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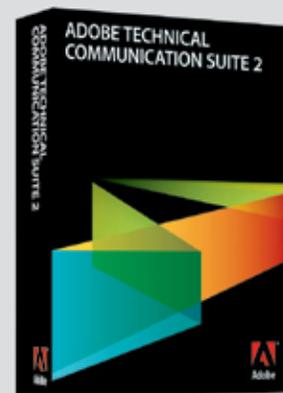
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A note from the editor

THE PAST SEVERAL MONTHS have been an exciting time to be a member of STC. Not only have the publications been improved and redesigned, offering more versions and features than even before—including an online edition of *Intercom* built on WordPress that was launched at the STC Summit earlier this month—but there are also two other developments that have been announced recently.

First, the U.S. Department of Labor's Bureau of Labor Statistics (BLS) released its newest *Occupational Outlook Handbook* (OOH) in December and "Technical Writer" now has its own chapter for the very first time. This is a result of a long-standing relationship between STC and association economist Richard O'Sullivan, principal of Change Management Solutions, who was honored for his service at the STC Summit with a President's Award.

The OOH presents some good news in its inaugural "Technical Writer" chapter as well. It states that technical writers held close to 50,000 jobs in 2008 and, more importantly, employment is expected to grow 18 percent—"faster than average," and nearly twice the rate projected for the nation's workforce in total—from 2008 to 2018. The chapter also calculates a median salary of $61,620 as of May 2008, with further breakdowns for specific industries.

Overall, the inclusion of the position and the information provided are good news for STC members and the profession.

The other good news from STC is that, on 30 April, the STC Board of Directors accepted a business case from its Certification Task Force after 35 years of ongoing discussion. The Society has embraced the idea of certification for technical communicators and, in the coming months, will be developing a certification program.

Certification creates two enormous benefits for our profession and for practitioners. First, certification establishes a solid foundation for the legitimacy and economic contribution of technical communication. Second, certified practitioners can clearly demonstrate their expertise as technical communicators, greatly enhancing their value in the marketplace.

Practitioners will become certified in six core competency areas: user analysis, document design, project management, authoring (content creation), delivery, and quality assurance. As a result, employers and clients alike will now have a concrete idea of the expertise, contribution, and value that technical communicators bring to the marketplace.

Expect to hear much more about certification in the coming weeks, including the official press release in the June issue of *Intercom.* Stay tuned for a page on the STC website dedicated to promoting certification and explaining the value of certified technical communicators.

When you couple all of these developments with the articles in the May issue of *Intercom,* from other sectors of the technical communication family tree, it is clear that the need for technical communicators is stronger than ever.

LIZ POHLAND

Career Opportunities *in the* Pharmaceutical Industry

By **SCOTT A. MOGULL** | *Member*

In this article, I provide an overview of the pharmaceutical drug development and commercialization processes and highlight opportunities for technical communicators to contribute to the development of regulatory documentation and technical marketing materials.

Product Development and Regulatory Genres

The drug development process is a complex, multidisciplinary endeavor that requires years of investigation, development, trials, and formal reporting of data to the U.S. Food and Drug Administration (FDA). The mission of the FDA is to balance the therapeutic benefit of an agent with the severity of side effects. The FDA states, "No drug is absolutely safe; all drugs have side effects. 'Safe' in this sense means that the benefits of

> The drug development process is a complex, multidisciplinary endeavor that requires years of investigation, development, trials, and formal reporting of data to the U.S. FDA.

the drug appear to outweigh the risks." Both traditional chemical agents and the newer biotechnology therapeutics undergo a similar regulated process, although in this article, I focus on therapeutic drugs produced by pharmaceutical companies.

Prior to beginning a clinical trial, pharmaceutical companies conduct pre-clinical studies of therapeutic agents. Laboratory formulations of the therapeutic agent are tested in animal studies that model the disease condition in human populations. The objectives of the pre-clinical testing are to establish baseline information for dosage, efficacy, toxicity, and dependency. This is an important step in the process, as most drugs that undergo pre-clinical (or animal) testing are terminated at that stage—often because of a major problem that arose in the baseline information. Therefore, many potential therapeutics never reach the FDA for review and evaluation.

If a therapeutic agent exhibits promising results from the pre-clinical trial, pharmaceutical companies prepare and submit an Investigational New Drug Application (IND) to the FDA. The IND's purpose is to ensure that humans are not exposed to undue risk. The IND contains the following information:

- ▸ introductory statement and general investigational plan
- ▸ investigator's brochure, which provides technical information about the therapeutic drug to those conducting clinical trials
- ▸ protocol for the conduct of each proposed clinical trial
- ▸ chemistry, manufacturing, and control information of the therapeutic drug

Drug studies can only begin in human subjects once the IND has been approved by the FDA and the local institutional review boards (IRBs) of the hospitals and/or research institutions that are involved in the clinical research trial. Although the IND is, in practice, the first document in the drug development process, it is not officially a legal requirement to begin clinical trials. Technically, the IND is an exemption to the federal law that prevents drugs from being transported or distributed across state lines without proper approval. The IND serves to exempt a pharmaceutical company from that restriction and enables a national clinical trial.

In clinical trials, pharmaceutical companies evaluate the effectiveness of a therapeutic agent by treating humans with a specific disease. Best research design practices often include randomized, double-blind, and placebo-controlled studies in which a causative relationship can be established between the therapeutic drug and the outcomes of treatment. Pharmaceutical companies usually design clinical trials by comparing their new agent against a placebo or non-treatment condition. The comparison must be conducted in large populations in order to establish statistical significance of the therapeutic agent—although safety must be demonstrated before a large-scale clinical trial can

be started. In some cases, the placebo or non-treatment condition may be purposely excluded from a clinical trial because of ethical implications of withholding potential treatment from diseased patients.

Once the IND is approved, pharmaceutical companies begin national testing of therapeutic agents in humans. The most common process for a therapeutic agent is to progress through four phases of clinical trials. Phase 1 studies are conducted in approximately 20 to 80 healthy volunteers in order to determine an agent's safety and risk. If a therapeutic agent does not exhibit any unacceptable side effects, it may pass to Phase 2. The focus of Phase 2 clinical trials is on the effectiveness of the agent for the treatment of specific diseases. Much like the design of pre-clinical studies in animals, Phase 2 clinical trials are composed of many individuals (a few dozen to a few hundred people) with a test and control condition. Efficacy and continued safety must be demonstrated in Phase 2 in order for an agent to progress to the large-scale Phase 3 clinical trial. A phase 3 clinical trial may include several hundred to several thousand people. The objective of Phase 3 is to expand on the efficacy and safety information, including a study of different populations, dosages, and combinations with other drugs.

The FDA requires pharmaceutical companies to provide an updated Investigator's Brochure (IB) to each principal investigator prior to the start of each phase of clinical trial. The IB is required to contain all known and relevant information regarding the therapeutic agent, including:

▸ a description of the drug substance and the formulation
▸ a summary of the pharmacological and toxicological effects
▸ a summary of information relating to the agent's safety and effectiveness in humans
▸ a description of possible risks and adverse reactions—including safety precautions or special monitoring that the investigator should take

Following the successful completion of clinical trials, pharmaceutical companies submit a New Drug Application (NDA) to the FDA's Center for Drug Evaluation and Research (CDER). If the therapeutic agent is a biological agent, companies must submit a similar document, the Biologics License Application (BLA) to the FDA's Center for Biologics Evaluation

and Research (CBER). Whether an NDA or a BLA, the application includes the following major sections:

(1) animal pharmacology and toxicology study data

(2) manufacturing information to demonstrate that the company can properly manufacture the drug

(3) the company's proposed label for the drug, which provides technical information about the drug, uses for which the drug has been shown to be effective, possible risks, and how to properly administer or take the drug

The NDA or BLA is the official application to the

> Technical communicators often focus on the role of technical writers during product development.

FDA for evaluating a new drug for marketing in the United States. Most applications are reviewed within 10 months, although priority drugs are typically reviewed in six months.

Product Commercialization and Technical Marketing Genres

Technical communicators often focus on the role of technical writers during product development, as described above. Yet, for technical communicators look-

ing for new opportunities, the genre of technical marketing in the pharmaceutical, bio-technology, and health care industries might be particularly interesting. This genre is important as the application of science and technology to human health increases the demand to communicate effectively to the public (potential health care consumers) as well as to health care professionals.

The interdisciplinary relationship between technical communication and marketing was addressed in *Technical Communication*. The guest editors, King and Matherne (1995), stated, "Marketing will also underscore the necessity for writers to know the products they are promoting—benefits, features, and functions." In fact, as these authors reported, "Typical 'Madison Avenue' marketing organizations, however, were ill prepared for the demands of promoting technical products. They often didn't understand the products they were promoting." Although many technical writers like to distinguish their writing from advertising, the lines blur in high-tech industries, especially in the emerging technologies using biological and nanotechnology for health care applications, where communicators need to have a technical understanding of the product.

Technical marketing includes the creation of product brochures (for health care consumers and professionals), television advertisements, print advertisements, press releases, websites, and even health care awareness campaigns. In fact, many technical resources and materials developed by technical communicators are also used to help commercialize a product. For example, clinical study reports, scientific publications, technical presentations, and white papers are all technical resources that, when the data is good, can be used to help commercialize a product.

Unlike other industries, however, the FDA monitors the marketing and advertising of pharmaceutical companies. According to the FDA, any therapeutic claim must be accurate and not mislead the consumer. Print advertisements must have a "fair balance" between the space devoted to benefit and risk information and the space allotted to a summary of side effects, contraindications, and precautions directly from the product's label.

