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Dear Friends of the Jockey Club College of Veterinary Medicine and Life Sciences,

Welcome to our 12th Newsletter that will provide you with plentiful information relevant to our progress.

As you will see from the contributions to this issue, we are continuing on our journey to build the four departments within JCC, and our faculty and staff numbers have almost doubled in the past three years. However, we are not growing for growing’s sake, we are recruiting what is absolutely critical for us to become a leader in Veterinary Medicine and Life Science research and education in Hong Kong and beyond. Much of this issue is dedicated to our new faculty and the research fields they represent.

Recently, we have also reached several important milestones and are preparing for others as you read this newsletter. The entire JCC is proud of our first cohort of BVM students that will enter their final year soon and have just recently embarked on their clinical rotations. We celebrated this occasion with our first ever White Coat Ceremony. As much of the past two years in Hong Kong and the world, this remarkable event was conducted in a virtual format due to the 5th wave of COVID-19 that until recently held an iron grip on our city. Nevertheless, the students and faculty and staff were upbeat and spirited the pandemic – as they and we all have done for too long.

We are immensely proud that our eleven rising seniors have begun their final lap and we have no doubt that they will hold the trophy of becoming veterinarians in about a year from now. Much of their final training will be done in close collaboration with our partners but the majority will be in CityU’s own Veterinary Medical Centre and Veterinary Diagnostic Laboratory, also featured in this Newsletter.

While our flagship at the JCC is the BVM programme, we have also been offering a number of signature programmes in Life Sciences. As we are taking the pulse of society and developments around the world, we are constantly evolving and adapting. What has always been our goal, however, is finally coming to life in only a few months from now and with the start of the new academic year: An MSc programme in Public Health and Epidemiology. We are immensely proud to be able to offer this programme to students locally and internationally, and we have now assembled the critical mass of dedicated faculty to stem this formidable task.

We hope that you will enjoy the summer and find some time to read our stories and thoughts in this Newsletter.

Thank you for your support, stay healthy and see you soon!

Klaus Osterrieder
Dr. med. vet., Dr. med. vet. habil.
Dean, Jockey Club College of Veterinary Medicine and Life Sciences
Chair Professor of Virology and One Health
院長的話

親愛的賽馬會動物醫學及生命科學院友好:

歡迎閱讀第12期通訊，這一期為您送上我們許多振奮消息。

從本期作者名單可見，賽馬會動物醫學及生命科學院四大學系發展一日千里，教授和學生數目在過去三年幾乎倍增。然而，我們追求的不是人數，而是要帶領我們成為香港和全世界動物醫學及生命科學教研高峰的人才，今期內容大多關於學院新教授和他們的研究領域。

我們最近達成多個里程碑，在您閱讀這期通訊一刻，我們正為其他目標衝刺。第一批獸醫學士課程學生將升讀最後一年級，最近還展開了臨床實習，賽馬會動物醫學及生命科學院上下十分自豪，並舉行了首次白袍典禮慶祝。然而，香港和全球過去兩年都受第五波新冠疫情影響，這項盛事亦須在網上舉行，但眾師生早求習慣疫情帶來的改變，對典禮仍然雀躍萬分。

最令我們自豪的是11位高年級學生踏上最後一哩路，大概一年後就獲得通往獸醫之門的鑰匙。跟我們緊密合作的夥伴會為他們提供最後階段實習，更大部分實習課程在城大動物醫療中心及城大動物醫療培訓中心進行，今期通訊有更多詳情。

賽馬會動物醫學及生命科學院除了最重要的獸醫學士課程外，也提供有關生命科學的獨特課程。我們緊貼社會脈搏和世界發展而不斷變革，不過，我們的真正初衷將隨著新學年在幾個月後開始而實現：公共衛生及流行病學碩士課程。能夠為本地和國際學生推出這項課程，我們深感自豪，如今已טר成茲鈴善士，願實現這項艱巨任務。

期待您享受盛夏之餘，不妨抽空閱讀今期通訊的動人故事。

感謝支持，身體健康，下期再會！

共勉

賀施德教授
賽馬會動物醫學及生命科學院院長
病毒學及健康一體化講座教授
Autumn in Cornell

5th Year students prepare for Clinical Placements

Dr Caroline Yancey
The Cornell University College of Veterinary Medicine (CVM) recently hosted JCC’s fifth-year student cohort at our Ithaca, New York campus. The 11 JCC students participated in a customized non-degree visiting student programme with Cornell CVM in 2021, which included completing two virtual courses in the spring semester, and in-person pre-clinical courses taken in the fall semester. This unique Cornell program was developed to provide temporary teaching support to JCC due to impacts from the pandemic on the B.V.M. program in Hong Kong.

Cornell CVM and other veterinary colleges in the United States offer a four-year professional doctoral degree programme, conferring a doctor of veterinary medicine (D.V.M.) degree. Our Cornell students typically matriculate into the D.V.M. programme after completion of a bachelor’s degree and some veterinary-related work experience. This is a different format than many veterinary programmes outside of the U.S., including Hong Kong, where students matriculate directly out of secondary school for a six-year programme. Therefore, the JCC students visiting Cornell worked alongside second- and third-year Cornell D.V.M. students. The JCC students were integrated into CVM’s rigorous courses and laboratories and actively engaged with their Cornell peers.

The fall semester pre-clinical coursework included demanding surgical laboratories that all CVM students complete during their third year of veterinary school. The students work in teams of three in the surgical laboratories and rotate in the role of anaesthesiologist, surgical assistant and surgeon.

The JCC students were mixed into the D.V.M. student surgical teams, allowing them to not only practice and develop surgical skills needed in clinical practice, but forge professional relationships with their future veterinary colleagues.
The third year of the D.V.M. programme prepares students for their final clinical year, which is spent completing rotations through a variety of clinical hospital services, such as orthopaedic surgery, anaesthesia, cardiology, dentistry and ophthalmology. The clinical rotations provide students the opportunity to apply and integrate their theoretical and practical knowledge from the previous three years of study, and prepares them for managing cases on their own once they graduate and transition to clinical practice. The JCC students had the opportunity to observe clinical rotations in action during their CVM visit. On weekends and breaks from their busy course schedule, they visited a range of clinical services at Cornell University Hospital for Animals. Based on their individual interests, we arranged student shadowing opportunities in the Sections of Emergency and Critical Care, Soft Tissue Surgery, Orthopedic Surgery, Cardiology, Dermatology, Theriogenology (Reproductive Medicine) and Large Animal Medicine.

CVM has been collaborating with City University since 2009 to advise and provide support in the development of the JCC and the B.V.M. programme. Cornell faculty took part in the admissions interviews to select this first cohort of JCC students in 2016, hosted them at Cornell in 2017 for a summer extramural studies animal husbandry program, and with this non-degree programme, have supported their pre-clinical studies. It is gratifying to watch these students progress in their B.V.M. programme and engage with JCC as the programme moves toward international accreditation. We enjoyed hosting these 11 resilient and professional JCC students and were inspired by their high-achievement and enthusiasm. We look forward to celebrating their graduation in 2023 as the inaugural class of JCC.

Dr Caroline Yancey, DVM MPH
Director International Programs, Cornell University College of Veterinary Medicine
Associate Professor of Practice, Master of Public Health Program, Cornell University
康奈爾的秋天：
五年級學生臨床實習

Dr Caroline Yancey

康奈爾大學獸醫學院最近在紐約伊薩卡校園接待了11位城大賽馬會動物醫學及生命科學院五年級學生，他們在2021年參加了康奈爾大學獸醫學院的非學位訪問學生計劃，要在春季學期完成兩個虛擬課程，並在秋季學期親身參與臨床前課程，這個獨特康奈爾課程是在疫情期間給城大獸醫學學士學生的臨時教學支援。

康奈爾獸醫學院和美國其他獸醫學院提供四年制專業課程，頒授獸醫學學士（D.V.M.）學位，學生要完成學士學位和獲得與獸醫相關的實習經驗，才能升讀康奈爾獸醫學士課程。反觀，香港和其他地方的獸醫課程採用另一方式，學生中學畢業後直接升讀六年制獸醫學士課程。因此，到訪的城大兼修動物醫學及生命科學院學生與康奈爾大學二年級和三年級的獸醫學學生一同上課，城大學生融入康奈爾大學獸醫學院的嚴格課程和實習室研究，並與康奈爾同學們緊密交流。秋季學期的臨床前課程包括嚴謹的外科實習室課程，屬康奈爾大學獸醫學院學生在三年級時必修。學生們在外科實習室三入一組，輪流擔任麻醉師、外科助理和外科醫生。

城大學生與康奈爾學生結合新外科團隊，不僅訓練臨床實踐所需的外科技能，亦可與將來的獸醫同事建立專業關係。

在獸醫學士課程第二年，學生要為最後臨床年做準備，即要完成在各種臨床醫院服務的實習，如骨科手術、麻醉、心臟病學、牙科和眼科。臨床實習讓學生有機會應用前三年所學的理論和實踐知識，將兩者結合為一，並為畢業後過渡到臨床實踐和獨立管理病例做準備。城大學生訪問康奈爾大學獸醫學院期間，有機會到臨床實習的情況，並在平日繁忙的課程時間表以外，他們在周末和假期參觀康奈爾大學動物醫學院多個臨床服務。我們根據學生的個人興趣，安排他們在急症和重症監護、軟組織外科、骨科、心臟病學、皮膚病學、生殖學（生殖醫學）和大型動物醫學等部門實習。

自2009年以來，康奈爾大學獸醫學院與香港城市大學合作無間，為城大賽馬會動物醫學及生命科學院的獸醫學士課程提供發展建議和支援。康奈爾大學教師參與城大招生面試，2016年挑選了第一批獸醫學生，2017年在康奈爾大學接待他們參加暑期畜牧業校外課程，以支援他們的非學位課程。看着這些學生在獸醫學士課程中取得佳績，又跟城大馬會動物醫學及生命科學院的課程獲得國際認證，我們深感欣慰。我們有幸接待這11位剛強專業的城大學生，他們的成就和熱情感動，期待在2023年慶祝他們成為城大賽馬會動物醫學及生命科學院首屆畢業生。

Dr Caroline Yancey
康奈爾大學獸醫學院國際課程主任
康奈爾大學公共衛生碩士課程實踐副教教授
The University Farm - ready to receive its first residents

Dr Howard Wong
It has been a long road in the making but the new CityU University farm is almost ready to receive its first residents. The story stretches back several years when the university decided to build its own dairy farm in order to provide teaching opportunities for BVM students and others. No new dairy had been built in Hong Kong for decades as existing ones moved north across the border, a combination of high land and labour costs, the result being that our farm will be the only one in Hong Kong producing fresh milk locally.

The design of the farm, penned by chief dairy consultant Simon Godden, a dairy design specialist with decades of experience designing farms around the world and assisted by Dr. Richard Brown, a dairy vet with experience in Hong Kong and Scotland, is a far cry from the first dairy farm in Pok Fu Lam established by a Scottish Doctor, Patrick Mason in 1885 (who also founded the London School of Tropical Medicine and Hygiene) who then went on to establish the Hong Kong College of Medicine for Chinese which subsequently became the University of Hong Kong.
“With stringent regulations imposed upon our farm design by the Hong Kong Government, the farm has several features that you are unlikely to encounter at any other dairy in the world.”
Foundations for the Adult Barn early 2021

Dairy Consultant Simon Godden

The Adult Livestock Barn begins to take shape (Sep 2021)
One example is the waste treatment system designed to prevent any animal waste from entering the nearby Lam Tsuen River, a designated water catchment area. Solid waste must be scraped up and deposited in waste bins for disposal in a local landfill (although plans are being hatched to try and turn this natural resource into fertilizer or biogas) whilst liquid waste is filtered and sent to a reverse osmosis (RO) system (that cleans the waste water to almost potable levels that can then be pumped into trucks and delivered to the government’s drainage water plant) that was manufactured, shipped and installed by an amazing team from FORSI in New Zealand. Like any project that was unlucky enough to occur during the COVID-19 pandemic, the RO system was originally manufactured as a single unit to be shipped fully built in a container and simply slotted into our farm building. However, shipping issues which continue to plague the world, meant it has to be disassembled into some 14 parts, air freighted, and reassembled in situ in Hong Kong by FORSI’s team, not a task to be taken lightly and testament to the dedication of everyone involved.

The Reverse Osmosis system to treat effluent, under construction in New Zealand (left) and in Hong Kong (right)
Almost all equipment has also had to be imported from around the globe including cattle crushes from New Zealand, Northern Ireland and Scotland, electric skid steers from the Czech Republic, cattle headlocks, mattresses and rubber mats from the Netherlands (including my favourite piece of equipment, electric cow brushes for scratching their backs - I'm looking for the human version), the list goes on. One of our most significant imports, however, has been the arrival of our new Farm Manager, Dr. Eryl Done, who arrived in Hong Kong last November after finalizing the sale of his prize-winning herd in Northumberland, in the UK. Since then Eryl has taken over the unenviable task of overseeing the completion of the farm, including the installation of our specialist equipment. Fortunately, Eryl’s decades of experience in the dairy industry has proved to be invaluable in this regard as well as preparing the breeding programme for our heifers in Australia.

Dr. Eryl T. Done  
MA VetMB DBR MRCVS

Dr. Eryl Done with Wyevalley McFly Sue, Reserve Champion Border & Lakeland Club Sale

Eryl grew up on a small family dairy farm near Monmouth, South Wales in the United Kingdom. From a young age he was heavily involved in the day to day farm operations with a particular interest in the farm’s pedigree Holstein Friesian herd. At the age of 16 he won the All Britain stockjudging competition of the British Holstein Society. This led to being invited to be a herdsperson at Hanoverhill Holsteins in Ontario, Canada during his gap year before studying veterinary medicine at Cambridge University. At that time Hanoverhill was the top Holstein breeding herd in the world, and whilst there Eryl started his own business, ET Genetics, specializing in importing and exporting dairy cattle genetics, primarily as frozen embryos. During the 1990’s Eryl held several of the most high profile and highest priced
Holstein sales in the UK whilst concurrent studying at Cambridge such as the “Wyevally New Horizons Sale” in 1997 and the “Global Genetics Sale” in 1998.

After graduation, Eryl initially entered mixed practice in Carmarthen in West Wales before becoming a resident in Farm Animal Medicine at Bristol Vet School, seeing individual and herd referral cases through the South West of England. Eryl left Bristol to work as a Temporary Veterinary Inspector in Devon during the midst of the Foot and Mouth Disease Epidemic in 2001. In 2003 Eryl gained the Diploma in Bovine Reproduction from Liverpool University, a qualification recognized by both the RCVS and European College of Animal Reproduction. After a further stint in cattle practice in the New Forest and Isle of Purbeck, Eryl left practice to concentrate on the further expansion of his “Wyevally” herd and his cattle breeding enterprise. His herd became renowned for its breeding stock from 3 different breeds: Holsteins, British Friesians and Scandinavian Reds. Wyevally bulls have had semen for artificial insemination exported globally with Wyevally Fortune being the No.1 genetic index Scandinavian Red bull in 2020 and Wyevally Veritas ET being the No.1 ranked British Friesian bull in 2021. The herd was dispersed at the Wyevally Final Chapter Sale in September 2021 at which point it was the No.1 genetic index Scandinavian Red herd and the No.2 British Friesian herd.

Naturally it is not just the cows’ comfort that has been considered. The farm also has built in accommodation for students, who during the calving period, will likely be on call and up all night assisting the Farm Manager. During the hot Hong Kong summers, they might also find some respite from the heat by spending time in our air conditioned feed store, a measure put in to reduce the chances of mould growth in feed such as hay and also to prolong its ‘best by’ date.
The Adult Livestock Barn

Feed store (Air-conditioned)

Young Livestock Barn
With our 24 pregnant Jersey heifers plus 6 yearling heifers due to be exported from Australia in mid to late September this year, their arrival will symbolise a major landmark in the development of the vet college and one that not only we at CityU are immensely proud of, but that we hope the people of Hong Kong will be equally proud of. The pandemic has refocussed minds all over the world on the importance of self-sufficiency, especially when it comes to food production, and whilst our teaching farm will never provide enough milk and ice cream for the local population, we hope it will provide impetus to a change of mind-set, a paradigm shift towards how we all view how are food is produced, both sustainably and safely. As one of the four major focuses of our vet college, food production and food safety, the role our dairy farm will play is more important than ever.

