Devices and Software for a Paperless Medical Education

Disclaimer: This document is meant as a tool to help guide your entrance into a paperless system. We intend to only suggest the tools and devices that have been recommended by current students at BUSM and other medical schools. Student testimony about these devices is included in this document, Italized and in blue. Purchasing these devices is a significant investment and all options should be considered carefully. We hope that this is a helpful tool for beginning your time at BU!

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General paperless tips:

- Your lectures during your first two years will be done without a printed syllabus provided by the school. (The syllabus functions as a textbook for each module. Each instructor composes a syllabus for their lectures.) Having a system to access lecture notes and presentations that works for you is paramount to your success. That being said, if working from a printed copy is best for you, there are options to have the syllabus printed for a discounted price. The FedEx on Albany Street will print for students at a discounted set price. A few students find it easier to read from a printed copy rather than using a laptop or tabled for various reasons (e.g. relieving eye strain).
- If you have not been in a paperless system before, don’t panic. There are many ways to go about using technology in medical education, and it gets some getting used to. Faculty and upperclassmen are always available for tips and suggestions.
- ALL of your written assessments at Boston University will be on a computer using ExamSoft... keep this in mind when you look into purchasing devices.

(The following is modified from a post on Student Doctor Network):
Before reading about specific options, think about what you want to do with your tablet. Do you:

- Want your tablet to be the only computer you own?
- Want to dock it with external monitors and a keyboard at home and avoid syncing hassles?
- Want to use it for presentations and/or patient education?
- Want to carry it around in your labcoat pocket in the wards?
- Want to study and work on the go, without using your phone’s 4G?
- Already own a nice laptop?
- Prefer to carry a both a laptop and tablet so as not to make any compromises?
- Need to budget your resources carefully?
- Take notes exclusively by hand and need a very precise stylus?
- Take notes mostly by typing and need a great keyboard?
- Need to budget so that you can afford other equipment?

**Ideas for Tablets/Laptops**

**iPad Pro > iPad and iPad Mini**

- The iPad Pro is the only iPad version currently compatible with the Apple pencil (see stylus section for more information about the Apple pencil).
- Available in two screen sizes: 9.7 inches or 12.9 inches
- Bluetooth Compatibility
- Screen resolution:
  - 2048 x 1536 resolution for the 9.7 inch
  - 2732 x 2048 for the 12.9 inch
- ~10-hour battery life
- Complete software cross-compatibility with Apple laptops and phones

“If you learn best by writing and/or highlighting and annotating, the iPad Pro is a great way to transition to a paperless system. I started out with an iPad Mini and a stylus from Amazon. After trying that, I exchanged both for the iPad Pro (the 9.7 inch version) and the Apple Pencil. The Apple Pencil is the only stylus I’ve tried to use with an iPad that writes as if I’m writing with pen and paper. I was initially resistant to converting to a paperless system because I learn best by writing rather than typing. But the combination of using the iPad Pro, Apple Pencil and Notability has helped me transition to be completely paperless. I am able to annotate my slides while listening to lecture, as well as highlight and annotate the syllabi when reading them. I also make review notes on Notability (using my laptop as a second screen since Notability can sync across iCloud) so that everything is in one place.”
iPad Mini > iPad

- Both are about equal for the classroom phase of medical education
- In 2011, Yale School of Medicine offered iPads to their students, and 99% of the students currently use them now as one of the predominately tools in their classroom and clinical education.
- iPad Mini 4 – 8” x 5.3” - 7.9” display
- 2048 x 1536 resolution – Great for learning anatomy
- Wi-Fi (802.11a/b/g/n/ac); dual band (2.4GHz and 5GHz)
- Bluetooth Compatibility
- ~10 hour battery life
- Complete software cross-compatibility with Apple laptops and phones
- Least expensive, iPad Mini 16 GB model: under $300

“I bought mine refurbished for $300, and I found that it was easy to use. It’s really easy to use to annotate slides. I felt that Noteability was the best app to use, as well as the Adonit stylus. Occasionally I still find myself taking notes on paper. My biggest problem was when the iCloud didn’t sync between my computer and the iPad, which I think was more of an iCloud issue. I think that the iPad mini might be preferable though, because apparently it can fit in the pocket of your white coat!”

“I used an iPad Mini this year for lecture, and I found that it helped me follow along with the professor’s notes. I was able to scroll back to slides that I may not have completely understood, and this helped answer questions during the formative evaluations that happen in many of the lectures. I had never used it for class before, and it did take some time to get used to. However, I feel that it was really nice to have everything in one place, especially when I was travelling and didn’t have access to internet. I could find and review all of my notes on my tablet, which made first year a lot easier.”