What This Means for Technical Communicators

In this article, I have divided the opportunities for technical communicators into product development and commercialization. The communication genres that have been highlighted are the required regulatory documentation and the subsequent marketing and advertising that are necessary to inform potential customers (including physicians and patients) about a new product. Technical communicators have become integral to product development, using their skill to understand and communicate complex information within a company and to government regulators. However, marketing and advertising departments are another place where technical writers and editors can thrive. In the case of pharmaceutical companies, technical communicators are essential to the efforts to communicate how health care technologies work, and to compare a therapeutic agent's benefits with its side effects. As technical communicators assume these roles, they will make substantial contributions to the education of health care consumers. ℹ️

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SUGGESTED READINGS

FORD, J. D., S. A. BERNHARDT, AND G. CUPPAN. "From medical writer to communication specialist: Expanding roles and contributions in pharmaceutical organizations." *AMWA Journal*, 19, 4-11, 2004.

GUTHRIE, J. R. "Selling technology in technical advertisements: A case study." *Technical Communication*, 42, 226-230, 1995.

HENSON, L. "A preliminary rhetoric of technical copywriting." *Technical Communication*, 41, 447-455, 1994.

MOGULL, S. A. "Chronology of direct-to-consumer (DTC) advertising regulation in the United States." *AMWA Journal*, 23, 106-109, 2008.

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MEDICAL COMMUNICATION:
A Branch *of the* Technical Communication Tree

BY LORI ALEXANDER AND LILI FOX VÉLEZ

"What exactly do you do?" As a technical communicator, you are probably asked this question often. Your answer, apt to be long as you try to capture all your functions and knowledge, typically prompts a quick nod, an "Oh," and a glazed-over look in the questioner's eyes. We medical communicators understand. An answer of "I'm a medical communicator" is usually greeted with "Oh, you're in medical billing" or "My aunt Louise is that—she's a medical transcriptionist."

Having to explain ourselves is just one of many similarities between the careers of medical and technical communication. Officially, the Bureau of Labor Statistics considers a medical communicator to be one type of technical communicator (BLS, 2010). Although the Bureau thinks of us as one unit, medical and technical communicators might be more comfortable describing themselves as different branches on the same family tree. This article discusses some of the similarities in history and work contexts, along with some of the distinctive aspects of medical communication.

Where We Come From

While STC is the home for technical communicators, the American Medical Writers Association (AMWA) is the primary home for medical communicators, although many other organizations appeal to medical communicators in specific settings. AMWA has fewer members than STC, but it has grown substantially over the years and now counts about 5,600 members. On the other hand, our branch of the family is older—AMWA celebrates its 70th anniversary this year.

AMWA was founded in 1940 by a small group of physicians who were editors of local medical journals. Initially, membership was restricted to physicians, although it was later expanded to include others who wrote or edited documents about medicine. It wasn't until 1970 that a nonphysician held the presidency of the organization. Currently, the largest portion of the membership (32 percent) consists of individuals with a degree in biology or chemistry, and about 30 percent have an educational background in English or the humanities, including journalism, communication, and technical writing (Hudson and Vivirito, 2008).

The split in the educational backgrounds of AMWA members has stirred a debate among members about which background yields a better medical communicator (Hudson, Gelderloos, and Vivirito, 2005). The scientists will tell you it's best to have a background in experimental design and interpretation of scientific data. The writers will say it's best to have a background in communication and comprehension theories. We believe that

education in technical writing offers a solid foundation for a career in medical communication, but only about two percent of AMWA members list that as their training.

Just as some—but not all—technical communicators were originally engineers or product designers, some medical communicators start out as physicians, nurses, or pharmacists. So, for both careers, the path is often indirect. In fact, nearly 63 percent of AMWA members have said they entered medical communication through "career exploration" (Hudson, 2005).

While numerous programs offer degrees in technical communication, few educational programs offer instruction specifically tailored to medical communication. There are currently no undergraduate degrees labeled "medical communication," and graduate work is offered at only a few colleges and universities. A few technical communication programs offer tracks in medical communication, and a few institutions have developed certificate programs. As a result, most medical communicators compensate for educational gaps by enrolling in courses that complement their original background. As new educational options open, they are eagerly adopted; of 464 AMWA members who are working on an additional degree/certificate, more than half are in a medical communication program (Hudson, 2005). AMWA itself offers a wide range of workshops through its educational program, which offers the opportunity to earn certificates in several areas (see *www.amwa.org* for more information).

Where We Work and What We Do

On its website, AMWA's working definition of medical communicators is, "Medical communicators write, edit, or develop materials about medicine and health. They do this by gathering, organizing, interpreting, and presenting information in a manner appropriate for the target audience." It's not easy to find a resource outside of AMWA that describes what a medical communicator does. Enter "medical writer" in the search field under "Research Careers" on Monster.com, and the first hit is "medical writer," but what follows is not—subsequent titles include travel writer, law clerk, and automotive service writer. If you enter "technical writer" into the search field, your first hit is "technical writer," your last hit is "technical writing, other," and most of the hits in between actually pertain to technical writing. This represents a significant difference between our fields; although each career has struggled to define itself, technical communication appears to be ahead in making itself known and accepted.

There are many types of employers for medical communicators, including:

- pharmaceutical and biotech companies
- medical education companies
- advertising or public relations companies
- health insurance companies
- university medical centers or managed care organizations
- nonprofit organizations, such as professional medical or health professional associations or health advocacy groups
- medical publishers or journals
- government agencies, such as the Centers for Disease Control and Prevention, National Institutes of Health, and the National Cancer Institute

Our job functions are as varied as our employers and clients. We are writers, author's editors, copyeditors, proofreaders, video script writers, project managers, publications managers, multimedia producers, publishers,

educators, researchers, journalists, web writers and editors, and advertising/marketing writers. Medical communicators may report research, establish standard operating procedures and protocols, write sales and training materials, and develop medical education modules.

The challenge of quantifying the number of medical communicators may simply be an inability to find all the communicators who qualify. For example, many communicators in the biotech world self-identify as technical communicators, and those who develop patient educational materials or write for the public often self-identify as health communicators. AMWA has been exploring ways to quantify the true number of medical communicators by researching work environments to see if people with alternative job titles are actually working as medical communicators. Some of you may now be realizing you can call yourself a medical communicator even though your job description doesn't use that language. (If you replaced "about medicine and health" with "technology and science" in AMWA's working definition, we'd be back on the technical communication branch of the family tree.)

In addition to AMWA's 5,600 members, other medical communicators perch on different branches of the family tree:

▸ editors for medical journals flock to the Council of Science Editors and/or the Board of Editors in the Life Sciences

▸ people who write for popular magazines and newspapers belong to the National Association of Science Writers and/or the Association of Health Care Journalists

▸ writers in the pharmaceutical industry belong to the Drug Information Association, the International Publication Planning Association, the International Society for Medical Publication Professionals, and/or the Regulatory Affairs Professionals Association

▸ medical writers and editors in the area of public relations join the Health Academy of the Public Relations Society of America

Our Relationship with the Medical/Technical Professions

The relationship between communicators and practitioners in any field needs to be a symbiotic one: the goal is to help each other develop accurate, reliable materials that meet the needs of target audiences in a timely fashion. That goal doesn't change if the field is technology, medicine, or public health. What does differ between technical and medical fields, however, is how the outsourcing of communication work to other professions is viewed or perceived.

In the technical communication world, it is accepted that engineers and product developers will focus on their work, with technical communicators seen as valuable intermediaries between R&D and end users. At many universities, future engineers/programmers/scientists are encouraged to take communication-related courses alongside technical communication students.

The same cannot be said of the medical communication world. Certainly there are health care professionals who value the ability to write effectively—you see this reflected in surveys about the kinds of writing physicians need to do (patient histories, manuscripts, grant proposals), the many "how to get published" advice articles in specialty medical journals, and the plethora of books on how to publish in medical literature (Yanoff and Burg, 1988). However, writing is not an integral part of medical education: students need to show writing proficiency on MCATs, but explicit teaching of writing in medical school is rare. A search of PubMed showed only one article specifically addressing writing coursework for U.S. medical students, and it was published more than 25 years ago. Those researchers found that "lack of time, lack of interest on the part of those needing instruction, or lack of qualified faculty members" explained why such coursework was not required (Bjork and Oye, 1983).

Those reasons are exactly why medical communicators are so useful: health care professionals have many other things to do, so why wouldn't they outsource the communication of their efforts to people with the necessary interest and skills, people who would be paid to spend their time crafting effective documents?

But this leads to other problems: who pays for these services? And who gets credit for the final documents? While both technical and medical communicators act as intermediaries between experts and audiences, technical communicators may have better-defined roles that increase their visibility and credibility with the general public. For example, for many in-house technical communicators, the names of individual writers are less important than the products or services they represent; end users are more interested in clarity of communication than in who did the work creating the help system or product manual. Such documents don't necessarily result in a byline or credit for authorship and are sometimes considered work-for-hire. No one is surprised that a technical communicator's salary comes in part from the success of a product/service that his or her employer makes.

However, in medical communication, perhaps in part because writers and health professionals rarely cross-train together, the situation is much more complex. Medical communicators may be paid by a company who stands to profit from the drug or device discussed in a document they have written, rather than by the physicians whose work they are trying to transform into prose. These financial relationships have not always been clear, and that lack of transparency can lead people to believe that documents written with the help of medical communicators may be biased.

