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# Rethinking the Public Workstation

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Guest Columnist**

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When I finished reading Amy Wallace's manuscript, I knew it needed to be the next Accidental Technologist column. Amy's experience with users' constantly changing technology needs will resonate with all frontline librarians. Her library's response is a readily available but often overlooked technology and her advice will be of great use to libraries in their quest to provide access to a variety of computer peripherals, both cutting-edge and legacy. As promised in my first column, I have provided my thoughts on emerging (and retreating) technologies in the sidebar.—*Editor.*

**O**pen any glossy news magazine and you will find articles on all sorts of exciting technologies that are revolutionizing learning in our universities. The pervasive media coverage leads one to believe that every incoming student has a tablet PC, iPod, PDA, and cell phone that can do everything including cook dinner. Okay, maybe not actually cook dinner, but have it delivered to them from their favorite take-out place. Many of these technologies are portable and will no doubt turn up in libraries sooner than we think. Colby Riggs, in her two part *Library Hi Tech News* article, details a number of such technologies, including the SanDisk Folding Universal Serial Bus (USB)/SD Card; the Pupillo video camera for video calls; the Cellstik that backs up information stored on cell phones; the TuneBuckle iPod Nano Belt that serves as an iPod case while holding up your pants; the Thanko MP3 Watch that records and plays music; the U3 Smart Drive that stores Windows settings and applications for use on other PCs; and the Eyebud 800 that records images directly to an iPod.<sup>1</sup> Additional items can be found by browsing the latest editions of popular computer magazines. Some examples include the Pure Digital single-use camcorder, the SanDisk Cruzer Crossfire drive with preloaded interactive games, and the Young Micro USB 2.0 Adapter for using old 2½-, 3½-, or 5¼-inch drives.<sup>2</sup>

The pressure from our users to support these technologies is enormous. Shoham and Roitberg's study on the uses of public workstations concludes that "from the user's point of view, learning is not divided into library and non-library uses. For the benefit of the students, libraries should offer them all learning tools under one roof and in one workstation."<sup>3</sup> Academic libraries everywhere are scrambling to meet these demands either by launching new services or finding new ways to support these must-have technologies with existing services. This scrambling, however, is nothing new and not just reserved for academic libraries. Libraries have always had to grapple with implementing new technologies to support user demands. In some cases, decisions to provide

support for a new hip technology has paid off, and in other cases libraries invest many dollars and work hours to find out a technology is passé just as it is implemented. Walk into any library and you are likely to see remnants of technologies past, including computer towers with out-of-order zip drives, specialized workstations languishing off in a corner, microform readers, or massive televisions occasionally used to view VHS tapes and DVDs.

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## LIMITS OF TRADITIONAL PUBLIC WORKSTATION PLANNING

Because it seems like libraries are always playing catch-up, it might be a good time for them to revisit how they interface with emerging and legacy technologies in general, instead of considering each individual technology or groups of similar technologies as they come along. To do this requires libraries to rethink the concept of the public workstation. The ideal public workstation has been a one-stop shop that allows all users to accomplish any desired function without waiting. *Library Technology Reports* notes that “public workstations in the library tend to offer the following features: access to the library catalog, access to Web-based electronic resources, access to CD-ROM-based electronic resources, productivity software, and e-mail and instant messaging.”<sup>4</sup> To help with planning, the same report also encourages libraries to gather formal or informal statistics on things like the total number of workstations, number of sessions per workstation per time period, sessions per type of user, applications accessed and number of sessions per application, measurements of activity, and pages printed per workstation.<sup>5</sup> Although the report is four years old, the planning model presented is not much different than ones presented today or even ten years ago.

The typical result of workstation planning—considering cost, function, space, and use—is usually not the ideal one-stop-shop workstation, but rather a plan for several different kinds of workstations with a clear idea of how many of each kind will be installed and in which location. A plan may call for a large number of workstations that provide access to Web-based resources, some computer workstations that provide access to specific electronic resources and applications, some kiosks set up for a specific task, some specialized multimedia stations configured to view and edit, or other workstations that meet site specific needs. Even with all the recent discussions on creating the “information commons,” the end result of workstation planning today does not look that different from five or ten years ago. Church’s article on a newly designed information commons describes a general and registration-express workstation, but also notes that the library has scanner and media workstations located in another section of the library.<sup>6</sup> Hein’s article on the same topic describes a general workstation as well as kiosks to access the catalog and course reserves, scanning workstation, and CD-ROM computers.<sup>7</sup> Neither article mentions if the workstation plan considered audio, video, or other single-use workstations. Libraries have not yet been able to achieve the goal of the single workstation that can do everything for everyone.