Dr Howard Wong, B.A. (Hons), M.A., Vet.M.B. (Cantab), MPVM (UC Davis), MSc (Sustainable Aquaculture) (St. Andrews), CertAquV, MRCVS
Director, Development for Veterinary Medicine
大學農場 -
恭迎首批住客

王啟照獸醫

城大大學農場籌備多年，終於準備接收第一批實習獸醫。這故事可追溯到幾年前，城大決定成立自己的乳牛場，為獸醫學學士課程學生和大眾提供教學機會。自從本地乳牛場陸續北遷後，加上土地和勞動力成本高昂，香港數十年來再未有新的乳牛場，我們的乳牛場成為香港唯一在本地生產鮮奶的農場。

這個農場由擁有數十年在世界各地農場設計經驗的首席乳牛顧問Simon Godden操刀，並獲在香港和蘇格蘭有豐富經驗的乳牛獸醫Richard Brown協助，跟1885年蘇格蘭醫生Patrick Mason在薄扶林興建的第一個牧場相差無幾，當年他創立倫敦衛生與熱帶醫學院後，再成立香港大學前身的香港華人西醫書院。

香港政府對我們的乳牛場設計有嚴格規定，令我們擁有世界獨有的農場特色。

其中一個例子是廢物處理系統，用以阻擋動物廢料流入鄰近指定集水區——林村河。系統將分隔開來的固體廢物存放廢物箱，最後送到堆填區，我們亦正計劃將這種天然資源轉化為肥料或沼氣。經過處理的污水會送往逆滲透（RO）系統，該系統將污水淨化到幾乎可以飲用的水平，泵入卡車後運到政府排水廠，該系統由紐西蘭聖岡FORSI生產、運輸和安裝。新冠疫情打亂了許多計劃，這個逆滲透系統本應在農場及運送，再安裝在我們的農場建築物中。然而，由於無法解決物流問題，這個系統要分拆成約41個組件，以空運抵港，並由FORSI團隊在香港原地組裝。這是一個艱巨任務，亦是對每個人意志的考驗。

乳牛場內所有設備幾乎都從世界各地入口，包括新西蘭、北愛爾蘭和蘇格蘭的乳牛固定架，捷克的電動推車，荷蘭的牛頭箱、床墊和橡膠墊等等，那個乳牛抓瘙電刷是我的至愛工具，只盼我也找到人類版的抓瘙電刷。在一眾來貨之中，最重要的是新任農場經埋Eryl Dones獸醫，他在英國諾森伯蘭出仕自己的獲獎牛群後，於去年11月抵達香港之後，開始接手監督農場竣工的艱巨任務，包括安裝我們的專業設備，憑着他在乳牛業數十年寶貴經驗，這工作對他來說是駕輕就熟。此外他早就安排好為我們的澳洲小母牛配種。
Eryl T. Done獸醫

Eryl在英國南威爾士蒙茅斯附近的小型家庭乳牛場長大，他從小參與農務，熱愛純種荷斯坦乳牛。16歲那年，他贏得英國荷斯坦協會的全英最佳青年比賽，獲邀到加拿大多倫多大略省的Hanoverhill牧場擔任牧民。當時Hanoverhill孕育出世上頂級荷斯坦品種，Eryl在那兒創立公司ET Genetics，專門從事乳牛基因進出口，主要是冷凍胚胎。20世紀90年代末，Eryl在荷斯坦大學讀書期間，在荷斯坦舉行的幾次重要的荷斯坦牛展售，在1997年的"Wyevale新視野展售"和1998年的"全球基金展售"創下最高售價。

畢業後，Eryl先在西威爾士的Carmarthen執業，再成為布里斯托爾獸醫學院農場動物醫學的住院醫師，處理英國西部的個體和牲畜轉診病例。2001年，口蹄疫流行期間，Eryl離開布里斯托爾，在德文郡擔任臨時獸醫檢查員。

2003年，Eryl獲得英國皇家獸醫學院和歐洲動物繁殖學會認證的利浦大學牛繁殖文憑，他在新森林國家公園和普內克島完成養牛實習後，便專注擴展他的養牛企業和Wyevale品種，該品種以來自三個品種聞名——荷斯坦牛、英國菲士爾牛和北歐紅牛。Wyevale公牛的人工授精精液已出口到全球，其中Wyevale Fortune是2020年第一基因指數北歐紅牛，Wyevale Veritas ET則是2021年第一英國菲士爾公牛，該品種在2021年9月的Wyevale終極拍賣會售光，當時它是第一基因北歐紅牛群和第二英國菲士爾牛。

我們的農場考慮的不僅是乳牛的舒適，還要為學生提供住宿，讓他們在乳牛產犊期間隨時侍命，通宵達旦協助農場經理。在香港的炎夏，他們可以在設有空氣調節的飼料庫乘涼，空調來來去去減少乾燥等飼料發黴，亦可延長飼料的使用期。

今年9月中下旬，我們將從澳洲入口24頭懷孕母牛和6頭一歲小母牛，這是獸醫學院發展的重要里程碑，不僅是我們城大的驕傲，也是香港人的驕傲。全球疫情令大家重新重視自給自足，尤其是糧食生產。除了我們的教學農場永遠無法為本地居民提供足夠的牛奶和農耕，但我們希望它能推動思維改變，讓大家明白生產食物的方式應該更永續和安全。食品生產和食物安全是動物醫學院的四大重點之一，這個乳牛場的角色將會日益重要。

王啟熙獸醫
總監 - 動物醫學發展
WEBINAR SERIES

VETERINARY NUTRITION

Date: 19 May 2022 to 24 November 2022
Start time: 8:00pm (Hong Kong Time)
CPD: 1.5 CPD Points each topic from the Veterinary Surgeons Board of Hong Kong
Registration: https://www.cityu.edu.hk/jcc/nutrition2022

19 MAY
Managing GI conditions with diet: From home-cooked for IBD to low-fat for pancreatitis
Dr John Loftus (PhD, DVM, DACVIM [SAIM]), Assistant Professor, Section of Small Animal Medicine, Cornell University

Nutritional management of Chronic Kidney Disease (CKD) JUN 9
Dr Pawel Beczkowski (DVM, PhD, DipECVIM-CA, MRCVS, HK registered, European and RCVS Recognised Specialist in Small Animal Internal Medicine), Clinical Associate Professor, Department of Veterinary Clinical Sciences, CityU

23 JUN
Advances in Canine Neonatology: what’s new in 2022?
Dr Emmanuel Fontaine (DVM, MSc, PhD, Diplomate of the European College of Animal Reproduction), Regional Scientific Communication Manager, Royal Canin

Nutrition and Heart Diseases: a diet or supplement for every condition (14 Jul)
Nutraceuticals for Arthritis: can we make a difference? (15 Sep)
Prof Joseph Wakshlag (DVM, PhD), Professor, Sections of Clinical Nutrition and Sports Medicine and Rehabilitation, Cornell University

18 AUG
Supplements in cancer
Dr Antonio Giuliano (DVM, MS, GpCert[SAM], PgCert[CT], ECVIM [ onc], MRCVS European, RCVS and HK Specialist in Small Animal Oncology), Clinical Associate Professor, Department of Veterinary Clinical Sciences, CityU

Fiber Fix: From constipation to diarrhea, the role of fiber for the nutritional management of gastrointestinal disease OCT 20
Dr Sally Perea (DVM, MS, DACVIM (Nutrition)), Veterinary Nutritionist, Royal Canin

Current knowledge of the pathological mechanism of Atopy and how this can be targeted by nutrition
Dr Adrian Watson (PhD [Biochemistry]), Project Scientist (Hair & Skin), Royal Canin Innovation
Dr Xavier Langon (DVM, CES [Dermatology]), Senior Research Scientist (Dermatology), Royal Canin
BVM students obtain the Humane Slaughter Association’s Dorothy Sidley Award for Advances in Animal Welfare

Ming Yi Tse & Desiree Hung

The Jockey Club College of Veterinary Medicine and Life Sciences wishes to congratulate two of our BVM students in obtaining the Humane Slaughter Association’s Dorothy Sidley Award for Advances in Animal Welfare during Transport, Marketing and Slaughter. Tse Ming Yi, a 5th year BVM student, and Desiree Hung, a 4th year BVM student, will conduct research projects on the welfare of chickens in live poultry retail shops and saltwater fish in Hong Kong wet markets respectively. Both of these areas have significant animal welfare issues and we are hope these projects will lead to further insight in animal welfare management.

The Welfare of Chickens in Live Poultry Retail Shops in Hong Kong Wet Markets

Ming Yi TSE, Lynnox Edviano LOO, Pui Yung Anna LEE, Yuk Yin LAI, Ling Yan Ruby CHEUNG, Woon Shuen CHAN,

Poultry is one of the most important meat sources in Hong Kong and as of 2020 the annual poultry meat supply in Hong Kong was 8,476 tonnes (AFCD, 2021). Despite the shortage of land in Hong Kong, there are still 28 chicken farms in the region with a carrying capacity of about 1.3 million broiler chickens. Since the ban of live chicken imports due to the avian influenza incidents in imported poultry in 2014, the live chicken market in Hong Kong is solely supplied by local chicken farms. Given that there is no poultry slaughterhouse in Hong Kong, the only route for these 1.3 million locally reared broilers to be slaughtered and sold in Hong Kong each year is the 128 licenced live poultry retailers, located in the wet markets of different districts throughout Hong Kong (Food and Health Bureau; FHB, 2020). Among the 128 licenced live poultry retailers, 84 are live poultry stalls in public markets and the remaining 44 are fresh provision shops with special permission for selling live poultry (FHB, 2020).

In practice, marketable live chickens reared by Hong Kong chicken farms are generally transported to Cheung Sha Wan Temporary Wholesale Poultry Market each evening and transported to the live poultry stalls and fresh provision shops in wet markets the following morning, where the live chickens are kept in cages for several hours before being sold to consumers and slaughtered upon request. For welfare assessment of chicken in live poultry retail shops in wet markets, the Council Regulation (EC) No. 1099/2009 “on the protection of animals at the time of killing” adopted by the European Union in 2009 and the “Slaughter of animals: poultry” published by the European Food Safety Authority in 2019 was used as reference to determine the welfare status of live poultry in the poultry retail stalls in Hong Kong.
The study also included staff and the general public’s opinion on live poultry welfare. Currently there is no report assessing the welfare of live chicken in Hong Kong wet markets. This study reviewed the welfare conditions of live chickens in the live poultry retail stalls and has attempted to raise awareness of the welfare conditions of live chickens in Hong Kong and other regions with similar practices. The objectives of the study were to 1) to collect information about stocking conditions of chickens in wet markets, including water stations, temperature, relative humidity, lighting, noise, stocking density, time until slaughter during pre-stunning; 2) to gather information regarding the methods of stunning, methods of slaughter, the cutting procedure, and the scalding procedure in wet markets; and 3) to obtain information from staff and consumers with regards to staff’s training history, year(s) of experience, their opinions on the welfare of live chickens, their opinions on any welfare improvements from both parties, and consumers’ reasons to choose live poultry over slaughtered poultry. We hope it can serve as a front for the welfare improvement of live poultry by providing the necessary background information about live chicken welfare for any changes in the future.

For our study, we selected 6 live poultry retail stalls out of 84 stalls in Hong Kong and collected data regarding the stocking conditions and the slaughtering methods from each. We found that water provision was not observed in all stalls and that stunning was not performed in any of the stalls sampled prior to bleeding, suggesting the possibility of some of the broilers being sent into the scalding tank alive. A survey on the training history of staff suggested that none of the staff received specific training before operation.

We suggest:

(1) Improvements regarding water provision and implementation of stunning before;

(2) Establishing regulations to require mandatory staff training with an approved trainer accredited by the government before working in the poultry stalls.
Welfare of Saltwater Fish in Hong Kong Wet Markets
Desiree HUNG, Kwok Zu LIM, Chi Fai LEUNG, Stephen Chi Ho CHAN, Sophie ST-HILAIRE

The welfare of saltwater fish species in Hong Kong wet markets is often overlooked. The objective of this study was to investigate the level of fish welfare in these types of markets and determine if any welfare indicators were associated with water quality parameters, and stocking density.

The study was conducted with the City University of Hong Kong Aquatic Animal Veterinary Service Team between June and July 2021, collecting data from marine fish stalls across wet markets in Kowloon, Hong Kong Island and the New Territories (see figure 2). All assessments were conducted under supervision of an aquatic veterinarian.

Welfare assessment was divided into three parts: 1) General visual assessment of tanks, 2) Water quality measurements and 3) Visual inspection of fish health through identification of health issues (see figure 3). Stocking density was visually evaluated through use of stocking density scores (see figure 4). Water samples were collected from reservoir tanks, which were connected to the rest of the tanks within a stall by circulating systems. At least 3 individual tanks and fish within were assessed in each stall.

Only 3 dead fish were observed during our visit to 15 commercial stalls. Results for water quality parameters in 47 tanks from the 15 stalls were within normal range for most warm water fish species; however, all stall owners used supplemental air or oxygen in their tanks. Welfare issues observed in holding tanks were ulcerations on the facial and lateral areas, fin erosion, and loss of equilibrium. Stocking density was categorised into one of three groups, and we found a significant association between higher stocking density scores and unionised ammonia levels, facial and lateral ulcerations, and fin erosion. This is consistent with physical damage from overcrowding. Overall, the welfare of fish in the stalls we visited was acceptable, and the few health issues can likely be addressed directly or indirectly by reducing the density of fish in the tanks. Further investigation...
would be required to determine the optimal threshold stocking density suitable for fish stalls, considering economic profit, available space, varying species of fish, and fish welfare.

This study was presented to other awardees and guests in the UFAW Animal Welfare Student Scholars Meeting 2021 (see figure 1) and has been accepted for an oral presentation in the HSA conference in Edinburgh (30 June-1 July 2022). The manuscript is being reviewed for submission to the UFAW journal in Animal Welfare.

I would like to thank the Humane Slaughter Association for providing me with this valuable opportunity, and the Jockey Club College of Veterinary Medicine and Life Sciences for their tremendous support to student development.

Figure 2. Marine fish holding tanks in Hong Kong Wet Markets

Figure 3. Example of health issues. Fish with exophthalmia (A), facial ulcerations (A,B) and fin erosion (A,C) were observed. 團隊發現的健康問題包括眼外傷（A）、面部潰瘍（A，B）和鰭部磨損（A，C）的魚。

Figure 4. Stocking density score (SDS) to assess stocking density in tanks. SDS 0 (good; A1, A2), SDS 1 (poor; B1, B2), SDS 2 (very poor; C1, C2). Criterion was based on available space for fish to swim in tanks. 團隊以放養密度評分評估水缸中的放養密度，分為SDS 0（好；A1，A2）、SDS 1（差；B1，B2）、SDS 2（極差；C1，C2），基於魚在缸中的游泳空間評分。
獸醫學學士課程學生獲
人道屠宰協會Dorothy Sidley推動
動物福利獎

賽馬會動物醫學及
生命科學院祝賀兩
位獸醫學學士課程
學生獲頒人道屠宰
協會Dorothy Sidley
獎，表彰他們推動
動物在運輸、銷售
和屠宰過程中的福
利。獸醫學學士課
程五年級學生謝明
儀研究活家禽零售
點的雞隻福利，而
四年級學生Desiree
Hung 則研究香港濕
貨街市的海魚福
利，兩個領域對動
物福利十分重要，
我們期待研究結果
能提升動物福利的
管理。
香港活臰街市活家禽零售商点的雞隻福利

Ming Yi TSE, Lynnox Edviano LOO, Pui Yung Anna LEE, Yuk Yin LAI, Ling Yan Ruby CHEUNG, Woon Shuen CHAN，

家禽是香港最重要的肉類來源之一。截至2020年，每年家禽肉供應量為8,476噸（漁農及天然食物局，2021）。即使土地短缺，全港仍有28個禽場，飼養了130萬隻肉雞。

自2014年因進口家禽爆發禽流感而禁止活雞進口後，香港的活雞市場僅由本地禽場供應。由於香港沒有家禽屠宰場，每年130萬隻本地飼養，只能在香港各區販售的肉雞為28家特許活家禽零售商屠宰和販售（食物及衛生局，2020），當中84個是公眾街市的活家禽攤檔，其餘44個是特別許可出售活家禽的新鮮殺食店（食物及衛生局，2020）。

其實，香港雞場每晚將可銷售活雞運往長沙灣臨時家禽批發市場，第二天再運往臰貨街市的活家禽攤檔和新鮮殺食店，籠內的活雞在數小時內賣給消費者，並按客人要求屠宰。臰貨街市對活家禽攤檔的雞隻福利評估，是參考2009年通過的歐盟理事會例（EC）第1099/2009規定「關於動物被屠宰時的保護」和歐洲食品安全局於2019年發布的「屠宰動物：家禽」，以確保香港活家禽攤檔的家禽福利狀況。

該研究包括員工和公眾對活家禽福利的意見。目前未有報告評估香港臰貨街市的活雞福利，本研究則審評活家禽攤檔的活雞福利狀況，從而令大家關心香港及類似地區的活雞福利狀況。本研究旨在：1）收集臰貨街市的雞隻儲存資料，包括水站、溫度、相對濕度、照明、噪音、儲存密度、屠宰前擊暈的時間；2）收集臰貨街市的擊暈方法、屠宰方法、切割程序和燙毛程序的資料；3）從員工和消費者兩方面，收集員工培訓歷史、年資、對活雞福利的意見，以及雙方對改善雞隻福利的建議，以及消費者選擇活家禽而非已屠宰家禽的原因。

我們期望研究可引領活家禽福利提升，創造改善活雞福利的有利條件。

在研究中，我們從香港84個活家禽攤檔挑選6個，收集每個攤位的存雞情況和屠宰方法的數據，發現並非所有攤檔為雞隻提供食水，也非所有攤檔將雞隻放血前會將牠們擊暈，可見雞隻是活生生送入燙毛缸，亦在員工培訓的研究中，發現他們操作前未接受過具體培訓。

我們建議：

(1) 改善食水供應和實施屠宰前擊暈。

(2) 制定法規，要求入職員工接受政府認可導師的培訓。
香港濕貨街市的海魚福利

Desiree HUNG, Kwok Zu LIM, Chi Fai LEUNG, Stephen Chi Ho CHAN, Sophie ST-HILAIRE

香港濕貨街市的海魚福利常被忽視，這項研究旨在調查這類市場中的魚福利水平，確定是否涉及水質參數和放養密度的福利指標。

這項研究在2021年6月至7月由香港城市大學水產養殖動物衞生服務隊進行，從港九新界濕貨街市的海魚攤檔收購數據（見圖2），所有評估均在水產衛生的監督下進行。

福利評估分為三個部分：1）魚缸目測評估；2）水質測量；3）通過識別健康問題測魚類健康（見圖3）。研究團隊以放養密度評分對魚缸放養密度進行目測評估（見圖4），並在魚缸收集水樣本，這些魚缸以循環系統與檔內其他水缸相連，團隊在每個攤檔至少評估三個獨立魚缸及缸內的魚。

我們走訪15個攤檔中只發現三條死魚，這些攤檔共47個水箱的水質參數，對大部分溫水魚種都在正常範圍。然而，所有攤檔東主在水缸中使用補充氧氣，令缸中海魚出現的福利問題，包括面部和身體潰瘍、鳍部受損和難以平衡。放養密度屬三組之一，我們發現放養較密容易導致游離氧水平、面部和身體潰瘍以及鳍部受損，跟過擠的身體損傷一致。

總體來說，我們在攤檔所見的魚福利可以接受，少數健康問題或可藉着減少魚缸裏的密度直接或間接解決，還應從經濟利潤、可用空間、各類魚種和魚福利考慮，進一步確定最佳的放養密度。

在2021年英國動物福利聯盟「動物福利學生學者會議」上，我們向其他得獎者和嘉賓報告了這項研究（見圖1），並將在愛丁堡舉行的人道屠宰協會會議上作口頭報告（2022年6月30日至7月1日），稿件正由英國動物福利聯盟的動物福利雜誌審核。

我要感謝人道屠宰協會給我這寶貴機會，並感激賽馬會動物醫學及生命科學院鼎力支援學生發展。
The diversity of animal anatomy: From form to function

Dr Mason Dean
I’m a new Associate Professor of Comparative Anatomy, originally from the USA and freshly arrived to Hong Kong in July 2021. My schooling is in marine biology and anatomy: ever since my undergraduate degree, taking courses at a marine lab on the coast of North Carolina, I’ve been interested in ‘form-function relationships’ in animals, particularly in the skeletons and biomechanics of fishes. And yet for the last decade, I lived quite far from the ocean in Berlin, Germany, where I had the chance to work in a vibrant materials science department at the Max Planck Institute. That department turned out to be an exciting place to learn how to look at animal tissues with new eyes, by applying engineering tools to biology.

The adage “There are many fish in the sea” is, in terms of animal diversity, quite true. Of the ~40,000 species of vertebrates (animals with backbones), more than 50% are fish. Fish occupy almost every body of water on the planet (from tropical to polar seas and all freshwater habitats) and are exceptionally diverse in diet, anatomy and ecology. In my research, this huge variation of form and function offers a backdrop for studying how the tissues that build skeletons grow, vary and evolve, adapting to conditions and challenges. Observing tissues outside of their biological context, only in the vials and slides of the lab, is like trying to suss out what pistons or valves do separately from the engine they belong in. In my workgroup, we leverage the natural context of animal tissues, how they are used in the animal’s habitat and life history. Can they tolerate extreme conditions or damage? Do they grow indefinitely? Do they incorporate particular elements from food? By exploring and cataloging the natural diversity of tissue form and composition within the frames of ecology (where and how the animal lives) and evolution (species’ relationships), we can start to make sense of the mosaic of animal forms and functions, and to decode the factors driving how tissues adapt - in short and long time-scales - to solve new problems.
“To dig into the inner workings of animal tissues, my workgroup combines biology, engineering and even design approaches to explore how tissue materials and architectures interact.”

