

# Report of the Information Technology Policies Committee

6th April, 2016

## Committee Members

- Professor Engin Kirda, Chair-CCIS
- Professor Dana Brooks-COE
- Professor Anthony De Ritis-CAMD
- Professor Rachel Jones-BCHS
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## 1. Introduction

The Faculty Senate gave the Information Technology Policies Committee (ITPC) three charges to fulfill for 2016. These were, in condensed form:

1. The Committee shall review the adequacy of technology available in classrooms, as well as course management software (i.e., Blackboard) in comparison to other state-of-the-art software (such as open edX)
2. In collaboration with RPOC, the Committee shall investigate common IT resources that will support faculty research, such as REDCap and other shared databases and tools, as well as develop policies for research IT, such as how human subjects data should be stored and protected.

3. Other priorities, to be determined by the Senate Agenda Committee, may be charged as they arise.

Note that Charge 3 did not arise. Hence, we only address the Charges 1 and 2 in this report.

To undertake these tasks, the committee divided itself into several subcommittees, one per topic, obtained valuable information from the Northeastern ITS staff, and also had joint meetings and discussions with other relevant senate committees. Also, to collect more data about the teaching and research IT requirements of Northeastern faculty, the committee designed and circulated a survey with the help of the senate. We include the results of these activities (and the complete survey results) in this report. We especially hope that the feedback given by Northeastern faculty to our IT support survey will be used in future decisions with respect to the systems maintained by the Northeastern IT, and the support provided to the faculty.

Based on the findings, the ITPC makes six concrete recommendations (see Section 4).

## **2. Findings with respect to the charges to the committee**

### **2.1. Charge 1: Review the adequacy of technology available in classrooms, as well as course management software**

As a part of this charge, the ITPC had meetings with the main stakeholders, and also collected information from Northeastern faculty by employing a survey that received large interest and participation from faculty. The survey results in this report (see Section 3) show that more than a third of the faculty who responded are unsatisfied with the IT technology support provided at Northeastern. The complaints ranged from issues such as non functioning projectors to difficult to use, non-intuitive software such as Blackboard.

An ITPC subcommittee also met with Rehan Khan, Vice President for Information Technology Services and the CIO of Northeastern, Stephanie Trowbridge, Director of Academic Technology Services, and Robert Whelan, Director of the Network & Telecom Services. The discussion was about issues related to classroom technology.

The ITPC was told that all “register-schedule” classrooms have an IT cycle ranging from three years to ten. There is a plan for each room, depending upon the life cycle of their technology. Currently, projectors with bulbs (that tend to be less reliable) are all being modernized.

The IT services at Northeastern have launched a website at *classroom.neu.edu* that gives a virtual tour of all registrar-scheduled classrooms, and find out what technology is in there. Also, the idea is to also have a standardized approach to technology so that, no matter what room a faculty member has, they can function with the tech in that space.

On a weekly basis, NEU ITS sends employees into every single classroom to check on the classroom technologies to make sure that it is functioning properly. However, NEU ITS told the ITPC that they are limited by budget. Nevertheless, they did manage to upgrade the classroom technology in each classroom over the last two and a half years. In fact, over the last year, 64 classrooms that needed serious work received \$3 million on classroom innovation.

NEU ITS is seeking to make each space ergonomic, with good sound quality. Also, NEU ITS believe that they can improve how they receive feedback from faculty about the classroom technologies, and not relying only on the service HELP desk. The ITPC was told that the registrar also asks faculty for feedback on a quarterly basis, but we do not recall seeing anything in this regard.

ITPC was told that faculty, in general, contact ITS only at the moment when they need help, especially when they are in the classroom. This just-in-time requests usually come as calls to the HELP desk, and faculty want immediate action.

ITPC also discussed with NEU ITS some issues related to particular classroom spaces where some screens mounted are fixed on a pedestal. Apparently, the registrar insisted that this is what faculty wanted (i.e., fixed computers in all classrooms).

Changing standards (expectations) in the classroom take time to implement. ITS first needs to do testing in their spaces before moving forward (e.g., moving from VGA to HDMI technology). Note that ITS heard faculty requests for needing specific connectors and dongles in the classroom for connectivity, and now, these are present in each classroom.

ITPC was told that Stephanie Trowbridge is head of ATS (Academic Technology services) which deals with Blackboard, information capture, and software, all within ITS. She also interfaces with CATLR related to faculty needs (Center for Advancing Teaching and Learning Through Research). With respect to Blackboard, this group is currently actively looking at new LMS (Learning management systems/ Platforms).

## **2.2. Charge 2: ...investigate common IT resources that will support faculty research, such as REDCap and other shared databases and tools, as well as develop policies for research IT, such as how human subjects data should be stored and protected...**

As a part of this charge, the ITPC had meetings with the main stakeholders, and also collected information from Northeastern faculty by a survey that received interest and participation from faculty. Similar to the teaching report, about a third of the surveyed faculty expressed dissatisfaction with the IT research support provided by the university.

### **2.2.1. Meetings with NEU ITS**

In a meeting with the NEU ITS, the ITPC was told that Rehan Khan will work with Dana Carroll (research “VP”) to improve the aspect of IT that supports faculty research. For example, instead of COEUS, the university might use a different system such as infoED.

The ITPC also discussed information security and security clearances with Rehan Khan. Currently, faculty are working with the Kostas Center for having the highest clearances.

ITPC was told that NEU is now partnered with EduRoam. Although this partnership was announced, the survey results indicate that not all faculty are aware of this. Hence, in terms of communication, it seems there is room for improvement.

In order to help get word out about what IT does, beyond its newsletters via e-mail, NEU ITS suggested a “Did you know?” service in order to share upgrades of a services that deal with teaching and learning.

We would like to note that NEU ITS has been very open and helpful in allowing some qualified faculty who perform research experiments on the Internet to manage and secure their own systems. Current protection and monitoring mechanisms in place sometimes interfere with the computer science-related experiments being performed over the Internet.

### **2.2.2. Discussions with the Research Policy Oversight Committee**

The ITPC discussed with the RPOC what IT resources would support faculty research, and what policies need to be developed for research IT.