Unfortunately for libraries, the ideal public workstation is different for every single person. The ideal public workstation of today may also not be the ideal public workstation of tomorrow. As a result, even after hours of planning and implementation, there is still the very real worry that a user will come in and need access to something that was not considered in the plan. Library workstation planning tends to be based on what are considered traditional library functions and the current technologies associated with those functions rather than on how more and new technologies are being woven into these tasks. Workstation planning often focuses on computer functions and overlooks functions that are already served by existing specialized video, audio, or even microform workstations. Current discussions about public computing in libraries focus primarily on the use of thin-client technology or personal laptops and handhelds in a wireless environment.<sup>8</sup> These forays have not directly addressed the challenge of how libraries can better interface with emerging and legacy technologies; but all is not lost. Other new technologies may provide the missing link in the quest for the single public workstation that does it all.

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## NEW MODEL FOR PUBLIC WORKSTATION PLANNING

How can libraries plan for a low-cost, multifunctional, space-saving, old- and new- technology-friendly public computer workstation? One answer is to design a more flexible public workstation that can serve as an interface for unknown future technologies just as it has for traditional library resources and applications. The library could then provide access to technologies on an as-needed basis. Users could either bring in desired technologies, or check them out from the circulation desk. One technology that has the potential to take libraries a long way in providing a more flexible workstation is the USB. This technology is poised to have an enormous impact on the delivery of services and resources via the public workstation, yet it is rarely talked about in library literature and continues to be underutilized in libraries.

USB technology has been around since 1995, and is available on many existing library workstations, but often is not accessible. On most existing workstations the USB port is located on the back of the central processing unit (CPU) or hidden under some secret flap. The CPU is then tucked away under a desk or stashed behind a giant monitor. Even if a user can find the USB port on the library workstation, the port might already be taken by some predetermined peripheral, or the port might be locked down so the public cannot use it.

A number of advantages would result for libraries if they made USB ports more accessible to their users and if they made USB technology the central focus of public workstation planning. An article about the “new mobile scholar” mentions two key advantages of USB technology.<sup>9</sup>

The great advantage of the USB is, as the name suggests, its universality. Almost everything can be attached to a computer, even such large and energy-greedy items as printers and scanners are now available in USB format.

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## ACCIDENTAL TECHNOLOGIST

Another advantage of USB technology is that it permits hot swapping. That is, devices can be connected and disconnected while the PC is turned on.<sup>10</sup>

Still other advantages include the support of legacy hardware such as external floppy or zip drives, the capability to connect to wireless devices using Certified Wireless USB, compatibility with many emerging technologies such as the Thanko MP3 Watch or U3 Smart Drive mentioned above, and the ability to connect devices such as headphones and DVD players that libraries traditionally have relegated to non-computer listening and viewing workstations. New products, such as the OverDrive Download Station software, which allows users to download audiobooks and music, are being pitched to libraries that require the use of USB ports.<sup>11</sup> Even microform readers are now incorporating USB technology.

All of these capabilities make USB technology a good fit for public computer workstations in libraries. Users would then have the ability to upload or download from a variety of storage devices, connect to personal peripherals, and not have to wait to power up or down to use a device. For example, a user could access information on her U3 Smart Drive (which stores Windows settings and applications for use on other PCs); or could stop by the circulation desk and check out a USB-ready headset and DVD player to view a DVD from the library's collection, a floppy drive to access a homework assignment or résumé, or a scanner to save an image.