No one technique tells us everything and so we use multiple tools at once - mixing high-resolution imaging with materials testing, and digital and physical models - pushing, pulling, and fracturing tissues to learn how they behave in nature. I find it especially fun and inspiring to work in groups with diverse backgrounds and disciplines, a cocktail of perspectives and ideas: someone will always see an angle or solution to a problem that I didn’t. I have met great friends and colleagues this way, and have been lucky to explore the biology of diverse tissues - from fish bone and cartilage to mollusc shell, from elephant ivory to shark teeth - while revealing natural solutions that could even be useful for building manmade materials. I look forward to continuing my work at CityU, taking advantage of Hong Kong’s rich natural environment and biodiversity - given the astounding diversity of animals, their tissues have much to teach us, especially if we can be creative in the ways we look!”
Science can be myopic with regard to the study of skeletal tissues: our understanding of the function and anatomy of bone and cartilage comes from just a few, closely related species of mammals. This restricts our concept of what skeletal tissues actually are and what they can do. The skeletons of sharks and rays, for example, represent an opposite materials design strategy to ours; whereas our skeletons are made of bone, filled with cells charged with fixing damage, the skeletons of sharks are cartilage, which can be added to and patched up, but not repaired. Despite this, we know that shark and ray skeletons perform just as well as ours—and perhaps better, considering the extreme loads some species deal with in their lifetimes. These fascinating ‘alternative’ design solutions provide important windows into how animal tissues work, but also make fantastic fodder for engineering/biomedical applications: How can a low-density material (cartilage) perform as well as a high-density one (bone)? How can a skeletal tissue be made resistant to damage so it doesn’t need a cellular repair service?

Dr Mason Dean, M.S., Ph.D.
Associate Professor,
Department of Infectious Diseases and Public Health

Mason Dean (upper right), his former lab group at the Max Planck Institute, collaborator Frederik Mollen (centre), and a bowemouth guitarfish specimen

Mason is a marine biologist, zoologist and anatomist, studying skeletal development, structure and function in vertebrate animals, but with a particular focus on (and affection for) sharks and rays.

In addition to his work at CityU, he is a Guest Scientist at in the Department of Biomaterials, Max Planck Institute of Colloids and Interfaces (where he led a research workgroup prior to moving to Hong Kong) and an Associate Investigator in the Humboldt-Universität zu Berlin’s Excellence Cluster ‘Matters of Activity’, collaborating with designers, engineers and architects to study anatomy. His work on “form-function” relationships in animal skeletons allows him to combine Zoology and Comparative Anatomy with illustration and 3D digital visualization.
動物解剖多樣性：
從形式到功能

Mason Dean博士

2021年7月，我從美國到香港，任職比較解剖學副教授。我專門研究海洋生物學和比較解剖學，自從在北卡羅來納州海岸的海洋實驗室獲得學士學位，便對動物的「形態－功能關係」深感興趣，尤其以魚類的骨骼和生物力學為甚。然而，過去十年，我居於遠離海洋的德國柏林，在馬克斯－普朗克研究所材料科學系工作，該學系令我眼界大開，我藉着將工程工具應用於生物學，以新視野觀看動物組織。

古人以「魚貫而入」形容魚的驚人數目，我亦想用來解釋動物多樣性。大約40,000萬種脊椎動物中，超過一半屬魚。魚類幾乎佔據地球上所有水域，包括熱帶海洋、極地海洋及淡水棲息地，在飲食、解剖學和生態學上逆變萬化。在我的研究中，這琳琅滿目的形式和功能有助研究骨骼組織如何生長、演變和進化，從而適應各種條件和挑戰。在生物範疇外觀察組織，即只用實驗室的試管和顯微鏡觀察，就如試圖弄清活塞或閥門在所屬機械以外的個別功能。

我們的團隊研究動物組織在動物棲息地和生活史的作用，它們可以忍受極端條件和破壞嗎？它們可以不斷生長嗎？它們可否吸收食物中的特別成分？我們研究生態學（動物生活地點和方式）及進化學（物種關係）範疇中的組織形態和組織組成的自然多樣性，漸漸掌握錯中複雜的動物形式和功能，並解構組織在短期和長期的適應能力，從而解決新問題。
為深入了解動物組織的內部運作，我們的團隊結合生物學、工程學甚至設計方法，探索組織材料和結構如何互相影響。

沒有一種方法萬能，我們只能同時使用多種工具——混合高解析成像和材料測試，以及數碼和物理模型——以推、拉和斷裂組織來了解它們在自然界的行為。我發現來自不同背景和學科的團隊成員工作既有趣又具有發性，不同思想互相交流，總有人看我忽略的角度或解決方案。

我因此結識了很多朋友和同事，有幸繼續探索各種組織的生物學——由魚骨、軟骨到軟體動物外殼，由象牙到漁具牙齒——同時發現以最符合自然的方法製造人造材料。我期待繼續在城大研究，善用香港豐富的自然環境和生物多樣性。動物的多樣性令人讚歎，牠們的組織是無涯學海，最重要是你們要用心意看待它們！

Mason Dean博士
副教授，傳染病與公共衛生學系

對於骨骼組織的研究，科學可能當局者迷：我們對骨骼和軟骨的功能和解剖學的了解，僅僅來自幾種關係密切的哺乳動物，這限制了我們理解骨骼組織的特性和功能。例如，選魚和鯊魚的骨骼跟我們的材料設計相反：我們的骨骼由骨頭構成，佈滿可以修復的細胞；而鯊魚的骨骼則是軟骨，可以添加和修補，卻不能修復。

儘管如此，我們知道鯊魚和鯊魚的骨骼媲美我們的骨骼，甚至有過之而無不及。這些物種要考慮極端負荷。這種神奇的材料設計成為一個重要窗口，讓我們研究動物組織的作用，也是工程學及生物醫學的一流素材：低密度的材料（軟骨）如何媲美高密度的材料（骨頭）？如何使骨骼組織可以耐得住損耗，而毋須修復細胞呢？

除了城大的工作外，他也是馬克斯普朗克膠體與介面研究所生物材料學系客席科學家，移居香港前曾於該研究所領導一個研究團隊，亦是柏林洪堡大學精英研究集群「活動事項」副研究員，與設計師、工程師和建築師合作研究解剖學。他研究動物骨骼的形式、功能關係，將動物學和比較解剖學與圖像和立體數碼視覺結合起來。
Getting Ready!
Our first cohort begin their clinical rotations!

Dr Yorkee Leung
BVM Year 5 students begin their clinical programmes in April 2022. The programme runs from the 2nd semester of Year 5 and until the end of their BVM programme in May 2023. The programme, which runs for 48 weeks, is split into 28 weeks of core rotations and 20 weeks of elective extramural studies (EMS). The CityU JCC programme offers students the opportunity to apply their theoretical knowledge, communication, and technical skills in real clinical settings under the close supervision of registered veterinarians with expertise in diverse fields. Clinical rotations will provide students with a holistic, immersive experience and equip them with the necessary clinical skills and experience to be competent, confident veterinarians ready for practice on Day One of clinical practice.

Students will undertake a three-week anaesthesia rotation, two-week diagnostic imaging rotation, two-week emergency and critical care rotation, three-week equine rotation, one-week exotic rotation, three-week general practice rotation, three-week livestock practice rotation, two-week pathology rotation, three-week referral medicine rotation, two-week ruminant rotation, three-day slaughterhouse rotation, and three-week surgery rotation at multiple off-campus sites.

Most clinical rotations will take place at CityU Veterinary Medical Centre (VMC) and CityU Veterinary Diagnostic Laboratory (VDL). Students will be supervised by both VMC specialists and veterinarians, as well as JCC faculty. Some rotations will be hosted at CityU JCC clinical partner sites, including the Hong Kong Jockey Club, with support and oversight from CityU JCC faculty and affiliated clinical personnel. Students participating in the programme will be allocated to different rotation groups, and each group will have a set schedule. Time commitments will vary by clinical rotations but will typically require a minimum of 40 to 45 hours per week of contact time.

CityU JCC has also formed partnerships with over 35 well-established local veterinary practices to provide 20-week clinical EMS placements. Students are required to complete five 4-week extra-mural placements in our partner practices, depending on students’ career interest areas.
Training the trainers

Being good at your clinical job doesn’t necessarily mean that you can teach it! In preparation for clinical rotations, JCC held clinical teaching workshops in December 2021. These workshops led by colleagues from the University of Queensland, Associate Professor Daniel Schull and Dr Donna Parker, assist clinical teachers to better understand how students learn and how to grab valuable teaching opportunities in a busy clinical environment. The sessions also allowed VMC clinicians, VDL specialists and JCC clinical teachers to interact and have some fun.

CityU JCC is fully prepared to provide this clinical programme to its first cohort of BVM students. The college trusts the students will enjoy their rotations, get the best out of these clinical rotations and be ready to practice on Day One of their careers.

Dr Yorkee Leung, BVSc(Hons), MVS, GradCertSAECC, MANZCVS
Clinical Programme Manager
萬事倶備，首批獸醫學生啟動臨床實習！
梁育宜獸醫

由2022年4月，獸醫學士課程五年級學生正式展開臨床實習，實習課程由五年級第二學期開始，隨著獸醫學士課程於2023年5月結束，一共為期48星期，分為28周的核心輪訓和20周的選修校外課程。城大獸醫會動物醫學院及生命科學院課程讓學生得以將理論知識和溝通技能應用在真實的臨床環境，並有不同專業領域的註冊獸醫密切監督。臨床輪訓為學生提供全面的親身體驗，掌握必要的臨床技能和經驗，成為獨當一面的獸醫師，隨時可以應付臨床實踐。

學生將在多個校内外地點進行實習，包括三周麻醉實習、兩周診斷醫學實習、兩周急救和重症護理實習、三周馬匹實習、一周禽類實習、一周普通科實習、一周拉畜實習、兩周病理學實習、兩周轉介醫學實習、兩周反芻動物實習、三天屠宰實習和三周外科實習。

大多數臨床實習在城大動物醫療中心和城大動物醫療檢驗中心進行，並由動物醫學中心的專家和獸醫及賽馬會動物醫學及生命科學院教授指導，部分實習將在包括香港賽馬會這些院臨床夥伴進行，由學院教授及相關臨床人員提供支援和監督。

實習學生會分配到不同小組，根據各自的實際情況有固定的實習時間，每周通常有至少40至45小時的實習時間。

城大賽馬會動物醫學院及生命科學院與超過35家本地知名獸醫診所合作，對方提供為期20周的臨床校外課程實習，學生須根據自己的研究興趣，在我們的合作夥伴診所完成五個各為期四星期的校外實習。

培訓員課程

即使有出色的臨床工作，亦須有優秀的教學技巧，城大賽馬會動物醫學院及生命科學院於2021年12月舉辦了臨床教學研討會，為臨床實習做好準備。這些研討會由昆士蘭大學Daniel Schull副教授和Donna Parker博士主持，協助臨床教師更了解學生需要，在繁忙的臨床環境中掌握寶貴的教學機會。這些會議還讓城大動物醫療中心的臨床獸醫、城大動物醫療檢驗中心的專家和城大賽馬會動物醫學院及生命科學院的臨床教師互相交流，樂趣無窮。

城大賽馬會動物醫學院已準備就緒，為第一批獸醫學士學生提供這門臨床課程，相信學生們會享受實習過程中的得着，在職業生涯的第一天就萬事倶備。

梁育宜獸醫
臨床課程經理
Developments in advanced Anaesthetic & Analgesic care

Dr. Alexander Thomson

Progress in technology and expertise has opened the door to a wide variety of advanced treatments and surgeries for our pets. From hip replacements to heart surgery, pets today can access many of the same cutting-edge procedures available to their human counterparts. However, none of these advances would be possible without the simultaneous development of advanced anaesthetic and analgesic care. Preventing and treating pain remains a top priority to keep pets happy, comfortable, and healthy throughout their hospital stay and beyond.

“Pain is a highly complex and individual experience. Its treatment is especially challenging in animals, who can’t verbally communicate and may hide signs of discomfort.”
Pain follows a specific pathway in the body, each portion of which is a potential target for pain relief. Nociceptors detect tissue injury, such as a surgical incision, and generate electrical pain signals known as action potentials. These signals are transmitted along nerves to the spinal cord, like a telephone line connecting to the operator. The spinal cord modulates the intensity of these signals before projecting them to the brain, where they are integrated with a huge web of sensory and emotional information to produce the unpleasant conscious experience of pain.

Conventional pain medications are given systemically – in other words, they are administered to the whole animal, and some of the drug is distributed to the intended site of action. Some drugs, like NSAIDs, target the inflammation at the site of injury, while others, like opioids and ketamine, exert their effect within the spinal cord and brain. While effective, these drugs produce incomplete analgesia, since they don’t prevent pain signals from reaching the central nervous system. Their doses may need to be carefully adjusted up and down depending on the severity of the pain, and severe pain may escape treatment. Systemic drugs often have off-target effects on other body systems – for example, nausea, excessive sedation, or a slow heart rate. The higher the dose, the more likely the animal will experience side effects.
To address these challenges, anaesthesiologists at CityU VMC use a multimodal approach to pain management, targeting pain signals at many different points in the pain pathway. The most promising of these modalities is regional anaesthesia, in which a small amount of anaesthetic is deposited around the nerves themselves, blocking conduction - essentially cutting the telephone line. Unlike systemic analgesics, nerve blocks can provide complete analgesia, preventing pain signals from even reaching the brain. This allows a much lower dose of systemic and inhaled drugs, thereby eliminating pain, reducing the side effects of anaesthesia, and lowering our environmental impact. With nerve blocks on board, studies have demonstrated improved patient comfort during and after surgery, improved long-term outcomes, and lower consumption of systemic analgesics like opioids. Some studies even suggest that nerve blocks could reduce the risk of metastasis after cancer surgery.

In the early days of nerve blocks, the location of nerves was estimated using anatomical landmarks. However, this failed to account for individual anatomical variation, and moving the needle a few millimeters in the wrong direction could make the difference between success or failure of the nerve block. Accidentally touching a nerve with a needle could result in permanent nerve damage. These problems are even more prevalent in dogs and cats, where the wide variety of sizes and shapes leads to considerable differences in the anatomy around nerves.

CityU VMC’s anaesthesiologists therefore use the most advanced technologies available for nerve blocks, mirroring the gold standard of care in human medicine. Nerves are located using a combination of electrical nerve stimulation and ultrasound guidance. Electrical nerve stimulators connect to specially designed stimulating needles, which release a small amount of electrical current from the needle tip. When close to a nerve, this current triggers muscle twitches; the intensity of current required to produce a twitch is used to estimate the distance from the needle to the target nerve. With ultrasound, the anaesthesiologist can watch the needle and target nerve in real time during the nerve block procedure, ensuring local anesthetic is deposited in the precise desired location and avoiding the risk of nerve damage. Advanced ultrasound capabilities like color Doppler and needle tracking allow the anaesthesiologist to identify nerves, blood vessels, and other surrounding structures with unparalleled clarity. CityU VMC recently invested in a Sonosite PX ultrasound system, one of the most advanced systems currently used in the human anaesthesia field, to ensure gold-standard pain care for Hong Kong pets. It is now possible to perform surgeries as extensive as a limb amputation with little to no pain.
at all.

In addition to clinical activities, CVMC’s anaesthesiologists are actively involved in research to advance the field of regional anaesthesia, adapting human techniques and developing new nerve blocks and analgesic strategies for use in companion animals. Their work has been published in leading international veterinary journals, promoting leadership in the burgeoning field of veterinary pain medicine. Hong Kong pet owners can rest assured that if their pet is hospitalized at CVMC, they will be cared for by a team of pain management experts with the best standard of care available today. 🥰

Dr. Alexander Thomson, DVM, DACVAA
Specialist in Anaesthesia and Pain Management, Medical Director, CityU VMC

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Dr. Alexander Thomson earned his Bachelor of Science and Doctor of Veterinary Medicine degrees at Cornell University, before completing a rotating internship at Wheat Ridge Animal Hospital in Denver, Colorado. After internship, he moved to the University of Florida for a residency in anaesthesiology and pain management, gaining valuable experience in a broad range of complex and high-risk anaesthetic procedures. His experience spans both domestic and exotic species, from dogs, cats, and horses to tigers, gorillas, and rhinoceros. During his residency, he also worked part time as an emergency veterinarian in hospitals across central Florida. He is board certified by the American College of Veterinary Anesthesia and Analgesia.

Dr. Thomson has particular expertise in ultrasound-guided regional anesthesia, and he has published novel techniques and scientific research on the subject in leading veterinary journals. He is passionate about using modern analgesic techniques and evidence-based medicine to prevent and treat animal pain in all stages of life. His major interests include cardiothoracic anesthesia, clinical pharmacology, and interventional pain management.

