

## June Oshiro: Knitting Words with Joy

The cover of the January 2002 issue of *Nature Genetics* featured a knitted fabric swatch with a double-helix design. It was based on a DNA scarf pattern designed by June Oshiro, now a medical editor in the Section of Scientific Publications at Mayo Clinic (Rochester, Minnesota).

Oshiro enjoys designing patterns, but her paths to medical editing and knitting do not seem to have had a formal pattern. “It’s a long story,” she replied when asked why and how she found her knitting and editing passions.



### Life in the Laboratory

Oshiro graduated with a bachelor’s degree in biological sciences from the University of Chicago in 1996. During her undergraduate education, she interleaved biology courses with courses in the arts and humanities. “I probably developed a love for creative arts because of the courses that I took,” she says. “But I could not forgo my interest in working in the laboratory.” Oshiro earned a master’s degree in food science, with a concentration in microbiology, from Rutgers University in New Jersey, graduating in 1999.

Determined to continue exploring microorganisms at the molecular level, Oshiro pursued a doctorate in microbiology and molecular genetics at Rutgers University. However, while studying for her PhD, Oshiro came to a sad realization: “For all my academic and laboratory efforts, I had only a few publications,” she says. She turned to knitting as a hobby that would rapidly bring her tangible results.

### Knitting Engrosses Oshiro

Oshiro taught herself to knit and subscribed to an online group devoted to the discussion of knitting. One day, a group member described her unsuccessful attempt at designing a DNA pattern. Because Oshiro’s PhD research involved yeast genes, she was inspired to combine art with science to design a knitted DNA cable.

But Oshiro’s true inspiration occurred later that day in a biochemistry class: although her body was in class, her mind was in a DNA knitting world. She used a tape recorder for transcription (not DNA transcription!) later. “The lecture could wait,” she said. Immediately after class, Oshiro grabbed her materials and sat in her parked car. Instead of driving back to the laboratory, she began knitting the DNA motif that she had sketched out during class. “I got so absorbed in the process that I did not notice when someone walked up to my car window,” she says. When she heard, “Are you okay?” she was startled to see the looming figure of a police officer. “I saw you enter the car, and for a long time, I didn’t see you move,” the police officer explained. “I just wanted to know if you are okay.”

Finally, Oshiro had something novel to show colleagues. Ever since the *Nature Genetics* cover was published, she has jokingly referred to the DNA scarf as her most famous contribution to molecular biology. However, she credits Thomas Montville, one of her professors at Rutgers University, for the idea of turning the knitted swatch into a scarf pattern (photo on next page). The free pattern can be downloaded at [www.twosheep.com/helix](http://www.twosheep.com/helix).

# Other Than Editing

continued

## Medical Editing Beckons Oshiro

Oshiro completed her PhD in 2003. She was a postdoctoral associate at Harvard University from 2003 to 2005. She studied genetics (transcription regulation) in baker's yeast, *Saccharomyces cerevisiae*.

As a graduate student and postdoctoral scholar, Oshiro helped students with their writing, particularly those who were not native English speakers. "I helped them revise and refine their dissertations, job applications, and resumes," she says. Moreover, Oshiro also edited grant proposals and articles submitted to peer-reviewed journals. Thus, when she found that she no longer wanted to do benchwork, she considered a career in scientific editing. "I believed that even though I had no formal training, my experience in editing dissertations, articles, and grant applications could help."

Oshiro responded to a Mayo Clinic advertisement for a medical-editing position. "When I applied, I told them I had relatively little experience, but I also emphasized my eagerness to learn," she says. "Still, I was surprised and elated when I was offered the job." Oshiro had on-the-job training with seven staff editors at Mayo Clinic for 12 months before becoming an independent medical editor.

## Life as a Medical Editor

At Mayo, Oshiro edits mostly clinical-research articles before they are submitted to peer-reviewed journals. Occasionally, she edits book chapters, opinion pieces, and position papers. By the end of 2008, Oshiro had edited about 200 papers.

