“Reference” in a veterinary library, as in other libraries, has to do with meeting the information needs of the library’s users. Activities of reference librarians and other staff include answering questions and helping patrons answer their own questions using available resources such as the library catalog, indexes, print and electronic journals and books, Web sites, and a wide variety of other sources. In today’s library, not only will the available resources likely be some combination of print, electronic, and other media, but the reference assistance itself may be on-site and in-person, or it may occur remotely via telephone, e-mail, a Web form, or even as a live online chat session between patron and librarian. Reference activities from the librarian’s perspective can run the full gamut from mundane to fascinating: giving simple directions, handling quick look-up “ready reference” questions, conducting mediated literature searches, teaching users how to conduct their own searches in one or more databases, referring patrons to individuals or organizations outside the library, selecting materials for the library’s print (and possibly electronic) reference collection, and managing that collection.

In addition to reference, instruction, outreach, and other activities will be discussed within the context of public services in academic veterinary medical libraries. In its definition of public services, Dictionary for Library and Information Science includes reference, instruction, online services, circulation, interlibrary loan, and other operations that bring library staff into direct contact with its users (1).

USER GROUPS SERVED BY VETERINARY MEDICAL LIBRARIES

What is different or special about public services in a veterinary medical library (VML), that is, how do they compare with any academic library, or any other branch library that serves a college or academic department? To answer this, we need to look at the several patron categories served by a typical VML. “VML” as used in this chapter refers especially, but not exclusively, to libraries that primarily serve a College of Veterinary Medicine (CVM), its students, faculty, and staff, and is physically located within the veterinary college building. As of 2001, the majority of the AVMA (American Veterinary Medical Association)-approved U.S. and Canadian veterinary schools (18 of 32) were served by libraries that fell into this category (2). The remaining libraries attended to a CVM as well as one or more other constituency of the university such as a college of agriculture, medicine, nursing, or pharmacy. In addition, a few veterinary colleges are served by two libraries: a campus library and a much smaller clinical library. User groups and library activities will vary somewhat depending on the category of library serving the veterinary community.

Academic veterinary medical libraries will have their own distinct mixtures and proportions of the above categories, and possibly others. These constituencies represent a diverse group of library users, most of whom are seeking specialized veterinary/animal
information. Some libraries develop reference policies that define the types and levels of services to be offered to various patron categories. A 1999 paper by Carol E. Vreeland reports on a survey of reference service policies that was sent to U.S. and Canadian libraries serving medical schools and veterinary medical schools (3). Her study found that among responding libraries, only 16% of veterinary libraries had a written reference services policy, although several combined medical school/veterinary school libraries also kept written policies. Vreeland concluded that a written policy was essential for providing consistent service to a library’s various user groups, and that provision of reference services to the general public should be specifically addressed. She noted that further studies were needed on consumer health reference services in veterinary medical libraries. One additional comment about VML policies: while it is true that the CVM’s students, faculty and staff typically will make up the vast majority of the library’s clientele, most VMLs are administratively a part of the university library system rather than the veterinary college. As with other branch libraries in a large university, a VML may appear to the casual observer to be a stand-alone library and its librarian the “final word” on rules, policy, and everything the library does. A patron proposal for changes in open hours, photocopy and print charges, for more study space, or physical rearrangement of the book and journal stacks will likely need to be discussed not only by the VML staff, but also brought to the attention of several library administrators and possibly one or more committees within the university library system. Final decisions can take considerable time, even if the results are ultimately favorable to the requesting library users.

Shown below is a brief outline of typical patron categories served by a VML:

University-affiliated:

1. The professional (DVM degree) students.
2. CVM graduate students (Masters and PhD).
3. CVM faculty, researchers, clinicians, staff.
4. Students, faculty, researchers, and staff from outside the CVM but within the University, from Departments of Animal Science, Food Science, Biosciences, Colleges of Medicine, University Extension, and elsewhere on- or off-campus.
5. CVM and other University alumni, in some cases.