A second area of concern comes from the way authorship is defined by medical journals. The criteria for earning "author" status for medical journals gives credit

to the person(s) who designed or oversaw the study being reported, not to the writer who may have actually crafted the language of the document (International Committee of Medical Journal Editors, 2009). According to these criteria, medical communicators are usually not eligible for byline credit. But the unacknowledged use of medical writers has led to accusations of ghostwriting, which can undermine the integrity of the medical literature.

Calls for greater transparency and accountability in terms of both funding and authorship have led to more stringent guidelines for disclosure of these and other conflicts of interest. The goal is to give readers of medical materials sufficient information about the research, the funding, and the role of the various contributors to assess the credibility of what they are being told. AMWA considers the unacknowledged use of a medical writer to be unethical and urges medical communicators to comply with the association's "Position Statement on the Contribution of Medical Writers to Scientific Publications," which requires mention of the medical writer in an acknowledgment or as an author, whichever is most appropriate, as well as disclosure of any pertinent professional or financial relationships. AMWA promotes its "Position Statement" and its "Code of Ethics" on the association's website and provides background and tools to facilitate adherence.

We hope two trends will help bring increased acceptance of the work medical communicators do:

increased transparency that clarifies our roles, and research about best practices that can show the value of our contributions.

Sharing Our Strengths

Given the similarities in history and job functions, medical and technical communicators have ample opportunities to share expertise and strengths across branches. Medical communicators can share their expertise with medical content and working with health care professionals, while technical communicators can share their expertise with usability testing, knowledge management, and software platforms for delivering complex content. We can collaborate to create materials for expert and lay audiences: explaining genetic tests, documenting medical devices, and managing electronic health records. Together we can promote research into our varied workplaces, identify best practices, and use our knowledge to educate the next generation of communicators.

If you'd like to know more about your "cousins," visit the AMWA website (*www.amwa.org*). If you want to meet some of those cousins, look on the site for the chapter nearest you and contact a chapter officer about the next chapter event. Or make plans to attend the AMWA Annual Conference, to be held 11-13 November 2010, in Milwaukee. Collaboration between our members and our organizations can enrich the entire family.

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LILI FOX VÉLEZ (lvelez@towson.edu) *earned her BA at Arcadia University, and PhD at Carnegie Mellon. In 1997 she founded the MS in biomedical writing program at the University of the Sciences in Philadelphia. Currently she is assistant professor of English at Towson University, teaching biomedical writing in their masters in professional writing program.* 🇮

REFERENCES AMERICAN MEDICAL WRITERS ASSOCIATION. "About medical communication: what is a medical communicator." Available at *www.amwa.org*.

AMERICAN MEDICAL WRITERS ASSOCIATION. "AMWA Code of Ethics." Available at *www.amwa.org/default.asp?id=114*.

AMERICAN MEDICAL WRITERS ASSOCIATION. "AMWA Position Statement on the Contribution of Medical Writers to Scientific Publications." Available at *www.amwa.org/default.asp?id=308*.

BJORK R.E., R.K. OYE. "Writing courses in American medical schools." J Med Educ.1983; 58(2):112-116.

BUREAU OF LABOR STATISTICS. *Occupational Outlook Handbook,* 2010-2011 ed. Available at *www.bls.gov/OCO/*.

HUDSON S., M. VIVIRITO. "Results of the 2008 membership survey." AMWA J. 2008; 23(4):198-200.

HUDSON S., J. GELDERLOOS, AND M. VIVIRITO. "Which comes first: the scientist or the writer?" AMWA J. 2005; 21(3):105-108.

INTERNATIONAL COMMITTEE OF MEDICAL JOURNAL EDITORS. "Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Ethical Considerations in the Conduct and Reporting of Research: Authorship and Contributorship." 2009. Available at *www.icmje.org/ethical_1author.html*.

YANOFF K. L., F. D. BURG. "Types of medical writing and teaching of writing in U.S. medical schools." J Med Educ. 1988; 63(1):30-37.
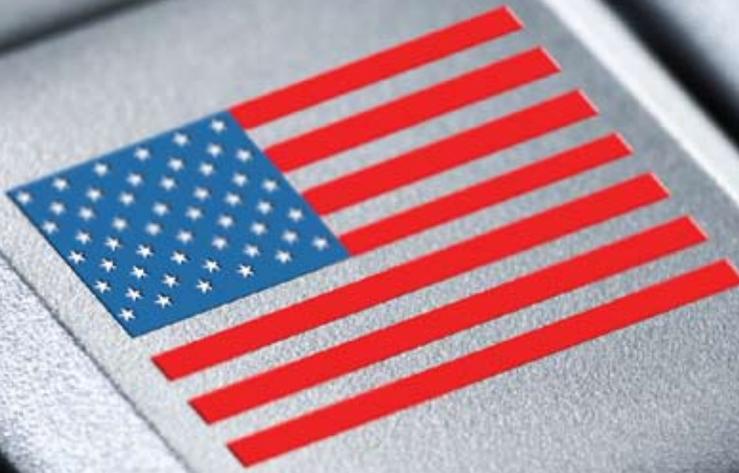
Breaking into
Government
IT Contracting

By **DAVID DICK** | *Fellow*

When I was preparing my transition from employment in Belgium to employment in northern Virginia, friends encouraged me to look at opportunities as an information technology (IT) contractor for the federal government, which relies on contractors to design and deliver IT solutions. For this reason, many companies that build and sell IT systems have entered the lucrative market of outsourcing employees.

SINCE MAY 2005, I have been employed by four contracting companies and worked at several government agencies. When I started working as a contractor, I discovered that very little is written about the ins and outs of contracting. What I learned came from friends and associates, and their advice helped me understand how to be successful.

Getting Hired

Whenever I post my résumé on a popular employment website, I am bombarded with phone calls and emails from recruiters who search a variety of employment sites for technical writers that match the job descriptions of their clients.

Common titles used in the company name of a recruiter are "Consulting," "Technologies," "Services," "Group," "Staffing," and "Consultants." Another type of recruiter is called a "headhunter," a highly specialized job recruiter who locates the right candidates to fill open positions for corporate clients. Charging substantial fees, headhunters earn their wages by working to benefit both the client and the job seeker.

Recruiters are interested in skills, familiarity with tools, security clearances, and certifications relevant to the job. Although important to your job searches, recruiters are not interested in achievements, accomplishments, published papers, and titles.

A telephone interview with a recruiter consists of four questions: number of years of experience, familiarity with tools, salary expectations, and whether there is a need for medical and dental insurance. This is what their clients want to know and responses help to filter candidates. In turn, I ask for a job description, the client for whom they are recruiting, the location (i.e., city and state), and the duration of the contract so that I can filter them from *my* list.

Additionally, recruiters prefer candidates with active security clearances, such as "Secret" and "Top Secret," because they expedite a candidate's assignment to a project. However, it's unrealistic to expect candidates to have active clearances because clearances are downgraded and revoked when access is no longer required (i.e., when a project or contract is over).

Some recruiters and headhunters have been helpful in finding employment, but the majority of them only want my résumé to include a request for proposal (RFP). I always ask how my résumé will be used because I don't want it to be included in an RFP without my knowledge and consent.

Getting Paid

Contracting companies make their money by billing clients (by the hour) for the use of contractors. The more hours billed, the more money the company earns.

If contractors do not bill enough hours, they will not earn enough money to cover their salaries; so they are told by management. A contractor is expected to be 100 percent billable to a project. A contractor out of the office for vacations and holidays is not billing enough hours because the hours cannot be charged to the client. For this reason, contractors without enough billable hours must find projects for which they can bill their time in whatever capacity possible (e.g., proposal writing or take meeting minutes for requirements gathering sessions).

Traditionally, when contractors were not assigned to a project they sat on "the bench." While on the bench, they continued to receive a salary, reported for work at the corporate office, searched for new projects, and performed a myriad of tasks. That's how it used to be, but not any more. Nowadays, companies put contractors on Leave Without Pay and send them home. While home, contractors apply for open positions and consult a human resources representative about upcoming placement opportunities.

What does this mean for technical writers? Contracting companies prefer technical writers who have multiple skills because of the billing opportunities to sell a candidate with two or more skills (e.g., business analysis, configuration management, trainer, and requirements analysis). There are only so many user guides and help files to be written, but there is always a need to gather requirements for new systems, to train users, to test software, and to take meeting minutes. These collateral jobs will enhance your skills and prepare you to transition into other opportunities later.

Training and Professional Development

Collateral jobs will enhance your skills and your value, but do not overlook opportunities to learn new skills. When I renewed my STC membership for 2010, I chose the Gold Membership so that I could take advantage of the certificate programs and online training. I also enrolled in a project management certificate program offered by a community college.

Because of the transient nature of contracting, contracting companies rarely pay for certification programs or specialized training on specific tools and technologies. There is simply too great of a risk that a contractor will quickly leave the company for better opportunities. Instead of formal classroom training by accredited institutions, contracting companies offer online training from training vendors. A site license offers a library of canned training courses for a fraction of the cost of classroom training. However, the course certificates earned through these vendors are not recognized by colleges and universities and, therefore, are not transferable.

Your success depends on taking responsibility for your training and professional development. A résumé that demonstrates ongoing professional and skills development is attractive to recruiters, and ensures that you have marketable skills for future employment opportunities.

