

## **Information service in support of Veterinary Education 2000 in Africa.**

### **Introduction:**

In recent months news of Africa has dominated almost every television and radio broadcast. Not only was the news of poverty and hunger but also floods which destroyed not only people and animals, but also belongings and libraries. Many people who hear the word "Africa" visualise a tropical paradise with wild animals and Third World circumstances and services. I would like to introduce you to First World services available in southern Africa at the University of Pretoria (UP).

The Academic Information Service (formerly Library Service) is primarily responsible for the provision of academic information to support education, tuition and research at UP. The Faculty of Veterinary Science is situated north of Pretoria, about 30 km from the main campus and is supported by a branch of the Academic Information Service, namely the Service unit: Veterinary Science.

The Transvaal University College opened its doors on 10 February 1908. It later became the University of Pretoria and has grown into the largest residential university in South Africa. Until recently training at UP was limited to contact education at the university campus. In 1995 the university moved into the distance education arena. The University has systematically broadened its traditional mode of contact to include telematic or distance education.

Some reasons why the move to distance education took place are the following:

- to allow more students to have the opportunity of a high quality tertiary education at an affordable price without physically expanding the campus. Distance education is relatively cheaper than contact education
- competition from "new" universities from other countries who were opening their doors in South Africa

The virtual campus was established. Two new web-based developments make life easier for students and lecturers via the Internet.

- "UP-online" allows students access to their financial records, courses/modules, exam results and test timetables and personal records.
- "Lecturers online" gives academic personnel access to class lists and student results. WebCT software program is being used for web-based programs.

Various regional tutor centres were developed all over the country on a decentralized basis. Each of these centers is managed by a facilitator, who sees to every student's needs in his/her own environment. Students receive academic and administrative support through the tutor centres.

### **Faculty of Veterinary Science**

What is being done at the Faculty of Veterinary Science to accommodate all these new developments and what role is the Service Unit: Veterinary Science (Veterinary Library) playing?

The following various methods are used by Departments at the Faculty of Veterinary Science to address these new demands. Here I would like to stress the difference between the undergraduate studies, post graduate studies, and continuing education courses.

#### **A. Undergraduate Courses**

The traditional mode of education is still being used for undergraduate study as clinical practice is of utmost importance.

**Problem-based Learning courses** are already in use e.g. in the Medicine Department by Professor F. Reyers. Such courses are strongly student-centered and lectures are not presented in a class-room set-up. The class is divided into groups of 4 to 5 students each. Tutors are assigned for each "case". Students have a specific time to "handle" each case before moving on to the rest. Should students need more information about the problem the Veterinary Library provides the necessary references and databases. Space where students can work in groups without disturbing others is needed. Computer workstations are available for quick consultation.

#### **B. Continuing Education.**

### **Short Courses for practitioners.**

The Department of Veterinary Tropical Diseases presents various short courses to private practitioners. A course in African epizootic diseases, for instance, trains veterinarians in epidemiology, and the diagnosis and control of epizootic diseases. This course is already produced on video and will soon be available in the international market.

Short courses in laboratory techniques, in the fields of applied veterinary bacteriology and mycology and applied veterinary ectoparasitology are also presented.

The Department of Veterinary Tropical Diseases also offers information days on subjects such as: Small animal infectious and parasitic diseases, and on contagious diseases such as Rift valley fever

All students attending short courses have access to library facilities and services and undergo a basic library orientation.

### **C. Postgraduate distance education.**

1. A regional Master of Science degree in Tropical Animal Health for the SADC Countries (Zimbabwe, Zambia, Mozambique, Tanzania) is now being developed in conjunction with Veterinary Science Faculty lecturers of these countries.. The target group consists of veterinarians and BSc, (Microbiology, Agriculture (Animal Health) Zoology and Entomology) students in the SADC Countries. This course will include :

- Tsetse and trypanosoma control
- Tick and tickborne diseases
- Epizootic diseases
- Laboratory diagnostic techniques
- Veterinary Public Health
- Introduction to epidemiology
- Scientific writing and research methodology

The Service Unit: Veterinary Science, being the most modern and well equipped Veterinary Science library in this region, will give extensive support to this project.

Databases on the topics presented have been started and will be available on the Internet for all students from the participating institutions. We also undertake all copyright queries.

## **2. Paper-based distance learning.**

Lecturers in Epidemiology soon realized that many veterinarians were being excluded from continuing education because they could not get to Onderstepoort or because they only require a certain aspect of epidemiology for the purposes of their work. The first step was to divide the epidemiology course into blocks that were relevant to the current needs of the veterinary profession. These blocks or modules were designed to be such that a student could either use it as a stand-alone course or in conjunction with other modules to facilitate a greater depth of knowledge in the subject.

