VCU is focusing on 2010 as the VCU Year of the Environment. The program highlights the contributions an organization can bring to help improve Virginia’s sustainable practices and the impact on our limited natural resources. How we interact with the environment has long been a topic of concern at local, regional and national levels. Signs of “going green” have become synonymous with good practices both at home and in business. “It is my hope that sustainability becomes an integral component of the academic, administrative, clinical, operational and research activity VCU engages in every day,” said Jacek Ghosh, VCU’s director of sustainability. I would like to see sustainability become ingrained in VCU’s DNA as a matter of course.” With this goal in mind, VCU Technology Services Developed this green computing guide to assist you in helping the environment while still gaining the benefits of the technology we all use every day at VCU.

Greater use of technology comes at a cost to the environment. It’s not just the number of computers in use that drives energy consumption upward, it’s how we use computers. National research reveals that most personal computers are left on continuously. EVERY time we leave a computer on we waste electricity!

You may wonder, “How much energy does my computer system use?” Typically a desktop PC system is made up of a CPU or “box,” monitor and a printer. The CPU may require around 100 watts of electrical power; add 50-150 watts for a 15-17 inch monitor (add proportionately more for larger monitors). Laser printers add 100 watts or more when printing (less if idling in a “sleep mode”), and ink jet printers use around 12 watts while printing. How a computer is used can have an impact as well. For example, continuous operation (day and night, every day) for a 200 watt PC system would cost approximately $125 annually in electrical costs. However, for the same system operating during normal business hours, but shutdown after hours, the annual electrical cost would be around $30. Of course, considering the benefits of computer use these costs may not seem like a lot. When they are multiplied by the thousands of computers in operation at VCU they are substantial both monetarily and to the environment.

We are not suggesting you stop using your computer! We are recommending that energy efficient computing practices. Just implementing the recommendations in the sidebar on this page make it feasible for you to reduce your energy consumption by 80% or more while still retaining most or all of your productivity.

Screen savers save no energy:
If your screen saver is on your monitor for more than 5 minutes you are wasting energy! Screen savers were designed to help protect the lifespan of monochrome monitors that are seldom used anymore.

Enable power management features:
Most computers and monitors today can be set to automatically “power-down” to a low power state when not being used (without any sacrifice in computing performance). The EPA estimates that providing computers with “sleep mode” reduces their energy use by 60-70%. The recommended settings are 20 minutes for monitor sleep and 30 minutes for system sleep. Follow these simple steps to set up a Macs & Windows computer:

Macs:
1. For any Mac running Mac OS X 10.4 and above, select the Apple () menu.
2. Select “System Preferences…”
3. Click on “Energy Saver” and adjust the settings

Windows:
For Windows computers running XP, Vista, or Windows 7 operating systems:
1. Select the “Start Menu”
2. Select “Control Panel”

For XP
3. Click on “Power Options” and adjust the settings

For Vista & Windows 7
3. Select “Hardware and Sound”
4. Click on “Power Options” and adjust the settings
**Green Computing Practices**

While you can take giant steps toward being more environmentally responsible by conserving energy with your computer, green computing involves more than just conserving energy. Green computing looks at our printer paper, toner cartridges, purchasing decisions of new equipment and disposal of old computer equipment.

**Reducing Paper Waste:**

Computers did not create the "paperless office" they promised. In fact, computer use has vastly increased paper use and waste!

Here are some suggestions for reducing paper waste:

- When documents are printed or copied, used double-sided printing and copying.
- On larger documents, use a smaller font size to save paper.
- Use e-mail whenever possible in place of faxes. When you must fax using hard copies, save paper using a “sticky” fax address note and not a cover sheet.
- When general information documents must be shared, try circulating them instead of making an individual copy for each person. Or share via Blackboard. For non-sensitive data, sharing services such as Dropbox, Sugar Sync, and ZumoDrive are also available.

- Remember that we are required to purchase and use recycled paper at VCU.
- Print as little as possible.
- Review and edit on screen; use print preview. Save information electronically instead of printing. Visit go.vcu.edu/sustainabilitytaglines for sustainability tag lines to use in email.
- Recycle waste paper.

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**When not in use, turn off the juice:**

This is absolutely the most basic of all energy conservation tips—if you aren’t using the equipment turn it off. Turning your computer on/off will not harm it. The common misconception that turning it on/off shortens the computer lifespan has led some to always leave computers on. According to research, computers are designed to handle 40,000 on/off cycles. This is considerably more than the average user will need in a 5-7 year life span of a computer. Turning your computer off helps reduce heat stress and wear on the system.

**Other suggestions for “Going Green:”**

Try to break the habit of turning on all of your computer equipment as soon as you enter the office each day.

Avoid using the switch on a powerstrip to turn on all of your equipment.

If you use a laser printer, don’t turn your printer on until you are ready to print.

Turn off your entire computer system (CPU, monitor and printer) or at least your monitor and printer when you go to lunch, a meeting or will be out of the office.

Explore ways to turn servers monitors off at night and weekends.

For your laptop and other portable devices, unplug your charger when you’re not using it. Chargers left plugged in continue to use energy.

We know that all of the above suggestions may not be appropriate for all work situations. Explore which ones you can adopt without reducing your productivity.
Reusing and Recycling:

VCU generates thousands of spent toner and inkjet cartridges and batteries each year. Instead of throwing these into the garbage, they can be recycled to save resources and reduce waste. Many toners that are purchased include a pre-paid return package for recycling the spent cartridge. Take a moment and drop that used cartridge in the mail for recycling. VCU has recycling locations on both campuses for toner, cartridges and batteries.

Disposal of Old Computer Equipment:

At VCU the Facilities Management Department is responsible for the disposal/surplus of all old computer equipment.

For policies and procedures regarding proper disposal of your old computer equipment, visit: http://www.fmd.vcu.edu/fmdsurplus/Surpro.htm

If you would like more information about VCU’s Year of the Environment, visit: http://www.yearofenvironment.vcu.edu/

To see about VCU’s ongoing efforts with “Going Green”, visit http://www.vcugoesgreen.vcu.edu/

Additional VCU Technology Services resources can be found at our site, http://ts.vcu.edu/

Purchasing New Computer Equipment:

Before you buy new equipment make sure there is need. Ask yourself, “Do I really need a new computer or printer? Can I meet my needs by upgrading existing equipment? Is there a solution in software rather than hardware?” Remember environmentally responsible computer use implies not buying new equipment unless there truly is a need. If you’ve asked the hard questions and decided that you have to get new equipment, buy efficient and buy green! Here are some things to keep in mind:

Do research online for the best environmentally friendly options for your needs (and comply with VCU’s purchasing guidelines).

Buy only Gold or Silver rated computers, monitors and printers. See EPEAT.net for equipment ratings. Flat panel monitors use half of the energy of a CRT (cathode-ray tube) display.

Bigger isn’t better! Buy a monitor only as large as you need. A 17-inch monitor uses 30% more energy than a 15-inch monitor when in active mode.

For your desktop printing buy an inkjet printer, not a laser printer—they use 80-90% less energy than laser printers and the print quality can be excellent!

If possible, share a network printer.

Additional resources:
The Ohio University “Green” Computing Guide, University of Oregon “Green Computing Guide” and The University of Colorado-Boulder “Green Computing Guide” were all used as resources for this guide.