

LIBRARY SUPPORT FOR Pathobiology (MSc, PhD, GDip)

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Summary and Recommendations

Overall, the library provides **strong support** for the three graduate programs in Pathobiology.

Collections:

Access to the broad literature related to Pathobiology is very strong, with excellent e-journal, monograph, and index coverage. Library participation in national and provincial purchasing consortia results in better collections than would be expected at comparable, less well-connected institutions. The acquisition of e-books is rapidly replacing print, facilitating convenient desktop access. Because of the flagship stature of OVC at the university, the library takes a nearly comprehensive approach to collections in all areas of veterinary medicine. This is further enhanced by the university's historic strengths in animal agriculture and the broader biological sciences.

The greatest challenge that veterinary science presents for library collections is the very high cost of medical information resources. As comparative biomedical research in areas such as cardiovascular disease, cancer, and public health gain prominence, the acquisitions budget is stretched. In addition, the increasing focus on systematic reviews by OVC researchers has created strong demand for access to Elsevier's *Scopus* database. Unfortunately, at approximately \$100,000 per year, a subscription to this tool is currently beyond reach.

Services:

Beyond the collection, the library offers extensive services for veterinary graduate students: Information Literacy librarians conduct guest lectures in select courses and provide individualized consultations. The Research and Scholarship team assists with advanced data, publishing, copyright, and methodological support. Learning and Writing specialists provide guidance on a variety of academic skills and offer English-as-an-additional-language support.

Perhaps the greatest challenge in supporting Pathobiology students is ensuring they are aware of library services and encouraged to use them. A recent survey indicated that supervisor support is the key factor in pursuing professional skills development for 75% of graduate students. We continually promote library services through various channels, but find that word of mouth is the most powerful referral source. As graduate student numbers increase, we continue to explore the best ways to maximize our reach. One area for possible development is the introduction of more online guides specifically tailored to Pathobiology, as heretofore our focus has been on developing resources for undergraduate courses.

Another major challenge is meeting the rising demand for learning support services. In 2017-18, we provided more than 5,000 individual consultations, and more than 1,500 students registered on waiting lists. Many of our graduate offerings, including *Dissertation Boot Camp* and *Brain Food* workshops, are regularly oversubscribed. Support for English-as-an-additional-language students is also in high demand, with the number of participants in EAL programs tripling from 582 in 2016-17 to 1,532 in 2017-18. As the international student population grows, we are seeking ways to increase program capacity.

Library Support: Collections

Journals

The library almost exclusively acquires online journals, providing access to more than 55,000 titles across all disciplines. The veterinary collection is very strong, and includes all of the titles on the ACVP Board Certification exam reading lists. The 25 subscription journals in which Pathobiology faculty members have published most often in the last five years are also available.

Students can access nearly complete journal suites, in many cases back to the first volume, from publishers such as:

- AVMA
- American Society for Microbiology
- Annual Reviews
- BioOne
- CABI
- Cambridge University Press
- Canadian Science Publishing
- Cell Press (select titles)
- Elsevier
- Nature journals (select titles)
- Oxford University Press
- SAGE
- Springer
- Taylor & Francis
- Wiley

Where gaps exist, it is generally for publishers to which the library subscribes to select titles rather than complete ‘bundles.’ Notable publishers in this category include BMJ specialty titles, Cell Press, Karger, Mary Ann Liebert, Nature (specialty titles), Thieme, and Wolters Kluwer/OVID. The library adds new subscriptions in response to evolving demand and as budgets permit.

The university has access to most of the high impact factor journals relevant to Pathobiology, according to Clarivate’s *Journal Citation Reports (JCR)* database (2017). By subject category:

JCR Subject Category	Guelph Access
Agriculture, Dairy & Animal Science	49/50
Anatomy & Morphology	18/21
Cell Biology	49/50
Developmental Biology	37/41
Endocrinology & Metabolism	21/25
Genetics	24/25
Immunology	25/25
Infectious Diseases	45/50
Medicine, General & Internal	23/25
Medicine, Research & Experimental	24/25

JCR Subject Category	Guelph Access
Microbiology	49/50
Oncology	46/50
Parasitology	25/25
Pathology	45/50
Physiology	50/50
Public, Enviro. & Occup. Health	47/50
Reproductive Biology	28/29
Toxicology	50/50
Veterinary Sciences	50/50
Virology	29/35

Books

The acquisition of e-books is rapidly replacing print, facilitating convenient remote access. All of the recommended titles for the ACVP Board Certification examinations are available (21 as e-books and 4 in print). Also of note, a project was undertaken in 2017 to obtain digital copies of every book listed in the DVM curriculum. Most have been acquired, except in cases where online access is not available to

libraries (notably textbooks from publishers such as Mosby, Pearson, and Saunders) or is prohibitively expensive.

