



COMMISSION_{ON}
DIVERSITY_{AND}
INCLUSION

Technology Barriers

Submitted to:
Chancellor Mark S. Wrighton
Provost Holden Thorp

November 7, 2016

Recommendations for Identifying Technology Barriers



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Last year the chancellor and provost charged the Commission on Diversity & Inclusion with making recommendations to implement a 12-point action plan designed to make Washington University in St. Louis a more diverse and inclusive community. The Commission requested a working group explore and consider how to best implement action item number 9: “All deans, leaders, and managers will identify and eliminate technology-based barriers to diversity and inclusion in both the employment and academic contexts...” In consultation with the working group, the Commission on Diversity & Inclusion makes these recommendations.

BACKGROUND

Technology’s central role in today’s world, amplified on college campuses, makes technological access and proficiency a requirement for both scholastic and professional success. As a University, we use technology to enhance and support the opportunities and successes of our community. For many people, their first or only contact with the University will be through technology (e.g., our website, email or our libraries). To fulfill our academic mission and embody our values of diversity and inclusion, we must ensure that these technological opportunities are accessible to all.

The Eliminating Technology Barriers

working group was charged with identifying and eliminating technology-based barriers that confront current and prospective members of our community. As we investigated such barriers and found hurdles to overcome, we also recognized that the targeted use of technology can provide opportunities to create a more welcoming and inclusive community.

Through technology, we can create connections and increase inclusion. We can implement best practices and use technology to improve access for those who are differently abled and those who do not have access to the newest devices. We can welcome more people to our

campuses and bolster the success of all of our students by leveraging technological opportunities. We can ensure a common knowledgebase for all students, faculty, staff and trainees. Broadly, we propose recommendations that address: identity, gender identity, geographic accessibility, physical accessibility, technological accessibility and socioeconomic barriers.

We believe that strategic choices and improvements in technology use on campus can play an important role in the University’s efforts to “do better and be better” as we strive to embrace more fully our values of diversity and inclusion.

RECOMMENDATION #1

Identified barrier: The University academic units have an inconsistent approach to ensuring that all students (undergraduate, graduate and professional) have the tools they need to participate fully in learning and to maximize academic success. For example, some students arrive on campus without a personal computer, such as a laptop, or without the software needed for their academic programs of study.

The University students require specific technological resources to achieve academic success on our campus. Student Financial Services recognizes this, assuring that

admitted students will receive the necessary resources to enroll, and that enrolled students will continue to receive the resources they need to graduate. Housing and textbooks are examples of resources currently acknowledged as necessary for our students, and Student Financial Services provides funds to students with need to ensure they have those resources.

However, a personal computer, equipped with appropriate academic software, is not considered among those resources automatically included in the student’s cost of attendance. As a result, some students arrive on campus without a personal computer, such as a laptop, or without the software they

need for their academic programs of study. This deficiency creates a technology barrier for them. While our University offers computers in labs for all of our students, the strong academic and social norm for students is that they can work collaboratively anywhere on campus by bringing a personal laptop to such meetings or study sessions. This same deficiency surfaces in classrooms, where some students can

take notes and access supporting material on the internet on laptops, while other students without laptops, or without the appropriate software, cannot do so. Some students who cannot afford licenses for academic software repeatedly use temporary licenses, which can be unpredictable, stressful and demoralizing.

We therefore recommend that:

1. Each program of study identifies the computer equipment and software necessary for success in that program.
2. The University develop a system to catalog, maintain and regularly update the costs of technology associated with programs and individual courses. Information about these costs should be accessible, available and updated for student use. We see this as the responsibility of the instructor, school and University.
3. Student Financial Services include for each student in his or her profile of need for the technological resources necessary for that student's studies. These resources should be considered part of the cost of attendance at the University.
4. Funding be established to ensure all students have the computer equipment and software necessary for success in their studies.
5. The University make computer labs widely available for use. For the short-term, increase operating hours in labs with specialized software. Also label computers with specialized software as such. And for the long term, use cloud-based computer labs to enable students to access University computer lab resources from anywhere and from any device.

RECOMMENDATION #2

Identified barrier: The University systems have not been optimized for full access across technology platforms or for compliance with applicable standards. Prospective or current students, faculty or staff with visual, hearing, motor or cognitive disabilities, or those with older technology, may be excluded from having full access to University web resources, and therefore, cannot use all the benefits and engage in all the community opportunities that our myriad online services afford.

