

















University of Michigan, Senate Advisory Committee on University Affairs (SACUA)

2018-2019 Annual report: SACUA Information Technology (IT) Committee

EMAIL: ITC.SenateAssembly@umich.edu

URL: <http://facultysenate.umich.edu/senate-assembly/committees/information-technology-committee-itc/>

Committee Membership

	Members	Unit	Term
	Eugen Alpareanu	Michigan Medicine	2019-2021
	Sharon Broude Geva	Advanced Research Computing (ARC)	2016-2019
	Kincaid Brown	University Law Library	2017-2020
	Marisa L. Conte	Taubman Health Sciences Library	2016-2019
	Jeremy Cross	Michigan Medicine	2018-2021
	Ivo Dinov (Chair)	UMSN/UMSM	2015-2019
	Melissa Dyson	Medical School	2018-2021
	Ryan Echlin	Medical School	2018-2021
	Emily Fuentes	Medical School	2018-2021
	Austin Glass	Graduate Student Representative (Aerospace)	2018-2019
	Rajesh Mangrulkar	Medicine	2016-2019
	Andy Palms	ITS – Infrastructure	2016-2019
	Yannis Paulus	Ophthalmology and Visual Sciences Engineering	2016-2019
	Rick Richter	LS&A	2018-2021
	Ken Varnum	University Library-IT	2016-2019
	Vlad Wielbut	SPH	2018-2021

(2018-2019) Committee Meetings

Date	Time	Place	Notes
Mon 10/22/18	12 Noon	4100 SNB (426 N. Ingalls @ Kingsley)	Organization and open discussion, Sol Bermann, UM Privacy Officer, Interim U-M CISO
Mon 11/19/18	12 Noon	4100 SNB (426 N. Ingalls @ Kingsley)	Ravi Pendse, VP for IT and CIO
Mon 01/28/19	12 Noon	2000 SNB (426 N. Ingalls @ Kingsley)	Brock Palen, Director of ARC-TS Great Lakes supercomputing cluster, DataDen
Mon 02/25/19	12 Noon	2000 SNB (426 N. Ingalls @ Kingsley)	Sharon Kardia, SPH Coursera MPH program
Mon 03/25/19	12 Noon	2000 SNB (426 N. Ingalls @ Kingsley)	Discuss online programs, Senate Assembly Voting Proposals, UMich ICT services table
Mon 04/22/19	12 Noon	2000 SNB (426 N. Ingalls @ Kingsley)	AI (James Hilton or James DeVaney)-declined to participate
Annual Report		(completed) May 10, 2019	

Majority of the committee members participated in the monthly ITC meetings, asynchronous communications, and collaborative interactions.

Committee Charge

As the voice of faculty, the ITC shall advise and consult on policy, procedures, and issues related to the broad range of University IT activities. The committee's advice shall be sought and given in a timely manner so that the advice could affect the decision-making outcome. Broadly explore the University IT needs, barriers, successes, and opportunities. Write annual report to SACUA. Invite guests from diverse units, schools, institutes, setting, ranks (faculty, students, staff), etc. that may have unmet IT needs, provide powerful IT services, or have visionary ideas for improving the IT infrastructure on campus.

ITC Advisory to

Dr. Ravi Pendse, Vice President for Information Technology and CIO, and SACUA/Faculty Senate.

Information, Feedback and Lessons Learnt

- ITC members agree that “*Cyber Hygiene*” is important for the institution and all UM members, and we need to be aware and proactive to protect electronic accounts. Examples of explicit concerns included Extortion emails, SPAM, Phishing, Spoofing, etc. All UM members should be aware that password reset requests are common in scam messages set by outside the university servers. Such retrieved passwords may be available to attackers on the Dark Web. By January 2019, all UM members (all 3 campuses) should utilize two-factor (DUO) authentication. Duo offers several options: Digital tokenizer, YubiKey, Smart phones, land-line phones, etc.
- *UM ITS/HITS*: New VP-IT/CIO, Dr. Pendse, is meeting with all stakeholders (faculty, staff, students and community partners). He is concerned with morale, in the wake of senior ITS turn-overs. He asked “*Where is the Data that needs handling, protection and analysis?*” and wants to enable and empower the data, streamline “Who has access to the data?”, and democratize data, based on secure haring protocols. Some new CIO initiatives include:
 - ITS put up a new service for faculty to check account balances:
<https://maizelink.umich.edu/task/all/faculty-account-balance-report>.
 - Service Excellence – change “reactive” model to “proactive” services and consider the UM community and ITS as “partners”. Put new procedures in place to quickly respond to faculty ITS needs. Reported faculty ITS resolutions sped up from 2 days to 6-minutes (in general).
 - Research Computing: Wants to build “frictionless” access to research computing resources. Free-access vs. pay-for-service ... Reduce complexity of access to HPC. GreatLakes HPC Cluster was supposed to be operational by April 2019, however, it does not seem to be in place as of May 2019 (<https://arc.umich.edu/news/great-lakes-announce/>).

