

Meeting Minutes from

SENATE COMMITTEE – Education Services and Information Technology (SCEDIT)
STATE UNIVERSITY OF NEW YORK AT STONY BROOK

Date: March 22, 2024

Time: 3:00 pm – 4:05 pm

Location: Zoom Meeting

In Attendance: Keri Hollander, [Scott Campbell](#), [Simeon Ananou](#), [Rose Tirota-Esposito](#), [John Shackelford](#), [Thomas Wilson](#), Moshe Eisenberg, [Erez Zadok](#), Cynthia Davidson, [Chintu Pandya](#), [Diana Voss](#), Lenore Lamana, Victoria Pilato, Fumio Aoki, Joseph Balsamo, Victoria Pilato, Doug Swesty, Henry Joseph, Matt Nappi

Meeting called to order at 3:00PM, Adjourned at 4:05PM

****attendance and start stop times are correct****

*****Placeholder until minutes are complete. In this meeting [Erez Zadok](#) gave a quick overview of the work done by the OCITO committee and Joe Balsamo gave a presentation on some of the projects he's working on with AI *****

As usual we asked the committee members for permission to record the meeting solely for the purpose of minutes. The recording will not be shared or referenced after the minutes have been completed.

Keri and Scott have consulted with [Simeon Ananou](#) and [Rose Tirota-Esposito](#) on the agenda for this meeting. We will be having a presentation by [Erez Zadok](#) who will give us a summary of the work done by the One Campus IT Operations working group followed by a presentation by a committee member, Joseph Balsamo on the work he has been doing with AI.

[Keri Hollander](#): Some housekeeping, we will have a new liaison to the University Senate Executive Committee who will attend our future meetings. We need to reschedule our May meeting, moving it from May 17th which conflicts with commencement to May 10th. Also the University Senate has updated its bylaws and all the seats for our committee are up for reelection. Once we know the outcome we will coordinate with everyone to get the proper positions filled.

Introductions: Doug Swesty is a Research Associate Professor in the Physics and Astronomy Department. He attended the IT Partners get together held by Simeon and expressed an interest in this committee, he has been a member in the past, and we are always looking for faculty participation. So welcome Doug, if you want to say a few words.

Doug Swesty: I know a lot of people that are here and look forward to meeting those that I don't know already. Thanks for having me and I'm looking forward to hearing how the committee is operating and looking forward to interacting with you all.

This is a joint committee of both Educational Services and Information Technology. We try to alternate who will lead each meeting to insure both get adequate time and attention. This meeting will start with Information Technology and then transition to Educational Services.

Information Technology

[Simeon Ananou](#): A couple of months ago we previewed the IT strategic plan and about three weeks ago we had a gathering of IT professionals from across the university. The goal is to create a true community of IT professionals who get to know each other and can depend on each other, support each other so that we can make a difference at this institution.

In my listening tour I learned we still have a number of IT professionals that don't feel they are necessarily part of that community yet. So I'm going to challenge this SCEDIT committee to bring in those colleagues into the community to help give them a voice so that they can be heard.

Also from our meetings I've learned that a lot of work has already been done at Stony Brook University along the lines of improving how IT aligns and serves the campus needs. At least three committees were formed in the past: OCITO, IT Governance and Identity Management. Today we will hear a summary from Erez Zadok who served on the OCITO committee to try and pass on their findings and see how it connects and supports the IT strategy plan.

Erez Zadok - shared a [copy of his presentation](#) that is stored in our Google Shared Drive

Before I begin I wanted to acknowledge a committee run by [Robert Harrison](#) at the [Institute for Advanced Computational Science](#). That committee looked at research infrastructure storage clusters specifically to support research. It was a really good committee that issued conclusions as a report, please reach out to him and get a copy of his report. We want to avoid continually creating committees to study the same problems that come to the same conclusions.

The previous interim CIO Charlie McMahon caused quite a stir on campus when he announced that the west campus was going to switch from Google Workspace to O365. This was brought up as if it was a done deal and would take around 6 months over the summer to accomplish. That was met with fierce opposition among the faculty and staff who had over 10 years of work invested in the Google suite of products. This major change was not socialized with the campus and the members of the campus community were not consulted or brought in as partners in the process. As a result this effort was put on hold and instead a committee was formed to look at what needs to happen to really unify what happens on campus in regards to Information Technology.

The One Campus IT Operations committee worked for two years, formed by:

- Rose Martinelli, VP of Strategic Initiatives
- Carol Gomes, CEO, COO for Stony Brook University Hospital
- Charlie McMahon, Interim SVP IT & CIO

. Margaret Schedel, Matt Tharakan, and myself were the three co-chairs. Our committee was charged by President McInnis in March 2021 to:

Identify the risks, challenges, and opportunities that can lead to an institution-wide unification, when appropriate, or technology resources, with the longer goals of improving collaboration and productivity, eliminating redundancy and reducing costs.