A broad selection of titles is available from academic publishers such as:

- American Society for Microbiology
- Cambridge University Press
- CABI
- CRC Press
- Elsevier
- Oxford University Press
- Springer
- Wageningen Academic Publishers
- Wiley

Search Tools to Access the Literature

Access to the broad literature in veterinary science is best achieved through a systematic search of the many indexes and databases to which the library subscribes, including:

- AGRICOLA
- Agricultural & Environmental Science Collection (ProQuest)
- Animal Health & Production Compendium (CABI)
- Aquaculture Compendium (CABI)
- Biological Science Collection (ProQuest)
- CAB Direct
- Cochrane Library
- Medline (ProQuest)/PubMed
- TOXLINE
- Web of Science

Other Library Resources

Research Methods & Protocols

Journals dominate the scientific research literature. However, methods and protocols are often impossible to replicate from the brief descriptions written up in research articles. To help overcome this challenge, the library collects an increasing number of books, book series, and databases that provide comprehensive detail about experimental procedures. Notable examples include:

- Cold Spring Harbor Protocols
- Journal of Visualized Experiments (JoVE, select collections)
- Methods in Enzymology (Elsevier)
- Springer-Nature Experiments (formerly *Springer Protocols* and *Nature Protocols*)
- Wiley Current Protocols

Multimedia resources

Audio, DVD, and streaming video that explore issues related to veterinary science are selected individually or as part of standing subscriptions. The library subscribes to a number of streaming media services that provide films and film clips to support the study of veterinary science, including *Docuseek 2*, *Films on Demand: Digital Education Video*, *Kanopy*, and *Veterinary Education in Video*.

Library Support: Student Learning

The library offers various services to help graduate students succeed, by several specialized teams including Learning and Curriculum Support (L&CS), Access Services, and Research and Scholarship (R&S). These teams deliver a range of services related to academic research and writing, information and digital literacies, scholarship and publishing, time management, professional and ethical behaviour, numeracy, data, and technical skills.

Different service models are used based on student and faculty needs, including:

- Customised in-class guest lectures
- One-on-one or small group consultations to discuss individual curricular or research needs
- In-library programming on popular library topics
- Support for faculty seeking to integrate academic skills development and assessment in their courses
- Development of point-of-need online learning objects such as library guides and videos.

Learning Services

Learning Specialists work with faculty to develop graduate students' academic skills through:

- In- or out-of-class workshops on topics such as critical reading, working in groups, presentation skills, poster presentations, and exam preparation
- Support for assignment and assessment design
- TA training on these topics and others upon faculty request
- Customized student resources (such as an error analysis worksheet for midterms)
- Individual student consultations

Research and Information Literacy Skills

Learning and Curriculum Support (L&CS) librarians are a part of the Information Literacy (IL) team and deliver research skills and information literacy instruction to graduate students across the disciplines.

PABI*6430 (Academic and Professional Skills in Pathobiology) and **PABI*6440** (Seminar in Pathobiology): a librarian teaches a 2-hour interactive guest lecture in each course, with content focused on comprehensive literature reviews and supporting the development of a thesis plan. Topics include finding relevant peer-review journal articles and critically evaluating information. Librarian involvement in these courses has been consistent over the past few years and is expected to continue.

To ensure students have timely access to research help, the library provides drop-in assistance in person and online. The Research Help Desk on the library's main floor is available for same-day research support. Help is also available via the library's *Ask Us* online chat messaging service, e-mail, and by phone.

Systematic Review Support

An increasing number of graduate students conduct systematic or scoping reviews as part of their studies. The IL team can assist with understanding different types of reviews, developing search strategies and queries, selecting databases, and managing results.