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### MAKING IT WORK: USB TECHNOLOGY AND OUR LIBRARY

My library serves a small public university with approximately 2,200 full-time equivalents (FTE). The library installed thirty PC workstations in fall 2003, each comprised of a small tabletop CPU with CD-ROM player and front access to two USB ports. The following year, the library acquired five Macintosh computers, each equipped with a CD-ROM player and access to three USB ports (two on the side and one in the keyboard). Students and faculty were encouraged to use USB key drives to download and upload information on the public workstations, but the library soon found that some students still did not have their own USB drives, or desired to use other storage formats. The library made six USB key drives, four USB-ready floppy drives, and one USB-ready zip drive available for checkout at the circulation desk. Each device was available for a two-hour period. There were some checkout period exceptions made for the key drives, which some users wished to check out overnight in order to transfer information to their home computer or to make an in-class presentation. So far all equipment has been returned in good working order, which has meant no replacement costs. Damage to an external drive would have little impact since it would not require confusing out-of-order signs or computer downtime.

Analysis of checkout records revealed that the USB-ready zip drive had seven checkouts, the USB key drives had sixty-

eight checkouts, and the USB-ready floppy drives had 299 checkouts during the 2005–2006 academic year. Although there were never any waits for, or holds placed on, these items, the usage statistics for these items gives several insights into our users' public computing needs. Few users are using zip disks, but it still seems worth the \$149.99 investment to have a zip drive on hand when needed.<sup>12</sup> There was a bit more demand for the USB key drives, which definitely came in handy for those who did not have one of their own and needed to transport something that could not be e-mailed or saved to another storage device. Most often these situations involved making a presentation in a campus classroom or transporting large files to a home computer or campus lab to complete tasks. The USB floppy drives had the highest circulation, but usage still only amounted to approximately six hundred hours. Again, purchasing four USB-ready floppy drives at \$31.95 apiece seems like a relatively inexpensive way to have them available when people need them. Prior to last year these items were checked out by hand, and not via the integrated library system, so no usage statistics were retained. When informally polled, the circulation staff agreed that zip drive use probably was about the same, floppy drive use was probably up, and key drive use probably was down from the previous year.

In addition to these three items, the library also circulates USB-ready audio, video, and image technologies that can be used for class projects. The audio and video recorded on these devices can then be uploaded to library workstations, library-circulated laptops, or other computer labs on campus via the USB port (for editing, addition of text, and background research), and then downloaded to be used in class presentations somewhere else on campus. All of these audio and visual items are extremely popular and usually have users waiting to check them out as soon as they are checked in. Our library currently circulates four Canon Power Shot G2 cameras, ten Canon Power Shot G6 cameras, and ten digital audio recorders for use in language courses. What's more, this trend does not seem to be restricted to small public universities like our university. At a recent local program, a librarian from a large private university talked about the success her library had circulating equipment needed to create podcasts for course assignments. Last year the large private academic library circulated each piece separately, but is considering circulating all pieces as a kit next year to assist users who do not know which pieces to pick and choose.

The reliance on USB technology for public workstations has been a great success for our library for the following reasons:

1. **No need to purchase zip or floppy drives for each public workstation**—Students could still use a zip or floppy drive on any workstation by simply checking one out from the circulation desk. As a result, the overall cost and footprint of the workstation was reduced.

2. **Ability to purchase relatively inexpensive drives to meet user demands**—If damaged, the devices do not require any downtime for the workstation.
3. **Easy for library users**—Users did not have to search around to plug in drives and other peripherals, since the drives are located front and center on the computer. Users also did not have to power up and down the workstation to use a new device.
4. **Enables the use of more than one drive or peripheral at the same time**—For example, a user can move a class project file from her USB key drive to another group member's USB key drive without saving anything to the workstation.
5. **Allows libraries to take advantage of emerging technologies.** The library can quickly provide access to new technologies without designing a new type of workstation or waiting until the end of a computer replacement cycle.

It is difficult to guess what technologies users will request this year or next, but USB connectivity gives libraries the flexibility to allow users to upload to all types of platforms, or download from a variety of devices, wherever and whenever they are working on a project. The digital audio recorders purchased this year are one example. Using the results from a recent user survey, the library has also identified a demand for USB-ready CD burners and scanners. Each device can be purchased for less than \$100 and checked out to give scanning and CD-burning capability to all of the library's public workstations.