Non-University-affiliated:

1. Veterinary practitioners, clinics, hospitals.
2. The general public, especially animal/pet owners.
3. Researchers, clinicians, and other professionals representing academic, government, or corporate interests.
4. Attendees of CVM short courses, workshops, veterinary extension programs, and other college-sponsored activities.
**University-Affiliated Library Users**

For VMLs serving primarily a CVM, the college’s students, faculty and staff will obviously be their core constituents, and as a practical matter a library may have little leftover time or resources (staff, collection budgets, etc.) to focus on other types of patrons. The professional (DVM) students are likely to be the most visible group frequenting the library facility during the regular school year, especially the first- and second-year students who are loaded with classwork, reading assignments, group projects, and exams. As the emphasis shifts to clinical medicine in the third and fourth years of the DVM curriculum, students spend more and more of their time in the clinics and less in the traditional classroom setting and the library, at least less time in the physical library.

CVM graduate students have library needs similar to graduate students in the other sciences; they may need help with literature searches; using bibliographic databases and online catalogs; verifying journal, conference proceeding, report, and thesis citations; obtaining items not held by libraries on campus; and library research assistance in general. Likewise, CVM faculty, researchers, and staff may need library support for their research, teaching, and writing projects.

Outside the CVM but still within the University, undergraduate and graduate students and faculty from other colleges and academic departments on campus may be seeking additional information in veterinary-related subject areas of food safety, biosecurity and bioterrorism, zoonoses, public health, livestock and poultry production, pet ownership, animal welfare, and comparative and human medicine, to list a few examples. A telephone conversation or e-mail inquiry in advance of an anticipated visit to the VML may help both client and librarian decide whether a trip is worthwhile, and give the library staff a better idea of how they may be of service. And the visitor may greatly benefit from an appointment which will allow the librarian or other staff to provide a brief orientation to library facilities and resources, as well as assist with the particular topic or question at hand.

A question occasionally arises from University and CVM alumni regarding what special library benefits may be available to them. They may ask for free literature searches, free photocopies of articles, book loans, and assorted other special privileges. This may be the case even though the requestor is now living and working hundreds of miles away from his or her alma mater, yet unknowingly resides within easy driving distance of a library that will be able to satisfy all of his or her particular needs. While the answer may be either yes or no to questions regarding special patron status, these situations can be anticipated by addressing alumni benefits within any existing university library and/or VML written policies and rules.

**Non-University-Affiliated Users**

As for the non-university affiliated user groups, practicing veterinarians sometimes contact VMLs for assistance with article and document delivery requests or they ask...
reference questions. A few veterinarians still request library-conducted literature searches from online databases. A 1991 study by Pelzer and Leysen found infrequent use of computers and libraries by practitioners, but speculated that the trend towards more computers, technology, and communication networks would lessen the information isolation of veterinary practices (4). Fifteen years later, new waves of computer-savvy students have graduated from veterinary schools and begun their own careers in the profession. Just as important has been continued advancements in software, hardware, and telecommunications, along with the development of high quality, veterinary-related internet resources that are freely available to all. PubMed, The Merck Veterinary Manual, and Consultant, a diagnostic support system and database from Cornell University’s College of Veterinary Medicine, are only a few of the hundreds of useful and authoritative resources that are now on the Web. In addition, there are some excellent subscription- and membership-based veterinary reference and networking services. The emergence of these resources, however, does not mean that there is no longer a need for veterinary libraries by practitioners or other user categories. Sarah Anne Murphy describes a VML’s outreach program directed at Ohio veterinary practitioners (5). The program focuses on e-mail and phone reference, document delivery, a continuing education course on accessing the veterinary literature that includes PubMed searching, and a redesigned library Web site with a specific link for veterinary professionals.

Pet owners on occasion seek library help in finding information about animals, especially information concerning any particular conditions or diseases of their own dog, cat, horse, bird, or other companion or barnyard animal. The creature in question may have already been diagnosed by a veterinarian, and owners want to read up on its condition, including news of any recent developments. The librarian’s challenge here is to locate and suggest sources that provide useful information in some detail, yet do not require a veterinary degree or PhD to comprehend. A pitfall to avoid, for ethical and legal reasons, is in making comments that could be construed by the animal’s owner as a diagnosis, prognosis, or recommendation of a specific treatment. The best advice a librarian can offer may be to refer the owner back to his or her veterinarian, or possibly to a veterinary extension specialist. Some universities or veterinary colleges employ extension veterinarians for small animal, equine, livestock, or poultry, for service to the general public as well as to the state’s veterinary professionals.