Job Security

A consequence of contracting is that employment is only ensured for the length of the contract, which can be one to five years with several extensions. That is not to say that contractors are not terminated for cause (e.g., poor performance, falsifying a timesheet, conflicts of interest), budget cutbacks, or at the discretion of the client—it happens all the time.

The U.S. government requires contracts to be renewed and new companies to be allowed to bid on the work. If the incumbent loses the "re-compete," the contractors are on their own to find new employment. The winner of the contract may offer to retain the entire staff to ensure continuity of business or only selected individuals as chosen by the client. Sometimes the wages and benefits are the same or slightly better, and sometimes less.

On occasion, a client will convert contractor positions to permanent hires (*Federal Computer Week*, 2009). Contractors filling a position that is scheduled for conversion will be asked to submit their résumés for consideration. Contractors seeking employment stability and better benefits will eagerly accept opportunities to convert to a government position. Contracting companies wince whenever they lose staff under these conditions because it is a loss of revenue. For this reason, contractors strive to establish strong social networks. There's nothing unethical about this because it contributes to good contractor/client relationships, which is what contracting companies emphasize.

Performance Appraisals

I cannot overemphasize the importance of a solid rapport with the client. The client has significant input about a contractor's performance and can influence the contractor's retention should the contract be awarded to another company.

A contracting company is obliged to show the client that it has set objectives and performance metrics for employees, such as creating new processes, writing operating procedures, and learning new skills. However,

The occupations in demand and for which there are not currently enough skilled people are cyber-security and information assurance analysis.

setting calendar-dependent objectives in January to be fulfilled by December is an ineffective measurement, since the impermanence of contract assignments raises the likelihood that someone may not still be employed 11 months later. Contractors work on projects, and the client is only concerned that work is performed efficiently and professionally; therefore, project- or contract-based measurements would be more appropriate.

I know many contractors who worked countless hours of overtime, were on-call 24/7, delivered work products ahead of schedule, overcame unrealistic deadlines, and were praised by the client—only to be surprised that their pay raise was 2 percent and that they were not entitled to a bonus. What happened?

Pay raises and bonuses are stipulated in the contract and planned in the annual budget. If the contract does not specify bonuses, then there are no bonuses paid even if individuals deserve it. If the contract offers awards for delivering early, the contracting company—and not the people who actually did the work—receives the money. Bonuses are paid to individuals who win new business, and the amount is proportional to the revenue the new business brings to the contracting company.

Promotion and Advancement

Advancement is a way to promote a person to higher levels of responsibility, and is compensated with higher pay and benefits. In the contracting profession, a junior, senior, lead, and principal technical writer may all earn the same pay because the title is meaningless; what is important is the billable rate that the contracting organization can charge a client.

Contractors seeking a promotion will relocate to the corporate office where visibility is higher and the opportunity to meet decision makers is greater. Contractors who stay at the customer site and do their job are not likely to be promoted.

It is important for technical writers to transition into other occupations that leverage their skills and experience. The occupations in demand and for which there are not currently enough skilled people are cyber-security and information assurance (IA) analysis. Entering these fields means returning to school to earn a certification, and looking for new employment opportunities. College tuition is tax deductible, so if you can afford the cost to return to school, follow your ambition.

Where Contractors Work

If given the choice to work at the client site or corporate office, I will always choose the corporate office. Having worked at both corporate offices and customer sites, I have learned the importance of adapting to my environment, and of being resourceful and innovative with what is available to me.

Contractors assigned to the corporate office can call upon staff that have specialized skills, use the latest tools and technologies, and resolve project constraints and issues with seasoned staff.

Contractors who work at the customer site have constraints about calling upon outside resources with specialized skills, they must use the tools and technologies available to them (which are not always the latest and best), and must work within their team to resolve project constraints and issues.

Having worked at corporate offices and customer sites, I have learned the importance to adapt to my environ-

ment, and be innovative and resourceful and with what is available to me.

Final Thoughts

The benefits of contracting are the ability to have more of a say in what you do and when you do it, and the opportunity to earn significantly more money than you would in a permanent (or captive employment) role. The downside is that you are responsible for finding work when a project or contract ends, and you are responsible for your training and development.

I am not worried about losing seniority because I have none. I am not worried about the choice of health and retirement benefits because they are all the same nowadays—you pay into it yourself.

Circumstances such as end of contracts, budget cutbacks, shorter commutes, and a desire to do something else, were reasons for me to leave and follow better opportunities. I don't want to be stereotyped as the go-to-guy for templates and meeting minutes. I welcome opportunities to help my coworkers achieve success, even if it means doing something I have never done before. In this way, I have learned how to be successful in contracting and to obtain the necessary skills to transition into new and challenging opportunities. 🄸

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REFERENCES   ARANA, WHITNEY. "What Is a Headhunter?" *www.ehow.com/facts_4914266_what-headhunter. html?ref=fuel&utm_source=yahoo&utm_medium=ssp&utm_campaign=yssp_art.*

LIGHT, PAUL C. *"The New True Size of Government."* New York University Research Brief, No. 2, August 2006.

MESS, MONICA. "For both government and private-sector workers, grass is greener on other side." *Washington Post*, February 12, 2010.

"Punch-Out: Contractors vs. Feds." *Federal Computer Week*, May 15, 2009.

ROBBINS, S. "How to Use a Headhunter." *www.ehow.com/how_4844500_use-a-headhunter.html.*

"Working With Government Contractors." *www.usoge.gov/training/training_materials/booklets/bkGovContractor_07.pdf.*

AWARDS & RECOGNITION

Job Well Done

Jay R. Gould Award

THE JAY R. GOULD AWARD for Excellence in Teaching Technical Communication honors the distinguished teaching career of the late Professor Gould, whose academic mentorship guided many into the technical com-

munication profession. To be eligible for the award, a nominee must have been a member of the STC for at least 10 years and must have been involved in postsecondary education for at least 15 years.

This year's winner is Nancy Coppola. Her citation reads:

> *For outstanding achievements in promoting Technical Communication as a discipline; for innovative curriculum and program design; and for excellent teaching that has inspired the next generation of technical communicators.*

Nancy Coppola is honored for her leadership in research-based instruction in the field of technical communication. She has made an outstanding contribution to not only teaching the body of knowledge but also developing our knowledge base as an original member of the STC Body of Knowledge (BoK) initiative. Her research on core competencies expected of graduates who practice technical communication helped inform the structural backbone for the current TC Body of Knowledge. As founding director of one of the first online graduate programs in technical communication, Nancy Coppola demonstrates a sustained pattern of mentorship to ensure student success. She built and maintains a strong student network of community through social media use. Involved in research beyond the classroom, she has ensured that her funded work always included a student presence. Her publications and presentations of research on learning outcomes for programs and core competencies for students in technical communication have established her as a national figure in program assessment who is changing the way technical communication is taught and measured.

Congratulations to Nancy.

Ken Rainey Award

THE KEN RAINEY AWARD for Excellence in Research was established by the STC in 2006 to celebrate and honor Professor Rainey's passion for research that results in improvements to technical communication, especially to practice. The goal of the award is to encourage quality and excellence in technical communication research by honoring those whose research studies have made an outstanding contribution to the field.

This year's winner is Judith Ramey, PhD. Her citation reads:

> *For her foundational, continued, and pragmatic research efforts on behalf of the user, STC awards Dr. Judith Ramey this award for Excellence in Research.*

Judith Ramey is a professor in the department of human centered design and engineering (formerly the department of technical communication) within the College of Engineering at the University of Washington. Her innovative research in usability research methods and user-centered design, including founding the Laboratory for Usability Testing and Evaluation, has resulted in more than 100 articles, book chapters, technical reports, and conference proceedings. Her teaching, research, and leadership have brought her multiple awards, including STC's Jay R. Gould Award in 2000, the Landmark Paper Author Award from the IEEE Professional Communication Society in 2007, and STC Fellow in 1998. She has also contributed to the field by establishing a PhD program in her department and serving as chair for 11 years.

Congratulations to Judith for this well-deserved honor.

Community Achievement Awards

THE COMMUNITY ACHIEVEMENT awards (CAA) program recognizes STC chapters and special interest groups (SIGs) for exceptional accomplishments in meeting Society goals. The awards not only acknowledge that the obligations of a properly functioning community have been met, but that the winning communities have performed well beyond expectations.

The awards program recognizes, in a visible and meaningful manner, communities that demonstrate outstanding, innovative, and sustained performance in advancing the goals of the Society. STC recognizes the following communities for their efforts.

COMMUNITIES OF DISTINCTION

GEOGRAPHIC COMMUNITY
76–150 MEMBERS

Orlando
For excellent and innovative services to members, particularly the Reach the Summit initiative.

GEOGRAPHIC COMMUNITY
151–300 MEMBERS

Willamette Valley
For providing members with value-laden programs during difficult financial times, supporting student members with mentoring and internship opportunities, and using creative meeting formats and social media to expand the effective reach of the community.

GEOGRAPHIC COMMUNITY
301–600 MEMBERS

Atlanta
For increasing member participation in leadership, redesigning your website, increasing your value to members by hosting social events, and finding sponsors to keep meetings low cost or free.

VIRTUAL COMMUNITY
LESS THAN 1,500 MEMBERS

Instructional Design and Learning SIG
For providing rich resources that hone your members' skills through webinars, online resources, and a forum for the free exchange of knowledge and ideas.

VIRTUAL COMMUNITY
MORE THAN 1,500 MEMBERS

Technical Editing SIG
For effectively providing valuable resources on an outstanding website, innovating new uses of social media, and setting aggressive goals in a challenging year.