One outcome of the discussion was that there needs to be qualitative versus quantitative software access and support. Some examples of software packages that were listed for some disciplines were:

- Dedoose - A cross-platform app for analyzing qualitative and mixed methods research with text, photos, audio, videos, spreadsheet data and so much more.
- Nvivo - software for qualitative data analysis.
- ATLAS.ti - is a powerful workbench for the qualitative analysis of large bodies of textual, graphical, audio and video data.

RPOC and ITPC also discussed some of the software-related challenges faced by faculty. For example, each year, faculty are confronted with several key challenges that are related to software licensing, such as:

- It is difficult to learn about which software the university has a license.
- Different colleges have different software and specialized software needs. Some software is so specialized that a site license is overkill, whereas some software should be made generally available across the university.

One question that came up was if each college should have an IT specialist who serves the faculty in each College. Also, it is an open question how each College can be surveyed to discover its specific software needs.

In some cases, it may be easier to just buy a specific software license. However, RPOC and ITPC note that not all faculty have such purchasing power and furthermore, this may lead to poor communication and / or inefficient expenditure of funds.

RPOC and ITPC also determined that faculty need access to server space, and this space needs to have various levels of permissions. Depending upon faculty expertise, there are various levels of support required in setting up and using servers. Currently, it is not clear whose responsibility it is to purchase servers, and how the purchased hardware can be integrated to create a common faculty infrastructure for the greater good.

Note that currently, there is a great displeasure (i.e., a “burning” issue) with respect to the ability to manage the finances of grants on a day-to-day basis. There is great dissatisfaction with the ePrint and Banner systems. Faculty are forced to create their own offline systems to manage their own grants, and the information in the systems that the university provides is often inaccurate and difficult to manage. An integrated system such as SAP would enable the grant administrators to have real-time tracking of grant expenses and projections, and it would remove the need to make manual payroll changes which are highly ineffective and time-consuming.

### **2.2.3. Help Desk Support**

IT Help Desk Support, in any organization, is challenging. Users typically expect quick support. While the ITPC realizes that the IT Help employees are doing their best, the committee notes that there is room for improvement. For example, currently, many faculty who use Help Desk services complain that the provided aid is highly dependent on who picks up the phone, and may take several hours in some cases. This may also include license renewals.

ITS feels that over the years, there has been a great improvement with its service desk in the Library. For example, during the snowstorms of last year, ITS would host some of its staff in a hotel if necessary just to make sure that they would be present for requests.

### **2.2.4. Response from NEU ITS**

RPOC and ITPC shared the results of their findings with NEU ITS. Mr. Khan and his team responded to the findings and concerns the committees expressed. More discussions and meetings are needed, and we appreciate the openness and constructiveness of the NEU ITS team. We include the initial response of NEU ITS at the end of this report. It was clear that some of the faculty dissatisfaction resulted because of a lack of communication between faculty members and NEU ITS.

## **3. ITPC Survey Results**

The survey created by the ITPC consisted of 12 questions and 3 pages, and was answered by a total of 174 tenure-track, research, and teaching faculty at Northeastern over a period of three weeks. In this section, we present the findings of the survey.

### **3.1. Executive Summary of the Findings**

Each Northeastern academic unit was quite well-represented in terms of survey participation. The College of Engineering had the highest participation and more than 22.41% of the participants were from this college. The second highest participation was from the College of Health Sciences (i.e., 18.39%), and third highest participation was from the College of Social Sciences and Humanities (i.e., 14.37%). Figure 1 depicts the distribution of the survey respondents.

Answer Choices	Responses	
College of Arts, Media and Design	8.05%	14
School of Business	12.64%	22
College of Computer and Information Science	6.90%	12
College of Engineering	22.41%	39
College of Health Sciences	18.39%	32
School of Law	2.30%	4
College of Professional Studies	6.90%	12
College of Science	14.37%	25
College of Social Sciences and Humanities	15.52%	27
<b>Total Respondents: 174</b>		

Figure 1: College distribution of survey respondents (Question: Select all units in which you have an appointment).

Answer Choices	Responses	
tenured/tenure track	56.65%	98
research faculty	2.89%	5
academic-associate/teaching faculty	40.46%	70
<b>Total</b>		<b>173</b>

Figure 2: Position distribution of respondents (Question: Describe your current position).

The highest participation was from tenured and tenure-track faculty (i.e., 56.65%) and teaching faculty (i.e., 40.46%). With about 2%, the participation of research faculty was rather low, probably indicating that this group of faculty have the least at stake as they typically remain at Northeastern for a limited period of time. Figure 2 depicts the position distribution of the survey respondents.

One of the most important questions of the survey was the satisfaction of the faculty with respect to the support of their research. While around 35% of the respondents agreed, around 31% of the respondents disagreed. 21% of the respondents were neutral and some chose not to answer. Hence, the survey results indicate that while a third of the faculty are happy and satisfied with the research support provided by the Northeastern IT services, at least a third

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	Total	Weighted Average
(no label)	11.35% 16	19.86% 28	21.28% 30	30.50% 43	4.96% 7	12.06% 17	141	2.85

Figure 3: Satisfaction with respect to research support (Question: I am satisfied with the degree to which the IT infrastructure of the university supports my research).

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	Total	Weighted Average
(no label)	9.29% 13	17.14% 24	21.43% 30	35.71% 50	4.29% 6	12.14% 17	140	2.99

Figure 4: Satisfaction with respect to server support (Question: I am satisfied with the degree to which the IT infrastructure provides server support).

of the faculty are unhappy and unsatisfied. Figure 3 summarizes the results of the survey. In comparison, the support for servers were thought to be more satisfactory: About 39% of the respondents were satisfied with the support while 26% were unsatisfied. Figure 4 summarizes the survey results.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	Total	Weighted Average
(no label)	3.57% 5	10.71% 15	30.71% 43	27.86% 39	7.86% 11	19.29% 27	140	3.27

Figure 5: Satisfaction with respect to data security (Question: I am satisfied with the degree to which the IT infrastructure secures data).