Storage: Basic=free, Premium=paid. The discussion also included “How to share UMHS data?”, cf. Andrew Rosenberg UMHS CIO, to test various technologies, e.g., DataSifter. How are ITS and HITS services synergized? There was a report of a recent hard-landing handoff (ITS→HITS) that did not go well. Learning Analytics Data – how to share/access/use? Education Data warehouse (student data is FERPA sensitive).

- *Distance Learning*: Dr. Sharon Kardia, director of SPH MPH Online degree program (starting Fall’19) presented the opportunities, challenges, and approached to design, implement and deliver online degree programs. There is no uniform UM “Digital Asset Management System” DAMS, which is critical in developing, supporting, and updating online/virtual education/training programs (from certificates, to micro-degrees, and degree programs). This is identified as an ICT infrastructure problem at UM. ICT infrastructure necessary to support ODP/MOOC/Online instruction includes:
 - Synchronous and asynchronous communication, video, chat, discussion forums
 - Storage for datasets, case-studies, lecture notes, learning materials, and other instructional resources
 - Code, scripts, protocols, pipeline workflows, etc.
 - Computational sandbox for students to experiment/play with exemplary code/data/simulations.
 - Direct integration with course gradebook
 - Assignments (grading assistant?), project submission, evaluation, peer-assessment capability
 - Jupyter or RStudio (Python or R/Rmd) Notebooks
 - Other online content, EBooks, Blogs, etc.

There is a need to manage the archival of all materials, e.g., SPH is partnering with Coursera as they provide the backend CMS/DAMS. There is a substantial difference between *massive open online classes (MOOCs)* and *Online Degree Programs (ODPs)*: MOOCs are mostly asynchronous, auto-piloting, not-accredited, lightweight programs, open-enrollment, no prereqs. ODP are parallels of rigorous UM residential programs that include synchronous and asynchronous components, videos, notes, assessment tools, standard program admission applies (learners are prescreened), steep UM tuition is assessed. ODPs tend to repurpose MOOC technologies for delivering online instruction. ODP access to materials is extremely limited (content and authorization). Even other ODP-participating instructors don't have access to course materials of colleagues/different classes.

When looking for (industry/non-profit) online-education partners, we need to consider tiered royalty for faculty, units, UM, and the outside organizations. Tuition may basically be at the in-state-level, however there are complexities of providing inter-state/across-border accredited education services (degrees).

It's difficult to ensure/guarantee enrollment DEI, test-taking authentication, quality of instruction, and long-term impact assessment may take decades). There is a short-term vs. long-term trade-offs in online instruction. Tenure track (TT) faculty should be involved in designing, implementing, delivering and evaluating online curricula. We need appropriate faculty training on how to teach, in front of a camera, for small 5-10-min fragments of limited scope materials, that are then aggregated, customized, and packages into lessons, topics, themes, and courses. The development pipeline for ODP takes 9-12 months to design, develop and implement. It requires substantial PM oversight.

ODP Instruction should ensure "clarity", "comprehension", and "practice", somewhat different from traditional higher-ed instruction based on abstraction and theoretical formulation with some practical demonstrations. ODP instruction should be based on "learning objectives", "competencies", and "rigorous assessments". The Academic Innovation (AI) office was not able to provide the resources and support for SPH ODP, AI does not understand degrees and can only help with product, but not design, delivery or structure of MPH curriculum. Thus, SPH built an in-house production team (2-instructional designers and 1 Production manager), designed a 3-week long training (seminar-style) on how to design, structure, deliver and manage on Online course part of a ODP, partnered with Coursera to develop a regional (Great Lakes) MPH program that can scale.

Coursera does enormous "student profiling", based on all their activities, which is used for curricular advising, but also for promotion, and may be integration (or sale to partners) with DB data from other resources (e.g., social media). Content sharing between instructors and courses is hard (impossible).

Distance learning is not a panacea – there are problems with MOOCs and ODP:

- Copyright, IP and open-science controversies
- Accreditation organization, SPH MPH ODP is still accredited by the Council on Education for Public Health (CEPH)
- Providing education/certification across State/Country borders!!! This is a problem that requires individual agreement with each State/Territory/State. Admission of students into ODP is tricky – different from out-of-state students arriving in the State of Michigan for training/education, where local MI laws apply.