This was a large committee with 20 members from all across campus, we decided to work on three aspects:

1. Do an inventory of all the supported assets on campus.
2. Look at Identity and Access Management which is an important precursor to doing anything to unify usage of applications and security across our campus.

3. IT Governance, we felt there was very little coordination between the various groups that use IT on campus.

We did a carefully designed study to find out how well the IT solutions work on campus across the entire enterprise. We had 1,500 respondents with lots of comments. We spent several days summarizing the results. Here are the results in no particular order:

- A. There are too many accounts, too many passwords, too many logins, too many credentials.
- B. It is hard to collaborate with others, everyone has multiple emails and multiple calendars. It's difficult to reach out and coordinate with each other. So we wind up picking up the phone or sending too many emails before we find the right person.
- C. It is hard to share documents and files because we have so many different groups. This isn't just an East-West campus thing, this exists within the West campus among these various groups.
- D. Complaints about outdated applications that are not user friendly with a poor user interface. It's very slow, every click leaves you waiting for a spinner progress icon until it's done.
- E. There was a slightly higher satisfaction rating with the Google Workspace and Zoom suite versus Microsoft but that may be biased because most of the respondents were from West campus.
- F. A lot of old computer, old networks running old software. We have no idea how secure or insecure these are and many can't be updated to a modern equivalent. There is a lot of concern all the way up to administration about the security of our systems. How vulnerable are we to breaches.
- G. Services are slow to respond to action, too much paperwork, not enough automation in place for these processes. An example is we have new employees that need certain access. It can take up to two weeks for them to get all the access required and many of the processes run once a night so it slows things down.
- H. Some groups felt they didn't know where to request IT support. They talk to one organization who says no you don't belong to us, go talk to others.
- I. Recognition that IT staff are overloaded and understaffed, and under appreciated.
- J. We are missing site wide licenses for software that a lot of us are using, either paying out of our own pocket or trying to find workarounds, ie. Adobe, Piazza, Slack. Employees are purchasing their own hardware, their own software, their own licenses to be productive.

Software Inventory - we have over 500 programs, the vast majority of them are healthcare specific, lots of little programs that are designed for a specific clinic or piece of equipment. All bought one point in time, no idea who configured it, no idea how secure/insecure, who maintains it, and it hasn't been updated. Non-healthcare specific we found about 170 applications.

We have 8 different databases, multiple oracle databases, oracle licenses are expensive. Presumably we could coordinate better, save money and run several databases out of one instance. Multiple HR systems, multiple security systems, at one time we had four Learning Management Systems. I think it's better now but I'm not sure we are down to one. These are examples of multiple instances of the same technologies, they are large and lack coordination. That means more effort across campus and more money spent.

Identity and Access Management - this task force met with Gartner and such, we spent about \$50,000 on a kind of little study to investigate what we need and we came up with multiyear plans for an enterprise wide identity management program that would reduce the number of logons and passwords and provide some kind of single sign on. A single way of unifying all the access to applications and managing risk, liability and regulatory compliance. We pay for cyber security insurance and we pay a higher premium because we don't have an Identity Management program in place.

We presented our results to the administration and the campus about what is needed. Understand this is going to be an evolving program that you put in place, millions of dollars over multiple years. We will need to make an initial investment to reap the benefits many years later. If we hope to unify productivity tools, emails, calendaring the Identity Management is an initial requirement.

IT Governance - what are the processes for acquiring and using IT services. It turned out East campus was much better organized than West campus. They have procedures in place when you want to buy software or hardware. There is nothing like that on West campus at this time. How can we unify IT across all campuses so there is a governance structure in place.

When someone wants to purchase something they can go through a quick review and find out if it's something we already have, or maybe someone across campus is getting rid of a bunch of machines that might fill your need. Maybe there is already a software license that you can piggyback on to which reduces cost. A cybersecurity review whenever someone is making a purchase, where is it coming from, how sure are we that it is safe and secure? Are there potential back doors, how would we integrate it to the rest of our systems?

Often what happens is someone gets a research grant buys a whole bunch of machines without consulting anyone, the boxes show up and they hand it off to the IT group saying rack it up then set it up for me.

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Moshe Eisenberg: I would like to add a couple of comments, Stony Brook is a very large university and there can be "unification anxiety" because areas of the university are not communicating with each other where they should. Regarding software packages related to health care many of these are part of an integrated product, X-ray machines, MRIs from General Electric Company. Finally I served on this committee and one good starting point was to try to economize on expenses by sharing services. Thank you Erez for summarizing it.

Erez Zadok: Looking at where we are 2.5 years later we have transitioned to a new LMS systems. Stony Brook HR recognized there are too many systems and they are working to merge and unify them. That's also an important aspect of having an Identity Management program, it serves as the source of truth as to who are your employees, what are their rights?