The survey results also show that most faculty either are neutral with respect to the security of their data (i.e., 30.71%), or are happy with the provided support (i.e., 35%). Only about 13% of the faculty seem to be unsatisfied with respect to data security. Figure 5 presents the survey results for data security.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	Total	Weighted Average
(no label)	7.91% 11	10.79% 15	20.14% 28	7.19% 10	0.72% 1	53.24% 74	139	2.45

Figure 6: Satisfaction with respect to support of outside consultants (Question: I am satisfied with the degree to which the IT infrastructure supports work with outside IT consultants).

Support for outside consultants does not seem to be a major concern for most of the faculty – more than half of the respondents said that it was not applicable to them (see Figure 6).

The support for survey deployment was not applicable to the third of the faculty respondents. This is not surprising as surveys are needed for research for some disciplines, but not all. The results show that 33% of the faculty are satisfied with the provided support while 36% are not (see Figure 7).

Note that with respect to teaching support (see Figure 8), the ratio of faculty who were satisfied and those who were unsatisfied were quite similar. That is, 33% of the respondents said that they were satisfied while 36% of the respondents stated that they were unsatisfied. Hence, the survey results indicate that a significant number of faculty are unhappy with the teaching support that is currently being provided.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	Total	Weighted Average
(no label)	0.00% 0	15.00% 21	22.14% 31	23.57% 33	2.86% 4	36.43% 51	140	3.22

Figure 7: Satisfaction with respect to the support of survey deployment (Question: I am satisfied with the degree to which the IT infrastructure of the university supports the deployment of surveys).

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	Total	Weighted Average
(no label)	11.51% 16	24.46% 34	19.42% 27	30.22% 42	12.95% 18	1.44% 2	139	2.97

Figure 8: Satisfaction with respect to the support provided for teaching (Question: I am satisfied with the degree to which the IT infrastructure of the university supports my teaching).

Finally, more than 45% of the faculty expressed unhappiness about the support provided for machines that have not been imaged by NUnet. Only about 13% of the respondents said that they were satisfied (see Figure 9).

## 4. Summary

In this report, the ITPC provided the results of its meetings with the NEU ITS staff, grants management personnel, and the Research Policy Oversight Committee being chaired by Prof. Carey Rappaport. Also, the survey results in which 174 Northeastern faculty took part across all disciplines and position types are included.

We, as faculty, recognize that securing and running the Northeastern IT infrastructure that serves thousands of users is a difficult and a complex task.

As suggestions for improving the current IT-based services and help Northeastern excel in research and teaching, the ITPC makes the following recommendations:

- We recommend the deployment and purchase of a software package such as SAP for payroll management and the real-time management of grants. Such software is typically

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	Total	Weighted Average
(no label)	24.11% 34	21.28% 30	18.44% 26	13.48% 19	0.71% 1	21.99% 31	141	1.99

Figure 9: Satisfaction with support for non-NEU imaged machines (Question: I am satisfied with the degree to which the IT infrastructure of the university supports computers that have not been imaged by NUnet).



used in top-tier, research-active universities, and Northeastern staff and faculty are in urgent need of such software.

- We recommend the introduction of web and mobile applications (e.g., such as Asana and Slack) to help teams track their work and collaborate.
- We recommend that NEU ITS should visit each College once per year and talk to faculty directly to hear some of their concerns. The survey that the ITPC conducted shows clear evidence that a third of the faculty surveyed are unhappy with some of the services that are being provided. More insights into why this is the case would be useful.
- We recommend that the NEU ITS services consider easing the process for license renewals for highly-used research software. Collecting more data about this process, and understanding what the faculty needs are would be useful.
- We recommend that the NEU ITS security group and staff regularly interface with the cyber security research faculty at Northeastern.
- We recommend that NEU ITS provide a list of all software being considered for procurement related to infrastructure, teaching, or research to ITPC on at least a semi-annual basis, and that ITPC be charged with reviewing these lists and providing recommendations to IT.

# A. Appendix

## A.1. Detailed Survey Responses

### A.1.1. Question: What are the three most important IT requirements for your research and teaching?

The answers (in verbatim form) from faculty to the question were as follows:

- computer support; software updates; fast and secure Internet systems
- 1) Establish clear protocols and substitute hardware options for traveling to countries for which ITS suggests faculty not bring their laptops and cell phones; 2) Increase the limits on the size of E-mail accounts and the 35MB limit on a message; 3) provide larger classrooms or clearer options for using computers in the classroom for teaching – the classrooms are too small now
- email, LaTeX, Blackboard
- Software up to date, software support, NUnet support
- security of data, access remotely, timely help
- availability for help, working equipment,
- My data/files are available 24/7. Staff provide knowledgeable support and solutions to my problems. Staff does not waste my time.
- 1) Staff at HELP@NEU.EDU should start thinking instead of following a script; 2) Convenient software access; 3) Better archival data storage / access / dissemination infrastructure
- Running software on super computers; That my computer works very reliably and quickly; That I can annotate slides with a stylus in powerpoint when teaching.
- Network reliability and performance
- computation and storage, network access, research financial support
- data repositories, collaborative software
- Timely response and availability, Ready access to appropriate software/applications, and availability for consultation
- Computer assistance, Software assistance, NUNET-related business
- Course software be easily available to students from their own computers (windows or mac), teaching software available and supported, backup of all data available and easy to set up.
- Server access, Security, IT support
- 1) A video-streaming system (for graduate courses) that does not waste my time and taxes my patience, 2) Support fort solving system problems with my office PC and laptop

- Data backup, server stability, desktop support.
- collection of survey data in real time on mobile phones and storing these data securely
- Blackboard functionality, web conferencing, sharing audio/video content with students, 1 stop audio/video feedback recording and posting of instructor responses to submitted work
- Research: Installation and maintenance of computers, clusters, customized changes in network configurations, svn/git, responsiveness, and a service-oriented and problem-solving attitude. For teaching: students should come first and not last (as now), questions/requests from students should be handled immediately; software, configuration, configurations, svn, structure and information made available.
- Access to statistical software/programs, continued availability of citation managers and support for developing secure survey tools.
- Sharing files/data, blackboard,
- working technology, available technology (computers in classroom, screens in classroom, projection equipment in classroom) and webchat/dialogue, platforms available for on-line discussion and information collation
- Help with computer issues
- Regarding research – I receive mail from software vendors about the products I use on campus. When learning about new releases that could benefit me and my graduate students, I often find that there is a long wait before the new releases are made available to faculty. With regard to teaching – the trend toward reducing the number of computer labs used for instructional purposes continues to pose problems for me and my students each semester. While nearly every student has a laptop, only about half of the students in my courses are able to successfully download and install software from their myNeu account (e.g., SPSS). Furthermore, I have requested access to a “dummy” student myNEU account in order to create step by step instructions on downloading, installing, and using supplied software. For years now the answer is always “Sorry, we can not provide you access to a student myNEU account. Because I do not have access to the same information that students have, I find it difficult, and frustrating, to teach students computer skills that could benefit both in college and in their careers after graduating.
- secure server of data; cluster computing; website hosting
- 1. Secure online storage of data. 2. Online video conferencing for classes or groups of students.
- 1. A Flexible IT environment so classes with unique needs can be supported. 2. Convenient access to data/databases outside the area and not available

through the NU Library. 3. Availability/Use of Google Apps as a collaborative tool with students.