Alexander Thomson獸醫在美國康奈爾大學獲得理學士和獸醫學學位，繼而在科羅拉多州丹佛市小參嶺動物醫院完成實習，再於佛羅里達大學接受麻醉學和疼痛管理實習。在廣闊艱澀的麻醉學問中獲得寶貴經驗，涉及國內和外來物種，包括狗、貓、馬、老虎、大猩猩和犀牛。在實習期間，他亦遊走佛羅里達州中部的醫院，兼職擔任急診獸醫，獲得美國獸醫麻醉和疼痛學院的認證。

Thomson獸醫擅長超聲引導下的區域麻醉，曾在知名獸醫期刊發表相關先進技術和研究。他熱衷於使用現代鎮痛技術和循證醫學來預防和治療動物在生命各階段的疼痛，其研究範圍包括心胸外科麻醉，臨床藥理學和介入性疼痛管理。
高級麻醉和鎮痛護理發展

Alexander Thomson獸醫

日新月異的科技和專業知識為我們的寵物帶來各種先進治療和手術，從頭顱到心臟手術，今天的寵物可以享受到許多媲美人類的尖端醫療。然而，沒有同一時間的先進麻醉和鎮痛護理，這些改變不可能發生。要讓寵物在住院期間保持快樂、舒適和健康，疼痛預防和治療仍是首要任務。

疼痛是錯中復雜，各有差別的體驗，治療疼痛對動物尤其困難，因為牠們不能用語言交流，還可能隱藏不適感受。

疼痛循着身體特定的路徑，各處都可用作緩解疼痛。感官疼痛偵測到像手術切口的組織受傷，並產生稱為「動作電位」的電流信號。這些信號沿着神經傳輸到脊髓，猶如電話線連接電訊商一樣，脊髓調節這些信號的強度後投射到大腦，再與龐大感官和感受一種信息網整合，從而產生疼痛的不適意識。

傳統的止痛藥是給全身的，換句話說，醫生將止痛藥注射到動物全身，真正需要止痛的身體部位只獲配部分藥物。非類固醇消炎止痛藥等藥物針對受傷部位的炎症，鴿片類和氨基類藥物則在脊髓和大腦中發揮作用。這些藥物雖然有效，但因為無法阻止疼痛信號傳達中樞神經系統，因此產生的鎮痛並不完整。它們的劑量可能需要根據疼痛程度調整。嚴重疼痛可能難以治療，全身用藥對身體其他系統常產生不良反應，例如噁心、過度鎮靜或心率緩慢。劑量越大，動物的副作用亦有機會增加。
為解決這些問題，城大動物醫療中心的麻醉師採用多模調試方法管理疼痛，在疼痛通路的不同位置針對疼痛信號，當中以區域麻醉最有效，只須在神經線四周注射少量麻醉劑即可阻斷傳導，原理就像切斷電話線一樣。與全身麻醉不同，阻斷神經線可以提供完整的鎮痛，阻止疼痛信號傳達大腦，因而減少全身性和和服用藥物的劑量，從而消除疼痛感覚，亦減少麻醉帶來的副作用，還可減少對環境的影響。有些研究更顯示這種神經阻滯令治療在手術期間和術後更加舒適，改善長期療效，亦可減少服用鴉片類藥物。有些研究甚至表明神經阻滯可以減少癌症手術後的轉移風險。

在神經阻滯初期，神經位置是通過解剖學地標定位，然而，這未能考慮個別的解剖結構差異，落針位置略稍微差別足以扭轉成敗。意外用針頭觸及神經，也可能導致永久性神經損傷。這些問題在貓和狗身上更普遍，牠們的形狀大小各有不同，令神經周圍的解剖結構差異極大。

因此，城大動物醫療中心的麻醉師用最先進的技術進行神經阻滯，跟隨人類醫學的黃金護理標準。他們以神經電刺激和超聲波超聲波結合的方法定位神經，神經電刺激器連接專門設計的刺激針，從針頭釋放少量電流。當它接近神經時，這種電流會引發肌肉抽搐；產生抽搐所需的電流強度就可估計從針到目標神經的距離。透過超聲波，麻醉師可以在神經阻滯中實時觀察針頭和目標神經，確保局部麻醉劑精準落於所需位置，避免神經損傷的風險。

彩色多普勒和針頭追蹤等先進超聲波功能讓麻醉師清晰準確地識別神經、血管和周邊結構。城大動物醫療中心最近添置一套Sonosite PX超聲系統，這是目前人類麻醉領域最先進的系統之一，確保香港的寵物得到黃金標準的疼痛護理，讓他們在幾乎無疼痛下進行截肢等各種手術。

除了臨床研究外，城大動物醫療中心的麻醉師亦積極推動區內麻醉發展，在寵物身上應用人類技術，研發新的神經傳導阻滯和鎮痛策略。他們的研究已在國際知名獸醫期刊發表，促進獸醫疼痛醫學這一新興領域的領導地位。香港的寵物主人可放心將寵物送到城大動物醫療中心，將寵物交託給我們的疼痛管理專家團隊悉心照顧，得到當今最好的護理水平。

Alexander Thomson獸醫麻醉和疼痛管理專家
城大動物醫療中心醫學總監
Dr Gareth Fitch
and his collaboration with
the Hong Kong Jockey Club
Background

I grew up around horses and worked in racing prior to going to veterinary school. Even though I had a strong equine background, I remained open-minded during my veterinary training as to which direction I would follow upon graduation. That said, after a short period in mixed practice, I chose to specialise in equine and did a two-year internship at Glasgow Veterinary School. During the internship I worked with mentors that were boarded surgeons from the United States and decided that this is what I wanted to do and with their help and encouragement secured a surgical residency position at UC Davis, California. Upon completing the residency training I became boarded in equine surgery.

Career

During my career I have worked in both academia and private practice and would say that both have distinct advantages and challenges.

“I have been lucky enough to live and work in the United States, Canada, Spain, Germany, New Zealand and now Hong Kong. One of the great advantages of a veterinary degree is that it can be a passport to the world!”

I have been lucky enough to experience different cultures and with respect to caseload, have worked with horses performing in a wide variety of disciplines. In equine, the client expectation is high because the horse needs not only to compete again, but also be successful and this can make equine practice particularly challenging at times.
Currently

I am employed as Clinical Associate Professor in Equine Studies within the City University’s Hong Kong Jockey Club College of Veterinary Medicine & Life Sciences. The primary role is developing and delivering the curriculum for clinical teaching and accompanying and teaching the students during their equine clinical rotations. The clinical teaching is organised through the Hong Kong Jockey Club facilities and initially, will be held at the Beas River Equestrian Facility; this facility is a British Horse Society certified Riding and Livery Centre. The facility houses over 250 horses, many of the which are ex-racehorses that have been retired from racing and retrained to other disciplines and are very well cared for. This provides a great opportunity for the students to gain hands-on experience with supervision from experienced equine vets.

As part of the relationship between City U and the Hong Kong Jockey Club, I assist with surgeries and the emergency on-call roster; this allows me to maintain clinical skills and hopefully allows the HKJC team have less on-call commitments.
Dr Gareth Fitch
BVetMed, MS, Diplomate, American College of Veterinary Surgeons
Clinical Associate Professor, Department of Veterinary Clinical Sciences

Gareth is Clinical Associate Professor in the Department of Veterinary Clinical Sciences at JCC, and a Diplomate of the American College of Veterinary Surgeons (Large Animal) teaching the equine curriculum of the BVM. After graduating from The Royal Veterinary College in 1995, Gareth worked in mixed practice before beginning an equine internship at Glasgow University Veterinary School. In 1997 he undertook a residency in Equine Surgery at the University of California Davis School of Veterinary Medicine, and passed the Board examination of the American College of Veterinary Surgeons in 2001.

Dr Fitch has worked as an equine surgeon in private practice in Canada and provided services to the emergency Surgery and Medicine units at Iowa State University. In 2007 he returned to Europe and worked at the University Alfonso X El Sabio in Madrid, Spain as a surgeon and lecturer where he stayed for 5 years. During this time, he completed a Masters in investigative sciences and also worked as team vet to the Spanish 3-day event team. From Spain he worked as a locum in private practice in Germany before taking up a position as a Senior Lecturer in equine surgery at Massey University in New Zealand. During this time, he carried out research on the upper airway in Standardbred racehorses and collaborated on other equine research projects. He was coordinator for equine studies and lectured on equine surgery. He worked as a surgeon in the referral clinic, teaching students, training interns and residents. Gareth was nominated by the final students for two consecutive years for a teaching award.

In 2016 he moved to a private practice in Christchurch, New Zealand and worked as a surgeon and sport horse veterinarian working mostly with thoroughbred and standardbred racehorses. Here he supervised students on extra mural rotations from Massey University. He served on the New Zealand Equine Association in 2014 and is a member of the editing committee for the Equine Veterinary Practitioner.
Gareth Fitch獸醫與香港賽馬會合作計劃

前言：

我跟馬匹成長，入讀獸醫學校前從事賽馬工作，雖然我對馬匹認識已深，但在獸醫培訓期間仍未確定畢業後的發展方向，直至我在短期內體會了各類實習後，便選擇馬科專科，並在蘇格蘭格拉斯哥獸醫學院實習兩年。實習期間，我與來自美國的獸醫導師工作，因而確定了這是我的發展方向。在他們的幫助和鼓勵下，我獲聘為美國加州大學戴維斯分校住院獸醫，完成培訓後成為註冊馬匹獸醫。

職業生涯：

我曾在學術界和私人診所任職，兩者各有優勢和挑戰。

『我有幸曾在美國、加拿大、西班牙、德國和新西蘭生活和工作，如今來到香港。獸醫學位的一大優勢，就是它像一本通行全世界的護照！』

我有幸體驗到不同文化和案例，也因為馬匹不同病例而涉獵各種學科。馬匹主人對獸醫要求很高，因為這些馬匹不僅要出賽，而且還要獲勝，令馬科醫學更具挑戰性。

現況：

我目前任職城大賽馬會動物醫學及生命科學院馬科研究臨床副教授，主要負責發展臨床教學課程，指導學生進行馬科臨床實習，這些實習在香港賽馬會的設施展開，前期在雙魚河馬術中心進行，該設施是英國馬會認證的騎術中心，當中250多匹馬包羅訓練作其他範疇的退役賽馬，如今得到悉心照顧，讓學生在資深馬匹獸醫的監督下實習。

我作為城大和香港賽馬會的成員，協助推手術和輪值急症，從而維持臨床技能，亦減少香港賽馬會團隊的輪值負擔。
Dr Gareth Fitch
臨床副教授, 臨床動物醫學系

Gareth獸醫是香港賽馬會動物醫學及生命科學院獸醫臨床科學系的臨床副教授，也是美國獸醫學院（大型動物）專科獸醫，向獸醫學士學生教授馬科課程。他於1995年畢業於英國皇家獸醫學院，經歷過不同的實習後，於1997年他在美國加州大學戴維斯分校獸醫學院進行馬科住院獸醫培訓，並於2001年通過美國獸醫學院的考核。

Gareth獸醫曾在加拿大擔任私家執業的馬科獸醫，為愛荷華州立大學緊急外科和醫學部門提供服務。2007年，他回到歐洲，在西班牙馬德里的阿方索十世薩比奧大學擔任獸醫和講師。這五年間，他完成調查科學碩士課程，在西班牙馬術賽擔任獸醫。離開西班牙後，他在德國臨時私人執業，再於新西蘭梅西大學擔任馬科醫學高級講師。在此期間，他研究標準種賽馬的上氣道其他馬科研究項目，亦統籌馬科研究課程，教授馬科醫學，擔任轉介獸醫、教授、培訓實習生和住院獸醫，連續兩年被畢業班學生提名教學獎。

2016年，他移居新西蘭基督城，擔任普通獸醫和運動馬匹獸醫，主要照顧純種馬和標準種賽馬，並指導梅西大學學生進行校外實習。他在2014年擔任新西蘭馬術協會成員，亦是《馬科獸醫師》編輯委員會成員。
From clinician to basic science researcher

Dr Yun Young Go
After graduation from Konkuk University in South Korea, Dr. Yun Young Go joined the Korea Racing Authority as an equine clinician, where she developed a lifelong passion for horses. She realized throughout clinical practice that tying basic science into clinical medicine is essential to better understand the disease processes and adapt new management and treatment strategies to improve patient care. A few years after she began clinical practice, Dr. Go decided to pursue further studies on equine infectious diseases at the Maxwell H. Gluck Equine Research Center, University of Kentucky, located in the horse capital of the world, Lexington, Kentucky, USA. The principal research focus during her PhD was on equine arteritis virus (EAV), the causative agent of equine viral arteritis (EVA), a respiratory, systemic, and reproductive disease of horses. Following natural infection, up to 70% of infected stallions remain persistently infected and shed EAV in their semen. Thus, persistently infected stallions play a pivotal role in maintaining and perpetuating EAV in the equine population. Her research studies, using contemporary molecular biology techniques and host genomic analysis, led to the discovery of the equine C-X-C motif chemokine ligand 16 (CXCL16), which plays a critical role in determining EAV persistent infections in the stallion’s reproductive tract. Notably, two alleles (CXCL16位列 CXCL16位列) were identified in the equine population. Stallions that are either homozygous or heterozygous for the susceptibility allele (CXCL16位列, CXCL16位列) can become EAV carriers, while the stallions that are homozygous for the resistant allele (CXCL16位列) do not become carriers. Based on these results, an allelic discrimination diagnostic test was recently developed to identify stallions at greatest risk of becoming EAV carriers which has had a significant impact on targeted vaccination practices to prevent the occurrence of the carrier state.

This multidisciplinary study is an excellent example of a successful translation of basic science research from the bench to clinical implementation. More importantly, it inspired the involvement of basic scientists in translating the fruits of their labor to accelerate the advancement of a still-growing field of veterinary science and equine immunology.
Dr. Go currently focuses on translational virology research, emphasizing the development of antiviral drugs and molecular diagnostic tests against emerging and re-emerging infectious diseases that are of global public health importance. She is particularly interested in deciphering the antiviral mechanisms of novel small molecule inhibitors against coronaviruses and flaviviruses, and developing field-deployable diagnostic tests for various viral diseases.

Dr. Yun Young Go, DVM, MSc, PhD, Dipl. ACVM
Assistant Professor
Department of Infectious Diseases and Public Health

Dr. Yun Young Go received her DVM and MSc degrees from Konkuk University in Seoul, South Korea. Dr. Go has been a Diplomate of American College of Veterinary Microbiologists since 2011. She is a member of the Veterinary Surgeons Board of Hong Kong since 2020 and currently serves as an Editor for Microbiology Spectrum.

博士於韓國建國大學獲得獸醫醫學學位和碩士學位，自2011年成為美國獸醫微生物學家學院專科獸醫，自2020年出任香港獸醫委員會成員，目前擔任《微生物學譜》編輯。
從臨床醫生到基礎科學研究員
高潤瑛博士

高潤瑛博士畢業於韓國建國大學，其後任職韓國農業部馬匹臨床醫學，漸漸培養成她對馬匹的畢生熱情。藉著臨床服務，她明白到結合基礎科學與臨床醫學更能掌握疾病形成過程，亦能以嶄新管理方法與治療策略提升對病者的照顧。

高博士投身臨床服務幾年後，決定遠赴位於美國肯塔基州列克星敦的世界馬匹研究中心，於肯塔基大學Maxwell H. Gluck馬匹研究中心進修馬匹傳染病學。她的博士論文研究重點為馬動脈炎病毒（EAV），這是馬科病毒性動脈炎（EVA）的病原體，屬於馬匹呼吸道、系統性和生殖性疾病。公馬自自然感染後，高達70%的公馬仍會持續受感染，精液含馬科病毒性動脈炎，令馬科病毒性動脈炎繼續在馬群中傳播。

她的學術研究利用當代分子生物學技術和宿主基因組分析，發現馬匹中的C-X-C基序趨化因子配體16（CXCL16），足以決定公馬生殖道可持續感染馬動脈炎病毒。更重要的是，她在馬匹群中發現兩個等位基因（CXCL16**及CXCL16’’），易感等位基因（CXCL16**，CXCL16’’）同型或異型的公馬可帶着馬動脈炎病毒，而抗性等位基因（CXCL16’’）的公馬則不會成為帶病毒者。

基於這些結果，高博士研發了一種等位基因鑑別診斷測試，以識別最有機會帶馬動脈炎病毒的公馬，從而推動針對性的疫苗計劃，避免牠們成為帶病毒者。

這項跨學科研究示範由基礎科學如何從實驗室轉化為臨床實踐，更重要的是，它啟發基礎科學家將各自的研究成果轉化，令日益發展的獸醫學和馬匹免疫學更加一日千里。

高博士目前專注於轉化病毒學研究，特別是研發抗病毒藥物和分子診斷測試，解決影響全球公共衛生的新興和復發傳染病。她致力破解對抗新冠病毒和新病毒的新型小分子的抗病毒機制，以及研發可實地部署的各種病毒性疾病診斷測試。

高潤瑛博士
助理教授
傳染病與公共衛生學系
SUPPORT STAFF
An essential part of the BVM programme
The success of CityU’s BVM programme relies not just on Faculty, but also on experts who support student learning across different environments. JCC has been fortunate to recruit outstanding colleagues with a range of skills and expertise as Scientific Officers and Clinical Educators.
Mrs Susanna Taylor

Originally from the UK, Susanna Taylor, is a Registered Veterinary Nurse and a Veterinary Technician Specialist (VTS) in Anaesthesia and Analgesia (2010). She holds a Post Graduate Diploma in Veterinary Education from the Royal Veterinary College, University of London, and is a Fellow of the Higher Education Academy. Susanna’s roles include creating new clinical skill resources, supporting surgery and anaesthesia practical training and assessments, and ensuring functionality in the design of the new Surgery and Anaesthesia suite for the Jockey Club One Health Tower (JCT), due for completion in 2023. Susanna has also been involved with CityU’s Advanced Diploma in Veterinary Nursing programme since its commencement in 2016, and is module leader for 2 modules.

Clinical skills are an essential element in veterinary training, Susanna says “I have become really interested in the way we all learn new skills, and I really enjoy the challenge of putting theory in to practice to ensure a student-centred approach for the learning of clinical skills”. The more training our students complete using models and simulations, the more confidence they will have when they work with animals, and the less animals are required for training purposes. When the JCT is completed, the Clinical Skills Suite will occupy a dedicated 350m² area.
Dr Cherry Lee

Dr Cherry Lee is a Hong Kong local. She holds a BVSc from the University of Melbourne (2012), and a Master of Veterinary Medicine in companion animal medicine from Massey University (2021). Cherry has a strong interest in emergency and critical care, having worked in that field for 6 years, as well as 2 years in general practice.

At JCC, Cherry is involved in problem-based learning classes, clinical skills training, and coordinating extra-mural studies for vet students.

Cherry enjoys “providing a positive and effective learning experience for students”. She sees her role as a ‘bridge’ between education and learning. “During Problem Based Learning (PBL) tutorials, we provide opportunities for students to work collaboratively with classmates and facilitates their learning through case-based studies”. “In practical classes, we provide an environment for students to put theory into practice by demonstrating the skills and creating models for them to practice. We also contribute to students' personal and professional development by sharing our clinical experience and knowledge.”
Dr Brett MacKinnon

Dr. Brett MacKinnon joins us from Canada. Brett holds a BSc in Biology (University of New Brunswick), and both a DVM and an MSc in Veterinary Epidemiology from the Atlantic Veterinary College, University of Prince Edward Island. Following a stint in private practice Brett joined the Canadian Food Inspection Agency (CFIA) as an aquatic animal health veterinarian. She has also served as a veterinary epidemiologist in the Animal Health Risk Assessment Unit of the CFIA, as well as an aquaculture biosecurity specialist with the Food and Agriculture Organization of the United Nations (FAO) based in Rome, Italy. During her MSc her research was based in Atlantic Canada investigating the epidemiology and management of ulcer disease in Atlantic salmon.

“We’re also involved in teaching veterinary clinical skills to BVM students during all five years of the programme to date (soon to be six!). These skills include animal handling, physical examinations, and basic surgical skills using models in the clinical skills lab. I also assist with teaching necropsies and clinical pathology labs.

This year, I’ve assisted with the coordination and teaching for the Conservation, Zoo and Exotic Animal Medicine course. For one of the field trips, we took the students to the Aberdeen Country Park to learn about wild boar conservation in Hong Kong.

I’m leading the Pre-EMS course where we teach the Year 1 students handling and restraint for various species prior to their EMS placements this summer. Francesca and I have been assisting with coordination of the Husbandry EMS course over the past few months and are preparing for student placements this summer at facilities and farms across Hong Kong and at Cornell University. In June, I look forward to co-leading the swine rotation with Dr Joyce Ip.
Dr Francesca Rizzo holds a BSc/MSc in Biological Sciences, and completed her PhD in Veterinary Sciences on the genetic characterisation of bat-borne viruses at the University of Turin. In Italy, Francesca worked in a Public Health Government Institute for Veterinary Medicine and Research as a clinical scientist and researcher where she developed her research interests in virology and zoonotic infectious disease dynamics at the wildlife / livestock / human interface.