Writing Services

The Writing Services team provides guidance on all aspects of the writing process. Writing specialists provide targeted support for graduate-level skills, such as organizing and structuring projects; getting started with a thesis or major research paper; navigating topic development; writing a literature review; improving written drafts; and publishing and presenting research. They provide expertise in academic integrity and citation; writing for specific disciplines (such as the 5-part *Writing in the Sciences* series); and effective use of grammar and style (the 2-day *Writing Tune-up* workshop). The team also coordinates major in-library events to support graduate students' writing through *Dissertation Boot Camp*, a weeklong program designed to help develop effective writing skills and thesis writing habits; and *Brain Food*, a series of workshops that teach effective ways to approach research, writing, time management, and data analysis.

English as an Additional Language (EAL)

Writing Services also offers continuing support for students with English as an additional language (EAL) through in-person or online consultations. These focus on writing, speaking, reading, and listening skills. EAL students can participate each summer in a 4-day *EAL Graduate Writing Camp*. Instructors can also access curricular support and resources from our EAL Specialist.

Writing Services' Experiential Learning Opportunities

Writing Services employed a Pathobiology PhD student as a member of the Writing Support TA team each semester during 2017-2018. This student received intensive on-going training, mentorship, and feedback, and worked 10 hours per week in the Writing Centre, providing individual writing consultations to students across the disciplines. In 2018, she successfully graduated with her PhD, and currently works as a full-time scientific writer.

Digital Literacy and Digital Media Skills

Many faculty members are exploring a variety of avenues for embedding digital media and communication technologies into their teaching and course deliverables. New models of pedagogy focus on empowering students to learn not just through consumption of information, but as creators of new information and media.

To support this emerging form of student learning, the library has launched the Media Studio, which supports the development of digital literacies in students and faculty from within the curriculum.

Models of support include:

- Consulting with instructors to create digital assignments that align with course outcomes and are pedagogically sound. Examples of assignment formats and topics include podcasts, infographics, digital storytelling, animated videos, live-action videos, digital citizenship, and social media identity.
- Providing in-class instruction on digital media topics such as digital storytelling; podcast, infographic, animated video, and live-action video creation; digital citizenship and social media identity; understanding Canadian copyright in relation to digital media creation; finding Creative Commons-licensed images and videos; iterative and design thinking.
- Appointments in the Media Studio, where students and faculty can work with staff to access digital technologies for filming, recording, and editing.
- Online library help guides to support digital skills development.

Scholarship and Data Services

The library's Research & Scholarship (R&S) team provides a variety of services in support of graduate student research activities.

R&S helps develop student data literacy and research skills: the collection and extraction of research data, cleaning, analysis and visualisation, and best practices for research data management throughout the full data lifecycle. The team assists with publishing activities such as guidance on authors' rights and copyright, open access publishing, measuring research impact, and creating researcher IDs and scholarly profiles. Students can also get help with specific research tools such as NVIVO, Dataverse, Qualtrics, and others.

R&S is home to the library's Data Resource Centre (DRC), where students can get assistance in accessing health, demographic, and geographic data sets from licensed, open, and government sources. Students can make an appointment with a data analyst to receive one-on-one support with accessing data sets and using data analysis tools for assignments.

R&S librarians and staff collaborate directly with faculty to integrate these services into courses, and to develop workshops, classroom visits, and point-of-need learning objects. R&S serves graduate students directly through drop-in help at the Scholars Studio on the second floor of the library, and through one-on-one consultations and in-library programming.

Accessibility Services

Library Accessibility Services (LAS) is a part of the library's Discovery and Access (D&A) team. LAS provides services, spaces and technologies to help students registered with Student Accessibility Services meet their accessibility needs. LAS is housed in the Access Lab, where students can book quiet space for study and access accessibility specialists, who coordinate alternative format materials, training on adaptive software programs including Kurzweil, Jaws, and others, and lend accessibility equipment such as digital recorders, smart pens, and tablets.

Ask Us Desk

The library's Ask Us Desk is the library's main service location. It is often a first point of contact for students entering the building. Open from 8:00AM to 2:00AM during the academic year, it is one of the few campus services available to students outside of business hours.