- Should ODP students get MCards, RE: visits, stores, verification, proctoring, services, Library, etc.?
- Practical component, preceptors, placements, tracking outcomes, etc.
- Student advising ... typically for ODP (smaller programs), like MPH, there is one faculty mentor assigned to each student, that provides mentoring and coaching as needed.

SI MADS ODP will take International students, whereas SPH MPH ODP only takes US students, to avoid conflicts with International laws.

At least on the short term, each UM school/unit/discipline/institute may need to build a local team of Online Content Development, Production, Management, and Delivery of learning modules. When it comes to distance higher-education, it's not clear if one-size-may-fit-all.

Dr. Qiaozhu Mei (SI Director of the fully-online MADS Program, starting Fall'19) indicated they expect about 150 students enrolled in the fully-online MADS program, which will include prereqs Stats 250 and pre-test is administered. Tenured SI faculty design courses, which are then run by SI faculty and Course Instructional Aids (CIAs). Some of the assignment grading is automated (via Jupiter Notebook assignments), some manual (e.g., visualization).

- Office of Academic Innovation (AI)

AI declined repeated invitations to join ITC in 2018-2019, ITC was only able to identify AI activities using information on this website (<http://ai.umich.edu>). It's not clear what are the education interactions, coordination and synergies between AI and ITS/HITS. AI should attempt to balance between (1) support for standardized mechanisms of designing, delivering and assessing distance learning, and (2) innovative strategies to enhance the instructional process and improve learning outcomes.

AI declared services include Personalization at Scale (facilitating large scale tech solutions that support teaching and learning), Curricular Innovation (partnering with faculty to research and support new modes of learning), Leadership in Learning Analytics (helping to empower students, faculty, administrators and staff to make more informed choices to improve learning outcomes).

AI includes about 100 staff/faculty members separated in various "Teams", e.g., Behavioral Science, Design Management, Faculty Innovators in Residence, Innovation Advocacy, Leadership, Learning Experience Design, Marketing, Media Design, Online & Hybrid Programs, Operations, Product Management, Public Engagement, R&D, Research & Learning Analytics, Software Development, User Experiences. This is a very substantial Institutional investment that should be independently evaluated to determine the return on investment and the tangible outcomes and impact of these resources, which appears unclear at present. AI has not materialized as a one-stop shop for all faculty- or unit-initiated ICT-enhanced training and education.

Some units have tried working with AI, and eventually chose to design, develop, implement, and service distance learning, online programs, and blended instruction on their own.

- *UM Information and Communication Technologies (ICT) Matrix*

ITC developed a matrix summarizing commonly used ICT at UM. This matrix does not represent a systematic or universal review, but it does include the collective ITC knowledge and experience with

ICT infrastructure at UM. It may be used by UM decision makers to plan, form strategic priorities, and determine forward ICT vision for the University. Recognizing that ITS/HITS already have strategic partnerships (e.g., MS, Cisco), and units tend to use “best of a kind” in deciding services and infrastructure. There are many competing alternatives for each kind of ICT resources, e.g., MS-Apps (365 Cloud) vs. Google Apps/Cloud. This is healthy, expected, and useful.

There are many overlapping, complementary, new and old types of “storage Cloud services”. WIFI example (started in 1998 – common in 2010, uniform by 2015), but UM still has 4 different WIFI networks in place. This matrix may help programs with exposing existent services that are available for curriculum development and research.

The wide spectrum of resources illustrates a balance between curse or blessing, variety or incongruity, too many or too few options. It may be best to have several options for solving each specific need. From a historical perspective, long-term usage of one unique service is unlikely. We need to mind and monitor the life-cycles of tools/ICT/service (e.g., DropBox occasionally spotty services).

It’s important to distinguish between commodity systems vs. cutting-edge enterprise solutions. One system is very unlikely to last 10 yrs or more. Routine long-term ITS contracts are 3-5 yrs and ICT change may require retraining, but be none the less inevitable. ITS to constantly review, assess, adopt, retire, innovate the ICT services on campus. Options are important to redundancy, reliability, longevity.

See **Appendix 1**.

- ITC also made a recommendation *to Faculty Senate to initialize electronic faculty voting* on various faculty-governance issues using the UM-specific SimplyVoting mechanism, see **Appendix 2**.