As a Scientific Officer, Francesca supports the 4th year students in their Problem Based Learning (PBL) tutorials for the Host, Agent and Defence Course. Tutoring requires guiding questions to facilitate but not to interfere with students’ self-learning as a team. Specific tutor training for PBL teaching is provided by JCC. Francesca enjoys the fresh perspective that

PBL has given her and finds it rewarding to observe the obvious progress our students have made over time in their critical and professional approach to clinical cases presented.

Dr Rizzo also participates in farm visits with the students and uses her expertise to support the diagnostics development of a research project for the 5th year BVM students.

She also works with Dr Brett MacKinnon in the organising husbandry EMS courses including the 5 week Cornell trip for 3rd year students which will resume in 2022 after a two-year interruption due to the COVID-19 pandemic.
Dr Peter Schiff

Peter Schiff has been involved with CityU problem based learning (PBL) sessions and horse handling with the veterinary students since July 2021. “It has been an inspirational experience working with young enthusiastic and dynamic students and watching them grow in confidence and knowledge.”

Dr Schiff graduated in veterinary science from Onderstepoort, Pretoria University in 1975, and has extensive professional experience in South Africa, UK, Singapore, Hong Kong and China. He been a practice owner, focusing on Thoroughbred racing and stud work, has lectured in equine reproduction, and served at the HKJC as a clinical and regulatory veterinarian. “In the early days we were also responsible for riding school horses which also involved going into China to inspect horses which had been donated by the HKJC. This was interesting and challenging with multiple trips to Beijing and Inner Mongolia”.
獸醫學學士課程的支援團隊

城大獸醫學學士課程成功，不單有賴一眾教授，還有在不同崗位支援學生的專家。賽馬會動物醫學及生命科學院有幸招聘到各具所長的優秀同事擔任科學主任和臨床教育家。

Susanna Taylor

來自英國的註冊獸醫護士Susanna Taylor是麻醉和鎮痛學獸醫技術員（2010年），擁有倫敦大學皇家獸醫學院獸醫教育研究文憑，也是高等教育學院院士。她負責發展新穎臨床技能資源、支援手術和麻醉實習培訓及評估，並監督賽馬會健康一體化大樓於2023年落成時，全新手術和麻醉室的設計符合功能需要。自城大於2016年開設動物護理學高等文憑課程後，Susanna便參與其中，並領導其中兩個課堂。

臨床技能是獸醫培訓中的基本元素，Susanna說：「我對大家學習新技巧的方法深感興趣，也很享受將理論學以致用，確保學習臨床技巧時以學生為本。」學生越習慣以模型和模擬完成培訓，診治動物時就越有信心，亦減少為了培訓而使用動物。新落成的賽馬會健康一體化大樓將有一個佔地350平方米的臨床技能室。

李芷晴獸醫

來自香港的Cherry Lee擁有墨爾本大學獸醫學學士學位（2012年）和梅西大學動物醫學獸醫碩士學位（2021年），對急診和重症監護興趣濃厚，曾在業界工作六年，亦曾從事全科工作兩年。

在賽馬會動物醫學及生命科學院中，Cherry參與問題導向學習課程和臨床技能培訓，亦為獸醫學生統籌校外課程。

Cherry喜歡為學生營造充實有效的學習體驗，視為自己為教育和學習的橋樑。她在問題導向學習課程中，我們讓學生有機會與同學並肩，通過病例導向研究促進學習，她說：「在實踐課上，我們讓學生得以示範技巧和製作模型，讓他們將理論付諸實踐，亦讓他們分享臨床經驗和知識，有助他們的個人和專業發展。」
來自加拿大的Brett MacKinnon教授擁有新不倫瑞克大學生物學學士學位，以及愛德華王子島大學大西洋於醫學院的獸醫學學士學位和獸醫流行病學碩士學位。她私人執業一段時間後，在加拿大食品檢驗局擔任水生動物健康獸醫，亦曾在該局的動物健康風險評估部門擔任獸醫流行病學家，以及為總部位於意大利羅馬的聯合國糧食及農業組織擔任水產養殖生物安全專家。她的碩士研究主要在加拿大大西洋地區進行，調查大西洋三文魚的流行病學和管理。

她說：「我們在傳染病與公共衛生學系展開問題為導向的學習課程，這個過程十分滿意，我們看着學生在學習中逐漸成長，不單眼界大開，亦對新課題更加信心。大家經常討論與病例有關的趣事，或研究臨床實踐中的病例，這個過程十分有趣。」

在獸醫學課程五年期間（將有六年！），我們教授學生獸醫臨床技巧，包括治療動物，身體檢查，以及用臨床技巧室的模型教授基本手術技巧，同時協助教授驗屍和病理實驗。

今年，我亦協助統籌和教授保育，動物園及珍禽異獸醫學課程，我們其中一個實地考察，是帶學生到香港郊野公園學習香港野豬保育。

我正籌備畜牧行業考試預備，讓一年級學生在今年夏天展開畜牧行業考試預備班之前，先學會處理和制服各種動物。過去幾個月，我和Francesca一直協調統籌畜牧行業考試預備班，讓學生於夏天在香港各區和康奈爾大學的設施和農場實習。我亦期待6月跟Joyce Ip獸醫共同領導豬隻實習。

Francesca Rizzo教授擁有生物科學學士和碩士學位，在意大利都靈大學完成蝙蝠傳播病毒遺傳學獸醫學博士學位。她在意大利獸醫研究所公共衛生部門擔任臨床科學家和研究員，專門研究野生動物、家畜和人類層面的病毒學和人畜共患傳染病。

Francesca是城大科學主任，為四年級學生在宿主、媒介物和抵抗感染課程中提供問題導向學習課程，以引導性問題促進學生思考，跟學生組成團隊，鼓勵他們自主學習。這些獨有的輔導員由賽馬會動物醫學及生命科學院培訓，Francesca享受這些課程的全視角，看學生對臨床案例提出越來越專業而批判的思考時，她感到十分滿意。

她還跟學生一同考察農場，以自己的專業知識支援獸醫學學士課程。學生有研究發展的項目。

她亦與Brett MacKinnon教授合作統籌畜牧行業考試課程，包括為三年級學生提供為期五星期的康奈爾交流。該活動因新冠疫情中斷兩年後，將於2022年恢復。

Peter Schiff教授自2021年7月起參與城大問題導向學習課程，並與獸醫學學生一起照顧馬匹，他說：「與朝氣勃勃的年輕學生共事，看着他們越來越踏實有為，這過程令人鼓舞。」

Schiff教授於1975年畢業於南非比勒陀利亞大學動物醫學系，在南非、英國、新加坡、香港和中國內地擁有豐富專業經驗。他曾從事純種馬比賽和種馬工作，教授馬匹繁殖，並在香港賽馬會擔任臨床和監管獸醫。他說：「我們早期還負責馬術學校，須到內地檢查香港賽馬會捐助的馬匹，常要前往北京和內蒙古，既有趣又具挑戰性。」
Clinical skills teaching for Year 4 BVM students

Mrs Susanna Taylor

Modern clinical skills teaching in veterinary medicine involves students actively engaging in ‘deliberate practice’ in a safe and supportive environment, using simulated clinical resources. This approach allows students to learn and practice techniques away from the stresses of a real clinic, receiving personalised feedback from instructors. Animal welfare is improved by ensuring students are better prepared for their first attempts on live patients. Our practical simulated labs are based in the JCC Clinical Skills Lab and are supported by a range of materials provided in a virtual learning environment (Canvas based Clinical Skills Hub) such as step-by-step skill sheets, video demonstrations, and virtual interactive training modules.
Semester B, running from January to May 2022, has been a semester of many ‘firsts’ for the BVM team as the clinical component of the BVM programme has been taught at CityU for the first time. Subjects such as anaesthesia, surgery, diagnostic imaging, and emergency and critical care have been covered in a variety of lectures, tutorials, wet and dry labs attended by the fifteen 4th year BVM students. Clinical skills labs were scheduled throughout the semester, aligned with relevant lectures and tutorials, and progressively developed student’s skills. Materials used in labs were sourced and created by the Clinical Skills team; Assistant Professor Dr Becky Parkes, Scientific Officer & Registered Veterinary Nurse (RVN) Susanna Taylor, and Senior Technical Officer Tom Chan. A wide range of items have been used, from simple soft toys and silicone models created in-house, to high fidelity units such as Syndaver (a synthetic cadaver) and VetSim CPR mannequins. Cadaver sessions were also utilised for specific skills.

Anaesthesia labs were led by Susanna Taylor, who holds Veterinary Technician Specialist status in Anaesthesia and Analgesia. Labs included equipment-based sessions, where patient safety and safe use of medical gases were highlighted, and interactive patient monitoring sessions, using real and simulated anaesthetic monitors.

Students learning to perform endotracheal intubation on models, supported by Professor Paulo Steagall.

Surgery Labs were led by Scientific Officer Dr Cherry Lee, an experienced Emergency and Critical Care clinician, and Clinical Associate Professor Dr Angel Almendros, a Specialist in Canine & Feline practice. Students focused on basic surgical principles and developing skills for day one surgeries, such as de-sexing and wound management.

Surgery on a silicone aural haematoma model, complete with simulated blood.

以矽膠耳廓血腫模型做手術，並出現模擬血液。
Simulation Spay lab in the Clinical Skills Lab. Left – students practicing clamp and suture technique on simple models. Right – Dr Cherry Lee instructing a spay on the Syndaver model (complete with pumping synthetic blood).

Emergency and Critical Care labs included a cadaver session performing emergency procedures and completion of the internationally recognised RECOVER CPR programme. A urology practical, led by Clinical Associate Professor Dr Pawel Beczkowski, Specialist in Small Animal Internal Medicine, allowed students to practice placing urinary catheters and treat urethral blockage in cats.

Students performing CPR on high fidelity models.

Urology practical: Dr Pawel Beczkowski demonstrating urethral catheterisation in a male canine model before student’s practice.

泌尿外科實習：Pawel Beczkowski獸醫在學生練習前示範為雄性狗隻模型的尿道導尿。
Diagnostic Imaging labs trained the students in basic sonographic techniques using ultrasound machines with phantoms, led by Assistant Professor Dr Brian Kot, veterinary imaging researcher, and used models of various species for radiographic patient positioning, led by Scientific Officer Dr Santi Sousa and Dr Becky Parkes.

Challenges to the semester’s teaching were faced with the rapid rise of COVID-19 cases, but the clinical skills team, led by Assistant Professor Dr Becky Parkes, reacted quickly by providing students with take-home kits for continued training. Several clinical skills sessions were redesigned to run virtually using ZOOM, with an instructor demonstrating onsite followed by students using their cameras to show their practice. Other skills labs were able to run in small groups with additional testing and PPE.

Observed Structured Clinical Examinations (OSCEs) were held in March to ensure students had reached the desired competencies to move forward in the course. These were again impacted by COVID-19, but through careful adaptation all staff and students remained safe. It was a nerve-wracking day for the students, but due to their hard work, and the ‘drop-in’ facility of the Clinical Skills Lab, enabling additional practice, they all passed.

Dr Santi Sousa discussing equine radiography.
Santi Sousa獸醫討論馬匹放射學。

Students learning to place IV catheters via Zoom.
學生以Zoom學習放置靜脈導管。

Professor Paulo Steagall assessing a student checking an anaesthetic machine in an OSCE.
Paulo Steagall教授在「客觀結構化臨床考試」評估一名正在檢查麻醉機的學生。
The culmination of the surgery and anaesthesia labs were the first JCC ‘spay days’ where the students put their practice into action and each performed anaesthesia and surgery on live cats based at CVMC. 16 female cats from local rescue organisations were successfully de-sexed by the students over a 2-week period, under expert supervision from JCC and CVMC staff.

Mrs Susanna Taylor, RVN, VTS (Anesthesia and Analgesia), NCert A&CC, PGCert (Vet Ed), FHEA
Scientific Officer

“The clinical skills lab was very well liked amongst students, typically for its easily accessible skill sheets and supplies. The animal models we could practice on were intricately crafted, and prepared us very well before working on our spay lab. Together with excellent teaching by our staff, the clinical skills lab is an invaluable asset for all BVM students to come.”

–– Darrian LEUNG Tak Lun, Year 4 class representative

Dr Angel Almendros supervising a student performing a spay on a cat.

Students under the watchful eyes of VMC and JCC Vets and Nurses during the spay procedure.
動物醫學四年度生學習臨床技能
Mrs Susanna Taylor

動物醫學現代臨床技能教學提供安全可靠的環境，讓學生以模擬臨床設備投入「訓練練習」。這種方法讓學生在沒有真實診所的壓力下學習和訓練，亦從導師身上得到更貼身的忠告。學生為將來治理患病動物做足準備，更能確保動物福利。我們在政大寶馬動物醫院及生命科學院臨床技能實驗室進行課程模擬實驗，由Canvas臨床技能中心虛擬學習環境支援各種教材，包括每步技能清單、示範視頻和虛擬互動培訓課程。

獸醫學士課程團隊在2022年1月5月的第二學期接連許多「第一次」，因為這學期開始教授臨床課程。15位四年級學生在導師課、導修課、實驗室與乾實驗室學習麻醉、外科、診斷醫學影像、急診和重症監護等科目。

整個學期都有臨床技能實驗課，配合相關導講堂和導修課提升學生技能。實驗課的教材由臨床技能團隊採購和製作，導師成員有助理教授Becky Parkes獸醫、科學主任及註冊獸醫護士Susanna Taylor和高級技術員Tom Chan，所用物品五花八門，從簡單教玩具和自製矽膠模型，到高仿真合成屍體Syndaver和心肺復蘇模型VetSim，還有教授具體技能的驗屍課程。

麻醉和鎮痛獸醫技術員Susanna Taylor領導麻醉實驗，包括講究患者安全和醫療氣體使用安全的設備為本課程，還有以真實和模擬麻醉儀器的互動患者監測課程。

外科實驗由科學主任Cherry Lee獸醫和臨床副教授Angel Almendros獸醫領導，前者是經驗豐富的急診和重症監護臨床獸醫，後者是貓狗診治專家，學生們專注基本外科原理，為他日做絕育等手術或處理傷口做好準備。

急診和重症監護實驗包括要緊急處理屍體課程，亦要完成國際認可的心肺復蘇課程。泌尿科實踐由臨床副教授、小動物內科專家Pawl Beczkowski博士主持，教授學生放置導尿管和治療貓尿道閉塞。

放射診斷實驗由放射診斷學助理教授葛展榮博士帶領，他以幻影超聲機教授學生基本超聲技術，並在科學主任Santi Sousa獸醫和Becky Parkes獸醫的帶領下，使用各種模型為患者進行射波定位。

本學期課堂因新冠疫情加劇而困難重重，幸得助理教授Becky Parkes獸醫領導的臨床技能團隊迅速應對，學生得以將工具包帶回家繼續受訓。團隊將多個臨床技能課程重新設計成網課，由導師在現場示範，學生在鏡頭展示實驗結果。在額外檢測和個人防護下，其他課程實驗得以透過小組形式進行。

『客觀結構化臨床考試』已於三月舉行，確保學生符合繼續修讀的資格，這些考試雖備受新冠疫情影響，但所有教職員和學生在細心安排下安然渡過。那天一眾
學生心情緊張，但平日辛勤學習，又能在臨床技能實驗室「隨到随學」設施加強訓練，最終大伙兒考試合格。

賽馬會動物醫學及生命科學院舉行首次「絕育日」，猶如手術和麻醉實驗的重頭戲。學生們將醫學知識付諸行動，在城大動物醫療中心為貓兒進行麻醉和絕育。在賽馬會動物醫學及生命科學院和城大動物醫療中心職員的悉心指導下，學生在兩星期內為本地動物保護組織的16隻雌貓完成絕育手術。

展望未來，臨床技能團隊期待在夏天得享更大空間，搬進新建的賽馬會健康一體化大樓專門成立的臨床技能實驗室。

Mrs Susanna Taylor
科學主任

臨床技能實驗室非常受學生歡迎。透過製作精良的動物模型練習，使我們到絕育實驗室工作之前能夠做好充分的準備。加上導師的出色教學，臨床技能實驗室實在是獸醫學生的寶貴資源。

-- 四年級學生代表
Darrian Leung
MSc in Public Health and Epidemiology

Dr. Ming Wai Kit
We are pleased and proud to introduce our new Master of Science programme: MSc in Public Health and Epidemiology, offered by the Department of Infectious Diseases and Public Health, Jockey Club College of Veterinary Medicine and Life Sciences.

Public health is the science and art of preventing disease, prolonging life and promoting health through the organised efforts and informed choices of society, organisations, public and private communications and individuals. In recent years, public health has received increasing attention, not only because humans are facing an increase in the emerging and re-emerging challenges of infectious diseases and chronic disorders, but also as a result of the dynamic social-economic structure and cross-border policies.

Currently, COVID-19 has demonstrated the challenges to the importance of sound public health systems within and between countries. This new MSc in Public Health and Epidemiology developed by City University of Hong Kong aims to address the growing need for experts in public health, specifically those who can address issues that cross over between human and animal health.

It is an interdisciplinary programme which focuses on:

- One health
- Epidemiology
- Control and prevention of infectious diseases
- Data analysis
- Health economics

This programme will be organised by passionate multidisciplinary faculty with expertise in health and zoonotic diseases, and include, for example, a curriculum with environmental health and risk assessment from the Department of Chemistry and data science from the Department of Mathematics and Department of Biostatistics.

Students will learn and apply expertise in public health and epidemiology to identify, analyse and understand issues in public health and healthcare systems, particularly the control and prevention of emerging zoonotic disease outbreaks resulting from exposure to human, animal and environmental diseases. Students will also learn the methods of infectious disease control and chronic disease prevention.
Our new programme provides students with specialized skills to critically evaluate medical literature, analyse and interpret epidemiological data, and identify determinants of health and methods of controlling infectious disease outbreaks and relative socio-economic impacts. In addition, the programme will enhance students' ability to design and conduct public health research (e.g. study design, collection and analysis of data from different types of fields' studies) and construct predictive models of infectious diseases, translating these findings into public health policy. This programme will also help students develop skills in statistical analysis of public health and disease data through several teaching modes, such as case studies, simulated public health events, problem-based learning (PBL), and other teaching modes. Moreover, it will enable students to apply advanced statistical models to epidemiological data, as well as forecast and monitor emerging and traditional infectious and chronic diseases.

This MSc aims to develop public health and epidemiology professionals with leadership skills. Students will have the opportunity to participate in international and local public health and epidemiology projects. Students are qualified to work in fields such as international organisations, national and regional government health departments, disease control centres, hospital clinical departments, the big data and medical industry, health communications, and education. Moreover, this programme is committed to promoting Hong Kong as a regional hub for One Health education and working with industry and government health agencies through global and regional partnerships to promote the development of public health in the local, regional, and international community.

