions that are already linking their instruments to the network; KEMI – approach may be to incent institutions to be part not for financial reasons but for sharing, e.g. Uber, allowing students to have greater opportunities for experimentation; SUE – NANSLO does this as students share the same control panel, share control, and we’ve found they experiment more and collaborate more than f2f labs.

Ann – finding more instruments – Ohio is probably her results—sent to super computer center and find other contacts that she might be able to send survey to. Ohio may want to refresh info if they have changed. Will ask them to update old responses.

Kim – one responded and pushed to Northern Tier folks – don’t know if filtered down to them or if James talked to them directly. Not responded to 2010 respondents but can do that.

James – continue collecting information. Thanks Kemi for European effort.

Kemi – GoLabs very impressive. Close to getting Thompson River water equipment going live.

Kim – UAS – education and research designated by FAA – when it happens generates research – drones – things happening on leading edge activities – collecting data from that equipment? Collecting data on all types of things that addresses multiple disciplines and topics – learning activity or research resource?

Kemi – drone work? We are harvesting data from users of our labs and have IRB permission to study for research purposes.

Kim – hoping that access to some of the types of data collected so that undergraduates or K12 students can access – legal issues with FAA and all kind of stuff may be delaying use.

Drone data – what data looks like and harnessed and used in higher education and K12 – visualization tools, etc.

May need to do a workshop (Internet 2) go after funding for the workshop – explore how might leverage asset.

Sue asked about the possibility of focusing on the packaging idea.

NEXT STEPS

* Ashley will send the group credentials for checking out the new ilabs studio interface.
* James has added Kemi and Ashley to our working group listserv [k20innovators@internet2.edu](mailto:k20innovators@internet2.edu)
* All – continue to encourage instrument owners to complete our brief survey. Please review the latest results here: <https://goo.gl/7iRVY9>