COMMUNITIES OF EXCELLENCE
▸ Carolina
▸ Chicago
▸ Houston
▸ Lone Star
▸ Northeast Ohio
▸ Phoenix
▸ Rocky Mountain

COMMUNITY OF MERIT
▸ Southeast Michigan

Pacesetter Award

THE PACESETTER AWARD acknowledges a community's contributions to the Society's goals through a single innovative and effective program or activity. Congratulations to the honorees.

Houston Chapter
For offering program meetings in a way that increases value for members and improves the flow of revenue for the chapter.

France Chapter, Transalpine Chapter, and Europe SIG
For collaborative work on a topic of great significance this year, content strategy, culminating in a collaborative conference held in conjunction with the conference of another organization.

Toronto Chapter
For streamlining operations, clarifying offerings that provide value for members, and moving toward financial self sufficiency.

Technical Editing SIG
For innovations in education and networking for members, generating revenue for STC, and supporting other STC chapters and SIGs.

Share Yourself

WE'RE LOOKING FOR contributors for one of the three columns that appears at the end of each issue of *Intercom*.
▸ "MY JOB" highlights members with a unique or interesting job in the field of technical communication.
▸ "OFF HOURS" celebrates a hobby or side gig—your passion away from work.
▸ "LOOKING BACK" concentrates on senior STC members—long-time technical communicators—and lessons they have learned in their careers that can be passed along to others.

To contribute a 750-word piece to any of these columns, please email Kevin Cuddihy at *kevin.cuddihy@stc.org*.

AWARDS & RECOGNITION

SIGMA TAU CHI

STC SPONSORS Sigma Tau Chi (STX) to recognize exemplary technical communication students in baccalaureate or graduate programs.

STX recognizes students enrolled in technical communication programs who have a cumulative grade point average of 3.5 or above, are exemplary in participation in STC, and demonstrate a potential for significant contribution to the profession. Students who are accepted into Sigma Tau Chi receive one year's membership in STC, a pin, and a t-shirt.

Congratulations to the students below!

Peggy Harvey
North Carolina State University

Rita G. Howard
Clemson University

Katie Marburger
Cedarville University

Kelly Shackelford
Cedarville University

Anna Beth Wilkerson
Clemson University

Alan Jeffrey Wyman
University of Minnesota

2010 President's Award

THE PRESIDENT'S AWARD honors one or more persons or institutions that have made distinguished contributions to the profession or the Society. The STC president announced the names of this year's recipients during the opening session of the Society's annual conference.

LARRY KUNZ

For your wisdom, advice, leadership, dedication, insight, and most of all patience while guiding the STC Board of Directors in the development of the first-ever STC Strategic Plan.

RICHARD O'SULLIVAN

For your tireless effort working with the United States Department of Labor, which resulted in the recognition of technical writers as a profession distinct from all other writing professions. Your tremendous contribution provides an unbiased and respected voice confirming STC's longtime position before employers and human resource departments.

Congratulations to Larry and Richard for this high honor, and thank you for your service to the Society.

Follow the 2010 Summit on Twitter

EVEN IF YOU weren't able to attend the 2010 Summit in Dallas, TX, you can follow it via Twitter—and even get a little taste of the conference to boot! Username *@stc2010* issued all the official announcements and information on speakers, preconference courses, and more. For a more in-depth view of the conference, check out the hashtag *#stc10* for all tweets during the Summit. Attendees were invited to tweet from the conference using that hashtag, and anyone can view their comments by searching on the hashtag. The conference website (*http://conference.stc.org*) had a live stream of tweets during the conference and will keep them archived. You can view the tweets there after the conference for as long as Twitter stores them.

This Issue in *Technical Communication*

Intercom isn't the only magazine with a new look. *Technical Communication* has a completely new design and a new website as well. You can click the "Technical Communication Online" button directly from *www.stc.org* to view the site, or go directly to *http://techcomm.stc.org.*

The May issue of *Technical Communication* includes the following articles.

Editorial: Technical Communication Online ... Behind the Scenes

MENNO D.T. DE JONG, EDITOR

This issue's editorial describes the design of the new *Technical Communication* website, in particular the guiding principles used for the design: simplicity, usability, possibilities to further expand the website's functionality, and a professional and inviting look and feel.

Promoting the Business Websites of Technical Communication Companies, Consultants, and Independent Contractors

JOHN B. KILLORAN

Business websites are important means for technical communication professionals and businesses to recruit new clientele. Using a combination of a survey (240 technical communicators) and interviews, this article investigates the effectiveness of various strategies to direct prospects to a business website. Results show that online strategies (e-mail and search engines) are more effective than offline strategies (networking and referrals).

Writing for Robots: Search Engine Optimization of Technical Communication Business Websites

JOHN B. KILLORAN

This article focuses on the role of search engine optimization techniques to attract visitors to technical communication business websites. Using a survey, interviews, and an analysis of business websites, the prevalence and effectiveness of various techniques are explored. Longer home page titles and more inbound links are features of effective business websites.

The Contribution of Technical Communicators to the User-Centered Design Process of Personalized Systems

LEX VAN VELSEN, THEA VAN DER GEEST, AND MICHAËL STEEHOUDER

Personalization is increasingly important in computer-mediated communication. This article analyzes the concept and process of personalization, and compares it to a traditional rhetoric approach. It then proposes a user-centered design approach for personalized systems and discusses the ways technical communicators may contribute to personalized systems.

QuikScan: Formatting Documents for Better Comprehension and Navigation

QUAN ZHOU AND DAVID K. FARKAS

This article describes a new format for online and print documents, called QuikScan. It employs within-

document summaries formatted as numbered list items. QuikScan improves readers' comprehension, and helps them navigate more effectively through a document. The article describes the format extensively, but also discusses its usefulness, drawbacks, and requirements.
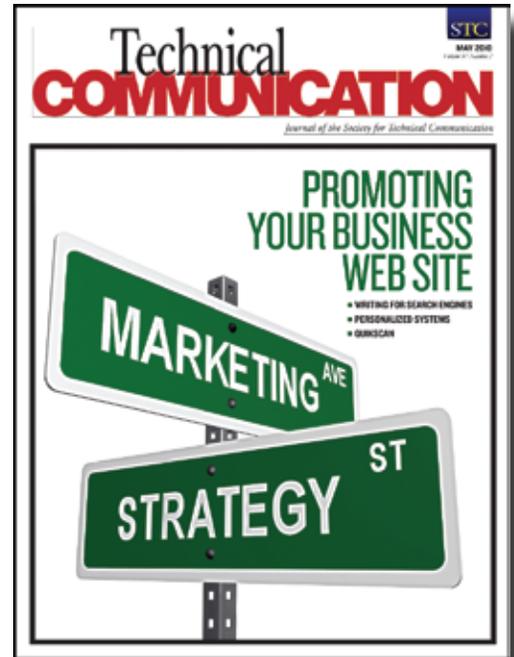
Book reviews

AVON J. MURPHY, EDITOR

Each issue of *Technical Communication* includes a Book Reviews section covering the most relevant new books in the field. In this issue, 23 new books are reviewed.

Recent and Relevant

SHERRY SOUTHARD, EDITOR

Each issue of *Technical Communication* includes a Recent & Relevant section highlighting and summarizing articles in related journals that may be relevant for technical communication professionals and scholars.

Communication Is the Best Medicine

BY THOMAS BARKER | *Fellow*

THE ACADEMIC CONVERSATION in the area of health and medicine covers many subjects—pandemics, SARS, breast feeding, brain scans, atherosclerosis, drugs, genetics, breast cancer, and more. But the unifying themes in this discourse, which has intensified over the last 10 or so years, concern the rhetorical nature of medical writing, what is accepted as medical fact, sources of good medical research, how to find methods to do research, and also the forms of medical discourse itself.

Typically, technical communicators who work in universities do research developing a critical view of medical writing, as they explore how patients, doctors, specialists, and scientists communicate. They teach students to understand that encouraging multiple voices can make a difference in health messages. In practice, medical writers and health information consultants find ways to apply a multi-vocal approach to health outcomes. And the voices in medicine and health seem to come from everywhere.

Research in Medical and Health Communication

Why is this so? In her introduction to a special issue of the *Journal of Business and Technical Communication* on "The Discourses of Medicine," Ellen Barton shows that research draws from many related disciplines. To build knowledge about medicine and health requires reading in history, sociology, literature, communication studies, and behavioral science. Scan any bibliography of a scholarly article in health and medicine and

This column focuses on a broad range of practical academic issues from teaching and training to professional concerns, research, and technologies of interest to teachers, students, and researchers. Please send comments and suggestions to *thomas.barker@ ttu.edu*.

you'll find journals like *Health Communication, The Journal of Advanced Nursing, Medical Anthropology,* and *American Sociological Review.* This varied conversation mirrors the interdisciplinary nature of technical communication itself. We see this diversity in the STC membership among practitioners who have careers in hospitals, drug companies, and public health agencies. These practitioners enact the written nature of good medicine.

Medicine is a writing-intensive activity. Doctors, researchers, scientists, drug salespersons, and hospital administrators connect through documents. Those connections, the documents themselves, embody the professional ethos, definitions, and, indeed, the realities of medicine. Academics love it when that happens. Put simply, medicine as we know it is just that: what we express in professional documents. To the patient this may seem unsettling: pain is pain. But, when you think about it, diagnoses, treatments, and recoveries depend on doctors' judgments, interpretations, and best guesses. The best medicine is often not grand, immutable fact, but what a doctor, doctor's team, lab technicians, and insurance analysts can treat, control, and record.