Dr. Ming Wai Kit, MD, PhD(JNU), MPH(HK), MMSc(Harvard), PostDoc(Oxon), PostDoc(Harvard), DipMed(CUHK), PDipCAH(HK), CertClinDerm(Lond), FRSPH(UK)
Assistant Professor,
Department of Infectious Diseases and Public Health
理學碩士（公共衛生及流行病學）
明偉傑博士

我們有幸介紹一個新課程—由賽馬會動物醫學及生命科學院傳染病及公共衛生學系推出的理學碩士（公共衛生及流行病學）課程。

公共衛生是一門科學與藝術，透過社會各界、公營私營及個人層面的群策群力和審慎選擇，從而預防疾病、延長壽命和促進健康。近年來，公共衛生受到日益關注，不僅因為人類面對的新興及復發傳染病和慢性疾病愈來愈多，也因為日益蓬勃的社會經濟結構和跨境政策。

當今的新型冠狀病毒對一國之內和國際之間的健全公共衛生系統造成重大挑戰，香港城市大學新推出的理學碩士（公共衛生及流行病學）課程旨在滿足大眾對公共衛生專家的殷切需求，培養能夠解決跨人類和動物問題的人才。

以下是這門跨學科課程的重點：
- 健康一體化；
- 流行病學；
- 傳染病的控制和預防；
- 數據分析；
- 衛生經濟學。

這課程由專門研究健康和人畜共患病的跨學科教授團隊統籌，內容包括來自化學系的環境健康和風險評估，以及來自數學系和生物統計學系的數據科學。

學生將學習公共衛生和流行病學的專業知識，用作識別、分析和理解公共衛生和醫療制度的問題，特別是控制和預防因接觸人類、動物和環境疾病而爆發的新興人畜共患病。學生還會學習控制傳染病和預防慢性疾病的方法。

我們的新課程培訓學生的專業技能，讓他們學懂批判醫學文獻、分析和解釋流行病學數據、識別健康決策因素以及控制傳染病疫情和對社會經濟影響的方法。此外，這課程將提升學生研究公共衛生研究的能力（例如研究設計、收集和分析各類研究領域的數據）、構建預測傳染病的模型，並將結果轉化為公共衛生政策。這課程還通過案例研究、模擬公共衛生事件、以及在實踐中學習（PBL）等多種教學模式，培訓學生分析公共衛生和疾病數據的技能。此外，課程讓學生將先進統計模型應用於流行病學數據，以及預測和監測新興的和傳統的傳染病和慢性疾病。

這個理學碩士課程旨在培訓學生在公共衛生和流行病學領域的領導技能，學生將有機會參與國際和本地公共衛生及流行病學項目的香港及國際政府衛生部門、疾病控制中心、醫院和臨床部門、大數據、醫療行業、健康傳訊和教育等領域工作。此外，本課程致力推動香港成為「健康一體化」的地區樞紐，藉著全球及區內的夥伴與業界和政府衛生機構攜手提升本地、亞洲區域和國際社會的公共衛生發展。

明偉傑博士
助理教授
傳染病及公共衛生學系
The programme team is immensely delighted to announce that holders of the Advanced Diploma in Veterinary Nursing (ADVN) qualification are eligible to apply for registration to practice in the UK. This means ADVN, a HK QF Level 4 registered programme, is considered an overseas VN qualification that is comparable to a UK veterinary nursing qualification. ADVN graduate applicants are eligible, and only required, to sit UK’s veterinary professions governing body, Royal College of Veterinary Surgeons (RCVS), pre-registration OSCE (Objective Structured Clinical Examination / practical) examination and pass to attain UK VN registration status. Prior to application to sit OSCE, applicants may seek employment in a UK Veterinary practice but they must first enroll for a Period of Supervised Adaptation (PSA) with RCVS. This outcome signifies international professional recognition of ADVN, on a level that is on a par with other overseas VN programme, such as HK’s BSc(Hons) in Veterinary Nursing (before 2014) and Australia’s nationally recognised Certificate IV in Veterinary Nursing.

We whole-heartedly congratulate the ADVN graduates from Cohorts 2018 and 2019 who submitted their applications to RCVS and received this decision outcome from RCVS that is worthy of celebration for us all at CityU.

Here is an update from two of these graduates to share with readers:

HoYin received his ADVN qualification in December 2021, with Distinction. He is currently studying on the *fulltime top-up BSc(Hons) in Veterinary Nursing programme at Edinburgh Napier University, Scotland. HoYin finds Edinburgh a lovely and pleasant city full of history and cultural heritage, and at the same time he has discovered it is full of urban wildlife as well! HoYin has always been fascinated by wildlife growing up in HK; he is now blossoming into an enthusiast for wildlife photography. In the past short four months since his arrival to Edinburgh, HoYin has often shared with us the fruits of his labour; photos and short video clips of wildlife species, such as foxes, river otters, field mice, deer and many
不同鸟类。我们非常热爱收集这些图片和视频片段，希望它们能一直持续到来，谢谢你， Hoyin！

CHAN Ingrid
ADVN Graduate of Cohort 2018

Ingrid received her ADVN qualification in December 2020, she is also a 2018 graduate of DSE Applied Learning (ApL) Animal Care course, delivered by SCOPE, CityU. Like Hoyin, Ingrid is studying on the *fulltime top-up BSc(Hons) in Veterinary Nursing programme at Edinburgh Napier University, Scotland. Ingrid is fully immersing herself into a whole new experience living abroad. Besides studying hard, she is also enjoying family time in UK and embarking on exciting new adventures together. She keeps in touch with her fellow ADVN graduates who are also studying in UK, at the same time, she is reaching out to make new friends in Scotland, through doing so she is acquiring a Scottish accent herself!

Dr Queeny YUEN,
BSc.(Hons), PGCert (Vet.Ed), PhD, FHEA Programme Leader, Advanced Diploma in Veterinary Nursing, School of Continuing and Professional Education (SCOPE)

*A formal articulation arrangement CityU SCOPE ADVN established with Edinburgh Napier University, 2016 — 2020.*

城大專業進修學院動物護理學高級文憑課程獲英國皇家獸醫學院認證 – 阮穎琳博士

動物護理學高級文憑課程團隊有今宣布，我們的文憑持有人如今可以申請在英國註冊執業，意味著香港資格架構第四級的動物護理學高級文憑會被視為國際動物護理學資格，與英國動物護理學資格相當。動物護理學高級文憑畢業生只須通過英國獸醫專業管理機構—皇家獸醫學院的臨床技術試OSCE，即可獲得英國動物護理學註冊資格。申請人應考OSCE前，須加入皇家獸醫學院「監督適應期」(PVA)，便能在英國獸醫診所求職。這發展意味動物護理學高級文憑獲得國際專業認可，水平等同其他海外動物護理學課程。如香港於2014年前的動物護理學博士學士（榮譽）及澳洲國家認可的動物護理學高級文憑。我們衷心祝賀2018及2019屆動物護理學高級文憑課程畢業生接獲皇家獸醫學院這項決定，城大上下感到十分雀躍。

蕭浩然
動物護理學高級文憑2019年畢業生

浩然於2021年12月以優異成績獲得動物護理學高級文憑，目前在蘇格蘭愛丁堡大學攻讀全日制動物醫學護理學士（榮譽）課程。他覺得愛丁堡是一個充滿歷史和文化遺產的可愛城市，同時又擁有很多都市野生動物。在香港長大的他一直鍾情野生動物，如今更迷上野生動物攝影。他在愛丁堡短短四個月，他與我們分享他的野生動物照片和短片，包括狐狸、河馬、田鼠、鹿和各種雀鳥，每每令我們喜不自勝，請繼續跟我們分享，謝謝你！

陳雪晴
動物護理學高級文憑2018年畢業生

雪晴於2020年12月獲得動物護理學高級文憑，亦早於2018年畢業於城大專業進修學院香港中文大學文憑動物護理應用學習課程，目前與浩然在蘇格蘭愛丁堡大學進修全日制動物醫學護理學士（榮譽）課程。全情投入海外的全新體驗。她除了努力學習外，亦享受在英國的家庭時光，展開驚喜的冒險。她與正在英國進修的動物護理學高級文憑同窗緊密聯繫，同時不斷擴大在蘇格蘭的朋友圈子，漸漸練得一口蘇格蘭口音！

阮穎琳博士
城大專業進修學院動物護理學高級文憑課程主任
A day in the life of a Clinical Professor at JCC

Prof Kerstin Baiker

Joining Clinical Professor Kerstin Baiker on an average day at work
Introducing Kerstin

I graduated from Vet School at the Ludwigs- Maximilian University in Munich, Germany, in 2004. Following on from that, I continued my studies for a doctoral thesis as a cooperation project between a medical working group for Mitochondrial Genetics and the Institute of Veterinary Neuropathology in Munich.

After gaining my doctor title, I started working as a lecturer in veterinary neuropathology before attending the Royal Veterinary College in London to complete a residency in Anatomic Pathology. I passed the certifying examination to become a Diplomate of the European College of Veterinary Pathologists and joined the Nottingham School of Veterinary Medicine and Science where I had a leading role in establishing a diagnostic service and an ECVP approved and successful training centre in Veterinary Pathology.

I’m a Senior Fellow of the Higher Education Academy, a member of several committees of the European College of Veterinary Pathologists, the European Board of Veterinary Specialisation and one of the very few certified specialists in forensic veterinary pathology in Europe.

Why did you choose an academic career?

I believe I kind of got sucked in at the end of my doctorate when they offered me a job as a lecturer for neuropathology in Munich which I gladly accepted. I also knew quite early on that I didn’t want to go back into practice. Having worked as a qualified veterinary nurse before and during my veterinary course I knew all about the ups and downs in clinical practice.

Additionally, I love the research: the discovery of new things, the group discussions and brainstorming with colleagues and students. Watching and supporting undergraduates and postgraduates learning and maturing until they finally disagree with me one day is good fun!
What does your average day look like?

As in practice or most other jobs, there is no routine or monotony, every day turns out to be different. My day usually starts with going through emails which could be from undergraduate students inquiring about timetables, exams or lectures, postgraduates regarding their projects and publications, course leaders regarding teaching and assessments or colleagues with tasks from committee work.

This is followed today, for example, by me teaching the year 3 students the principles of disease development. It is an important course in the curriculum as it provides a foundational but also comparative knowledge of how an infection or cancer, or an autoimmune disease may start in the body and progress if there is no intervention. But you could say that every course deliverer considers their course as being important!

Once all questions are answered, I will go to Veterinary Diagnostic laboratory (VDL) to read biopsy submissions from clients from all over HK and our own teaching hospital, the CityU Veterinary Medical Centre (VMC) at Sham Shui Po. This often involves phone calls with our submitting vets to get more clinical context and discuss differential diagnoses; and case discussions with my pathologist peers.
“I enjoy this clinical, interactive and collaborative work very much and believe by providing accurate diagnoses and helpful comments I can deliver something useful to the overall health and welfare of animals in our care.”

Depending on the diagnostic workload on that day, I will also keep checking and replying to emails, as they never stop coming in, especially with some of my postgraduate students working in Europe. Later in the day, there may be committee meetings which thankfully nowadays often contain a link to join virtually which is very useful if I’m still stuck at the microscope.
Prof Kerstin Baiker
Dr med vet, MRCVS, Diplomate ECVP, Cert Forensic Pathology, SFHEA
Clinical Professor, Department of Veterinary Clinical Sciences
臨床教授, 臨床動物醫學系

Kerstin Baiker is a Clinical Professor for Veterinary Pathology at City University’s Jockey Club College of Veterinary Medicine and Life Sciences. She graduated from the Vet School at the Ludwigs-Maximilian University in Munich, Germany, in 2004. She then continued her studies for a doctoral thesis as a cooperation project between the medical Institute of Diabetes Research (working group for Mitochondrial Genetics) and the Institute of Veterinary Pathology, Chair for General Pathology and Neuropathology in Munich, Germany.

She is a Diplomate of the European College of Veterinary Pathologists and a Senior Fellow of the Higher Education Academy, member of several committees of the European College of Veterinary Pathologists, the European Board of Veterinary Specialisation and is one of the very few certified specialists in forensic veterinary pathology in Europe.

Kerstin Baiker是城大賽馬會動物醫學及生命科學學院獸醫病理學臨床教授。她於2004年畢業於德國慕尼黑路德維希-馬克西米利安大學獸醫學院，隨後獲頒博士論文，屬於糖尿病醫學研究所（線粒體遺傳學工作組）和慕尼黑獸醫病理學研究所的合作項目，後者為普通病理學和神經病理學主席。

她是歐洲獸醫病理學家學院專家，亦是高等教育學院資深院士，亦是歐洲獸醫病理學家學院和歐洲獸醫專業委員會成員，也是歐洲少數認證法醫獸醫病理學專家之一。
城大臨床教授的一天
認識臨床教授Kersin Baiker的日常工作

認識Kersin

我在2004年於在德國慕尼黑路德維希－馬克西米利安大學獸醫學院，此後晉升為一個博士論文項目，屬於犬貓體遺傳學醫學工作小組和慕尼黑獸醫神經病理學研究所的合作項目。

我獲得博士學位後成為獸醫神經病理學講師，再於倫敦皇家獸醫學院完成解剖病理學實習，其後通過資格考試，成為澳洲獸醫學病理學家學院專門獸醫，並加入諾定成動物醫學及科學學院，帶領團隊成立診斷服務及該學院認證的獸醫病理學培訓中心。

我是高等教育學院資深院講師是獸醫病理學家學院和澳洲獸醫專業委員會成員。也是澳洲少數認證法醫獸醫病理學專家之一。

你的平日生活是怎樣的？

執業工作不一定常規不變，每天都有不同的情況。

我的一天通常由回覆電郵開始，有些是本科生訪問筆記表，考試或課堂，有些是研究生訪問他們的研究項目和論文出版，有些是課程主任問教學評估，還有同事查問工作小組的任務。

例如，今天我給三年級學生講解疾病發展的原理，這是課程中的重要一課，既是基礎知識也是比較學問，解釋在沒有干預下，傳染病、癌症或自身免疫疾病如何在體內醞釀，當然所有課程講師都認為自己的課程很重要！

等我答完所有問題，便會到城大動物醫療檢驗中心研究各區動物提交的活檢報告，部分來自城大位於深水埗的教學醫院 — 城大動物醫療中心。我們要跟獸醫在電話探討臨床背景和各種診斷，亦要跟我的病理學同行討論案例。

『我很享受這種臨床合作，互相交流
準確診斷和務實建議，更能確保我們
手上動物的健康和福利。』

除了日常診斷工作外，我還要不斷回覆無止境的電郵查詢，很多來自職業-latrobe工作的研究生。我有時要參加小組會議，幸好如今只須在網上按連結出席，讓我可以在遠方直接出席會議場地。
CityU Veterinary Diagnostic Laboratory
A Smorgasbord of discoveries
Dr Fraser Hill

After four years of operation, CityU Veterinary Diagnostic Laboratory (CityU VDL) has made many new and unusual disease discoveries, advancing animal health in Hong Kong. Recent identifications include infections with oomycetes Pythium water molds, detection of Anaplasma platys in the platelets of a dog, observation of Hepatozoon canis in the lymph node and blood of a dog, culture of Mycoplasma canis in a dog with a urinary tract infection, culture of Nocardia from the abdomen of a fish, and culture and molecular confirmation of Trichophyton species causing “ringworm” in cats and dogs.

“Having locally based veterinary pathology specialists, microbiologists and molecular scientists on-site in Hong Kong provides the ability to alert the veterinary community to new and emerging pathogens or the detection of existing ones.”
**Anaplasma infection**

An adult female Golden Retriever presented for veterinary examination because of weakness and pale mucous membranes. Anaemia was confirmed by a complete blood count revealing a low packed cell volume. In addition, inclusions suggestive of Anaplasma platys were seen in platelets during blood smear examination (Fig. 1). Infection with Anaplasma platys was confirmed via molecular PCR tests performed at CityU VDL, followed by DNA sequencing. Infected ticks are the vector for this organism, therefore it should be considered as a differential diagnosis in unwell dogs exposed to tick bites.

**Pythium infections**

A range of infections with the water mould oomycete Pythium have recently been identified in the skin and gastrointestinal tract of cats and dogs in Hong Kong. The organism was seen on histopathology sections and highlighted by silver stains (Fig. 2). This is an emerging infection in Hong Kong and JCC Clinical Associate Professor Jeanine Sandy is investigating the pathology of the lesions, while JCC Chair Professor Vanessa Barrs is assisting practitioners with treatment of this complex infection. The molecular team at CityU VDL has developed a PCR test to identify the organism from tissue.

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*Figure 1: Peripheral blood smear showing Anaplasma spp. organisms within platelets (red arrows). The dark blue structures are the organism inside the platelet (Wright’s stain, 1000x oil magnification). Image courtesy of Dr D Hernandez Muguiro.*

*圖1: 周邊血球片顯示血小板（紅箭咀）內有片狀變蟲生物體，深藍色結構為血小板內的生物體（顯微染色法，1000倍油鏡放大）。圖片由Hernandez Muguiro獸醫提供.*

*Figure 2: Wide oomycete organisms within the dermis of a cat with an ulcerating lesion. The fungi are stubby and wide with early hyphal branches forming (Grocott’s Methenamine-Silver (GMS) stains, 600x oil magnification).*

*圖2: 患上潰瘍病變的貓的真皮層出現卵菌，這種真菌細壯而寬大，早期形成了透明分支（GMS染色，600倍油鏡放大）*
**Trichophyton infections**

Recently, Trichophyton fungal species from hair samples of cats and dogs were cultured and identified. The MALFDI-TOF system used at CityU VDL identified the fungus before molecular PCR testing confirmed their identity. Microsporum canis is the most common cause of dermatophytosis skin lesions (also known as “ringworm”), (Fig 3.), whereas Trichophyton infection is the main cause of ringworm in guinea pigs and hamsters.

![Image](93x228 to 504x370)

**Figure 3:** Microsporum canis fungal hyphae (arrow) within the hair shaft of a cat with “ringworm” (PAS stain: 400 x magnification).

**Hepatozoon canis**

A tissue sample from a firm, inguinal mass was received from an adult female Schnauzer dog. On histopathology examination the tissue was confirmed as inflamed lymph node reacting to the presence of protozoa in macrophages. Gamonts were observed within neutrophils on blood smears of subsequent blood samples from the dog (Fig. 4). A PCR test later confirmed the protozoa was Hepatozoon canis. This is the second confirmation by CityU VDL of this parasite in dogs in Hong Kong. Infected ticks are the vector for this organism, therefore it should be considered as a differential diagnosis in unwell dogs.

![Image](93x228 to 504x370)

**Figure 4:** A Hepatozoon canis gamont (circled) within the cytoplasm of a neutrophil in dog blood ((Wright’s stain, 1000x oil magnification). Image courtesy of Dr D Hernandez Muguiro.