Examples of other non-affiliate library users include researchers, educators, and librarians from other universities, state or federal government officials, and drug and animal product representatives. These individuals represent organizations from anywhere in the U.S. and beyond and usually make initial library contact by telephone or e-mail rather than in person. They are often looking for very specific veterinary resources or pieces of information (in some cases proprietary information) that are not readily available from the average public or academic library. Veterinary librarians sometimes need to guard against letting these inquiries evolve into major research projects for the library, but instead suggest relevant publications, databases, offices, etc. that will hopefully steer the investigator in the right direction.
Yet another category of non-affiliated VML user is the out-of-town attendee of veterinary short courses, workshops, conferences, and programs held at the CVM or elsewhere on campus or in the community. These may be local, regional, national, or international in scope and run in length from a few hours to several weeks. They are typically scheduled by CVMs during non-peak periods such as summers, or winter and spring breaks. Attendees frequently take advantage of these learning opportunities to use the collections and other resources of a genuine academic veterinary library. Many have never visited the library previously and may not soon return. In addition to whatever specialized assistance they may need, they will greatly benefit from a brief orientation to the library facility and its staff and resources. Regardless of patron category or type of information request, librarians need agreed-upon reference policies or rules, whether written or informal, to provide fair and consistent service.

ACCESS TO USER SERVICES
Access to Facilities

Typically, veterinary libraries are located in colleges or schools of veterinary medicine that are situated several blocks or even a few miles from the main campus, often in out-of-the-way locations. Within the past few years heightened veterinary security measures have further limited building access to non-veterinary college affiliated individuals. For example, a veterinary college may offer normal workday access to its buildings from one or more entrances, but access to all external doors in the evenings, on weekends and during holidays is only for pre-authorized holders of keys, proximity cards, punch-lock combinations, etc. This means that non-CVM-affiliated library users who are unfamiliar with the veterinary college building(s) should call ahead to determine library open hours, directions to the veterinary facility and to the library location within that facility. Most importantly, they should ascertain from a conversation with library staff whether the library is going to be able to satisfy their particular information needs, and if the answer is yes, is a visit to the physical facility even necessary. For example, does the library have on its shelf several books on a certain breed of dog a person is considering acquiring? Will it have veterinary texts that describe a particular surgical procedure in sufficient detail? Does the library provide print and/or electronic access to current, recent, and older issues of some specific veterinary periodicals that an individual wants to browse? Will there be someone present who can instruct a non-affiliated researcher in using the CAB Abstracts database, for example, and then help that person find the referenced articles and other publications on the shelves or on the computer? These and similar questions can sometimes be dealt with successfully by telephone, e-mail, fax, document delivery, or other means, thereby saving the patron an unproductive trip to the VML. If a visit to the library is deemed necessary by staff but the patron simply cannot make it to the building during regular weekday hours, special arrangements may need to be made during “off” hours to resolve the situation. The annual AVMA Membership Directory and Resource Manual includes a detailed description of services and resources provided to veterinary professionals by the libraries serving AVMA-accredited institutions in the United States, Canada and overseas. The directory also provides a complete list of those libraries along with contact information for each (6).
Access to Electronic and Print Resources

The resources of a VML, as with many other libraries, are much closer to everyone than they were 20 years ago because of the computer, the Internet, and remote access. Libraries of all types and sizes now maintain their own Web sites that provide library information and news, links to the online library catalog, citation databases to which the library subscribes, hundreds if not thousands of electronic journals and books, and subject resource guides that link to veterinary-related Web sites worldwide. Often these same resources are made available remotely off-campus as well as on-campus; proper user authentication will be required to obtain remote access to paid subscription library resources such as e-journals, index databases, and e-books. Other excellent resources such as PubMed, AGRICOLA (Agricultural Online Access), The Merck Veterinary Manual, and Consultant, a veterinary diagnostic database, are also linked from VML Web pages and are freely available to everyone. The Internet in general and the Web in particular have brought the library closer to all its users, at least all who have entered the computer age.

A still-important service of many VMLs, however, is the maintenance of an in-house collection of print reference materials: dictionaries, encyclopedias, handbooks, manuals, guides, directories, and other publications for ready reference by in-library users, as well as for the use of library staff in answering frequently-asked questions. It must be noted that in VMLs the latest editions of many of the standard veterinary textbooks are frequently shelved in Reserve, and as a ready source of facts, figures and detailed information on conditions, diagnoses and treatments serve as an invaluable extension of the library’s Reference collection.