- software, shareable folders with my group and with outside collaborators
- data storage, statistical software,
- hands on student experiences setting up virtual environments and personal eportfolios
- The maintenance and functioning of monitors and projectors in classrooms. Support for migrating information to new computers and other support of my office computer; This is not too much to ask. Many other institutions manage this.
- Shared Server space for teams of faculty and students from multiple institutions
- I need to be able to use ArcMap. That's it.
- functioning projector that is either connected to or can be connected to a computer and internet access on an advanced browser
- 1. networking; 2. backups; 3. server support
- 1. Walking into a classroom and finding an easy-to-use, functioning computer and projection equipment; 2. Easy access to necessary software (that doesn't require multiple phone calls or emails or reports to support); 3. Less bureaucracy-laden tools (Blackboard, Banner, and Office 365 are horrible ? multiple clicks or navigational moves for even the simplest tasks).
- Maintaining computer security, providing up to date software I use, providing timely technical support
- working computers; ability to display large files; ability to research large non-NEU databases
- support (for me and for students), learn about new products, interact with researchers at other institutions
- access to apple laptop and software that is up-to-date ?access to gotomeeting or other conferencing software with screen share ?access to better learning management platform options and file sharing server for classes (I end up paying out of pocket for all these services on top of what university provides, ie dropbox, gotomeeting, wordpress on server host account) Lack of clear central access to options on software Access for mac seems secondary Better platform options for designing and delivering online courses
- The COE network is critical to my research and teaching in the College of Engineering in the Snell Engineering building. However, this network has been unacceptably slow for students to connect to on the 3rd floor of the Snell Engineering building for the past year. It seems to be better now (Spring 2016) but it was terribly slow in Fall 2015. It would sometimes take

8-10 minutes for students to login to the COE network and connect on the 3rd floor of the Snell Engineering building but only take 1 minute on the 2nd floor. Why is this?

- Having a laptop and fast internet connection.
- reliable computers, AV equipment that works properly, reliable internet
- access to scholarly articles when I am off-campus; access to databases when off campus; PROMPT resolution of computer problems
- My need to create websites and combine them into groups.
- computer help
- Secure server space for research data; classroom space for teaching students to use software
- Qualtrics, SPSS, MPlus
- Qualitative methods software
- linux support, wireless microphones in large classrooms (like RB109)
- Campus wireless, being able to run a research server securely, classroom IT that works seamlessly
- Helpline, classroom equipment functioning well
- Functioning classroom technology. Updated, user-friendly Blackboard.
- Office desktop computing, research cluster computing account, general IT services assistance
- Support, support, support, even though is not the latest operating system
- westlaw, blackboard, basic ms office
- computer stations in EVERY classroom
- teaching: using touch screen and stylus for presenting PP slides in the classroom. The computers do have a stylus, but they don't work well, if at all
- ability to utilize latest technology in classroom, usability for students, communication with students
- Email. Needs to be a better system than outlook.
- 1. Secure and easily accessible storage for PHI data with documentation for funders. .2. Assess at work and at home to research-based software. 3. Easy to use systems for tracking finances related to funded research projects
- the most important requirements are met, but I consider these minimal. Access to databases relevant to nonprofits & social entrepreneurship. Polling software for use in the classroom without having to charge students.
- archiving data, updating software, steady internet access
- Backups, storage, access to multiple platforms, speed

- Course management system, survey instruments, course related administrative stuff
- Patient protected data environment
- up to date and functioning technology in all classrooms, support for university hosted websites, consistent, fast, internet access and blackboard functionality
- Support for Banner, etc
- Security of data, ability to analyze big data efficiently and without
- fast access, versatile LMS, access to tools such video for students to design
- Speed, reliability, flexibility
- quick access to internet, support of computers in labs and classrooms, support of other hardware/software
- University-wide computing and storage facilities that are administrated by IT staff members
- Having the appropriate software and hardware to perform research and teaching, providing support and updates to software, helping faculty use new software/letting us know about new technology
- I want an open network that doesn't restrict my teaching or research activities. Onerous firewalls that are deployed without consulting faculty directly and negatively impact my teaching and research.
- not making insane requirements for usage of free software - having to go through the legal department is not only time consuming and painful it is absurd
- Fast, secure internet; projectors and wall-mounted computers in classrooms; secure email
- Reliable AV equipment in the classroom. It is important that the HDMI connections actually work. Blackboard and myNEU sites are both frustratingly sluggish and only moderately intuitive.
- 1) having relevant software available to students (prefer a larger selection), 2) better IT hardware expertise to consult when something goes wrong, 3) advise when purchasing new computers
- Reliable access to discovery cluster without being hampered by other users filling the scratch disk or overloading the login nodes (or breaks in the fiber connection); fast reliable secure sharable data storage and access (eg. <https://ist.mit.edu/dropbox>); Computers that students can easily install and use Anaconda python distribution and packages in the conda ecosystem;
- Maintenance and updating of the classroom equipment; fast and HELPFUL support to classrooms; genral IT support