**圖4:** 腸內的精液細胞質內，出現犬肝孢子蟲性母細胞（(圖內)染色法，1000倍油鏡放大）。圖片由D-Hernandez Muguiro獸醫提供。
Infectious disease of cats and dogs in Hong Kong diagnosed by molecular methods at CityU VDL

Analysis of the data for cat and dog samples submitted to CityU VDL for molecular testing over the past four years revealed some interesting trends. Some of these diseases can be diagnosed at the veterinary practices, so this data only represents cases sent to CityU VDL, and doesn’t represent the entire prevalence in Hong Kong. The most common disease diagnosed by molecular methods at CityU VDL in cats was feline coronavirus causing feline infectious peritonitis (FIP). Data in graph 1 shows the five most common infectious agents identified in cats included FIP, Trichromonas fetus, Calicivirus, Feline panleukopaenia virus, and Feline herpes virus.

The most common infectious disease diagnosis made by molecular methods in dogs are tick borne diseases. Data on the percentage of infectious diseases are shown in Graph 2 illustrating the dominance of Babesia and Ehrlichia infections.

If tick borne disease are excluded, the next most common infectious diseases diagnosed by molecular testing are distemper, leptospirosis, parvovirus and Giardiaisis. Leptospira surges can be seasonal, depending on the level of rainfall in any particular year, and the highest incidence was seen in 2018 after Typhoon Mangkhut. This data is shown in graph 3.
**Allamanda cathartica plant toxicity in a dog**

The importance of having post mortem facilities with trained pathologists available in Hong Kong at CityU VDL was highlighted recently when investigating the cause of death in a young dog. The dog had been normal all day before taking a run in the garden in the evening. Soon afterwards, the dog started to have seizures. Despite emergency treatment, the dog deteriorated and died within two hours.

Post mortem examination at CityU VDL found distinct plant material within the stomach. Leaves from the plant were still intact and when compared with the plants in the residence’s garden, the leaves were identified as being from the Allamanda plant (figure 5).

Allamanda cathartica is a member of the Apocynaceae family and is known as allamanda or common allamanda. All parts of the plants are poisonous. The toxic agent in the plant is pleumericin. There is no specific treatment and clinical management includes only supportive therapy.

Sudden death in dogs can be frustrating to investigate. A thorough history and rapid post-mortem were important in solving this case.

The Allamanda plant is very common in Hong Kong and owners should be made aware of its toxicity and ensure their dogs cannot ingest it.

Disease investigation and diagnosis are a core component of veterinary science. Having the personnel, expertise and equipment available at CityU VDL in Hong Kong has allowed a number of new pathogens to be identified, expanded the diagnostic investigation options for veterinarians and improved the outcome for their animal patients.

Dr Fraser Hill, BVSc, MANZCVSc (Sheep Medicine, Pathology), FANZCVSc (Anatomic Pathology)
Director of CityU Veterinary Diagnostic Laboratory

Figure 5: Allamanda cathartica
圖5: 軃枝黃蟬
城大動物醫療檢驗中心五花八門新發現

Fraser Hill獸醫

城大動物醫療檢驗中心成立四十年以來，發現了多種新型疾病，推進香港動物醫學的發展。最近鑑定結果包括俗稱水黴的腐黴菌感染，在一隻狗的血小板檢出片狀邊緣，在另一隻狗的淋巴結和血液中發現犬肝孢子蟲，在患上尿道感染的狗身上培植大黴黴菌，在一條魚的腹部培植諾卡氏菌，以及對令貓狗生癢的毛黴菌進行培養和分子確認。

邊緣感染

一隻成年雌性金毛尋回犬因身體虛弱和黏膜蒼白而被帶來檢查，其血細胞計數顯示低血細胞壓積，獸醫因而診斷其貧血。此外，獸醫為牠進行血液塗片檢查，其血小板出現片狀邊緣（圖1）。城大動物醫療檢驗中心進行分子聚合酶鍵式反應檢測及DNA測序，證實牠感染了片狀邊緣。受感染的蜱蟲是這種生物體的載體，因此被蜱蟲叮過而不適的狗屬鑑別診斷。

腐黴菌感染

香港貓狗的皮膚和胃腸道中最近出現一系列俗稱水黴的腐黴菌，該生物體在組織病理學切片上發現，呈現在黑色染片（圖2）。這是香港一種新感染，賽馬會動物醫學及生命科學院臨床副教授Jeanie Sandy正調查變異的病理學，院校講座教授Vanessa Barrs正研究這種複雜感染的治療方法。城大動物醫療檢驗中心的分 子團隊研究出一種聚合酶鍵式反應檢測，從組織中識別該生物體。

毛黴菌感染

獸醫最近從貓狗的毛髮樣本中培養並鑑定了毛黴菌，城大動物醫療檢驗中心進行分子聚合酶鍵式反應檢測前，以MALDI-TOF系統確認這種真菌。皮黴皮膚病變（也稱為「癢」，圖3）最常見的原因是犬小孢子蟲，而毛黴菌感染是天竺鼠和倉鼠生癢的主要原因。
犬肝孢子蟲
獸醫從一隻成年雌性史納莎身上發現一個堅實的腹股溝腫塊組織樣本，經過組織病理學檢驗後，證實該組織為癲癇的淋巴結，源於巨噬細胞中的巨蟲，豚鼠為此進行血樣採集，在飼中性白血球內發現配子母細胞（圖4），再以聚合酶鍵式反應檢測證實該原生動物是犬肝孢子蟲，這是城大動物醫療檢驗中心第二次確認香港狗隻有這種寄生蟲。受感染的蜱蟲是這種生物的載體，因此被蜱蟲叮過而適應的狗屬於鑑別診斷。

城大動物醫療檢驗中心以分子方法診斷香港貓狗傳染病
城大動物醫療檢驗中心過去四年的貓狗樣本進行數據分析，當中發現有趣的趨勢，有些疾病可在獸醫診所診斷出來，所以數據只代表送到城大動物醫療檢驗中心的病例，並不代表香港整體情況。城大動物醫療檢驗中心用分子方法診斷出最常見的貓疾病，是引起貓傳染性腹膜炎的貓冠狀病毒，表1數據顯示從貓身上發現五種最常見的感染性病原體，包括貓傳染性腹膜炎、貓戀腫、杯狀病毒、貓白血球變形病和貓血症。

城大專家用分子方法診斷出最常見的狗傳染病由蜱蟲傳播，表2顯示傳染病的百分比數據，可見巴氏氏蜱和埃里希亞感染為主。

若排除蜱蟲傳播的疾病，獸醫以分子測試診斷出第二常見的傳染病是犬瘟熱、鈷端螺旋體病、犬小病毒和梨形纖毛蟲，鈷端螺旋體病高達可能是季節性的，取決該年份的降雨量，最高發病率是在2018年強颱風黑竹襲港後，這數據顯示在表3。

狗隻中了軟枝黃蝉植物毒
城大動物醫療檢驗中心最近研究一隻小狗的死因，顯示香港擁有本地駁屍設施和本地培訓病理學家的重要性。這隻狗在某天狀態正常，但晚上在花園跑了一圈後開始抽搐，即使已立即送往急診，仍在兩小時內死亡。

城大動物醫療檢驗中心為她驗屍，在它們的胃內發現植物成分，植物葉子完好無損，獸醫將葉子跟花園內的植物比較，確認是軟枝黃蝉（圖5）。

軟枝黃蝉屬夾竹桃科，整棵植物都含毒素，這種毒剤是耕作花素，它沒有具體治療方法，臨床管理只包括保養性治療。

要調查一隻狗暴斃原因並不容易，需要詳盡的病歷和極速屍檢。

軟枝黃蝉在香港很常見，寵物主人都應了解它的毒性，確保不會影響自己的狗隻。

疾病調查和診斷是動物醫學的核心要素，香港城大動物醫療檢驗中心的人才、知識和設備能夠識別新的病原體，令獸醫有更多診斷調查方法，提升患病動物的治療效果。

Fraser Hill獸醫
總監，城大動物醫療檢驗中心
CityU researcher, Dr Liu Qiang, unveils the neuronal mechanism underlying a rhythmic behavior controlled by a gut-brain circuit in tiny worms.
CityU researcher unveils the neuronal mechanism underlying a rhythmic behaviour controlled by a gut-brain circuit in tiny worms

Dr Liu Qiang

Biological rhythms are common in all animals underlying repetitive behaviors across broad time scales. Using the rhythmic defecation cycle of the nematode worm *C. elegans* as a model system, Dr. Liu Qiang, a newly recruited Assistant Professor in the Department of Neuroscience, unveiled the neuronal mechanism that underlies a clock-like behaviour controlled by a gut-brain circuit.

*C. elegans* is a widely used model organism to study many aspects of biology including neuroscience. It has a small nervous system with only 302 neurons, but this “simple” brain is complex enough to generate sophisticated behaviours. A particularly fascinating behaviour in *C. elegans* is its clock-like defecation every ~45 seconds, which has attracted researchers to study its underlying mechanisms for over three decades. Scientists have collectively figured out that the worm’s intestine and two enteric neurons play important roles for generating this behaviour. However, how the two enteric neurons, one located in the worm’s head called AVL, the other in the tail called DVB, communicate with each other over the whole-body length while processing the gut timing signal with remarkable robustness and accuracy is not understood. Using electrophysiological techniques to directly record from these two neurons, Dr. Liu found that both neurons fire discrete all-or-none electrical discharges called action potentials under stimulations. Such digitalized neural signals are essential for rapid propagating signal from head to tail and synchronizing downstream muscles. Furthermore, Dr. Liu also identified the worms’ genes
responsible for generating action potentials in the enteric neurons. Interestingly, one of these genes encodes a voltage-gated potassium channel similar to a potassium channel in humans called hERG in their molecular structure and biophysical property. The mutation of hERG channel is known to cause a common heart disease called the long-QT syndrome in humans. Similar mutation of the counterpart channel in worms can cause dysrhythmia in the defection cycle and death. This unexpected finding shows that curiosity-driven basic research in worms may identify potential drug targets that one day may lead to treatment of heart diseases such as arrhythmia.

Dr. Liu is the corresponding author of the study recently published in Nature Communications with the title of "C. elegans enteric motor neurons fire synchronized action potentials underlying the defection motor program". This work was in collaboration with Dr. Louis Tao’s lab at Peking University.

Dr Liu Qiang, B.M., MSc
Assistant Professor,
Department of Neuroscience
Flight Behaviour Research

Dr Chen Xi
Innate defensive behaviours, such as flighting, freezing, and fighting, are crucial for animals to survive in a complex environment. A prominent environmental cue may herald the approaching danger. To improve the potency of defensive response, animals need to perceive and integrate these cues.

The team led by Dr. Xi Chen (Research Assistant Professor) and Prof. Jufang He (Wong Chun Hong Chair Professor of Translational Neuroscience) in the Dept. of Neuroscience at CityU recently revealed a neurocircuitry which is fundamental for an animal to integrate cues in innate defensive behaviours. Therefore, animals are more likely to survive when danger is coming.

The latest research is published in the scientific journal Cell Reports, titled “The anterior cingulate cortex directly enhances auditory cortical responses in air-puffing-facilitated flight behaviour”.

![Diagram showing neural responses and actions](image)
“In the past decade, scientists have studied the defensive behavior and its underlying neurocircuitry in single sensory modalities. However, little is known about how a prominent cue influences innate defense behavior, which is important to elevate the survival rate when an animal faces imminent danger,” says Dr. Chen.

Previous studies show that a high-intensity sound can induce an innate flight behavior. In the current study, the team presented an air-puffing to the animal to mimic the prominent environmental cue before a high-intensity sound. By anatomical, physiological, optogenetic, and chemogenetic methods, they studied how the anterior cingulate cortex (ACC) – auditory cortex (ACx) circuit controls the flight behavior on this model.

First, the team demonstrates that air-puffing facilitates sound-evoked flight behavior. This model provides a new way to understand innate defensive behaviors in the future.

Second, the team demonstrates that the ACC encodes the air-puffing information, enhances the auditory response through its projection to the ACx, and thus facilitates flight behavior. They also prove that this circuit is essential for animals to integrate the air-puffing and sound cues. Previous studies on top-down modulation to the ACx mainly focus on how motor areas transmit motion-related information to the ACx. The team shows that the prefrontal area can also enhance auditory cortical activities.

However, every coin has two sides. Prof. He points out that pathological overexcitement of the ACC may induce an overactive state of the auditory system. Such an overactive state can cause auditory hallucinations. This study provides a new possibility to treat the symptom in schizophrenia patients by inhibiting the ACC-ACx projection.

Wenjian Sun, Peng Tang, and Ye Liang are co-first authors, and Dr. Xi Chen and Prof. Jufang He are co-corresponding authors of this study. RGC, ITF, HMRF and NSFC supported this study.

Dr Chen Xi
Research Assistant Professor,
Department of Neurosciences
逃跑行為研究

陳曦博士

動物要在艱難環境求生，必需有逃跑、僵立和攻擊
（flight-freeze-fight）等本能防禦行為。顯著的環境線索可以預告即將到來的危機，動物為了提高生存能力，必須接收和整合這些線索。

由城大神經科學系研究助理教授陳曦博士及黃俊康講座教授（轉化神經）賀菊方教授領導的研究團隊，最近發現了一個神經環路，該環路是動物整合線索以驅動本能防禦行為的基礎。使得動物在面對危急時的生存能力得到提高。

陳博士說：「過去十年，科學家研究了單一感官驅動的防禦行為及潛在神經迴路，然而，人們對額外的顯著線索如何影響本能防禦行為所知甚少，而該功能有助動物在危險時提高生存機會。」

早前有研究表明高頻度聲音會誘發本能逃跑行為。利用這一行為，團隊在高頻度聲音前給予氣吹從而模擬額外的顯著環境線索。通過解剖學、生理學、光遺傳學和化學遺傳學方法，他們研究了由前扣帶皮層（ACC）及聽覺皮層（A1）組成的環路如何控制該模型的逃跑行為。

首先，團隊證明氣吹會促進聲音誘發的逃跑行為，這個模型為未來進一步理解本能防禦行為提供了新的方法。其次，團隊展示了前扣帶皮層可編碼氣吹相關訊息，並通過對聽覺皮層的投射而增強聽覺反應，從而促進逃跑行為。他們又證明改環路對動物整合氣吹和聲音線索十分重要。以往對於聽覺皮層被上而下調控的研究主要集中在運動皮層如何向聽覺皮層信遣運動相關信息，研究團隊如今展示前額葉區也能調控和增強聽覺皮層活動。

然而，凡事有利有弊，賀教授指出聽覺皮層的病理性過度興奮會誘發聽覺系統的過度活躍狀態，從而誘發幻聽等一系列症狀。通過抑制前扣帶皮層到聽覺皮層的投射，這項研究有望提供治療精神分裂症患者的症狀的新方法。

這項研究的共同第一作者為孫文健博士、湯朋博士及博士生梁燦，陳曦博士和賀菊方教授則為共同通訊作者，並獲得研究資助局、創新及科技基金、醫藥衛生研究基金及國家自然科學基金的支持。

陳曦博士
研究助理教授，神經科學系
Taking up the mantle: from diagnostic imaging to marine conservation
Dr. Brian Kot

Dr Brian Kot joined the Department of Infectious Diseases and Public Health at JCC, City University of Hong Kong, as an Assistant Professor of Diagnostic Imaging in July 2021.

As a diagnostic radiographer, clinical ultrasonographer, and animal health researcher, Brian has developed multi-disciplinary research interests at the interface of diagnostic imaging, veterinary medicine, and One Health. He is one of the few diagnostic imaging experts with formal training in radiology of both humans and exotic animals, as well as forensic radiology, following his internships at hospitals in Hong Kong and the United Kingdom, zoos and aquariums in North America, and the University of Zurich in Switzerland.

Brian is interested in clinical, forensic, and conservation medicine of aquatic wildlife, particularly using cetaceans and sea turtles as sentinel species to monitor the health of our oceans, to support marine conservation and policy decisions, and to contribute towards the ‘One Ocean–One Health’ paradigm.

His research represents a new frontier in the biological health assessment of aquatic animals and has important implications for animal health, conservation, and disease surveillance globally.

Performing a post-mortem MRI examination on a deceased finless porpoise as part of the local cetacean stranding investigation 正為江豚遺體做屍檢磁共振掃瞄，作為本地鯨類擱淺研究。
As a descendant of (Cheung Chau) islanders and son of a Marine Police officer, Brian grew up with a passion for aquatic animals and the marine ecosystem.

Instead of pursuing a veterinary medicine degree (which was not yet available in Hong Kong), he studied for a Bachelor of Science in Radiography programme. He had never thought of ‘servicing’ aquatic animals and how wide the scope of diagnostic imaging could reach, until the time he met one of his first professors at university, Dr Fiona Brook, who later became his PhD supervisor and lifelong mentor. Dr Brook was the first scientist to use ultrasonography in the assisted reproductive technology of bottlenose dolphins, leading to the world first successful artificial insemination of bottlenose dolphins in Hong Kong.

Although Brian’s trajectory appears smooth – admission to a university, meeting his mentor, graduating, completing his postgraduate training, working overseas as a visiting scientist, and becoming an Assistant Professor, his success, he says, “is actually a string of challenges and failures”. For years, Brian was warned by Dr Brook that his road in the veterinary diagnostic imaging would be a hard one. She could not do much but encourage him, as she did not want anyone to see him as just one of her students – they would not then take him seriously in his own right. “You listened, you have stuck with it, and you have become very good at what you do and made a place for yourself as I did. I am proud of you!” , Dr. Brook once said.

“So, what is failure? I’m not sure.” Brian said. His public examination results were not as good as expected but he managed to be admitted into a university programme. Although diagnostic imaging was not his first choice, he met his lifelong mentor, found a link between his professional knowledge and personal interest, and extended his interest to aquatic animal health, disease surveillance, and marine conservation. While he has faced countless challenges, difficulties, and failures in his career, at the end of the day, he thinks that these are only opportunities to acquire experiences. If not for them, Brian would not be the same person he is today. Brian is keen to share his stories with students so they can better understand how to build a future for themselves.

Brian recalled a question that Dr Brook had once asked over a decade ago, “are you ready to take up the mantle?” After years, his answer is an emphatic YES. He is well-prepared and
confident with his experience in veterinary diagnostic imaging and determined to integrate what he believes into his daily practice as a competent educator in the vet college.

Every year, as many as 50 cetaceans and 20 sea turtles are found stranded on Hong Kong beaches or floating in Hong Kong waters. As most of the carcasses are highly decomposed when found, the cause of death could only be determined in 10% of cases. Despite costly and often logistically challenging attempts to retrieve these carcasses, a lack of scientific evaluation underpins current decision-making processes around this endeavour. Currently, scientific research on aquatic animal monitoring in Hong Kong waters focuses solely on their distribution and abundance, while matters of conservation (survivorship/fitness) and biological health (disease and anthropogenic injury), remain undetermined. Brian and his team work at the forefront of the emerging field of biological health assessment with the aim of improving outcomes for both species and individuals. He applies diagnostic imaging on captive aquatic animals for standardisation of health assessment protocols, as well as virtopsy routinely in stranded cetaceans and sea turtles worldwide to investigate their biological health and profiles. Brian will further undergo photogrammetric health assessments and behavioural analyses on aquatic animals via routine boat survey in Hong Kong and adjacent waters. The findings will be complied on a centralised online database accessible to authorised researchers and relevant stakeholders including academics, green groups, and marine ecology experts to implement precise and effective management plan for the endangered aquatic animals worldwide.