Also the campus is recognizing we have no idea where the money is spent so they are getting a whole new unified financial system. So we can make progress one system at a time. Also we have made great progress with the help desk using Team Dynamix that spans both East and West campus.

[Simeon Ananou:](#) I am encouraged that there are several things from this OCITO committee that we can latch onto. I want to encourage us to see this as good work and not that everything is broken. I have had the privilege of reviewing these reports and I see clear connections between the work that was done prior and the strategies that we are creating for our future.

Regarding the idea of unification, I will caution us not to see it as creating an empire. We need to keep in mind the beneficiaries of our work, the students, faculty, our researchers, our back office operations. How we will end up improving those and infusing efficiencies in them. Creating standards only on paper will have no effect.

Educational Services

Now we will switch over to Educational Services, Rose Tirrota-Esposito will introduce this and then we will have a presentation from Joe Balsamo about his work with AI and biomedical informatics.

Rose Tirrota-Esposito: CELT has been doing a lot of AI workshops and panel discussions with faculty members, to share best practices. This is a quickly changing field that we've been trying to stay on top of it as much as possible. Diana's team has been doing presentations in this area, the library has been doing presentations in this area but if anyone feels something is missing about AI and teaching please reach out to CELT. We can help facilitate the resources around it. I am looking forward to Joe's presentation.

Joseph Balsamo

Before I start, Rose, one thing I want to pass on to you is whoever is dealing with Google Workspace could reach back to East campus and the people dealing with Microsoft 365 and Teams. There are a huge amount of applications that can be used as add ons. I realize there are security issues with some but currently we black out everything and do not allow them. There is a chatGPT interface you can turn on for Google Docs, Google Slides, etc... to help you rewrite your text when you want to shorten it. I think we need to be more open to exploring some of these tools because they would greatly benefit the campus.

So let's get started, my team has been working with AI for a long time. The biomedical informatics team works towards driving data science for health and biomedicine. That involves projects to either create products that will enhance different types of analysis and data and research. We are a cross campus group. We have faculty in the school of medicine and engineering. A couple of our members are part of the [Institute for Advanced Computational Science](#). We have faculty in this area developing tools for genomic data analysis and predictive modeling for cancer therapies.

We also have a data science group that's researching testing methods and analysis of large data sets. This has been done over the years using Machine Learning (ML), so we have been working with AI for over 10 years. We also have a clinical informatics areas where we are using predictive models to go through text and using language models to go through text of notes to be able to glean understanding about patient records and what we are doing for patient care to better understand it.

We also work with imaging informatics, this is one of the longest running projects since my chair, Joel Saltz arrived. We analyze data from pathology, radiology and other types of imaging to make meaningful judgements about what's going on, the features and other things we can pull out of it.

We have been working with AI with our education group, our students are working with machine learning to build pipelines. Data feeds into one side of the pipeline and turns out meaningful data on the other side. They do this by building models, using tools like PyTorch, Tensor Flow and other AI modeling tools. We also work with [hugging face transformers](#) and some other older tools and older methods of building these machine learning models. Large language models are the latest we can get those through hugging face. We get them through ChatGPT and one of the best sources we have been getting is working with students from David Cyril's group who have given us access to Azure AI, which is basically ChatGPT on Azure. We have been able to build deployments for our group and others working with these tools.

In the future we are looking to use large vision models which are similar to large language models but for images. So they analyze images, pull out features but you only have to give it a natural language query to get that data instead of feeding them through all the learning models we have created in the past. We have also been playing around with image generators, every slide in this presentation is made out of an AI generated image.

How do we use AI in biomedical informatics? We have 10 researchers that focus on deep learning, that includes machine learning, AI, language models, all across the board. Situated on both sides of campus, a lot of access to both medical students as well as Computer Science students. We have 15 graduate students between the two sides of campus that are working with us to help on big projects. The studies that we are doing have substantial external funding, a lot of grants and campus sources that have been assisting us.

Our biggest need is computing power, which means gpus, gpus, gpus. We have clusters that we are using from the National Science Foundation, Department of Energy and certain internal clusters that we have built. We are now using Seawulf and another one called Harrier to run these pipelines that are doing a lot of computing. A lot of these sources of computing help have been helped by David Cyrils group who have setup a lot of the machinery and infrastructure for us on the back end. With each successful project we are asked to compute more and more, which means more gpus again.

I will give you a demonstration, the models are built by our students and faculty to detect certain forms of cancer. We've also built models to detect COVID in chest CTs and worked with aortic aneurysms using the same technology you see in the images. One of the best features of this is it's only getting better and moving forward faster. Our models aren't just built and used, we take information from experts who annotate these images and tell us okay this is correct, this area is wrong. This serves as a feedback loop to make the model better. As we iterate, we are on our fifth or sixth iteration of model building on some of our latest models, it's a large improvement from our first models.