Appendix 1: UM Information and Communication Technologies (ICT) Matrix

UM ICT SERVICE TYPE	SERVICE NAME	FUNDING MODEL	UNITS/COLLEGES SCHOOLS USERS	ALTERNATIVES/COMPETITORS	PROS	CONS
Web-Conferencing	BlueJeans	Funded by ITS Cost allocated to units	all UM students/faculty/staff	Zoom/WebEx/Google Hangouts	intuitive, portable, toll-free & web-based connection, very functional and effective breakout rooms	archived videos for only 3 months (removed after that)
Web-Conferencing	Zoom	licensed by units	SPH	WebEx, Saba	Good integration with Exchange / Outlook	Not fully compatible with Mac OS X
Web-Conferencing	Skype for Business	paid by users	Michigan Medicine	(Will be replaced by Microsoft Teams)		
Communication	Gmail	central funding	all UM units, except UMHS	Exchange, Outlook.com		
Communication	MS Exchange	licensed by HITS, ITS	UMHS, some UM units			
Communication	Slack	licensed by units	some Umich units and groups			
Communication	Google Talk	central funding	some Umich units and groups			
Lms	Canvas	central funding	All UM units	WebCT, Blackboard		
Lms	Canvas Catalog	licensed by units	SPH, Nursing	Canvas		
Hpc	Flux/Great Lakes	paid by users	all UM units			
Hpc	Google	paid by users	all UM units			
Hpc	Amazon Web Services	paid by users	all UM units			
Hpc	Microsoft Azure	paid by users	all UM units			
Website Creation	Drupal	paid by users	some Umich units and groups			
Website Creation	Google Sites	central funding	all UM units			
Website Creation	Wordpress	licensed by units	some Umich units and groups			
Website Creation	MS Sharepoint	licensed by units	some Umich units and groups			

Web Cms	OU Campus	licensed by units	SPH	accepts payments, issues certificates
Data Storage And Collaboration	M-Box	central funding	all UM units	Google Drive
Data Storage And Collaboration	DropBox	Free or paid by users	all UM units	
Data Storage And Collaboration	Google Drive	central funding	all UM units, except UMHS	
Data Storage And Collaboration	MiStorage	units pay per GB	all UM units	
Audience Response System	PollEverywhere	licensed by units	SPH, ??	
Audience Response System	iClicker	students pay for devices	most UM units	
Surveys	Qualtrics	central funding	all UM units	
Surveys	Survey Monkey	licensed by units	some UM groups	
Surveys	Google Forms	central funding	all UM units	
Lecture Recording	Panopto	licensed by units	SPH, Dentistry	
Lecture Recording	Echo 360	licensed by units	Nursing	
Video Cms	MiVideo	central funding	all UM units	
Collaboration	Asana	licensed by units	SPH-ICS, IA, ??	
Collaboration	Airtable	licensed by units	SPH, Taubman HS Library	
Collaboration	Sharepoint	licensed by units	LSA, ITS, ??	
Collaboration	Google Drive	central funding	all UM units	
Server Virtualization	MiServer	paid by users	all UM units, except UMHS	
Server Virtualization	Google, AWS, Azure	paid by users	some UM units	
Ticketing System	Footprints	paid by units	multiple UM units	
Ticketing System	ServiceNow	paid by units	ITS, Michigan Medicine, University Library IT	

Appendix 2: UM-specific SimplyVoting Quote



5160 Decarie Boulevard, Suite 502
Montreal, QC, H3X 2H9 Canada
1 (800) 585-9694

Updated Pricing For

University of Michigan


Attention: Chris Eagle

December 12, 2018

Adrienne Hardy
Senior Project Manager

Simply Voting Inc.
ahardy@simplyvoting.com
1 (800) 585-9694 ext. 804

CONFIDENTIAL AND PROPRIETARY



Premium Services & Features

Simply Voting also offers a range of Premium Services such as fully-managed elections, managed mailings, customizations to the voting technology, and Premium Features like voter segmentation or weighted voting.

❖ Fully Managed Election

If you desire to be fully hands-off from the election process, Simply Voting offers a fully managed election premium service. With a fully managed election, Simply Voting staff will manage the election and elector set up, sending email blasts, reporting on mid-election turnout, and reporting on post-election results.

You remain the first point of contact for your voters and your staff retains access to the back-end Election Manager at all times (unless no-access is specifically requested to be completely hands-off). Simply Voting staff will coordinate with your election organizers to provide previews and samples to ensure that everything is up to specification. Simply Voting staff will also actively monitor the election as it proceeds to ensure that everything is working as intended.