- 1) Student access to software including MS Project, 2) Personal access to software including up-to-date versions of MS Project and data analysis software including access in ALL classrooms, 3) Access to tools for the detection of plagiarism and the use of purchased papers by members of the NEU student body.
- Tolerance for individual customization of uNEU machines
- help with non-imaged computers; research computing training for postdocs and students;
- 1. Reliability of network connectivity. 2. Flexibility and ease of software download. 3. Storing and maintaining large data sets for experimental usage
- Online access to published research, access to computational software
- access, security, ease of use
- Class podiums that work - connecting laptop etc. Wireless network consistency, Computer labs
- classroom computers that work; prompt responses to problems with computers
- data backup, data security, system availability/reliability
- Classroom services and set up in my office.
- Data Security, Technical Support, Programming Support
- LMS access and support
- Interface of IT with Instructional Design team; virtual support; Nimble mobile adaptability
- There is no discernible support for web-based publicity of our publications, whereas other schools provide such support.
- access to online databases, expertise for help with analytics when needed, trouble shooting IT issues
- Classroom needs
- I do computer systems and networking research, and I need un-filtered Internet access to take measurements.
- Ease of use. Availability in classrooms.
- course/blackboard type integration, banner, and data analysis software
- data backup and storage; access to institutional data
- access to site licensed software on non-imaged computers, real-time data collection in classes
- wifi, classroom data consoles
- MGHPCC support
- Classroom projection, TurningPoint, internet

### **A.1.2. Question: What support for your professional activities is not currently being provided by the IT infrastructure?**

The answers (in verbatim form) from faculty to the question were as follows:

- It is important to establish clear cybersecurity policies and opportunities for faculty and students to have access to substitute hardware for overseas travel to countries for which ITS suggests we do not bring our computers or cell phones; 2) The e-mail account is too small, and the message size limit is too low; 3) Large classrooms are not IT ready if you want to have students use computers interactively, and associated software is not readily available (we are way behind compared to other universities); 4) the protocols for use of the computing center in Holyoke are not at all clear; 5) general server support is challenging unless college staff are able to address it.
- Classroom computers out of date, hard to use
- IT “support is totally incapable of solving my problems. I rarely ask for help because I have learned they waste my time, but don’t solve the problem. On Thursday I decided to ask for help with a problem that I suspected I could solve myself, but it would take a long time. They took all day - and didn’t solve it. They told me in order to solve it, I needed to upgrade my OS. I went home that evening and solved it myself, without upgrading my OS. They really stink.
- access to big national data (NHANES, NIH, etc.)
- No university research data storage - shameful! Faculty is made bottleneck for everything - let RAs deal with things!
- I have not had sufficient support in using the Green High Performance Computing Center.
- None, I’m relatively satisfied with support
- Northeastern is not part of EDUROAM or of Google’s drive for education. Joining Eduroam would allow our faculty to use the wireless networks of any universities which are part of the consortium
- ITS support for research computing is totally inadequate, we are forced to rely on (also inadequate) college resources and our own efforts. Internet access for guests is inadequate – why did it take 2 years to get EDUROAM installed?
- not sure what they offer. not much is explained to new faculty
- There is no evening/weekend HELP line access; there is usually a wait time of several days for computer problems that need in person tech assistance
- IT support for special activities (development of web-site or platform for conferences)



- Data backup, support for non-NUNET computers.
- Server space, support
- IT fails to provide server space for data storage at a price that is reasonable for members of the university community. This severely constrains research and leads to the perverse effect of many small solutions all over campus, when IT should be leading a unified and feasible data storage solution for the whole campus.
- support of not NEU imaging computers, web site development and timely update
- Easy conferencing with archives - some file types not displaying properly
- I can not count on any of the services provided by the university and college. This includes email and web pages.
- Sharing files/data consistently
- Need to learn more of what is and is not available
- The growing use of smartphones for research purposes.
- all of the above are being provided, but poorly, with inadequate support
- 1. Software to analyze qualitative research data. 2. An easy method of requesting software for research and teaching. 3. Simulation software for teaching and research.
- Ability to use Gmail for my mail server just like my students. Students presume we can and it causes a huge hassle every semester.
- No support for sharable folders with people outside Northeastern. This makes collaboration extremely difficult and more expensive. Support for non-imaged computers is minimal. Support is inadequate in most cases, slow. Very frustrated. it took 3 weeks to get approval for software in non-imaged machine. Also, minimal support for computers that are not imaged. Essentially every computer in my lab. This is arbitrary and inadequate, as imaged compatible machines are very limited, with very limited customizability, and generally much more expensive. In my old institution any windows computer was supported.
- classroom technology is dated
- It's like playing Russian Roulette to count on functioning projectors and terminals for class presentations. Intolerable. I have had more than one total fail on a day when I really needed the technology. Why is there not notification when the technology is not operating in a classroom to all those who are teaching in that room. This seems a minimum expectation. I have come into a new classroom in Snell only to find the projector is not only not functioning but GONE. Why can't there be notifications to everyone teaching in that room?

- I can't use ArcMap through remote desktop on a mac
- It would be great if Northeastern had an institutional subscription to content and discourse analysis software that faculty could easily access
- 1. service of non-managed machines; 2. advice on securing servers; 3. assistance (rather than oversight) from IT security
- Simple, straightforward document submissions from students. Blackboard is terrible ? too many options. I just need a Dropbox-like function.
- Need more software researchers use to be available and supported by the university
- non-NEU databases
- better advising and planning platform desperately needed to allow faculty mentors and advisor and students to work together to envision path through co-op and major/minors
- survey support,
- there is NO IT support. I cannot access scholarly articles when off campus; when my computer breaks down I am told to go to the Apple store, there is NO HELP provided here.
- computer help
- Server space is atrocious. Tons of red tape to request and get set up. Connections are slow.
- MPlus
- Web design
- wireless for linux installed laptops.
- Security consulting/help for research projects that involve developing server-side systems
- None
- The research cluster computing group seems to have strong support for power users, but basic informational materials for navigating the Unix system in jargon-free language is lacking for those with more basic needs
- Older operating systems. I am left at my devices...which means I have to pay for a consultant
- high quality video and audio recording of student presentations and for distance learning, also support for gamified blue book exercise
- IT does not support my professional activities
- provisioning of servers/clusters for highly intensive computations