The library may have additional responsibilities for collecting other formats of reference materials besides print: CD-ROM, CD, DVD, microform, Web sites, etc. CVMs may have their own biomedical communications departments or similar units that collect some or most of the non-print materials used in the College. Format needs to be addressed in the CVM’s collections and/or reference policies. The issue of format has been somewhat complicated by the fact that some publishers have bundled CDs or DVDs with their print texts for a single price; they are marketed together as a package.

Nearly all bibliographic indexes and abstracts that are likely to be used by veterinary students, faculty and researchers are now available electronically. The shift from print to electronic format for journals has been steady and pronounced, but is far from complete. The change from print to e-books has been slow by comparison. As more CVMs require or strongly encourage their students to use laptop or tablet computers and provide wireless access throughout their buildings, and as more class materials are placed on these computers, it is natural to assume that more course-required and recommended veterinary texts will be accessed from these same computers. Correspondingly fewer books and class reading assignments will be accessed in print, or they may be kept in libraries as backup and archival copies and no longer be heavily-used reserve materials. Veterinary researchers and graduate students, however, will continue to draw upon a
A wide range of current and older print journals, conference proceedings, reports, books, etc. into the foreseeable future, and the library will likely remain the foremost repository for these print items.

**ASSISTING VARIOUS USER GROUPS**

*Assisting Users within the VML*

As with other small academic branch libraries, in contrast to the university main library, the lines separating reference from other library functions are frequently blurred. Reference, circulation, reserve, document delivery, lost-and-found, and a variety of other public services are often handled from a single service desk. This is advantageous from a user’s perspective in that he or she needs go to only one desk to ask any question or to request any service.

Types of questions received and how they are answered by library staff depend to a great extent on the category of patron. The largest single category of VML users consists of the professional (DVM degree) students. These students frequent the library to check out class materials including required and recommended reading that has been placed on Reserve, study individually or work on class assignments in small groups, use the photocopiers and computers, or browse some current issues of veterinary periodicals. Because they spend more time in the physical library than other user groups, there are more opportunities for library staff to answer students’ reference and directional questions. The veterinary librarian or other staff can also provide point-of-use instruction on the library online catalog, on choosing and searching index databases, accessing e-journals, locating books, print journals, and other items in the library, using the library’s Web request forms to recall a book, requesting book or journal delivery from the main library or a library storage building, and using interlibrary loan to obtain materials not held by the VML or elsewhere in the university library system. Instruction to larger groups of students or others is typical of most academic libraries in that it focuses on use of library resources, usually within the context of a subject or topic: veterinary medicine, veterinary ethics, alternatives to animal testing and teaching, etc. Depending on the size of the class or other group and library facilities, these sessions may need to take place elsewhere in the CVM, in a classroom, meeting room, or computer lab.

Many individuals from the other CVM groups (vet grad students, faculty, research assistants, clinicians) may visit the library to browse the latest issues of their favorite journals (of those print titles that the library has not yet replaced with their online counterparts), seek specific journal articles, books, conference proceedings, use the photocopiers or check out publications to photocopy in their departments, pick up books and other items delivered to them from the main library, and so forth. These frequent in-library contacts help library staff become acquainted with many of the students, faculty and other college and departmental employees, along with their individual research and classroom needs. This frequent interaction can contribute to a more personalized, less bureaucratic service operation within a welcoming, user-friendly environment.
Initial and subsequent contacts with VML patrons beyond the CVM and the university are less likely to occur within the library facility itself, due to its relative remoteness, and also because of building security issues. Security has become a serious concern for a variety of reasons, including the threats and actions of some animal rights activists, and heightened awareness of biosecurity and bioterrorism issues. While any category of library user may have access during normal weekday hours to VMLs housed within veterinary college facilities, evening and weekend visits by “outsiders” can become more problematic. It is important that library Web site information, calendars, and other publicity make clear any differences in library access hours for CVM- versus non-CVM-affiliated patrons. Regardless of time of day or day of the week, initial contacts with non-university clients often occur by telephone, e-mail, or as Web reference questions. In at least some cases an individual’s question or request can be satisfied or referred to a more appropriate source without a visit to the VML. If not, an appointment can be arranged at a mutually agreeable time to assist persons with their specific needs. A pet owner, veterinary practitioner, and drug company researcher, for example, will each have very different information needs that call for different types of assistance and possibly different levels of service.