❖ Voter Segmentation

With voter segmentation, you can categorize voters into groups, restricting access to certain ballot items and delivering a unique ballot to each group of voters, so they only see and access what is relevant to *their group* (e.g. their classification) in addition to what is relevant to *all voters*. Voter segmentation also allows for targeted email blasts to specific groups, as well as additional turnout tracking.

This Premium Feature carries with it a onetime activation fee. See the *Pricing* section for more details.

❖ Elector Data Pull

Simply Voting offers an automated Elector Data Pull feature which can pull the member data directly from your API and synchronize it with the eligible voter list within the Simply Voting election. This feature provides a more secure and efficient transfer of elector data and can eliminate the potential of any inadvertent data errors due to manual manipulation. This feature may be employed either exclusively prior to the start of voting, or periodically throughout the voting term to re-synchronize your database and the elector list, depending on your desired configuration. This feature requires adhering to our technical specs provided as an addendum to this document.

❖ Multiple Administrators

With the multiple administrators feature, you can setup unique administrator login identities that can have unique permissions on what actions each administrator identity can do to or with an election.

Thus, scrutineers or auditors could be configured to have read-only access to say the Electors list, Turnout Reports, the Activity Log, and final Results once voting is over, but could be restricted from other interactions with an election.

This Premium Feature carries with it a onetime activation fee. See the *Pricing* section for more details.

❖ Vanity URL

Simply Voting may deploy a vanity URL for your Voting Website, to improve branding for your voters. You create the domain or subdomain, you create the CNAME record pointing to the appropriate Simply Voting URL, and you setup an SSL certificate for the domain. Simply Voting Technical Staff will assist with questions as necessary, and ensure corresponding setup is done on our system to ensure the successfully deployment of the vanity URL.

Vanity URL samples (which also deployed custom style sheet branding) are: <https://vote.umn.edu> and <https://vote.reco.on.ca>

There is a onetime setup fee for this customization. Up to one month may be required for implementation. See the *Pricing* section for more details.

❖ Custom Voting Website Branding


Default

All our customers receive a voting website they can brand with their colors and logo when an account is setup on Simply Voting. A sample of this default level in action can be found at: <https://stusu.simplyvoting.com/>

Custom Voting Website Branding (Level 1)

Simply Voting can develop a custom CSS style sheet to overlay our default voting website look and feel. The look and feel of your voting website will be similar your organization's branding. Essentially, the look and feel will resemble your website, but your organization's website's content is not part of the style sheet.

A sample of this level in action can be found at: <https://ams.simplyvoting.com>



Custom Voting Website Branding (Level 2)

Simply Voting can develop a custom CSS style sheet, in addition to custom HTML headers and footers for your voting website. The look and feel of your voting website will be similar to your organization's website. Essentially, your voting website will have your navigation links, search bar, etc. in the header, and your quick links in the footer, with similar visual styles. The links will be clickable and will navigate voters just as if they were on your website.

A sample of this level in action can be found at: <https://vote.umn.edu>
(Note: your voting website would still be a *.simplyvoting.com* URL address unless you are also interested in premium white labeling customizations).

The customization fee for either level is based on a programming per hour fee or a minimum setup fee, whichever is greater. Two weeks to one month may be required for implementation. See the *Pricing* section for more details.

Pricing

Simply Voting's election fees are based on the number of eligible voters. This quote is an example based on the assumption that you would run an election or elections with 8000 or less electors. If there are more electors, the cost will fluctuate accordingly.

Item	Cost	More / Less Electors
<u>System fees:</u>		
1-Year Plan (10 elections, up to 8000 electors ea.)	\$2738.80	~\$0.18 / elector

Additional Items	Cost
<u>Optional:</u>	
Fully Managed Election	\$650.00 / election
Voter Segmentation Activation	\$300.00 One-time
Multiple Administrators Activation	\$500.00 One-time
Elector Data Pull Activation	\$750.00 One-time
Integrated Authentication Setup	<i>FREE</i>
Vanity URL	\$1500.00
Custom Voting Website Branding	
- Level 1	\$800.00 Minimum, \$200/hr out of scope
- Level 2	\$2000.00 Minimum, \$200/hr out of scope

Notes
<ul style="list-style-type: none">❖ All prices are in USD.❖ Additional items are charged on top of system fees.❖ Items marked as "one-time" carry a one-time activation fee. Once activated, you retain access to the feature on your account indefinitely.❖ No out of scope work will be performed by Simply Voting without prior approval by you.

Getting in Touch

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1 (800) 585-9694 ext. 804