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## CHALLENGES OF USB TECHNOLOGY FOR LIBRARIES

There are some obstacles to putting USB technology front and center on the public workstation. The foremost concern is security. Our library has not experienced any security concerns related to allowing increased access to USB ports and allowing users to connect personal peripherals. The library has focused on promoting library-purchased devices that can be checked out, but also allows users to bring in their own personal electronic devices. Hines's article mentions that "the security risks from such digital toys—not to mention smart phones, digital music players, and USB drives—are growing."<sup>13</sup> Some companies that allow employees to connect gadgets to USB ports have acquired cameras or implemented programs to monitor use. Others have installed software that blocks access to certain devices. Despite these measures in the private sector, there has been little discussion on the appropriate use of USB technology in libraries, or guidance to help develop circulation

## EMERGING (AND RETREATING) TECHNOLOGIES

This time the Accidental Technologist offers up a trio of related technologies. Can you spot the theme?

### Withering—OPAC

Long the standard of access to the bibliographic surrogates that describe our library materials, they are as unappealing and difficult as this sentence. Librarians are beginning to realize that there might be other options and that we do not have to rely on our ILS vendors to supply the solutions to access. The MARS Hot-Topics discussion, "Not Your Dad's OPAC," at the 2007 ALA Midwinter Meeting drew 275 audience members. One of the most provocative statements came from the audience: Do we need the OPAC anymore?

### Sprouting—Collaborative Tagging and Social Bookmarking

Perhaps easier to see in context than to describe, del.icio.us and LibraryThing all use this technology to allow individual users to define how content is categorized. Other users can find items of interest by searching for terms, finding content tagged with that term, and then moving to other items with the same tag. Since items can be given multiple tags, a user can move on to related (or unrelated) items by clicking the links for those terms. Might remind you of subject headings, but user-generated. There are undeniable advantages to this in that users define what they find as important about the content and then share it with others. It is interesting to librarians that participants in social tagging are starting to notice problems with lack of hierarchical structure—for instance, searches for "vegetable" don't bring up items tagged as "corn." See PennTags for an example of collaborative tagging in a library environment. A hot-off-the press Pew Report on tagging has found that 28 percent of Internet users have tagged online content.

Sites: <http://del.icio.us>, [www.librarything.com](http://www.librarything.com),  
<http://tags.library.upenn.edu>,  
[www.pewinternet.org/pdfs/PIP\\_Tagging.pdf](http://www.pewinternet.org/pdfs/PIP_Tagging.pdf).

### In Bloom—Going Where the Users Are

Last column I mentioned Instant Messaging (IM), but there are many other ways that librarians are placing themselves in user spaces. This is not without controversy, (are we invading users' space?) but increasingly, libraries are forging ahead into the social networking arena of MySpace and the gaming world of Second Life. Articles and blog posts abound about these endeavors. See in particular the category for "gaming in libraries" at Aaron Schmidt's blog [www.walkingpaper.org](http://www.walkingpaper.org). He also has some interesting posts about MySpace.

Librarians in academic libraries are also using laptops and wireless technology to offer reference service in untraditional physical spaces such as student unions and coffeehouses.



## ACCIDENTAL TECHNOLOGIST

policies for USB-ready devices. This category of access was not considered in the survey used for *Appropriate Use Policies for Computers in College/University Libraries CLIP Note #31*, and as a result no appropriate-use documents included in the appendixes really address the issue.<sup>14</sup> Sendze's recent article on securing public access computers details many security concerns that would no doubt be aggravated by increased use of USB technology in libraries, but unfortunately the author does not directly address the technology.<sup>15</sup> The security concerns are real, and as with all technologies, libraries will need to consider how to balance demand, access, and security. There have been new upgrades in USB technologies to provide virus protection; however, as more users integrate these personal technologies into traditional library activities, security concern will continue to grow.