**Library Web Services**

What makes the turn-of-the-21st-century academic veterinary library very different from its 1950 (or even 1990) counterpart is the ability to deliver a large portion of its services and collections electronically to a scattered and diverse user base, via a well-organized Web site. Within only the past few years a larger portion of reference now takes place remotely, that is, outside the physical library. (This overall “out of library” experience, however, will be somewhat tempered in those VMLs that are conveniently located in the same building as the students, faculty, researchers, clinicians, and staff of the CVM.) Some examples of remote information delivery and exchange typically available at a library Web site include:

- “Ask a question” Web form
- e-mail questions and remarks; can be directed to a specific librarian
- “e-Resources by Subject” pages; quality-assured Web sites arranged, annotated, and linked
- Web form to put a recall on a library book that is checked out
- Web form to put a hold on a book ordered but not yet received or processed by the library
- Web form to request the library purchase a book, journal, or other item
- Access borrowing record online: see a list of books you have checked out, when due, fines owed
- ILL request form, intra-campus delivery form, fee-based document delivery form
- Loansome Doc (some VMLs participate in NLM’s document ordering system for end users) (7)
- Basic information about the library: its collections, services, location, hours of operation
- Collections, reference, and general library policies
- Contact information for library staff: names, e-mail address, telephone and fax numbers
Some VML Home Pages now offer separate resource links or “tracks” for the CVM community (students, faculty, staff), veterinary practitioners, and animal owners. Libraries may arrange or tag their e-resources in such a way that users can see at a glance which ones are available only in the library or on campus, which ones are available off-campus to CVM- or University-affiliated users only, and which ones are freely available to all, regardless of patron category or location.

To the extent that digital chat (real-time) reference occurs in VMLs, it may be “plugged in” to the chat service of the main university library, if indeed such a service is even offered on campus. “Live chat” may not be well-suited for small VMLs with small staffs. Nor would it seem essential for a faculty member or researcher whose office was only a one- or two-minute walk from the room that houses the library, which is often the case. E-mail as a vehicle for ready reference, however, has been around for years, as an “Ask a Question” Web form, or more informally is initiated by patrons who find a librarian’s or library office’s e-mail address on a Web page or in a print directory. A recent study of academic health science libraries found that approximately 90% maintained a digital e-mail service, but only 27% offered digital chat (8).

**REFERENCE STAFF**

Regarding the practice of reference in an academic VML, which library staff should handle which kinds of questions from which categories of patrons? Reference policies and rules can partially address this, but realistically a small permanent staff that consists of one MLS librarian plus one or two paraprofessionals means that a number of part-time student assistants will need to be hired to work most evening and weekend desk hours. These students must be willing and able to help with reference questions while at the same time recognizing the point at which they need to turn a question over to a permanent library staff member, whether on-the-spot, or possibly the next working day if the question is asked during evening hours or on a weekend. While a small permanent staff has its obvious limitations, a potential advantage is small-team flexibility – each staff member by necessity has knowledge of many operations within the library, the option to refer a patron’s question at the time it is asked to another staff member or work on a question together, and the likelihood of knowing someone else in the CVM with the needed subject expertise to answer a difficult question.
Whether formally stated or only implied, a flexible tiered system of reference is probably in practice at most VML service desks. If a student worker cannot answer a patron’s question or satisfy a request, that student refers the question to the paraprofessional on duty, who, if unable to resolve the matter, may then refer it to a fellow paraprofessional, if there is one, or to the librarian in charge. In actual practice, especially with a small team, this process may not even be obvious to the waiting patron. The question may be quickly bounced around by staff and the matter resolved within a minute or two. The success of such a team approach lies not so much in referring a question “up the chain” but in each staff person, including the part-time student helper, being able to quickly judge which co-worker, if not themselves, would best be able to answer a specific question or type of request. For example, an unusual circulation question may need to be referred to the paraprofessional who works most frequently at the service desk; a difficult citation verification from a faculty person or research assistant may need to go directly to the vet med librarian; the best person to quickly locate the “answer” to a class assignment, or at least the most likely source for the answer, could very well be the library’s veterinary student worker who took that same course last year, or is taking it this semester.
NEW APPROACHES TO INFORMATION DELIVERY