Microsoft Surface Pro 3 (or 4)

- 12-inch PixelSense Touchscreen
- 2160 x 1440 resolution
- Includes Surface Pen
- 4 GB of RAM
- ~9 hours of battery life
- Runs Windows 10, works very well with OneNote (Microsoft’s note-taking software)
- Recommendation - get a cover and sleeve for the Surface
- Note-taking cross-compatibility with other devices depending on software used.

“This device was a game changer and definitely made it advantageous to go paperless because I could just write on the PDF’s and store them on my computer.”
Dell Inspiron 11-17 (newest versions)
- Large price and performance range
- 11-17” touchscreen or non-touchscreen option
- Large variance in resolution and storage space, depending on model
- Compatible with ExamSoft
- Most versions include stylus
- Operates on Windows 10, good for OneNote (see software)
- Meant to be a “2-in-1” laptop/tablet
- ~8 hours of battery life

“I could totally see myself using this to help patients’ visualize virtually anything (by way of graphs or 3D models they can play with). Also super easy to carry around (scroll through like a tablet while you walk, open it up to type).
I have a second monitor, and I can still use the touch screen while I have it hooked up (helpful for taking notes if watching lectures at home and doing BioLucinda stuff; definitely need a stand alone mouse for this)

General advantages: I really like Windows 10, light, decent speakers, perfect size for notes, 7+ hour battery life

Disadvantages: spinning disc hard drive kind of a bummer (I was on a budget), and there was this one time I accidentally hit the power button while exam soft was still running and my hard drive got stuck in a loop (ended up uninstall->reinstalling Windows all together)”
Software

Note-taking software is definitely dependent on your personal preference. Many of the current softwares are easy to use, and there are tutorials for all of them available on the BU website at

Notability

“Despite this app costing money, I think it’s the best one out there. It’s easy to create an organized system for your notes for school, as well as calendars and sketchbooks for your general life.”

The pros:
- Good for note taking on PDF versions of lectures.
- Can import and back up with Blackboard as well as Google Drive.
- Syncs with other devices, including phones and computers as long as you have the app.
- Costs $5.99 to buy.
- Can record audio from lectures, and the notes will sync with the recordings.

What people didn’t like about it:
- Eraser function is a little “finicky”
- Costs money
- Currently only compatible with iOS

OneNote

“OneNote is amazing, very organized. There’s one app that is the "full desktop" version, and one that is streamlined for quick, in class stuff. They automatically sync (also auto sync to OneCloud). I also use drawing apps such as Bamboo Paper a lot to make drawings of pathways etc. The screen is a perfect size, and it’s very light. Touch screen is essential for good in-class notes. Mouse is helpful for BioLucinda”

The pros:
- Free
- Best for Windows compatible devices, but does run on Apple products as well.
- Can zoom and take notes on slides, not a bad replacement for pen and paper.
- Can edit at the level of a slideshow, word document, or a free sketch space.
- Plenty of tutorials and testimonials are available on Youtube
What people didn't like about it:
• Cross-compatibility on Apple products is pretty complex
• Some students found it “clunky” in contrast to Notability and some other software.

Other Note-taking softwares that students used:
• Growly (for Apple products)
• iAnnotate (Android)
• Mendeley
• Skim

See http://medlib.bu.edu/computing/pdfutilities.php for other suggestions about PDF resources!
**Stylus:**

Adonit – *If you are going to buy an advanced stylus*, this is the most recommended for Apple and Android tablets

- 1.9 mm tip
- 2,048 levels of pressure sensitivity, palm rejection – Students say that it has “unparalleled precision”.
- $12.99-$99.99
- Comes in multiple colors
- Fine point stylus, not a rubber tip
- Magnetic cling

“I love this stylus. I just googled ‘best stylus’ at the beginning of the year and never looked back. It was infinitely better than the rubber tip ones that I had used previously.”

Wacom Bamboo Stylus

- Fine tip for precisely capturing notes and ideas on your iPad
- Pressure sensitive
- Palm rejection technology allows you to rest your hand on the screen while writing
- Rechargeable with standard Micro-USB Cable (included)
- Free Bamboo Paper app and fine line pack to enhance your digital writing experience
- Comes in multiple colors

Apple Pencil

- Only compatible with iPad Pro
- Fine tip
- Pressure-sensitive tip
- Palm rejection technology
- Rechargeable by simply plugging into you iPad Pro or with Micro-USB adaptor (included)
- 12-hour battery life
- $99

Other stylus ideas:

- Dimples 2-in-1 Stylus
- Musemee Notier v2
- FiftyThree Pencil
- Adobe Ink and Slide