Dr. Brian Kot, Ph.D. in Diagnostic Imaging, B.Sc. (Hons) in Radiography, Cert. (RPC), Cert. (Virtopsy)

Assistant Professor, Department of Infectious Diseases and Public Health
Coaching BVM students to perform ultrasonography on a deceased Olive Ridley sea turtle.

Brian and his students from the Aquatic Animal Virtopsy Lab introduced their “Aquatic Animal Postmortem Multimedia Analysis Platform”, which utilises virtopsy techniques such as computed tomography, magnetic resonance imaging and 3D surface scanning, to provide insights for the assessment of aquatic animal profiles and biological health locally and globally.

Brian’s team received a Gold Medal at the Inventions Geneva Evaluation Days 2021, a virtual edition of the International Exhibition of Inventions of Geneva. His invention is the world first novel platform of this kind, which provides up-to-date results to governmental agencies, researchers and stakeholders to facilitate and support marine conservation and policy decisions, which allow the use of aquatic animals as sentinels of ecosystem health, working towards a “One Ocean-One Health” ideal.
繼承衣缽：
從放射診斷到
海洋保育
葛展榮博士

葛展榮博士於2021年7月加入城大
動物醫學及生命科學院傳染病及公
共衛生系，擔任放射診斷學助理教
授。

Brian身兼放射診斷技師、臨床超聲
波造影師及動物健康研究員。營養
科研究放射診斷、動物醫學及健康
一體化。他曾任職於香港及英國的
醫院，北美的動物園和水族館以及
瑞士蘇黎世大學，是少數精於人類
及珍禽異獸放射醫學及法醫放射學的
放射診斷專家。

Brian專門研究水生動物的臨床、法
醫和保育醫學，擅於利用鯨豚和海
龜作為哨兵物種，監測我們的海洋
健康，推動海洋保育和政策制訂，
實現「海洋健康一體化」。他的研
究開創水生動物的生命健康評估領
域，對動物健康、動物保育和全球
疾病監測貢獻良多。

Brian的外祖母是
長洲原居民，父
親是水警，令他
自幼熱愛水生動
物和海洋生態。

Coaching students to
perform ultrasonography
on a live dolphin
正在指導學生為一隻海豚做
超聲波檢查。

Performing CT scan with a
student for a bale of mud
turtles
正在與學生為一箱泥鰍做電腦
掃描檢查。
然而，當時香港未有動物醫學學士課程，他只能改讀放射學理學士課程。當他以為自己跟水产動物練習於此時，沒料到放射診斷的範圍如此廣闊。他在大學時遇到其中一位教授 - Fiona Brook博士，她首位用超聲波協助控制海豚繁殖的科學家，令香港在世上第一次成功人工繁殖瓶鼻海豚，他更是Brian的博士生導師和人生導師。

Brian看似一帆風順 - 升讀大學、見得良師、順利畢業、完成研究生培訓，以訪問科學家身分在海外工作，再成為助理教授，但他說自己的成功「其實是由挑戰和失敗組成」。多年來，Brook博士不斷叮囑他獸醫放射診斷之路難行，她一直鼓勵他，希望Brian不只是她的門生之一，而是能夠獨當一面，他曾跟Brian說：「你肯聆聽，還堅持下來，如今成就斐然，又獨當一面，我為你感到驕傲！」

「其實何謂失敗？ 我也不肯定」Brian說。他的公開考試成績不如預期，但成功考上大學，雖然放射學不是他的首選，但他遇上人生導師，將專業知識建立在個人興趣之上，並將興趣擴展到水生動物健康、疾病監測和海洋保育。雖然他的事業勤勉滿途，但說到底也是成長之路，令他蛻變成今天的自己。Brian樂意跟學生分享自己的故事，讓他們明白如何為自己創造未來。

Brian回憶十多年前Brook博士曾經問他：「你準備好接過衣缽了嗎？」多年後，他仍會毫不猶豫答「好」。他對獸醫放射診斷學期許滿滿，決心投入獸醫學院，成為在生活實踐信念的教育家。

香港海灘每年最多可達50條海豚和20隻海龜擱淺，由於大部分屍體發現時已經嚴重腐爛，只有10%個案可以找出死因。打撈屍體的成本很高，物流過程十分複雜，
A wholesome study experience at the Jockey Club College of Veterinary Medicine and Life Sciences (JCC) is never confined to classroom learning. Last summer, the Veterinary Medicine Society organised the first-ever High Table Dinner for veterinary students and partners of JCC at Eaton Hong Kong Hotel on 27th August, 2021. The event achieved great success with the enormous support of JCC, especially our Dean, Professor Nikolaus Osterrieder, and CityU Career and Leadership Fund under the Student Chapters Scheme.

High Table Dinners have always been a tradition in the academic field to allow the connection of great minds. As we all know, JCC is the first and only veterinary college in Hong Kong. While we are actively expanding, it is of the utmost importance for veterinary students to stay informed of the ever-changing landscape of this profession not only in Hong Kong but worldwide.
Given that Hong Kong is a hectic hub of animal transport and animal-related activities, our veterinary community works hard to contribute to the betterment of One Health, which is a modern public health concept that emphasizes the interconnectedness of animal health, human health and environmental health as a whole. Hence, our High Table Dinner this year aimed to feature the theme of One Health and enrich students’ understanding of the role of veterinarians in One Health. We were deeply honoured to have Dr. Thomas SIT Hon Chung, Assistant Director (Inspection & Quarantine) of the Agriculture, Fisheries and Conservation Department to share with us his thoughts on the roles of veterinarians, One Health and the prospects of veterinary medicine in Hong Kong and globally. We also had the honour of the presence of valuable partners and members of JCC, including but not limited to members of Hong Kong Jockey Club, Society for the Prevention of Cruelty to Animals, Tai Wai Small Animal and Exotic Hospital and CityU Veterinary Medical Centre, as well as Professor Raymond CHAN, Vice President of City University of Hong Kong.

We were glad that participants took pleasure in mingling with new friends and catching up with old fellows at the Dinner. In the future, the Veterinary Medicine Society will continue to serve students, JCC and the community by heart and promote not only student welfare, but also the concepts of animal welfare and One Health in Hong Kong. We will keep building links with external parties and international organisations to provide students with the best opportunities to learn and to put what they have learnt into practice. As we are over halfway through the academic year, let’s celebrate our personal growth over the past year and look forward to more fruitful learning experiences at JCC in the upcoming year.
城大獸醫學科
聯會高桌晚宴2021
獸醫學學士課程三年級學生陳曉汶

賽馬會動物醫學及生命科學院的整體教育不限於課室教學，去年8月27日，「香港城市大學獸醫學科聯會」假香港逸東酒店為獸醫科學生及學院夥伴舉辦了首次高桌晚宴。在學院院長賈施德教授及「學生領袖計劃」轄下城大職業及領導基金支持下，活動得以圓滿結束。

高桌晚宴是學術界匯聚智慧的傳統。眾所周知，賽馬會動物醫學及生命科學院是香港第一所及唯一一所獸醫學院。今天學院發展如日方中，獸醫學生更應緊貼香港及全球獸醫業日新月異的形勢。
香港是動物運輸及動物活動的重要樞紐，我們的獸醫業界努力促進“健康一體化”，這個現代公共衛生概念強調動物健康、人類健康及環境健康息息相關。因
此，我們今年高桌晉宴旨在凸顯健康一體化主題，讓學生更了解
獸醫在健康一體化下的角色。

我們有幸邀請漁農自然護理署助理署長（檢疫及檢疫）薛漢忠
獸醫蒞臨，他跟大家分享自己對
獸醫角色和健康一體化的經驗，
並闡述香港和全球獸醫學科的前
景。多個學院合作夥伴亦蒞臨
臨，包括香港賽馬會、愛護動物
協會、大圍珍禽異獸24小時寵物
醫院、城大動物醫療中心及城大
副校長陳漢夫教授等。

大家在宴會上跟新知舊友打成
一片，香港城市大學獸醫學科
聯會將致力服務學生、學院及
社區，不單推廣學生福利，亦
促進香港動物福利及健康一體
化。我們會繼續聯繫社會各界
和國際組織，為學生提供最佳
學習機會，讓他們學以致用。

本學年已過一半，讓我們慶祝
過去一年的個人成長，並攜手
展望未來年在學院有更豐盛的學
習體驗。
A Warm WELCOME to New Faculty Members

The Jockey Club College of Veterinary Medicine and Life Sciences is proud to welcome and introduce our newest faculty members.
Prof Huang Yu  
Head

Dr Wang Li  
Assistant Professor

Dr Liu Jessica Aijia  
Assistant Professor

Dr Liu Qiang  
Assistant Professor

Dr Fung Alan Chi Chung  
Assistant Professor
Dr Mason Dean
Associate Professor

Dr Cai Wenlong
Assistant Professor

Dr. Ibrahim Elsohaby
Assistant Professor

Dr Kot Brian Chin Wing
Assistant Professor

Dr Li Fuyong
Assistant Professor

Dr Li Linyan
Assistant Professor

Dr Ming Wai Kit
Assistant Professor

Dr Surya Paudel
Assistant Professor

Dr Yang Guan
Assistant Professor
**PAIN MANAGEMENT**

Specialist in Anesthesia, Prof. Steagall conducts world-leading research aimed at improving pain management in companion animals. He chairs the WVMA Therapeutic Guidelines Group and authored the textbook “Feline Anaesthesia and Pain Management.”

*Professor Paulo STEAGALL  
Professor*

**ANATOMICAL PATHOLOGY**

Specialist in anatomical pathology with a research focus on neuro- and cardipathology, Prof. Bailer is a member of several committees of the ECVP, the ERVS and is one of the very few certified specialists in forensic veterinary pathology. She is also one of the Deputy BVM Programme leaders and chairs the Fitness to Practice committee.

*Professor Kerstin BAOLER  
Associate Head/Clinical Professor*

**ANATOMIC & CLINICAL PATHOLOGY**

Boarded in both Anatomic and Clinical Pathology, Dr. Sandy has a passion for teaching and all things pathological. Originally from Australia, Dr. Sandy conducts research and collaborative studies pertinent to a range of important animal health issues.

*Dr. Jeanine SANDY  
Clinical Associate Professor*

**EQUINE STUDIES**

Specialist in Equine Surgery who has worked in both academic and private practice settings. Dr. Pitch conducts research in ruminators with the aim of increasing the longevity of their career. Current research projects include developing a non-invasive method of identifying osteoarthritis early in the disease process. The outputs of this research are expected to benefit both horses and people, since equine osteoarthritis mirrors aspects of the human condition.

*Dr. Gareth PITCH  
Clinical Associate Professor*

**CLINICAL SKILLS**

Dr. Parkes is an equine veterinarian with research interests in equine biomechanics and welfare. Her current research work investigates load-carrying in donkeys and gait asymmetries in horses.

*Dr. Rebecca PARKES  
Assistant Professor*

**SMALL RUMINANT STUDIES**

A production animal veterinarian from New Zealand, Dr. Flay teaches all things ruminant-related in the BVM program.

*Dr. Kate FLAY  
Assistant Professor*
INFECTIOUS DISEASES

With a specialty in Feline Medicine, Chair Professor Vanessa Barrs co-leads an internationally recognized team investigating infectious diseases of companion animals.

Professor Vanessa BARRS
Chair Professor / Associate Dean / Director of Veterinary Affairs

DERMATOLOGY

Diplomate in Dermatology (AECVD and ECVV)
Stefan Hob, joined in August 2020
Member of the Administrative Committee, AECVD.
Vice President and Chair of the Education Committee AECVD.
Program Director of the AECVD Western Education Day.
Tylo, Distance Education Course in Veterinary Dermatology.
Sydney University.

"I am very proud and happy to be part of such a great team and to work with all these wonderful students and staff members; together we can reach the impossible.

Dr. Stefan HObi
Clinical Associate Professor

INTERNAL MEDICINE (Small Animal)

Clinical specialist in Small Animal Internal Medicine and a virologist. Dr. Bezkowski is passionate about endocrinology and all aspects of internal medicine. He is developing a program of infectious disease research in Hong Kong.

Dr. Pawel BEczKOWSKI
Clinical Associate Professor

ONCOLOGY

An oncology specialist in HK, UK and Europe. Dr. Giuliano has a passion to improve the quality of life of patients suffering from cancer and managing complex cancer cases. He teaches students oncology and internal medicine. His main research aims to find more effective treatment options for dogs and cats with cancer, including immunotherapy and alternative treatment.

Dr. Antonio GIULIANO
Clinical Associate Professor

EXOTIC COMPANION ANIMAL & WILDLIFE MEDICINE

A specialist in reptile and amphibian practice and a certified aquatic veterinarian, Dr. McDermott has a passion for advancing the medicine, surgery, and welfare of exotic species. He has a varied clinical background working with numerous exotic companion and zoological animals.

Dr. Colin McDERMOTT
Clinical Assistant Professor

PRIMARY CARE

Board Certified in Canine and Feline Practice, Dr. Almendros is thrilled to share his knowledge and experience with our brilliant students, new in their clinical years. He will investigate severe parasitic and gastrointestinal diseases.

"What’s not to love? Brilliant students, brilliant professionals in this department and college and brilliant city.

Dr. Angel ALMENDROS
Clinical Associate Professor
疼痛管理学

Steagall教授是麻醉学专家，他的研究带领世界提升宠物的疼痛管理。他是世界小动物兽医协会（WSAVA）疼痛管理小组主席，著有《宠物动物疼痛管理》。

Paulo STEAGALL教授
教授

解剖病理学

Baiker教授是解剖病理学专家，专长研究神经和内分泌学。她是欧洲解剖病理学学会（ECVP）及欧洲兽医病理学专业委员会（EVCP）等组织的成员。她是研究发育解剖的病理学教授专家之一，也是兽医教育委员会的职务。

Kerstin BAIKER教授
学系副主任 / 解剖学

解剖及临床病理学

Sandy博士拥有解剖学和临床病理学的资历，热衷教学及病理学知识，来自澳洲的她专注于动物健康的研究及合作研究。

Jeanine SANDY兽医
临床副教授

马匹研究

Fitch教授是马匹科学专家，他研究赛马及私人马匹的健康及训练。他的研究项目包括马匹的生理学、行为学及训练方法。他致力于改善马匹的健康及福利。

Gareth FITCH兽医
临床副教授

临床动物医学系

Beatty教授自2019年10月加入城大，讲授动物医学及生命科学系，并创立临床动物医学系。

「我們在極短時間內組成一支傑出的臨床學者團隊，創辦獸醫學學士臨床課程。」

「雖然世界風高浪急，但我們正為區內學生和動物福利指引康莊大道。」

「臨床動物醫學系的學者來自10個不同國家，且數目不斷增加，因而成為城大最國際化的學系之一。」

臨床技巧

Parkes博士在馬匹生物力学和馬匹福利方面。目前正在进行研究的是心理和行为对马匹福利影响。她教授学生临床技巧，及发展管理教学方案。

Rebecca PARKES兽医
助理教授

小型反芻動物研究

Flay博士在小型反芻动物学研究，特别研究动物疾病和生理学。她教授学生小型反芻动物学课程，及发展教学计划。

Kate FLAY兽医
助理教授
傳染病學

Barra教授是獸科醫學專家，他有出色的協作智中國
傳染病研究實驗室，並是賽馬會動物醫學及生命
科學院獸醫學學士課程主任，並擔任獸事務副院長
及總監。

Vanessa BARRS教授
講座教授 / 副院長 / 獸醫事務總監

皮膚病學

Leah教授是皮膚病學演講的
(ACVIM和RCVS)。於2018年3月加入康盛，
她是RCVS的學會委員。2018年她成為
委員會副主席及主任。亦在大學獸醫及生貨
遠距教育課程及歐洲獸醫皮膚病學
學院的教育項目聯合主任。

Stefan HOBI獸醫
臨床副教授

內科醫學

(BECV)。於2018年3月加入康盛，
 estates，並在联赛及內科醫學各領域，正
在籌備於香港創辦傳染病研究課

Pawel BECKOWSKI獸醫
臨床副教授

腫瘤學

Giuliano教授是香港、英國及澳洲腫瘤學
專家。他在癌症治療物的應用及治
療癌症癌症治療疾病，他在治療腫瘤及內
科醫學，其研究在為發展療癒疾病的
見效更有效的治療方法，包括免疫療法
及另類療法。他是世界腫瘤小
動物協會腫瘤小組 (WOW)
A組成員，教授住院獸醫腫瘤

Julia BEATTY教授
學系主任 / 講座教授

Antonio GIULIANO獅醫
臨床副教授

珍禽異獸與動物及
野生動物醫學

McDermott博士是於澳洲及英國
獅醫學的學士院，他是一個受認可的野生
動物醫學，他熱衷於推動珍禽異獸
醫學，外科、寄生蟲和發展。他有豐富
的診療經驗，治療過多珍禽異獸
動物及野生動物。

Colin McDERMOTT獅醫
臨床助理教授

初級護理

Almendros博士擁有犬科和獅科護理
資格，他熱愛帶領學生在臨床護理
實習坊分享知識，他將展開研究
以血液生準針治療類科動物的骨
頭癲癇。

Angel ALMENDROS獅醫
臨床副教授
Enquiry
All enquiries should be directed to the Department of Infectious Diseases and Public Health
ph.tpg@cityu.edu.hk https://www.cityu.edu.hk/ph/msphe

Application is open and on rolling basis.

MSc in Public Health and Epidemiology

Applied public health education that makes a difference

Programme Highlights

- Multidisciplinary passionate faculty with expertise in health and zoonotic diseases
- Curriculum with environmental health and risk assessment from the Department of Chemistry and statistics and data science from the Department of Mathematics
- CityU is an innovative hub for research and education (#4 in QS “Top 50 under 50” in 2021)

Programme Aims

The Master of Science in Public Health and Epidemiology equips students with knowledge and skills in One Health, public health, and emerging zoonotic diseases.

- Assess scientific literature, analyze epidemiological data to identify health determinants, infectious diseases outbreaks and socio-economic impacts of disease
- Design and implement public health research, develop infectious diseases models, and communicate findings to policy makers and the public
- Develop skills in leadership, planning and management
- Formulate evidence-based prevention and control policies for diseases in human and animals for the betterment of public health

Career Prospect

After graduating from this programme students will have the skills to work in a range of disciplines and settings such as:

- Government public health agencies (such as CDCs), research institutes, NGOs, international organizations (such as WHO)
- Private sector (pharmaceutical industry, consulting, health care organizations)
- Health education and advocacy
- PhD studies in health related fields

Mode of Study

- 1-year Full-time
- 2-year Part-time

UGC Fellowship opportunities for local students HK$120,000 each
SHAPING THE FUTURE OF VETERINARY MEDICINE AND LIFE SCIENCES