Here is a screen capture from the program, this is a segmentation map, where we can change the threshold for items that are odd shaped, those can be marked out and we can give a count of the cells that we have segmented off. This is very useful for a pathologist to see what's happening in the tissue. Next we have a heat map which can highlight areas of the disease, whether it's cancer or COVID, whether it's aortic aneurism to give a nice overview of what it looks like. Computers are great but we still want to have humans check that it's all correct, so areas are marked out by pathologists, in this case, marking out an area of lymphocytes in the surrounding tissue which highlight cancer in a lot of cases. We have been working with the doctors for a few years and it improves our work tremendously.

This is a next generation 3D tool. This right now is one layer but we are going to work on layering multiple layers on top of this, where we will be able to turn off surrounding tissue and just see the cells, or turn off the certain cells and see only necrotic tissue, which is dead tissue. And as we work with this, it's going to get better and better. But we'll be able to do a fly through on a patient and see what the data looks like.

Next we have the CentsBot Community Engagment tool, this is a web based service where users will ask health related questions and we generate answers through ChatGPT. They are then reviewed by experts and posted up. We start with a community web page it's built on a system on campus in Azure and then we have the question reviewed by a panel of 4 experts. We hope to set a group of people that will rotate and be answering this. This is under the group [LINCATS](#), they are trying to reach out to the community and gain community engagement with the hospital and answer the question so we don't have any misinformation or any kind of poor information out there that people just get through web sources

and things like that which are not accurate. In a later iteration we will have recommended answers, they will look at them and rate them. Essentially did this answer your question? That information will be fed back in and improve the answers.

One of our last projects is data analysis and extraction. We have two projects: the lung nodule project which looks at cancer. Here we are using hugging face and some of the free LLMs we can download, a library that includes pretrained models for various natural language processing. They are using those to look for keywords and items in a patient's notes and cluster that group based on whether it's a cancer risk, benign, other things like that. This is still an early research project, run on one of the computing clusters on campus, and we are trying to see how we can interrogate this into medical care. That's really our goal in all of this, how can we improve medical care. A project like this will be helpful to build cohorts of patients for studies and trials.

The last area is stakeholder engagement. We are going to be collecting meeting transcripts between stakeholders and programmers in our group who are working with them. We have noticed there is a disconnect between stakeholders and what they are asking for and programmers and what they program. The goal is to align the programming efforts with what the stakeholders request. It is a useful tool for project management because we don't have somebody working for two weeks or a month and comes back to demonstrate and they say that's not what we asked for. This is powered by the tools we have been getting from David Cyril's group. I'm happy to take any questions you might have.

[Simeon Ananou](#): Thank you so much for this very informative and very innovative presentation. Everything you spoke about sits at the intersection of pedagogy, IT and patient care and how we can improve those things. Something else you touched on repeatedly was the need for gpus as an institution. I hear you and I am repeating the fact that Stony Brook University needs a substantial investment in gpus very badly to be able to research AI for those who understand it. Let's think collectively as to how we can go about investing in gpus to allow students, faculty and other researchers to have the tools they need. Right now I think our facility is very small, very limited.

Erez Zadok: My concern isn't that we need more gpus, it's that we have a lot of different processes and procedures to access the computing resources that exist on campus in various departments and groups. I have been advocating for 20+ years we need a more unified approach, more of a joint shared resource where everyone benefits. If you contribute X, you will get multiples of that in return. The idea of a unified self service portal where you can reserve the resources. An example is [chameleon cloud](#) that I use and of course all the commercial clouds. There are many examples of this, then we integrate it with credential and access management.

Joseph Balsamo: Another thing I touched on is we have a lot of people who started out using Jupiter notebooks with back ended gpus and paying for this rather than saying can we get something on campus that we can use to work. We can put our purchasing power behind it yet not have to rely on some outside resource. Also when you are dealing with medical data we don't like sending that data out anywhere. One other thing was that my chair Joel Saltzer mentioned if we would ever like him to discuss other issues or highlight any of the particular projects we discussed or discuss other issues about AI and about research he would be willing to come and talk to our group. I think that would be a wonderful thing if he can.

[Keri Hollander](#): Thank you Joe, we are running a bit over but we want to give Tom Wilson a chance to speak about where we are with IT policies for departing faculty and staff.

Tom Wilson: I will make this a quick presentation. The working group of Keri, Scott, Moshe, and myself to maintain institutional continuity when faculty and staff depart. We have sent Simeon a list of questions about some of those processes. The aim is to deliver a report by the end of the semester. Thank you Simeon for acknowledging that and we look forward to hearing the answers to those questions.