- The major component of technology I use for teaching is PowerPoint and I like to include multimedia. The sound system in the room is very poor and when I've tried to connect other devices (e.g., iPad) to use educational programs they have been incompatible.
- -email. Outlook automatically deletes every email I receive. It's not reliable, attachments disappear. Sometimes I wait 2 hours for email to get to me when it's sent. Faculty could benefit from the husky system
- Searchable databases to find collaborators at NEU. Documentation of research security protocols. Archiving of completed research data (with PHI)
- archiving data, any mac support at all, really
- AWS credits
- None of the systems seem to talk to each other
- No university-supported environment for patent protected data
- the Writing Center IT support is weak.
- Computational support for research
- More memory and storage space is needed; data security has flaws/loopholes; cannot do several types of analysis on the Discovery Cluster
- Speed, reliability, flexibility
- support for centralized application systems
- University-wide computing and storage facilities that are administrated by IT staff members
- I have to use my own personal computer at my practice site because I was issued a desktop computer only and did not have the option of a laptop
- All I want is unencumbered network access, i.e. I just want IT to stay out of my way. However, ITs current approach is to make low-level, opaque changes to the network with no advanced notice.
- you don't employ people that know how to work with anything other than common PC applications making a great help desk but useless support staff
- None
- Classroom computers are slow to load and AV equipment is unreliable.
- Seeking out what new software/hardware is available, hardware problems- what to do about them, how to better integrate & utilize the university's backup programs
- Data storage and access; Discovery access reliability could be improved; Many administrative tasks could be improved with better database support (eg. student management, lab management, admissions, graduate committees, purchasing, etc. etc.. This is highly devolved, and perhaps should be, but the typical implementation is poor)

- The move from MyApps in December 2015 left my students without access to a key piece of software - MS Project - putting them at a significant disadvantage. While DMSB students DO have access through the expanded version of the software that replaced MyApps, my students are afforded second-class status within the University and are denied access to the program. I'm at a loss to understand why business students, who are focused primarily on routine operations matters, require project scheduling software but students in a professional practice program dedicated to project management are not.
- non-imaged computer support; laptop repair, etc.
- Inconsistent network connectivity
- Certain resources (e.g. MathSciNet) aren't available over VPN.
- Wireless network is unreliable
- classroom computers that work; prompt responses to problems with computers
- data backup
- none
- Data Security, Technical Support, Programming Support
- Sense that I can obtain fairly quick resources to help me with video productions and other web-based products.
- adequate for current professional activities
- Getting access to a network that is not behind the university firewall is very difficult today.
- Support for statistical software like Stata, SPSS.
- need better access to statistical software. for example, no site university wide site license for the most current version of Stata.
- web conferencing;
- There is no support for my research, and substandard support for my teaching.

### **A.1.3. Question: Do you have any other suggestions or comments?**

The answers (in verbatim form) from faculty to the question were as follows:

- In general, ITS is doing very well; I hope these helpful comments can be addressed.
- The HR website for faculty hiring is woefully antiquated! Needs to be made much more versatile. Cf. MathJobs
- good job

- none
- I have learned my lesson. They are completely useless. I will not waste my time with them again.
- ITS needs to change its attitude and understand that we are here to do work and they are here to support. See COE IT for instance for starters... We request something and it gets done; end of story. With ITS everything is a struggle through their stupid email and customer service management systems.
- no
- Joining Eduroam would allow our students and faculty to use the wireless networks of any universities which are part of the consortium:  
<https://www.eduroam.us>. Joining google's (free) Drive for education would allow our faculty and students to have unlimited cloud storage:  
<https://www.google.com/edu/products/productivity-tools/#how-to>
- The help desk is a joke from a professional point of view. IT support for research finance is horrible—colleges have to make up their own systems and no one has adequate access to information. And Blackboard is so difficult to use and so slow ... I have heard from colleagues at other institutions that there are better systems, why don't we use one? Finally, perhaps most important of all, why are faculty not included in ITS policy decision-making, for example about guest access to wireless or about financial reporting software?
- Have more techs available and when possible have them assigned to colleges/departments so that there is greater physical presence and ongoing support
- No
- Remote app doesn't work well.
- In the past when I sought help for my teaching, I was not listened to. Rather they told me what they wanted to show me instead of what I asked for.
- I suggest rolling out personal meeting rooms (webex) for use by all faculty with ability to archive and make available recordings. This needs to be easy! Also, I received incredible help support from Tech folks until this semester - now, I don't get ANY replies to emails -what happened?
- The state of the IT is disastrous both in the university and college. There are serious problems with basic things such as network connectivity and network quality, email, web accessibility; Teaching-wise the only support is storage (!?). Research-wise there is zero support. There is lack of structure and systematic approach to IT services, lack of people and expertise, and a "no" attitude instead of a service-oriented and problem-solving attitude.
- Greg has been great

- More information about options for secure online storage of data
- A better calendar system than the one in Outlook would be nice. I've had someone schedule a meeting with me by looking at my calendar through outlook but I wasn't free. They were unaware of that because the calendar won't sync with my real calendar...
- We need support for shareable folders, non-imaged machines, network support for lab computers that are not imaged. The infrastructure is far beyond inadequate.
- I think there needs to be a much greater investment in the support of the most mundane IT needs of faculty: functionality in classrooms and help with our office computers, especially with transferring data between computers. My husband teaches at BU and can't believe how hard it is for faculty to get assistance.
- Too many of the things I need for teaching are just clunky and hard to use. For example, Banner has no way for me to get a simple roster of names of students (no majors, id numbers, etc). That is emblematic of Banner, Blackboard, and Office 365 ? everything is gummed up with too much stuff, too many options, too many clicks, too many operations to get the very few things I actually need.
- Better integration of separate school IT and university IT
- larger text boxes on this survey would have helped in addition to some clarity about all that IT covers at NU Please consider some open forums for faculty and staff to discuss current shortcomings and needs It would be great for there to be a draft plan of findings and recommendations shared with faculty and staff to respond to and add to before it goes up the chain Would be great if technology and classroom site lines and size could be reviewed as a whole
- Yes, the MAC laptops provided to CPS faculty, at least in my department, are MacBook Pro, that are too powerful and unnecessary for teaching track purposes. It would be cheaper and more reasonable to have the MacAir laptops.
- connections to statistical packages and endnote tend to fail while traveling, please fix.
- Yes, fire all IT people and hire actual people who will SUPPORT faculty.
- More efficiency and precision in support of faculty projects.
- Univ offers site licenses for various stats programs but none for qualitative software - that is essential
- Some classrooms - equipment not well enough maintained
- I need Arabic fonts on classroom computers. Perhaps IT can ensure installing that where I teach.