The University's websites and online resources are a major portal into our academic community, providing access to academics and patient care, the means to apply for

admission and employment, and an ongoing connection to the experiences available, from class registration to time reporting to obtaining general knowledge about campus events and activities. Those with visual, hearing, motor or cognitive disabilities, or those with older technology, may be excluded from having full access to University web resources and, therefore, cannot use all the benefits and engage in all the community opportunities that our online services afford. This is especially true for prospective or current students, faculty or staff. It is both an imperative of our commitment to inclusion and our obligation as an institution of higher learning that require us to make our online resources accessible to all, regardless of ability and device.

We therefore recommend that:

1. The University require all websites and online resources created and maintained by groups within the University to follow web accessibility best practices, aiming to adhere to WCAIG 2.0 AA standard and undergoing periodic audits to ensure conformity.
 2. The University require all websites, online resources and administrative services (such as WebSTAC, HRMS and AIS) be accessible from as many and as diverse devices as feasible.
 3. The University build a portfolio of best practices and require all new enterprise systems to follow accessibility best practices. The University provide ongoing communication, support and resources to empower those who maintain University websites and enterprise applications to stay up to date with best practices in accessibility.
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RECOMMENDATION #3

Identified barrier: The University does not provide consistency in general and critical information and communications to all members of the community. Our current technology is missing opportunities to provide information to people in two separate categories:

1. People with physical disabilities who use accessibility routes on campus
2. People who cannot physically visit and explore our campus due to geographic, ability, time or financial constraints

We therefore recommend that:

1. The University include accessibility information in the University map app for both the Danforth and Medical campuses.
 2. The University conduct regular audits of accessibility information (e.g., automatic door operation and parking). Consider partnership with key academic units (e.g., Programs in Occupational Therapy and Physical Therapy) to engage students and employees with disabilities in the process.
 3. Parking & Transportation Services inventory the number of disabled parking spaces and the proximity of the spaces to each building on campus to ensure that the distances traveled from vehicle to destination are reasonable/acceptable.
 4. The University develop a committee of students and employees with disabilities through Disability Resources to meet quarterly (or biannually) to discuss concerns on campus.
 5. The University conduct a survey of the Summers Recreation Center and all campus buildings to ensure that both the buildings and equipment are accessible (<https://www.access-board.gov/guidelines-and-standards/recreation-facilities/guides/sports-facilities>).
 6. The University develop virtual tours using readily available and readily accessible technologies to enable people to experience visiting campus and give them an opportunity to familiarize themselves with campus and campus landmarks. For instance, Google Goggles are an inexpensive technology that can be easily made from readily available materials and a smartphone.
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RECOMMENDATION #4

Identified barrier: The University's alert system does not currently ensure that on-campus contractors are aware of emergency incidents in a timely manner. Some contractors cannot receive emergency alerts because they either do not have a cell phone, or they have a cell phone but are not registered to receive alerts. Additionally, contractors may be working in areas that do not have digital signs or TVs, or are not in proximity to campus sirens. Finally, some contract employees are discouraged from checking their cell phones

during work hours. We recommend ensuring alerts reach all individuals on campus, including students, faculty, trainees, staff and contractors, as quickly as possible.

Our current emergency alert system includes many communication vectors, but notifications for the noted groups rely primarily on the University app for iOS and Android. Contractors do not have email addresses or cell phone numbers that can be harvested from our employee and student information systems for distribution of alerts, so a two-pronged approach is recommended:

1. Ensure supervisors in the field can receive emergency alerts on either a vendor-owned or personally owned mobile device. Work with vendors to charge supervisors with ensuring individual contractors are alerted.
2. Develop mechanisms to partner with vendors to promote the University app to all contract employees as they are on-boarded to work at the University.

We therefore recommend that:

1. The University increase and sustain efforts to ensure all contracted employees can be contacted in an emergency situation. There should be a particular focus on field supervisors whose duties include knowing the locations of personnel who may be in work situations where they cannot hear emergency alerts.
2. The University require every vendor to have an emergency alert plan reviewed and approved by the University.
3. As part of future negotiations with vendors or when contracts are renegotiated, the University include a protocol for emergency notifications that includes requirements to ensure the notifications are communicated to each contract employee.