The Ask Us desk provides a variety of services, including circulation; help with library accounts; interlibrary loan and intercampus borrowing services; circulation of the Course Reserves collection; management of media bookings and group study rooms; computer and printer troubleshooting; quick reference help; and triage to events or other library service points. Help is available in-person and via phone or e-mail.

Library Services Used by Students in OVC/Pathobiology

NOTE: Data cover the 2017-18 academic year. Data are not usually collected at the departmental level, so in many cases data are reported at the College level.

Student Consultations

Service	# of Participants
EAL	46 (OVC)
Learning	11 (OVC)
Research	36 (OVC)
Writing	151 (OVC) – 46 PhD, 44 Masters, 5 “other”

Guest lectures: Learning, Research, and Writing Skills

Date	Course	Type of Session	# students
June 2017	PABI*6430	Research	7
June 2017	PABI*6440	Research	8
October 2017	PABI*6430	Research	18

Use of Online Research Guides

An online [course guide](#) has been created for *PABI 6430 – Academic and Professional Skills in Pathobiology*. It received 14 page views in 2017-2018.

Appendix – McLaughlin Library Overview

TUG (TriUniversity Group): The libraries of the Universities of Guelph, Waterloo, and Wilfrid Laurier collaboratively manage:

- Primo: shared catalogue of over 7 million TUG holdings
- InterLibrary Loan: Students can obtain items quickly and efficiently

Consortial memberships

Approximately 54% of resources are obtained through consortia (OCUL/CRKN).

OCUL (Ontario Council of University Libraries) operates:

- Scholars Portal, an online library containing
 - 600,000+ e-books
 - 48m+ articles from 20,000+ journals
 - over 1m Open Access (OA) articles from over 2,000 OA journals
- Scholars GeoPortal (geospatial data discovery tool)
- <odesi>: over 3,535 datasets for the social sciences
- Dataverse: a repository for research data
- OLRC - Ontario Library Research Cloud, a 350TB storage network
- ASK A LIBRARIAN: provides students with real-time research assistance through chat
- OCUL Information Resources Committee - for collaborative subscriptions & purchases

CRKN (Canadian Research Knowledge Network)

- In 2017 University of Guelph participated in a total of 42 subscriptions managed by CRKN, including journals from major publishers such as Elsevier, Sage, Wiley-Blackwell, Taylor & Francis, Oxford, Cambridge

Library Collections and Space

	2015-16	2016-17	2017-18
Expenditures on Acquisitions	\$8,246,731	\$8,223,406	\$8,425,320
Library Holdings			
Print Books	909,092	914,657	898,544
E-Books	613,862	669,186	708,085
E-Journals	N/A	59,113	59,120
Archives [linear meters]	9,200	9,200	9,250
Library Building Use			
Hours Open Per Week (term)	111	111	111
Hours Open Per Week (exams)	126	126	126
# Student Study Seats	3,088	3,088	3,088
Daily visitors on busiest days	12,816	13,330	12,969
Annual visits	1,504,000	1,545,100	1,444,905

Student Access to Expertise

	2015-16	2016-17	2017-18
Librarians at Guelph	29	31	31
Professionals	24	23	23
<i># Learning Commons Professionals</i>	11	11	11
Support Staff	56	54	54
# Reference/Instructional Questions Answered			
In person	12,698	14,881	14,372
online	4,015	3,692	3,414
consultations	6,191	5,598	6,956
TOTAL	22,904	24,171	24,742
# sessions	2,112	2,055	2,136
# students	37,461	43,347	49,023
Library Accessibility Services			
requests for alternate format texts	979	1,017	1,169
consultations with library staff	574	603	572
Participation in Learning Commons Programs			
Students in Supported Learning Groups	3,932	3,925	N/A
Students in Student Athlete Mentorship Program	281	315	295

Online Student Support

	2015-16	2016-17	2017-18
Library Web page views	2,609,000	2,765,000	2,951,365
Views of Library "How To" YouTube videos	26,675	41,891	90,099
Course/Subject Guides (LibGuides) Page Views	68,514	147,599	195,149
WriteOnline.ca (launched September 2015)			
sessions	15,958	50,682	61,769
users	9,523	32,578	44,416