Another prime concern is that USB technology facilitates more piracy due to the increased rate at which data can be downloaded. There are still many questions regarding tension between library missions and the steps libraries should take to prevent piracy. For example, Hoorebeck's article states both that "libraries can learn from these case studies and lessen the risk of facilitating copyright infringement by not allowing the installations of any peer-to-peer programs, not installing floppy disks or external drives and displaying relevant copyright notices."<sup>16</sup> Hoorebeck also states that the "threat of increased liability must not prevent libraries from fulfilling their potential to become fully fledged multimedia hubs."<sup>17</sup> Not installing peer-to-peer programs and posting copyright notices seem entirely reasonable, but not installing floppy disks or external drives seems to contradict Hoorebeck's second statement, since content uploaded and downloaded via a USB port could easily be material that was legally obtained or otherwise not in violation of copyright laws. One such example of appropriate use is the collection of personal electronic archives, which Burrows explores in her article, "Personal Electronic Archives: Collecting the Digital Me."<sup>18</sup> Another example might be images taken on a cell phone to document some assertion made in a term paper. Yet, as libraries delve into interfacing with and circulating storage devices, it will be important for them to consider the procedures for preventing piracy and protecting privacy. Policies may need to address what happens when a USB key drive is checked in with downloaded copyrighted material or a patron's personal information, or a digital audio recorder is checked in with interviews for a research project.

There are limitations to USB technology that may be of concern to libraries. Axelson's book notes that "limits to be aware of include speed, distance, lack of support for peer-to-peer communications, no ability to broadcast, and lack of support in older hardware and operating systems."<sup>19</sup> The USB developers continue to work to improve speed with the launch of Hi-Speed USB, but other products still claim to have faster data transfer rates. Developers have also released Certified Wireless USB, which supports peer-to-peer communication with a variety of devices (printers, external hard drives, PDAs, DVD players), and is comparable in speed to

Hi-Speed USB at close range. Our library has not yet begun to experiment with Certified Wireless USB, but it may be an option for the increasing demand for printing to public printers from personal and library-circulated laptops. Also, some older computers may not have USB ports, the ports may not be high-speed ports, or ports may not be easily accessible to the public. If there is no port or the port does not support higher speeds of data transmission, a library may have to wait for a refreshment cycle or raise funds for new computers to utilize USB technology. If the port is hidden from public access, the library may be able to purchase inexpensive extenders to make the technology more accessible.

Last, our library found that "plug and play" is not the same as "plug and complete the needed task." Many devices need software to edit data, audio, images, or use the device. Software may need to be loaded to each computer to use scanners, burners, or recorders. For some libraries that use a single image or provide network access to software, this may not be a big deal, but to other libraries this may be a major obstacle.

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## CONCLUSION

Despite the merits or challenges, USB technology is here to stay. More products than ever can connect to other devices via a wired or wireless USB port. These products are ending up in libraries, and people desire to use them to complete both traditional and new library tasks. There are many merits to planning public workstations that better utilize USB technology. The technology supports traditional public computing in libraries and is easy to use. It allows for more flexible workstations by supporting legacy technology, audio/video viewing, microform stations, and adaptation to future unknown technology needs. When used in conjunction with item checkout, this technology is both cost effective and saves space. Libraries that choose to place USB technology front and center will, however, need to address security, piracy, and privacy concerns. Some libraries will also need to consider the age of their equipment and potential software installations before implementing this approach. The capabilities of USB may even allow libraries to move one step closer to the goal of a single workstation.

Our university is scheduled to open a new library in 2008, and will consider a plan for a single public workstation that relies on USB technology to enhance access and flexibility. Although the library opening is eons away in "technology time," we will continue to strive for the ideal. It will be an exciting day for libraries when our users can sit down and plug in a USB drive that contains all of their personal computer settings, old papers, and research materials, and write a paper while simultaneously interfacing with our resources, our reference librarians, and their music on a next-generation player.

## References and Notes

1. Colby Riggs, "New Gadgets on the Horizon," *Library Hi Tech News* 23, no. 2 (Mar. 2006): 16–18; Colby Riggs, "New Gadgets on