RECOMMENDATION #5

Identified barrier: The University does not have a sufficiently consistent approach to communicating information about University events and information. Campus events rely primarily on email to notify the University community. Indeed, email is the preferred method for reaching all students, faculty, trainees and staff on both campuses. However, some members of our community have no email address or are not registered to receive notification of such events. The current approach relies on reaching individuals via postings on a physical bulletin board at the time clock where they clock in and out each day.

We did not find this issue a concern for students because only a dozen do not have email addresses in SIS.

As of August 22, 2016, there are 810 individuals in the Human

Resources system (PeopleSoft HRMS) who have no University email address. Out of this group, 167 people have not provided a personal email address. This group is distributed across many facilities and service functions.

Examples include animal care facilities at the School of Medicine, residential college housekeeping service areas on the South 40, and maintenance/operational personnel including the power plant facilities on the Danforth Campus. These individuals are mobile throughout their workday and may cover a large area. Most are nonexempt individuals who clock in on a physical time clock, so it is important to remember to distribute printed postings through their supervisors.

This may also be helpful for our adjunct faculty, many of whom do not have University email addresses.

We therefore recommend that:

Washington University increase and sustain outreach efforts to ensure all University employees are made aware of campus community events and employee engagement programming.

RECOMMENDATION #6

Identified barrier: The University systems do not support the identity needs of community members. Some individuals cannot express their gender identity because our web pages, online resources and enterprise systems cannot accept gender spectrum information. This negatively affects people

who identify on the gender spectrum. The two key instances are pronouns and honorifics, which are limited to gender binary options.

The University has committed to addressing this limitation in our new enterprise system, which is scheduled to be purchased and launched by AY 2019.

We therefore recommend that:

1. The University identify an interim solution for current systems that enables individuals to report their preference in the gender spectrum.
 2. The University work with key members of the Office of Student Affairs, including the new dean of the Center for Diversity and Inclusion and the new assistant director of Leadership and LGBTQIA Involvement to identify and recommend these interim solutions, ideally ones that can be implemented by AY2018.
 3. The outcomes of these efforts be used to build a portfolio of best practices. The University find ways to publish, widely communicate and encourage these best practices, including the ones that have already been published by Public Affairs at the following web address: <https://diversity.wustl.edu/framework/advisory-best-practice-groups/best-practices/>
 4. These best practices be used when vetting products from vendors, ideally establishing requirements that all vendors must meet in order to partner with the University.
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RECOMMENDATION #7

Identified barrier: The University has not established a foundational knowledgebase for all employees, nor does it have consistent policies to ensure that all community members have access to appropriate training. Some students, faculty members, trainees and staff lack proficiency in computer-based tools or technology, the use of which is essential for success. Those with access to technological

resources can engage in online learning, but some do not have access to the technology to do so.

The University strongly encourages its staff and students to continue to develop their literacy in emerging technologies. The University should provide equal opportunities for professional development and advancement for faculty and staff.

We therefore recommend that:

1. Washington University make online resources, like Lynda.com, freely available to all faculty and staff for training and skill development.
 2. The University provide a resource that can be used by all members of the Washington University community to conduct online training.
 3. Washington University consider asking (or requiring) that supervisors grant staff time during the work week to conduct training.
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RECOMMENDATION #8

Identified barrier: Several people have observed that the University's hiring platforms are not user-friendly, consistent, or well-functioning. This may create an especial barrier for diverse applicants, who may not have access to the

internal networks and connections to be able to navigate or circumvent the various portals. In addition, University firewalls may prevent diverse communities from accessing key resources, including scholarship, programming, and other potential resources.

We therefore recommend that:

1. The University will ensure that all employment-related platforms operate at a high level of accessibility.
2. The University will eliminate any unnecessary firewalls.

RECOMMENDATION #9

Identified barrier: The recommendations may require additional resources to implement and maintain. The working group recognizes that some recommendations can be executed with little to no cost or the costs may be absorbed by the groups implementing them, but some recommendations may have added costs and may

require additional administrative overhead which must be estimated and approved before implementing changes. These initiatives may require interaction across multiple disparate organizations, and therefore will require additional and more complex communications resulting in increased administrative overhead.

We therefore recommend that:

1. The University conduct a cost analysis for each approved recommendation.
2. The Washington University establish appropriate funding and administrative resources to ensure the recommendations can be implemented.
3. The Washington University ensure the funding includes the costs to maintain the initiative to ensure they can be sustained.