There is some evidence that veterinary librarians are gradually moving more reference and instruction activities outside the library and into the veterinary clinics, faculty offices, and classrooms of the CVM. In a brief article now ten years old, Texas A&M librarian Norma Funkhouser describes her (then) “librarian/informatician” position as a joint appointment: 60% librarian in the Medical Sciences Library, and 40% lecturer in the College of Veterinary Medicine (9). She served as liaison between the Library and the teaching and research activities of the CVM, with reference, mediated searching and bibliographic instruction responsibilities at the Library. At the College, she taught online search skills and computer software applications to students and faculty, both in the classroom and one-on-one in faculty offices. She reported that her work in each of these two environments supported and benefited the other. A more recent paper concerning the Texas A&M Medical Sciences Library gives an overview of its Clinical Veterinary Librarian (CVL) service (10). Librarians attend rounds in the large or small animal clinics, conduct literature searches to support patient care (focusing on CAB Abstracts, MEDLINE, and Current Contents), and advise students and faculty regarding the most appropriate resources for their research. Future plans for the CVL program included providing information at point of care in the clinics.

The University of Florida Health Science Center Libraries (HSCL) has taken a slightly different approach. HSCL serves six colleges, including the College of Veterinary Medicine. In 1999 HSCL began a liaison librarian program that addressed function as well as subject specialty of its CVM patrons (11). Two liaisons were assigned to the College, one for basic sciences and one for clinical sciences. The basic sciences liaison covered the Pathobiology and the Physiological Sciences Departments and their faculty, Ph.D. students, and M.S. students. The clinical sciences liaison was responsible for the Small Animal Clinical Sciences and Large Animal Clinical Sciences Departments, their faculty, the professional (DVM) students, and residents. Liaison duties included communication, user education, collection development, and information access (providing access to e-journals, developing Web page collections, etc.). Instruction sessions for the library’s clinical clients focused on MEDLINE, CAB Abstracts, PubMed Clinical Queries, and Internet resources. HSCL’s experience, along with its surveys of CVM members, suggested to the authors that a functional division of responsibility by liaisons (clinical versus basic science) could be effective at any academic medical center library.

Another recently published paper details the experiences of Washington State University’s Health Sciences Library (HSL) in providing instructional outreach programs to veterinary professional (DVM) students (12). All students in the DVM program receive at least three mandatory library instruction sessions. The first session occurs at the beginning of the students’ first year and consists of a one-hour library orientation and introduction to the library catalog and database searching. The databases used are PubMed, VETCD, and BEASTCD. (VET and BEAST are the veterinary science and animal science subsets of CAB Abstracts, the large agriculture/biosciences bibliographic database.) The library’s second mandatory session supports the College of Veterinary
Medicine’s Diagnostic Challenges (DCs) problem-based learning intensive program. DCs are separate one-week sessions that take place three times during the students’ second year. Student teams are given case studies that require a literature search by them, along with a library search refresher. Finally, librarians provide students with an instruction session when they begin the required independent research project that results in their senior paper. The authors conclude that successful use of electronic databases is a vital part of the veterinary curriculum, and that library-veterinary college collaboration has positively affected student learning.

The above examples of library outreach, liaison, and clinical veterinary programs come from larger health science libraries that serve several schools or colleges, of which one is a veterinary college. It has been noted that most published literature on liaison programs relates to the activities of the larger academic libraries. In a 2003 article, Jill Livingston invites small libraries to adopt the liaison model of the larger libraries, but scale it down to size to fit their fewer resources and staff (13). She contends that a liaison program does not need to represent every individual in an institution, but the really important consideration is the likely degree of mutual benefit between the library and a particular user group. Establishing good communication is the single most important element. This should be a reasonably attainable goal for smaller VMLs that primarily serve a college or school of veterinary medicine, a goal that has hopefully been realized in large part by most. Once effective channels of communication are in place, the small library can concentrate on improving specific services such as reference, instruction, and developing the collection, to the extent that its more modest budget and staffing will allow.

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