In 1996 Professor Gummow started to explore the concept of correspondence or paper-based distance learning. This was not a new concept but does not appear to have been applied much within veterinary circles. In 1998 the modules of epidemiology were converted into paper-based distance learning modules. A core study material component includes notes and tutorials. Students are required to go through the notes and complete the related tutorial in their own time. Case studies are also presented in these notes. The answers are then returned to the lecturer for evaluation and feedback. A final exam is written.

Positive feedback received included: students were highly motivated and able to study in their own time. Interaction with the students improved. This approach also has the advantage of being cheaper, as it does not require the infrastructure necessary for contact-based education or the equipment, training and technology required for virtual education. A greater target population can be reached.

## **3. Virtual campus studies (Clinical Pathology)**

In the Department of Companion Animal Medicine, Section of Clinical Pathology, the Honours and Masters degree in Clinical Pathology are presented in two principal modules and one small module. These are advanced studies in clinical pathology including diagnostic indices and methods. It will be presented to students on campus and via the Virtual Campus.

The courses will consist of a number of literature reviews which are presented as seminars. These literature reviews are prepared by all the candidates and are compiled from the most recent journal literature in given topics. Each candidate prepares a journal-format review article for each literature review with reference to the species of his choice.

At the meetings the lecturer/facilitator will return the literature reviews and highlight certain issues identified by the students. The lecturer/facilitator may elect to give a short discourse or a student may be called upon to give a verbal presentation of his/her literature review.

Virtual Campus students : By the day scheduled for the topic, the lecturer/facilitator will have placed certain questions, comments (possibly even excerpts from some of the submitted reviews or from new or especially important publications) and/or data analysis results, on to the course website "discussion" page. Students can respond and lecturers give feedback.

The subject librarian arranges a short course on library use and literature searches on the day of the first meeting. The students make a selection of journal article titles that "best fit" the species or topic emphasis which they have chosen for their studies.

Virtual Campus students should go online to the Academic Information Services CD ROM collection and inspect the abstracts to determine those articles that they wish to see "in full". These can then be supplied by the Academic Information Service. Certain key articles have been scanned in by the subject librarians. These articles can either be placed on the Intranet or e-mailed to the students via the Ariel system. The students are required to use books, journals, manual searching and computer-based searching (Internet and CD-ROM). Examination papers of previous years are

available in the Service Unit: Veterinary Science or on the VC web for Virtual Campus students.

#### **D. Other products for under- and postgraduate students.**

1. Professor A. Leisewitz developed a small animal veterinary dermatology course on CD-ROM with the title: "Skin diseases of small animals : an atlas of common conditions arranged by dermatological syndromes". The CD includes actual cases, with photographs, symptoms, diagnosis and treatment. It is aimed at not only the pre- and post graduate student but also the general practitioner.

Dermatology is a very visual subject and the course thus relies very heavily on 35 mm slides in lectures. Although one can provide students with class notes, this does the subject matter very little justice as the ability to recognise characteristic lesions is the bedrock foundation of dermatological diagnosis. Student evaluation is based on identification of lesions shown on photographic colour slides. In the past students have used the library's few dermatology atlases, to prepare for tests and exams. The CD was made available to provide students with a general description of the important diseases and visual material of actual case studies followed by commentary on the case investigation and diagnosis.

It has been written specifically for the South African student and practitioner practicing in the South African environment.

The database can be searched alphabetically by disease name, by keyword and by syndrome. The dermatology course is taught by syndrome and hence the emphasis is placed on classifying skin diseases using this approach.

Feedback from the students and practitioners on the CD has been positive. It has been found to be user-friendly by both the undergraduate and the practising veterinarian.

An additional bibliography, compiled by the subject librarian is available if students need more information on skin diseases of companion animals. This

bibliography is updated every six months.

2. Staff members of the Department of Veterinary Tropical Diseases, as part of the training of both under- and post-graduate students, have designed a CDROM covering the following diseases: African horse sickness, African swine fever, blue tongue, bovine malignant catarrhal fever, contagious bovine pleuropneumonia, foot-and-mouth disease, heartwater, lumpy skin disease and Rift Valley fever. These diseases were selected as they are of major importance in Africa and have the potential to have a world-wide impact. The diseases are presented in a systematic fashion *i.e.* aetiology, epidemiology, socio-economics, pathogenesis, clinical signs, pathology, diagnosis, differential diagnosis and control. Where possible, the diseases have been presented in the format of high quality pictures, video material and animations. To date the response to the CDROM has been highly favourable and has encouraged them to make another CDROM that will be available in September 2000. It will deal with anthrax, rabies, bovine tuberculosis and brucellosis.