SUMMARY

In summary, the working group posits that any technology barrier can and should be eliminated once identified. The group recommends that a fresh working group be formed periodically to review and audit the University's progress toward elimination of these identified barriers, and that the University continue to identify and eliminate technology barriers to support our charge to be a diverse and inclusive community. The group

also recommends that the Washington University in St. Louis commit the appropriate resources to ensure the success and ongoing maintenance of these recommendations.

Additional information regarding the topics in these recommendations is included in the Appendix. Included are links and information culled from websites from peer universities on the topics of Technology Requirements, Diversity and Technology – Best

Practices and Technology and Personal Pronouns.

The group suggests that this report be made available to all working groups that are currently working on diversity and inclusion projects so they understand the concepts we have identified and the recommendations we have made.

As a final note, the working group would like to thank the Commission for their time and consideration.

APPENDIX

Technology Requirements – Assistance

Amherst College:

https://www.amherst.edu/offices/it/services/help/help-desk/new_students/faq/node/505998

- **Can Amherst College help me with the cost of a computer?**

Amherst College offers a two ways to help you with a computer purchase.

- ◆ **Discounted computers:** You can order Apple and Dell computers at educational prices.
- ◆ **Financial Aid:** You can finance your computer purchase using a loan from Financial Aid. Contact the Financial Aid office after you arrive on campus.

Barnard College: N/A Bowdoin College: N/A

Brown University:

<https://it.brown.edu/announcements/read/new-student-faq#finaid>

Do I get a discount on computers?

The [Brown Bookstore Technology Center](#) offers student discounts on Dell and Apple computers. Apple and Dell also have educational discounts on their websites, and you might find other vendors who do as well: [Apple Student Discounts](#), [Dell Student Discounts](#).

Can I get financial aid to buy a computer?

The Office of Financial Aid website has [instructions for buying a computer or laptop](#), whether using an additional scholarship or an outside student loan.

Are there loaner laptops available?

Yes - if your laptop breaks, or you didn't bring a laptop and you need one for a short time, the [IT Service Center](#) has some loaners. [More information about IT Service Center equipment loans](#)

Bryn Mawr College: N/A

Caltech: N/A

Carleton College: N/A

Columbia University: N/A

Phones

Are there land lines in residence halls?

There's a phone in the hallway. Starting in fall 2016, we'll also have an app called Jabber available by request (at no cost). This app can be used on phones, tablets, and computers. The app gives you a local Brown phone number, and you can make and receive local calls from that number.

Do Brown students get cell phone discounts?

Yes - check out discount codes on our [Buying a Cell Phone](#) page.

Cornell University:

<http://aap.cornell.edu/resources/computer-support-services/student-laptop> (Architecture Art Planning School)

Recommended Specifications

It is strongly suggested that each student own the recommended laptop computer, accessories, and base software listed below. The mobility of owning a laptop is essential as much of the work is collaborative and happens in a variety of locations. Please note that the AAP IT Solutions service team is available to provide free support for student-owned laptops.

A lightweight alternative: Students looking for an ultrabook that meets the recommended laptop specs should consider the Asus Zenbook (architecture, art, or CRP), Microsoft Surface Pro 4 (CRP only), or Microsoft Surface Book (architecture, art, or CRP). These devices exist with several options but can be found with AAP's specific recommendations.

Dartmouth University:

For an example of Dartmouth University policy that updates every year, please see: <http://tech.dartmouth.edu/its/services-support/help-yourself/knowledge-base/incoming-students-computer-minimum-hardware>

DETAILS

The minimum hardware requirements for the class of 2020 are as noted below. We believe that starting with a computer that meets these minimum requirements will enable students to have a useful computer for their four years at Dartmouth.

Macintosh Computers

- *Processor:* 2.3 GHz Dual Core Intel I5 or higher
- *RAM:* 4 GB or more
- *Operating System:* Macintosh OS X 10.10 or higher

Windows Computers

- *Processor:* 2.3 GHz Dual Core Intel I5 or higher
- *RAM:* 4 GB or more
- *Operating System:* Windows 7 Professional or higher

Topic: Computer and Device Services

Subtopic: Desktops and Laptops

Last updated: Thursday, August 4, 2016

Duke University: N/A

Georgetown University: N/A

Harvard University: N/A

Johns Hopkins University: N/A

MIT: N/A

Middlebury College: N/A

Mount Holyoke College: N/A

Diversity and Technology – Best Practices

<http://ventures.jhu.edu/accessibility-statement/#cofhe>

Amherst College: N/A

Barnard College:

<https://www.washington.edu/doi/>

<http://barnard.edu/disabilityservices/students/assistive-technology>

<https://barnard.edu/disabilityservices/external/dsnny#END>

Bowdoin College:

<https://www.bowdoin.edu/studentaffairs/student-handbook/college-policies/information-technology-policies.shtml>

Bryn Mawr College: N/A

Caltech:

Campus Map with ADA Information – displaying ADA-accessible paths of travel, building entrances, and parking

Carleton College: N/A

Columbia College: N/A

Cornell University:

<https://disability.cornell.edu/docs/2015-2016-disability-strategic-plan.pdf>

Dartmouth University: N/A

Duke University: N/A

Georgetown University: N/A

Harvard University:

<http://accessibility.harvard.edu>

Johns Hopkins University: N/A

University of Ottawa:

<http://www.uottawa.ca/respect/sites/www.uottawa.ca.respect/files/accessibility-inclusion-guide-2013-10-30.pdf>

“In order to support learning, documents should be designed with congruence, ease of reading and understanding; and foster accessibility (e.g. readable with a word-to-voice program; include Alternate text and screened via the Accessibility Checker feature from the Microsoft Office Suite). Specific tips related to Strategy 4 are described in the different guides presented hereafter, more so in the Council of Ontario Universities (COU) Educators’ Accessibility Toolkit.”

For the Ottawa University's most recent policy see: <http://www.accessiblecampus.ca/educators/intro-to-accessible-education/understanding-barriers/>

MIT: N/A

Middlebury College: N/A

Mount Holyoke College: N/A

Northwestern University:

<http://www.northwestern.edu/studentaffairs/sait/services/accessibility/index.html>

Oberlin College: N/A

Pomona College: N/A

Princeton University: N/A

Rice University:

https://professor.rice.edu/uploadedFiles/Professor/Faculty_Senate/Rice%20University's%20Strategic%20Plan%20for%20Accessibility.pdf

Smith College: N/A

Swarthmore College: N/A

University of Chicago:

<http://www.uchicago.edu/about/accessibility/S>

University of Pennsylvania:

<http://www.upenn.edu/about/styleguide-best-practice>

University of Rochester: N/A

Vanderbilt University:

<http://www.library.vanderbilt.edu/about/disabilities.php>

Wellesley College: N/A

Wesleyan University: N/A

Williams College: N/A

Yale University:

<http://ctl.yale.edu/using-technology>

University of Washington:

https://www.washington.edu/doi/sites/default/files/atoms/files/Universal_Design_in_Higher_Education_Promising_Practices_0.pdf

University of Minnesota:

<https://diversity.umn.edu/disability/achievingaccessinyourclass>

Technology and Personal Pronouns

Hampshire College:

<https://www.hampshire.edu/it/preferred-name-and-pronoun-faq>

Middlebury College:

<http://www.middlebury.edu/student-life/community-living/diversity-inclusivity/preferred-name>

Q: What pronoun options do I have?

A: A committee of students, faculty, and staff discussed various options and settled on the following values, available to all Hampshire community members.

- HE
- SHE
- THEY
- ZE/HIR
- NONE (do not use a pronoun)

Q: What happens if I don't select a pronoun?

A: The words "not set" will be displayed. This may be challenging for faculty who don't know the appropriate pronouns to use when writing evaluations so we encourage all community members to record a pronoun.

Q: Where are pronouns displayed?

A: On TheHub class rosters and advising lists, in Moodle class rosters, and in the Hampshire College directory (displayed only when a Hampshire community member is logged in). Pronouns are never displayed on public websites (those not requiring a Hampshire login).

Middlebury recognizes that some members of our community use names other than their legal names to identify themselves.

One way Middlebury seeks to promote comfort and safety among those who wish to do this is through a preferred name procedure in [BannerWeb](#), where students, faculty, and staff may now indicate their preferred first name regardless of whether or not they have legally changed their name.

Individuals are free to determine the preferred names provided that it is not for the purpose of misrepresentation (using inappropriate names or using the process to avoid a legal obligation). Preferred first names that differ from an individual's legal name will be used solely for Middlebury's internal systems. In addition, individuals will be able to indicate a preferred gender pronoun (him, her, them, etc.) and name prefix (Mr., Ms., Miss, etc.).

ELIMINATING TECHNOLOGY BARRIERS WORKING GROUP

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To view the full report click [here](#);
to view the Executive Summary of the report, click [here](#).