Research starts with this writing, but goes much further. Research in medicine and health areas among technical communicators examines the tension between the view of medicine as rhetorical and the view

of medicine as grand, immutable fact. Researchers like to examine both scientific accounts of a medical event—for instance, a doctor's discussion of breast cancer with a patient—and then compare that to other "discourses"—such as the popular discourse represented by the "survivor" or "pink ribbon" view of breast cancer. Cynthia Ryan, writing in the July 2005 issue of the *Journal of Business and Technical Communication*, examines how these two views interact to make a complex picture of an important social reality. My colleague at Texas Tech University, Amy Koerber, writing in the same volume, examines how "popular" discourse on breast feeding compares with the "institutional" discourses, and how these help us understand this complex human activity. Often, as Huiling Ding writes in *Technical Communication Quarterly* in 2009, the "official" discourse lags far behind what we find in social media and informal information channels like Facebook and Twitter, not to mention rumor and gossip.

As you might expect, these studies reflect a trend in health research toward qualitative methods: interviews, discourse analyses, and case studies. These methods rely on judgment, interpretation, and values, rather than on strict empirical evidence. Qualitative survey research contrasts with this approach—one that underlies the popular evidence-based practice in clinical medicine. Evidence-based practice argues that doctors' decisions should follow trends in empirical research—that if the pill has not shown clear effectiveness, then you should not take it. On the other hand, technical communication scholars like Mary Lay, writing in *Rhetoric of Midwifery*, base the validity of a treatment on the community's acceptance of one practice over another. (Who knows, blood-letting could make a comeback.) In many ways, what we now validate as "best medicine" is often what we're convinced is best

medicine. Research looks at how discourse works all this out.

Thus, the academic conversation in health and medicine holds its ear to patients' stories, alternative media, history, and web sources of information. While these voices— alternative discourses to mainstream medical information—might seem questionable, they struggle for, and deserve, a hearing. True to a central tenet of technical communication, academics amplify, analyze, and validate users' voices.

Medical and Health Communication in the Classroom

This validation, taken into the university classroom, helps students see how communication functions in the medical setting. For example, the following description of a medical and scientific writing course at Carnegie Mellon University emphasizes the connections students need to make in medical careers: "Healthcare Communications is [a] writing-intensive course designed for students interested in how healthcare information is developed by researchers, healthcare providers and writers and communicated to patients and their families, the general public, and other experts." There seems to be a market for medical writing. According to CenterWatch Monthly (December 2008), the medical market grew from $345 million in 2003 to almost $700 million in 2008.

Most medical and health courses in technical communication programs follow this model. Sometimes medical writing is taught in the same course alongside science writing, public writing, environmental writing, and veterinary writing. Usually these programs offer only one course to help nursing students, health professionals, therapists, and others. Like courses in engineering writing or agricultural writing, these courses strengthen the writing skills of those who help patients and those who translate research findings into practice. These courses sometimes

reside in nursing schools, medical schools, and two-year colleges. "But the field is booming," as my friend and fellow boomer Christine Abbott put it, "what with all the baby boomers now retiring and needing more care, surgeries, and replacement parts." Let's imagine we could sit in on one of those courses. What might it sound like?

I recently sat in on a conversation among graduate students in a medical writing class at Texas Tech University. The discussion focused on a book by Annemarie Mol, entitled *The Body Multiple: Ontology in Medical Practice.* This book explores atheroscleroses by looking at the various conversations among doctors, nurses, researchers, patients, and others interested in blood flow to the legs. Trying to keep up with the discussion among these students made my head spin. This was no class in how to derive, test, and communicate set messages about sore blood vessels. These students used language from discourse analysis, genre theory, narrative literature, critical theory, and sociology. The resulting conversation expanded the notion of health communication beyond narrow, one-way

concepts reminiscent of marketing and communication theory. Their discussion brought to life the complexities of medical communication.

Doing Medical and Health Communication

That technical communicators play a significant role in encouraging such a discursive approach to improved medicine is not a new idea. Last summer I conducted a course in independent consulting in medicine and health, in which my students studied the role consultants play in public health. Many STC members who work in public health consulting do research, build health campaigns, and help health agencies shape their public image. Increasingly, however, consultants take on the role of communication facilitators. They use symbolic and analytic skills to encourage communication channels so that health agencies can build alliances with supportive community groups. These skills include conducting interviews and running focus groups, along with strong writing, media, and graphic design skills.

Technical communicators are trained in audience research, which helps them identify and respond to the needs of all persons involved in complex medical interactions, such as we find in medical clinics, telemedical interventions, long-term care/caregiver relationships, and private medical information sources like WebMD. These communication directions suggest that conversation, discussion, and communication could enrich the work of medical professionals. The following example of how narrative functions in medicine at Columbia University's Program in Narrative Medicine shows how communication and medicine go together to overcome miscommunication.

At Columbia University's Program in Narrative Medicine, researchers help practitioners put narratives (stories and interpretations of medical events) to work to create good medicine. Their mission statement clarifies the approach: "Through narrative training, the Program in Narrative Medicine helps doctors, nurses, social workers, and therapists to improve the effectiveness of care by developing the capacity for attention, reflection, representation, and affiliation with patients and colleagues" (*www.narrativemedicine.org*). In this program, courses focus on the training of health professionals in the use of narrative, writing, storytelling, "witnessing," and interpretation. This kind of discursive medical practice can facilitate patient education, clarify options for patients, and lead to broader, lifestyle interventions rather than costly and often ineffective clinical treatment.

Our health care system could use some of the medicine that technical communicators can provide. Researchers study medical discourse using people-centered methods to develop critical attitudes toward forms of medical discourse. In turn, courses in medical writing and public health communication help medical writers learn new writing skills that can connect caregivers to care recipients. Similarly, medical writers equipped with skills in language, narrative, and dialog, as well as media design and writing, can help health care systems function more effectively though better communication. One researcher who explored the idea of communication in health, Dr. Robbie Foy, writing in the *Annals of Internal Medicine* (2010), found that interaction among care physicians and patients seemed to improve health outcomes. His review of 23 clinical studies of interactive communication in clinical settings suggests that interactive communication plays a positive role in the delivery of health services. Maybe communication is the best medicine. **i**

Thomas Barker *(thomas.barker@ttu.edu) is the director of technical communication and rhetoric at Texas Tech University. A fellow of STC, he is also manager of the Academic SIG and a member of the Environmental Health and Safety SIG. He has published in* Technical Communication *and* Technical Communication Quarterly*, and is the author of* Writing Software Documentation: A Task-Oriented Approach.

FURTHER READING American Academy on Communication in Healthcare, *www.aachonline.org*

American Medical Writers Association, *www.amwa.org*

Journal of Business and Technical Communication. "Special Issue: The Discourses of Medicine," Volume 19, 2005.

Lay, Mary. *Rhetoric of Midwifery: Gender, Knowledge, and Power.* NewBrunswick: Rutgers UP, 2000.

Segal, Judy z. *Health and the rhetoric of medicine.* Carbondale: Southern Illinois University Press, 2005.

Technical Communication Quarterly, "Special Issue on Online Health Communication." Volume 17, No. 3, 2008.

Winker, Margaret A., et. al. "Guidelines for Medical and Health Information Sites on the Internet." *The Journal of the American Medical Association,* Volume 283, No. 12, 2000.

Why Simple Is Better

BY GEOFFREY J. S. HART | *Fellow*

THE CONCEPT OF "working memory," also called "short-term memory," is important because it's a limited resource. The human brain can only handle so much information simultaneously; when there's no more room, something must be dropped to make room for something else. The information design goal of simplicity reminds us to seek ways to avoid overwhelming readers' working memories.

A Simple Example

If you think of working memory as analogous to physical space on your desk, and long-term memory as analogous to your bookshelves, it's easy to understand how the two forms of memory cooperate. Let's say you're planning a vacation and get out your reference books to start researching details:

▶ an atlas that provides maps of the area

▶ a short history to help you appreciate the culture of your destination

▶ your *Lonely Planet* guidebook

▶ your *Rough Guide* guidebook, to fill in the gaps in *Lonely Planet*

▶ your checkbook because (alas!) you must consider your budget

▶ a travel writer's exposé that provides the dirt most guidebooks miss

▶ your laptop—every destination has a website (and books are so last century)

You'd love to put more things on the desk, like a notepad, but there isn't room. If you want more resources, you must remove something from the desk to make room for another book from the shelves.

It's not a coincidence that I listed seven items. George Miller's famous "magical number seven" is much abused, but it's a useful way to think about working memory. Don't get hung up on the number: the important point is that the more things you ask someone to deal with simultaneously, the less space that remains in working memory. Each addition removes a space ... until there is none left. At that point, old things must disappear to make room for new ones.

A Technical Communication Example

How might this relate to technical communication? Consider the task of helping readers to follow a procedure. The items on their mental desktop probably include:

▶ their overall goal, of which the current procedure is only a small part

▶ the current procedure's goal, which constrains how they perform the procedure

▶ the overall characteristics of the software interface they'll use (this is "orientation" information: we must know where something is before we can act upon it)

▶ the number of the step they're about to perform, so they can return to that step, move down a line, and continue with the next step

▶ the name of a menu item or button you've told them to look for

This column focuses on the principles of information design, the art and science of understanding how humans process and comprehend information, and using that knowledge to develop more effective ways to communicate. Please send comments and suggestions to *ghart@ videotron.ca.*

▸ its location within the overall interface (e.g., which menu or toolbar)

▸ details of what to do with or to that menu item or button

We're already up to seven items, and we haven't yet accounted for distractions (that fascinating conversation in the next cubicle or the ominous dentist appointment that afternoon); watching the software or hardware for feedback that something good or bad is happening; wondering whether we're about to make an irreversible error; and many other possibilities. No wonder so many people ignore our documentation and go straight to the local expert.