One challenge that Oshiro faces in her work is that sometimes authors do not understand changes made in their papers during editing. But she usually convinces them: "Oh, I get it now," she hears after such authors are satisfied by her explanations. "At Mayo Clinic, I am glad to be working with pleasant people who are detail oriented and make a great effort to conduct the best possible research," she

says. Oshiro's satisfaction in medical editing sometimes comes from authors, too. "I could not have done it without you," one author said to her after a journal with a high impact factor accepted a paper. "I am delighted when I hear such remarks," she says.

Although Oshiro works full time, she isn't always in her office on the Mayo Clinic campus. "Since August 2008, I have been teleworking from home 2 days a week," she says. "Because my commute to and from Rochester takes about 3 hours per day, the telework arrangement gives me more time to spend with my infant daughter and husband."

Oshiro's role at Mayo Clinic also includes some teaching. Every year, she and her fellow editors teach a workshop for physicians and researchers; the half-day seminar focuses on technical writing skills. She also provides guidance to authors who request individual help when preparing their research findings for publication.

Oshiro is a member of several professional organizations, including the Council of Science Editors and the American Medical Writers Association (AMWA). Since 2007, she has been the secretary of the North Central chapter of AMWA.

## Satisfaction Beyond Editing

Beyond medical editing and knitting, Oshiro enjoys blogging, handspinning, and cooking. Oshiro blogs mostly about fiber arts and food on her Web site, [www.twosheep.com/blog](http://www.twosheep.com/blog). The site has several hundred daily visitors. "Blogging is a way to connect with others, particularly people with common interests, former schoolmates, and friends," Oshiro says. "In a way, blogging also reinforces my editing skills in that I have to ensure that what I put on the site is succinct and without errors."

Oshiro continues to get satisfaction from knitting, particularly when people e-mail pictures of their DNA scarves. "A lady once sent me a photo of James Watson [the Nobelist] wearing a DNA scarf knitted



**Scarf knit by Laura Arneson using June Oshiro's DNA pattern (photo courtesy of Laura Arneson)**

from my pattern," she says. "It was such a thrill." Oshiro occasionally gets correspondence from various groups promoting awareness of genetic diseases that want to knit and auction off a DNA scarf as a fundraiser. "It is wonderful to think that a single knitting design can have an impact on the lives of others."

DNA scarves have been created by many other knitters. Jesse Loesberg, a knitter and blogger who Oshiro does not know, had this to say on the Web site "yarn boy" ([yarnboy.com/wp/?p=81](http://yarnboy.com/wp/?p=81)): "Not only was the pattern for this scarf easy to follow and fun to knit, but June Oshiro actually tricked me into creating an accurate representa-

tion of DNA, something I most certainly could not have done on my own. I'm not a scientist, but I hope that the patterns that I've put out into the world result in hand-knit items with even half the elegance." A blogger and knitter who identified herself as Thomasina ([bajada.typepad.com/everybody\\_wants\\_a\\_rock/2005/03/calling\\_all\\_gee.html](http://bajada.typepad.com/everybody_wants_a_rock/2005/03/calling_all_gee.html)) wrote: "One of my personal favorites is the DNA scarf pattern, designed by June Oshiro while she was a graduate student at Rutgers. . . . I've knit it several times, won first place at the state fair (which I credit fully to the designer), and have a post on yarn substitutions that I have tried."

## **Editing and Knitting—the Link**

For Oshiro, the intricacies of knitted designs and the internal structure of manuscripts are similar: "I enjoy the process of knitting in much the same way as I enjoy the process of medical editing," she says. "In addition, to be a successful knitter or editor, you must pay extra attention to details, and you have to strive to maintain consistency."

BERNARD APPIAH, *a graduate student in science and technology journalism at Texas A&M University, is the current Science Editor intern.*