- Brad Whitmarsh and Chris Carillo are amazing. They are incredibly responsive, efficient, effective, and friendly. Fantastic IT support staff.
- hire people who care
- I find the level of technology in the classroom to be primitive for 2016. Not what one would expect at a top university.
- Please get rid of outlook!
- mac specialist would be nice
- We just got 2 new virtual servers for a virtual lab. As of now, we're doing OK
- Make it actually possible to find information. Everything is so fragmented here.
- More personnel to help. Nilay Roy is terrific, but he is only one person helping so many people
- Improve speed, reliability, flexibility
- ITS supports many aspects of technology at Northeastern, but some processes are more cumbersome than they need to be
- If IT plans to make significant changes to the university network (e.g. new firewalls, DNS indirection, DPI, transparent proxies, etc.) they should give faculty notice well ahead of time, provide an opportunity for comment, or (ideally) whitelist sections of the network so that the changes don't negatively impact research and teaching.
- get a better grip on how to deal with technology
- Update hardware and ease of use for wall-mounted computers for use in classrooms.
- Please consider investing in upgrades to the classroom AV devices. Technology/AV failures are embarrassing to the instructor, time consuming to fix, and detract from the learning experience of students.
- It would be nice if the university/college would upgrade my office computer (at present, it is at the department's discretion in my college, which, in a nutshell, is equated with new people getting a new computer because they are just starting, while faculty who have served the university longer get stuck with antiquated computers). Research funding, at least in my lab, goes to new lab computers (to benefit students) but it is perhaps not appropriate for a PI to use such funds for their office computing needs. Problem:the PIs that generate research \$\$ can often end up with the worst computing equipment here at Northeastern. New office computers, for senior faculty, would be much appreciated!

- Instead of having a set of rigidly defined, fixed services that are supported, it would be useful to have a set of experts that can help those of us that have real IT needs
- It would be nice if the powers-that-be stop treating CPS (the largest revenue-generator for the University) as underserving of the same resources afforded to the rest of the University population.
- Improve software like Sharepoint, Peoplesoft, etc.
- Fix NUwave

## **A.2. Initial Response From NEU ITS**



Initial Response to the Faculty Senate ITPC and RPOC Colleagues  
April 4, 2016

Dear Tony and Faculty Senate ITPC and RPOC Colleagues,

Thank you for sharing the survey results and comments and recommendations from faculty regarding the state of technology and support. I hope this is the beginning of a continued dialog and engagement with faculty on how we can collaboratively strengthen technology infrastructure and services at Northeastern.

We appreciate the thoughtful comments and recommendations summarized in your email. While each of these deserve focus and deliberated resolution, for the purposes of an initial discussion we have framed them into groups of issues that merit further follow-up, remediation and improvement. Our initial thoughts of each of these groups of issues are included below. I would like to see us use these as a starting point for in-person discussion with ITPC and RPOC that we in the process of scheduling.

We'll also preface this by saying that ITS is committed to working in partnership with our constituents. Research enablement is a strategic planning focus for ITS. With regard to research, over the past 3 years we have invested in computational research support as follows:

1. Put in place a dedicated team with extensive experience in research and computational domain expertise.
2. We want to develop and grow resources and support for research computing. We have begun with HPC, including the successful operation of MGHPCC and high performance computing. Please see below for more details.
3. Continuous discussions and partnership with research faculty is critical to this success. The VP/CIO initiated the creation of a Research Computing Committee (RCC) with representation from all colleges, to advise and guide. This committee meets regularly to discuss computational research.
4. Research administration system improvements are high on the list, particularly for improving grant administration. Discussions and work with the Office of Finance and Administration and Office of Research Administration is ongoing.
5. Software and services for individual faculty use for both instruction and research, are an important service for ITS and are committed to increasing them as appropriate.

It also appears that there are services mentioned that are already available. It is imperative that we do a better job of communicating to faculty all the services that are available (e.g. myBackup, network services, server / storage hosting. These services are listed on the research computing website, but not necessarily profiled for researcher use. How can ITPC and RPOC partner with us to identify ongoing required improvements to services?

Below are some detailed and collated *draft* responses/thoughts and ideas on the group of issues we assembled from the faculty responses as a starting point for a series of in-person discussions, which I look forward to having with.

Best regards,  
Rehan Khan

Initial Response to the Faculty Senate ITPC and RPOC Colleagues  
April 4, 2016

***Software Licensing and contracts:***

We agree fully with many of the issues expressed in the responses — faculty should not have to deal with these issues individually, and should have easy access to information and assistance to help them obtain the right tools for their needs. We continue to make investments to provide more, easier, and effective information about what software is available and for what types of usage. As you know, software companies are becoming more and more inventive to try and maximize their business returns, and the restrictions and regulations are becoming more complex. At the same time, the choices of tools are growing, and we recognize that technology is ever more a critical component of research productivity. Being able to obtain and use the right tool for the job is critical.

ITS has a full-time person who is responsible for software licensing. Colleges and faculty are encouraged to leverage his expertise on any specific software acquisition a college or faculty member wishes to make, in order to make the most appropriate investment. Processes are well developed for software related to teaching and learning. We should assess this from the perspective of research needs.

Also, for high performance computing (HPC), we have started building a full-time centralized research computing team that helps researchers maximize their use of the software. This team currently supports over 200 different pieces of software. We intend to grow the team to provide support for other (non-HPC) research computing software and applications, in partnership with researchers and colleges.

**Software**

Specifically, SAS and Nvivo are currently part of the list of software packages that are managed as part of ITS Software Licensing, and packaged for the appropriate audiences on our Windows / Mac OS managed images. While these may or may not be currently licensed for use by all faculty, staff and students, we are happy to discuss investments to grow their availability, and to make similar investments for other research-critical software applications. For example, Rajiv Shridhar is currently partnering with David Budil from COS and faculty from several colleges to investigate the acquisition of Schrodinger suite of tools for research use. We look forward to similar discussions and work with faculty and academic units on the widespread need for other software packages, related to instruction and/or research.