Implications

Clearly, people learn to cope with this complexity, otherwise nobody would ever get anything done. Coping strategies abound, such as learning the hardware (keyboard and mouse) and software (menus and toolbars) so well they become subconscious parts of how we work, and thus no longer need to be numbered among the seven items we can juggle simultaneously. Again, the important point is not the number seven, nor is it the things we can't control (such as distractions)—it's the fact that even seemingly simple situations are far more complex than they appear at first glance.

Understanding that this complexity exists gives us tools to solve it, starting with creating lists such as the two I presented earlier. By understanding the size of the list that must be held in working memory, we can seek ways to minimize the burden. For example, instead of using a single step to tell readers to find a menu, open it, select an option, select a tab in a dialog box, navigate to a heading in that tab, then select three options, we can break this into at least two separate steps:

▸ opening the dialog box and selecting the correct tab

▸ finding the relevant options and setting them

▸ any option that requires elaboration (when there are multiple alternatives that must be explained), should be treated as a single additional step

I'll describe three more approaches in the following paragraphs.

Use the same mental mode. To facilitate locating part of an interface, provide a screenshot with that part highlighted. This lets readers move a visual image of what they're seeking into working memory; when they turn to the software, they don't have to translate a verbal description into a visual target, thereby freeing up the memory space that would hold that translation. The more visual the thing they're seeking, the more important it is to provide an image. Icons should always be presented as graphics, not described.

Juxtapose related things. When readers must look back and forth between software and documenta-

tion, working memory is consumed by the positions of the current step in the documentation and the location of the interface parts used to accomplish that step. (This is why you'll often see people hold a finger on the page while trying to operate the software with their free hand.) Making it easier to glance back and forth would free up some working memory. For example, adding "affordances" in the interface, such as clear button names or tooltips, reduces the number of times readers must return to the documentation for basic information on how to use the interface. Providing documentation as context-sensitive online help eliminates the need to navigate through the help just to find the correct topic; moving the help window beside the software makes it easier to consult the documentation without becoming disoriented. If we use embedded help, for example, by organizing the interface from left to right and top to bottom in the same order as the procedure's steps, we further reduce the need to consult the documentation (here, to learn the sequence).

Reorganize the interface. Understanding how people progress through the steps in a procedure gives us knowledge that a product's designers often lack. Programmers and engineers most often focus on the details of implementing features, not on integrating them within a workflow. Moreover, most either never use the products they produce or never ask anyone outside the design team to use the products, so they don't understand why an interface is unusable. By providing them with that knowledge, we help them stitch the feature list together into something that supports the product's users. This may involve simple things, such as eliminating irrelevant or rarely used options from a dialog box (such as placing them behind an Options button instead) or grouping related tasks into a single tab of a dialog box. It can also involve more complex processes, such as reconsidering the overall workflow.

Simplify!

This article can be boiled down into a single rule: Before you begin writing or designing, think about how your audience will use what you create. In the context of working memory, this means we should count the number of things users must keep in their head while they work, then look for ways to minimize that number. We won't always have the luxury of redesigning a product to reduce the burden on its users, but we can at least lighten that burden. ■

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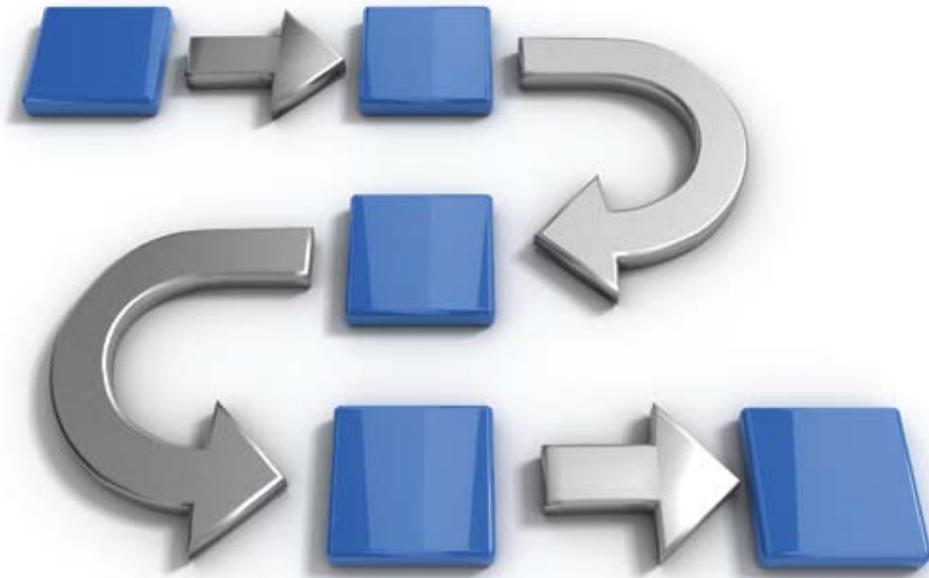
The PDF Landscape for DITA Content

BY SARAH S. O'KEEFE | *Associate Fellow*

THERE ARE NUMEROUS alternatives for producing PDF output from DITA content. The approach you choose will depend on your output requirements—do you need images floating in text, sidebars, and unique layouts on each page? How often do you republish content? How much content do you publish? Do you need to create variants for different audiences? Do you provide content in multiple languages?

This article describes several common approaches and what requirements they support best. Your options include the following:

▸ The DITA Open Toolkit (OT) with an Extensible Stylesheet Formatting Objects (XSL-FO) processor (Apache FOP, Antenna House XSL Formatter, and RenderX XEP)

▸ XML authoring tools that work with the DITA OT and an XSL-FO processor to produce PDF files. They let you author XML and create PDF files from an interface (Just Systems XMetaL Author, SyncRO Soft oXygen, and Quark DITA Studio)

▸ Conversion tools that produce PDF files from DITA files (WebWorks ePublisher)

▸ Help authoring tools that import DITA files and have built-in PDF file conversion capabilities (MadCap Flare and Adobe RoboHelp)

▸ Page-based publishing software that imports DITA files and has built-in PDF file conversion capabilities (Adobe InDesign and FrameMaker)

▸ High-capacity enterprise publishing tools that work with the DITA OT and produce PDF files (SDL XySoft XML Professional Publisher and Arbortext Publishing Engine)

DITA Open Toolkit with XSL-FO Processor

The DITA Open Toolkit includes support for PDF output via XSL-FO. By default, the output created through the Open Toolkit is ugly, and customizing the XSL-FO code is a daunting task. The advantages of the Open Toolkit are automation and licensing cost. You run the Open Toolkit from the command line, and it's possible to integrate the Open Toolkit with automated build systems. If you use the free FOP processor, you can generate PDF without any software licensing costs. The commercial FO processors cost up to $5,000 but have better functionality than FOP. Configuring the Open Toolkit to produce even reasonably attractive pages requires significant technical skills and is not for the faint of heart.

DITA-capable XML Authoring Tools with PDF File Conversion

DITA authoring tools, such as XMetaL Author and oXygen, provide a way to run the DITA Open Toolkit from within the authoring environment. This approach is friendlier than requiring an author to run a command line to kick off PDF generation, but the configuration process still requires you to modify the DITA Open Toolkit. The authoring tools do provide a way to specify some parameters (such as conditional settings). The software licenses include a rendering engine—FOP for oXygen, the XEP (a more robust commercial engine) for XMetaL.

WebWorks ePublisher 2009

WebWorks ePublisher is a conversion tool that includes the DITA Open Toolkit and XEP, so once again, you face a difficult Open Toolkit configuration project to produce the output you want. If you use ePublisher for other outputs or want some of the automation that ePublisher can provide, this might be a good option.

Another tool in this class is DITA2GO. As this article was written in March 2010, DITA2GO has announced that they are working on PDF output.

Help Authoring Tools with DITA Import and PDF File Conversion

Adobe RoboHelp and MadCap Flare both have the ability to import DITA content and render it to PDF. The process of configuring these tools is much easier than working in the DITA Open Toolkit. However, since these tools are intended primarily for help output rather than PDF, the options for print formatting tend to be somewhat limited. These tools also allow you to generate HTML-based help (often called WebHelp), so if you need that output and are happy with a simple, but respectable, PDF look, a help authoring tool might be the way to go.

If you have DITA specializations, you will probably need to transform your files back to unspecialized DITA before importing into Flare.

Page Layout Software with PDF Output

The traditional page layout tools, including FrameMaker, InDesign, and QuarkXPress, can accept DITA content. Once the information is in the page layout application, it is treated like any other content, so you can take advantage of all the layout features. FrameMaker's DITA support is much better than the other page layout tools and can be further improved with the third-party DITA-FMx plug-in.

The major advantage of page layout software is that you can see the exact layout and pagination and make adjustments before creating the PDF output. This workflow increases the cost of production, but may be worthwhile for highly designed publications.

Enterprise Publishing Tools

For enterprise publishing requirements, consider tools such as XML Professional Publisher (XPP) or Arbortext Publishing Engine. XPP is intended for high-volume, intricately formatted publications, such as in financial publishing, and allows users to make adjustments to formatting before generating the final output. The Arbortext Publishing Engine also has high-end features such as change bars and column-wide footnotes. Enterprise-class tools can address formatting requirements that none of the other options will support.