Contact with the lecturers involved in this project has been important to ensure good support. The Information Specialist attended all planning meetings. Bibliographies of all these diseases have been developed by the Information Specialist to support this project. All of these bibliographies are available on the Intranet.

This Department in collaboration with GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit), is presently compiling material for a CDROM titled "Applied serological techniques". The CD-ROM will be given to students as a supplement to a 4-week practical course in immunology and serology. With the use of graphics, video and sound it will present the theoretical background and step-by-step techniques of the most common serological tests in use today. This CDROM will be available by the end of 2000.

3. An annotated CD-ROM atlas has been developed as part of the curriculum of the Pathology Department. This computer-based training is an innovative approach to learning and was designed to be a supplement to formal lectures. The "General and Organ Systems Pathology" CD-ROM consists of high-resolution digitised images and descriptive text. This CD-ROM atlas is

available in the computer-aided facility for students to use in their own time.

Previously students used photographic slides of pathological conditions. These slides provided a major headache for the staff of the Veterinary Science Library. It was difficult to keep adequate control of the projectors, slides and notes. This CD-ROM atlas is a dream come true!

### **Summary of the Academic Information Service, Service Unit Veterinary Science's role.**

What are we doing to support the development and use of distance education and other modes of learning in the Veterinary Faculty?

By providing relevant references from the books and journal literature the library can support continuing education.

The Academic Information Service (AIS), started strategic organization transformation in the beginning of the nineties. Within this strategy, the switch over of its services to a digital base is high on the priority list.

Developments in information technology (e.g. Internet) drastically changed the university system and the access to information that supports these scientific processes.

### **Bibliographies/Databases**

Information specialists in the Service Unit: Veterinary Science are in the process of developing databases in the different fields of veterinary science. This is done to support the above-mentioned distance education programme with the necessary references, as well as new developments in the education of all our students. These bibliographies are linked to our Intranet and homepages, with links to other useful sites on the Internet. These librarians are also trained to develop and design their own web pages.

### **E-Journals**

Various commercial information sources in the electronic full text- and multimedia-format, are available commercially. The AIS subscribes to a



variety of electronic journals from different publishers and vendors. These are available to all students, lecturers and other staff at UP, on the homepage at [TYDS@TUKS](mailto:TYDS@TUKS).

### **Copyright**

The library undertakes to obtain copyright permission for reproduction of books, articles or electronic media from the relevant authors or publishers, before the material is copied for student use.

Digitizing and duplication of information sources to assist lecturers are also in the interest of distance education. The AIS provides modern scanning facilities to digitize information sources so that they can be available for students in remote areas. This information can be sent directly by Ariel or e-mailed to the students.

### **Internet**

Information specialists attend courses in Webpage Design. The Academic Information Service is now available on the Internet at :  
<http://up.ac.za/asservices/ais/ais.htm>

The Service Unit: Veterinary Science as a branch of the AIS is available on the Internet at :  
<http://up.ac.za/asservices/ais/vetindex.htm>

Each Information Specialist has her own Webpage with general information of the departments serviced, and contact information. Bibliographies on the different subject fields are linked to the Webpage. Links to other useful Websites are also given.

### **Conducting searches**

All information specialists at the Veterinary Library are fully trained to search databases on the Internet, in CDROM format or online, for information.

They are also trained to develop bibliographies to support projects for distance education, as well as new developments in the education of all our

students. As stated above these Bibliographies are linked to our Intranet and homepages.

#### **Training of students and staff.**

Monthly sessions of hands-on training are provided to all staff and post graduate students on campus. Scheduled classes are given in a Computer Aided facility to ensure that all staff can use the various databases from their own offices.

#### **Capacity building for other libraries in Africa**

The Veterinary Library runs a book and journal donation project for other veterinary libraries in Africa called "Vet Books for Africa" . This project, with the support of the student community at Onderstepoort, has helped to improve the collection of information sources of veterinary schools in Zimbabwe, Zambia, Mozambique, Tanzania and the DR Congo.

A workshop or short course for animal health/veterinary information workers in Africa, is being planned. This course will include Internet (searching, homepages, links and databases), paper and electronic document delivery, traditional and electronic library catalogues, information retrieval and the marketing of a library

All of these new developments are subject to limitations in the infrastructure of Africa. Other limitations include finances. However where there is a will the way will follow. Solutions to some of the problems are already found. Some of the distance education programs opted to use CD-ROM facilities or video recordings. These can be used by students in areas where Internet development is slow.

As the faculty at Onderstepoort becomes more and more involved with training programs elsewhere in Africa, our Library will play an increasing role in information provision to these other African veterinary schools.