In recent years, ITS invested to make MATLAB available for all university constitutes including the home use by students. SPSS is also available for download and use by faculty, staff and students on work and home computers. In general, if a group or individual researcher need some specialized software for their use, they typically fund it themselves or through their group/ college. However, if there is widespread use, or widespread potential for use, of a software, ITS encourages the exploration to, either directly or in partnership with researchers/groups/colleges/Provost, invest in it further. The best way to ensure a successful outcome is to engage with ITS and initiate discussions.

**High Performance Computing and MGHPCC**

Northeastern is a co-founder of the MGHPCC consortium. Northeastern has access to 20% of the 90,000 sq.ft. data center dedicated to research computing. The MGHPCC itself offers only data center facilities. Northeastern (and each of the other institutions) support our own infrastructure hosted in that facility. We have led the creation of a 10,000+ core, 3PB, shared compute service, called Discovery, which is open to ALL Northeastern research faculty. We support research up to NIH CMS security standards at MGHPCC. This resource is being actively used by over 700 researchers, and 60+ papers

## Initial Response to the Faculty Senate ITPC and RPOC Colleagues April 4, 2016

presented at RISE 2015 were based on research conducted on the Discovery cluster. We also successfully offer 'buy-in' services where ITS will fully integrate and manage researcher-purchased HPC equipment — over 30% of Northeastern's HPC resources in MGHPCC are through 15 researcher buy-in investments. For more details of services managed and supported by Northeastern in the MGHPCC facility, please contact Rajiv Shridhar, who is Northeastern's MGHPCC Lead and Program Management representative, having been closely involved with MGHPCC since its genesis in 2009, and oversees the Research Computing Support team. Details on the shared Discovery cluster are available at <http://www.northeastern/rc/>

### **Servers**

Information Technology Services has significant expertise in managing servers, and provides a service for hosting servers, both virtual and physical. The service enables yearly purchase of managed Windows, Linux or UNIX servers with configurable amounts of CPU, memory and storage, at a very competitive price. Physical servers, where required, must be purchased in conjunction with ITS so that the hardware conforms to the data center and management standards supported by ITS. We have worked with several numerous faculty (e.g. Prof. Rachel Jones) to support the purchase and use of virtual servers against faculty grants, and host physical servers for several researchers. We are happy to share / discuss information about these services in more detail.

### **Administrative Systems and Grant Administration**

We are aware of the limitations of the core administrative software such as Banner. While Banner does many things well i.e finance, GL, Student etc. it is not a pre and post award management system. It is not user friendly and provides limited utility (access and self-service). Business Intelligence reporting and data analytics is a high priority. In particular, the university recognizes the need for research reporting, including grant administrator reports and faculty self-service reports.

### **Personal computer backup**

Northeastern was one of the first universities to offer a self-service pay-as-you-go personal computer backup service. The myBackup service offers unlimited and automated backups to the cloud for a fixed price per computer/year, and is accessible any time anywhere. (<http://www.northeastern.edu/its/services/mybackup/>). Over 1000 users currently utilize this backup service. With OneDrive, and similar data storage services, we seek to provide faculty, staff and students with tools that are reliable, secure, cloud based and easily accessible and shareable. They also support some of the security features that are important to researcher data storage (such as data loss prevention).

### **Mac OS Support**

We recognize that Macs are continuing to grow in use and preference, and are supporting them accordingly. ITS Customer Services staff are fully certified by Apple for hardware support of the Mac desktop/laptop line. We provide a managed NUNET Mac OS image and software dissemination for use in labs as well as for faculty/staff. These standard "images" enable us to provide enterprise supported software deployment and system security while allowing faculty and staff to maintain day to day autonomy in using their computers. Support for Mac OS is an integral consideration of all desktop software licensing and deployment. We are happy to provide more details and demonstrate this service to the ITPC and RPOC.

### **Support for Sensitive Data**

## Initial Response to the Faculty Senate ITPC and RPOC Colleagues April 4, 2016

Support for data set storage at various levels of sensitivity is a priority. The ITS strategic plan recognizes the need for a data management plan and support across the university. This is a complex issue that requires collaboration and effort from cross-divisional faculty, the office of the Provost, Research Administration, Libraries, academic units, and researchers. ITS provides secure and resilient storage options for researchers to be able to obtain, manipulate, store and share their data sets. These are available both on our main campus and within Northeastern's MGHPC-based shared Discovery cluster environment. ITS also supports the Kostas Research Institute, where there is support for 'disconnected research' at the 'classified' and higher levels.

### **Survey Tools**

ITS has just negotiated the acquisition of site-wide licenses for Qualtrix, a top of the line survey and assessment tool. The service is currently being set up with centralized authentication in conjunction with Institutional Research and IRB, and is expected to be available to the university community by Fall 2016.

### **Research Support and Engagement**

ITS is growing our efforts to support faculty research — we are working with the university to build dedicated support resources where applicable, and to use existing resources/services to provide support in other places (such as networking, server support, consultation and engagement) as well as to build recommended 3rd party collaborators — a “bench strength” - managed by/through ITS. An example of the latter is web development support.

The Web Hosting team is an overlay group that is composed of UNIX systems administrators and others, focused on supporting over 1200+ website owners across a wide spectrum of the university community. Tireless and focused, these staff actually have other full-time roles and band together to be directly accessible to our faculty and researchers for their needs, and to work with their outside consultants to support the faculty web needs. We are now working to increase and enhance the services they provide.

The current Research Computing website is focused on our shared Discovery cluster at MGHPC, and the services offered by the Research Computing Support team. A project being launched in May will work through the Summer to change and create additional promotion of university research via dedicated web services.

ITS welcomes regular interactions and discussions with departments and colleges, as well as with individual researchers or groups wanting to discuss their IT needs. We are also happy to provide letters of support for research proposals, to engage in the hiring process for new faculty, work with new faculty, and to provide specialized design consultation on research IT needs. Please reach out to me [r.khan@neu.edu](mailto:r.khan@neu.edu) x2752 or Rajiv Shridhar ( [r.shridhar@northeastern.edu](mailto:r.shridhar@northeastern.edu) or x7547 ) for any of these needs.