Conclusion

Evaluate the following factors to select your DITA-to-PDF file process:

AUTOMATION. If automated production is a priority, avoid the page layout tools and the temptation to reach into the intermediate layout files. Instead, consider the DITA Open Toolkit and choose your FO processor based on formatting requirements.

FORMATTING REQUIREMENTS. Are ligatures, attractive justification, and hyphenation critical? Do you have requirements, such as mixed columns on a single page, that the XSL-FO processors cannot support? You probably need page layout software. On the other hand, if your formatting requirements are simple, you can probably use any of the options discussed here; look at other evaluation factors.

DIFFICULTY OF CONFIGURATION. If you want to minimize the difficulties in formatting your output, consider a help authoring tool. If you want a technical challenge, go with the Open Toolkit.

FORMATTING ADJUSTMENTS. If hand-tweaking the formatting before generating the final output is a requirement, do not use any of the options based on the Open Toolkit. You can adjust formatting in the various help authoring, page layout, and enterprise publishing tools.

COST. The combination of the DITA Open Toolkit and the FOP processor is free. All of the other tools have at least some cost.

EXISTING TEMPLATES. If you already have formatting templates in a specific tool, consider using that tool to produce your DITA PDF output. For example, an organization that already has an unstructured FrameMaker template or an InDesign template that meets all of their requirements might stay in those tools to take advantage of the existing template files.

LANGUAGE SUPPORT. If you need to support a wide variety of languages, verify that your languages are supported or can be supported by the tools you are considering. In particular, right-to-left languages, such as Hebrew and Arabic, are not widely supported. The DITA Open Toolkit actually has excellent language support.

Many technical communicators equate XML or DITA authoring with ugly PDF output. The default output provided through the DITA Open Toolkit is certainly rudimentary. However, there is no technical reason that PDF from the Open Toolkit should be ugly, and XSL-FO consultants are available. If automation is not a high priority, a help authoring or page layout tool could provide a reasonable alternative with a smaller learning curve. ℹ

This article is a condensed summary of "Creating PDF files from DITA content," *published by Scriptorium Publishing and available at* www.scriptorium.com/resources/white-papers.

Sarah O'Keefe (xmlstrategist@scriptorium.com) *is president of Scriptorium Publishing Services, Inc.* (www.scriptorium.com). *The company provides expert advice and collaborative development to streamlining publishing processes, resulting in cost reduction and quality improvements. Visit her blog at* www.scriptorium.com/blog *or follow her on Twitter:* sarahokeefe.

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Organization events across the globe

5 24–28 May 2010
The Usability Professionals Association (UPA) will hold its 2010 international conference, "Embracing Cultural Diversity—User Experience Design for the World," in Munich, Germany, at the Bayerischer Hof Hotel. For more information, contact:
Nicole Tafoya
+1 (630) 980-4997
Chair2010@usabilityprofessionals.org
www.usabilityprofessionals.org/conference/2010/index.new.html

6 24–28 May 2010
The International Terminology Summer School (TSS 2010) will take place at the University of Vienna in Vienna, Austria, jointly organized by TermNet, the International Network for Terminology, and the Center for Translation Studies. For more information:
TermNet
+43 1 23060 3965
events@termnet.org
www.termnet.org/english/events/tss_2010/index.php

1 13–15 May 2010
The American Society for Indexing (ASI) will be holding its annual conference in Minneapolis, MN. For more information, contact:
ASI
conference@asindexing.org
www.asindexing.org/site/conferences/conf2010/index.shtml

2 14–18 May 2010
The Council of Science Editors (CSE) will hold its annual meeting, "The Changing Climate of Scientific Publishing—The Heat Is On," in Atlanta, GA. For more information, contact:
CSE
+1 (703) 437-4377
CSE@CouncilScienceEditors.org
www.councilscienceeditors.org/events/annualmeeting10/index.cfm

3 16–19 May 2010
The American Society for Training and Development (ASTD) will hold the 2010 International Conference & Exposition in Chicago, IL. For more information, contact:
ASTD
+1 (703) 683-8100
www.astdconference.org

4 19–22 May 2010
The 4th International Maastricht-Lodz Duo Colloquium on "Translation and Meaning" will take place in Maastricht, the Netherlands. For details, contact:
Dr. Marcel Thelen
+ 31 43 346 6471
m.m.g.j.thelen@hszuyd.nl
www.translation-and-meaning.nl

10 **17–19 Aug 2010**
The International Society of Logistics (SOLE) presents its 45th Annual International Logistics Conference and Exhibition, themed "Global Logistics Sustainability," to be held at the Omni Mandalay Hotel at Las Colinas in Dallas, TX. For more information, contact:
SOLE
+1 (301) 459-8446
solehq@erols.com
www.sole.org

12 **27–30 Oct 2010**
The American Translators Association (ATA) will hold its 51st annual conference at the Hyatt Regency Denver in Denver, CO. For more information, contact:
ATA
+1 (703) 683-6100
ata@atanet.org
http://atanet.org/conferencesandseminars/annual_conference.php

7 **1–4 June 2010**
Join the Association of Proposal Management Professionals for the 21st Annual APMP International Conference and Exhibits at the Walt Disney World Dolphin in Orlando, FL. The focus of the event is "Going Green: A Global Initiative—All Things Considered." For details:
APMP
www.apmp.org/ca-29.aspx

8 **2–4 June 2010**
The Society for Scholarly Publishing will hold its 32nd Annual Meeting in San Francisco, CA, at the Hilton San Francisco. For more information, contact:
SSP
+1 (303) 422-3914
info@sspmet.org
www.sspnet.org/Events/spage.aspx

9 **7–9 July 2010**
The Professional Communication Society (PCS) of the Institute of Electrical and Electronic Engineers (IEEE) will hold its 2010 Professional Communication Conference at the University of Twente in Enschede, the Netherlands. For more information, contact:
PCS
http://ewh.ieee.org/soc/pcs/index.php?q=node/850

11 **27 Sept–1 Oct 2010**
The Human Factors and Ergonomics Society (HFES) will hold its 54th annual meeting at the Hyatt Regency San Francisco in San Francisco, CA. For more information, contact:
HFES
+1 (310) 394-1811
info@hfes.org
www.hfes.org/web/hfesmeetings/2010annualmeeting.html

13 **11–13 Nov 2010**
The American Medical Writers Association (AMWA) will hold its annual conference in Milwaukee, WI. For more information, contact:
Dane Russo
+1 (301) 294-5303
amwa@amwa.org
www.amwa.org/default.asp?id=433

* STC-related event

Consensus Building in Team Environments

BY RON STANLEY | *Member*

EDITING IN A collaborative environment can be a nightmare. You can spend hours adding commas after subordinate clauses only to have someone else spend hours deleting them "because my ninth grade English teacher told me not to use too many commas." Okay, no one actually said that to me—that's what makes it a nightmare and not reality.

Communication is critical in a workplace where large numbers of people work on the same document multiple times. Where I work, the production schedule for a single online course is a complex spreadsheet that takes up many pages. Most of our courses are published "just in time." Meeting deadlines and staying within the budget are overriding concerns. Duplicate work can wreck the schedule as well as the bottom line—and it can cause frustration and a loss of confidence in your colleagues.

That's why I've had to step out of my comfort zone as the quiet comma fixer and become a more vocal advocate in team meetings. A big part of my job as editor—a part that doesn't appear on any job description—is to make sure that everyone on my team is aware of and agrees on matters like formatting, style, and boilerplate text. That means I have to speak up in meetings, keep in touch with team members via email and IM, and help build a consensus that everyone can live with.

And consensus is hard. You have to be confident enough to speak up. You have to be flexible enough to compromise. You have to be willing to say, "I disagree, but in the interest of getting this consistent, and getting it done on time, let's do it your way."

You also need the tools to educate the others on your team about what you're doing and why you're doing it. You need to be patient enough to explain the in-house editorial style without seeming dismissive of your teammates' work. You need to be able to build trust with your team members so they're willing to listen to you. And you have to have a sense of humor about yourself.

Those skills don't always come naturally to someone who's used to toiling away in solitary confinement with only a *Chicago Manual of Style* for company. Communications professionals, oddly enough, aren't necessarily good at communicating. We're aces with the written language, but we're not always so great at hashing out differences of opinion in a meeting with 10 other people. Or shooting a quick IM to the content specialist to check a math formula. Or putting together a 10-minute presentation on 10 things the writers can do to reduce corrections.

But what makes my job challenging is also what makes it fun. If I'm willing to step outside the comfortable but rather small box of copyediting, I don't have to be just the guy who fixes the commas. I can also be the guy who watches out for everyone else, who helps the visual designers understand what the rest of the team wants them to do, who makes sure no one puts in those odd characters that make our systems choke and give our information specialists fits, who figures out what the content specialists and instructional designers really want and shows them how to make it better.

I'm blessed with a good team. No one feels proprietary about his or her area of expertise. Everyone knows I'm the expert at semicolons. But they're also willing to listen to my opinions about visuals, content, instructional design, and workflow. And they're patient and compassionate enough to explain to me in clear, concise language why—sometimes—I'm wrong.

By the same token, I may get final say over the commas, but I don't get the *only* say over the commas. I have to be open to anyone else on the team questioning the editorial style. And every once in a while, someone makes a good catch. When that happens, it's nice to know my team members have my back. ◼

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