

# Faculty of Veterinary Science produces world's first Skills Laboratory Bull

9 September 2016



Ms Liezl Kok, CEO of Anatomoulds and  
Dr Annett Annandale, manager of the Skills Lab, with the Zoetis Bull

Worldwide, veterinary clinical teaching has changed dramatically over the last couple of years. Increasing student numbers, the availability of teaching animals and animal welfare issues have led to the development of veterinary simulators and models that are used to teach veterinary students clinical skills.

There are a variety of small animal models available for training purposes, such as canine training manikins for auscultation (the action of listening to sounds from the heart, lungs, or other organs, typically with a stethoscope, as a part of medical diagnosis) of heart and lung sounds, resuscitation, intubation, intravenous catheter placement and bandaging. Other equipment includes suture and injection training pads, as well as spay and castration training models. Large animal simulators include colic horse simulators, dystocia cow models, and rectal examination simulators, to name just a few.

One of the challenges when equipping skills laboratories is that only a limited variety of veterinary models are commercially available, while there are many more day-one competency skills that could be taught on simulators.

This challenge in particular has led to the development of the world's first Skills Laboratory Bull. The diagnosis of bovine venereal diseases is an important skill required of any rural or large animal veterinary practitioner in southern Africa. All newly graduated veterinarians as well as veterinary nurses must be able to perform a sheath scrape. The procedure is slightly invasive, but fairly simple and can be taught well on a veterinary model. Dr Annett Annandale, skills laboratory manager at the Onderstepoort [Faculty of Veterinary Science](#) at the University of Pretoria, had the idea for the sheath scrape model and decided to attach it to a life-size bull. A [Zoetis](#) sponsorship made it possible for Dr Annandale to build this first of its kind male large animal simulator in collaboration with Ms Liezl Kok, the CEO of [Anatomoulds](#) with which the Skills Lab has a contract.

An existing taxidermy mould was used to manufacture a Brahman bull made of fibreglass with a gel coating. The skin from a bovine carcass was preserved. The scrotal contents (testes and epididymides), penis and accessory sex glands were used to make moulds of these organs. The moulds were then used to cast silicone models of the organs. Further parts used to construct the bull model included a dragon skin perineum, a Pilates ball ("rumen"), rubber tubing ("oesophagus"), pool pipes ("trachea") and silicone injection pads. Cleaned anatomical specimens of the pelvis, sacrum and tail vertebrae were also added to the model.

Skills that can be taught on the bull include rectal palpation to assess the accessory sex glands, palpation of the sheath and its contents, palpation of scrotal contents (interchangeable normal and abnormal testes, epididymis and spermatic cords), measurement of scrotal circumference, palpation of the penile sigmoid flexure, evaluation of sheath confirmation as well as the sheath wash and scrape procedure. Additional features are the passing of a stomach tube into the "rumen", with the possibility of rumen auscultation to ensure correct placement of the stomach tube, intravenous and intramuscular injection sites and an epidural anaesthesia function, where correct needle placement is confirmed by a light coming on.

Other veterinary training models that have been developed by the Onderstepoort Skills Laboratory in collaboration with Anatomoulds are suture pads, a canine spay model, a canine ultrasound-guided cystocentesis model, a small animal lymph node palpation model, a canine castration model, as well as sheep body condition scoring models. Some of the small animal models have already been sold through Anatomoulds to several schools of veterinary medicine in Europe. Further models are currently under development.

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