- the Horizon: Part 2," *Library Hi Tech News* 23, no. 3 (Apr. 2006): 22–25.
2. Greg Scoble, "Pure Digital Revamps Single-Use Camcorder," *TWICE: This Week in Consumer Electronics* 21, no. 10 (May 8, 2006): 8; "SanDisk Debuts Game Content USB Drives," *TWICE: This Week in Consumer Electronics* 21, no. 13 (June 19, 2006): 6; Steve Blass, "New Uses for Old Hard Drives," *PC World* 24, no. 8 (Aug. 2006): 41.
  3. Snunith Shoham and Nurit Roitberg, "From Electronic Library to Learning Center in the Academic Library: Integrating Traditional and New Uses in the Library Workstation," *Journal of Academic Librarianship* 31, no. 4 (Jul. 2005): 345.
  4. "In-Library Public Workstations," *Library Technology Reports* 38, no. 3 (May/June 2002): 56.
  5. *Ibid.*, 59.
  6. Jennifer Church, "The Evolving Information Commons," *Library Hi Tech* 23, no. 1 (2005): 75–81.
  7. Karen K. Hein, "Information Uncommon: Public Computing in the Life of Reference," *Reference Services Review* 34, no. 1 (2006): 33–42.
  8. According to Diana Romm, "Thin clients differ from PCs or 'fat clients' because their applications and data are stored on the server, rather than on the thin client itself. In a PC network, some applications and data may be stored locally on the personal computer itself and some may be stored on the server. In a thin client network, all of the applications and data reside on the server. The thin client is simply a device from which to send requests and on which to see the results. Thin clients are essentially empty boxes, much like the original "dumb" terminals that connected to a mainframe." Romm, "It Pays To Be Thin," *Library Journal* 131, no. 2 (Feb. 2006): 34.
  9. David B. Bills et al., "The New Mobile Scholar and the Effective Use of Information and Communication Technology," *First Monday* 11, no. 4 (Apr. 2006): 1–14. [http://firstmonday.org/issues/issue11\\_4/index.html](http://firstmonday.org/issues/issue11_4/index.html) (accessed Jul. 6, 2006).
  10. *Ibid.*, 4.
  11. "OverDrive Announces OverDrive Download Station," *Advanced Technology Libraries* 35 (Apr. 2006): 7.
  12. It is important to note that the costs included in this article were actual costs at time of purchase. Prices for USB-ready zip and floppy drives continue to fall.
  13. Matt Hines, "Gadgets Present Security Conundrum," *eweek* 23 (May 22, 2006): 20.
  14. Jane H. Tuten and Karen Junker, eds., *Appropriate Use Policies for Computers in College/University Libraries CLIP Note #31* (Chicago: ALA, 2002).
  15. Monique Sendze, "The Battle to Secure our Public Access Computers," *Computers in Libraries* 26, no. 1 (Jan. 2006): 10–16.
  16. Mark Van Hoorebeck, "Health and Safety and Piracy: Legal Risk Minimization in Libraries," *Electronic Library* 22, no. 3 (2004): 235.
  17. *Ibid.*
  18. Toby Burrows, Personal Electronic Archives: Collecting the Digital Me," *OCLC Systems & Services: International Digital Library Perspectives* 22, no. 2 (2006): 85–88.
  19. Jan Axelson, *USB Complete: Everything You Need to Develop USB Peripherals*, 3d ed. (Madison, Wisc.: Lakeview Research, 2005), 10.

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#### FROM THE EDITOR CONTINUED FROM PAGE 7

There are several people I need to thank on the home-front. While professionally rewarding, the editorship of a journal is a time-consuming task and requires institutional support. I would not have been able to assume this role without the support provided by my institution, The Pennsylvania State University Libraries. In particular, I want to thank Dean Nancy Eaton, Associate Dean Sally Kalin, and Gary W. White (head of the Schreyer Business Library). Additionally, I am grateful for the financial support provided through the Louis and Virginia Benzak Business Librarian Endowment. Monies from this endowment have enabled me to employ Christopher T. White (a gifted doctoral student in English) as an editorial assistant. Finally, I want to thank my husband and son for their willingness to pick up the slack at home when I have been preoccupied with deadlines.

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#### ERRATUM

The From the Editor column in the Winter 2006 issue (Volume 46, No. 2) contains an error on page 5. The corrected text should read:

*RUSQ* employs a double-blind review process, meaning that the author does not know the identity of the reviewer, nor does the reviewer know the identity of the author. Manuscripts submitted to *RUSQ* are sent to two reviewers for evaluation.

The editor apologizes for the error.