

Celebrating 100 Years of NUS Anatomy (Part 2)

Interview by Joycelyn Soo Mun Peng and Helen Cai, Student Correspondents
Photos by NUS Department of Anatomy

*This is the second article of a two-part series. Part 1 (<https://bit.ly/5411-Insight>) covers a snapshot of key historical developments in the Department of Anatomy, National University of Singapore (NUS). This article comprises interviews conducted by **Joycelyn Soo (JS)** and **Helen Cai (HC)** with previous and current Heads of Departments (HODs) of the NUS Department of Anatomy – **Emeritus Prof Ling Eng Ang (LEA)**, **Prof Bay Boon Huat (BBH)**, and **Prof George Yip (GY)** – and an NUS medical alumnus and practising emergency medicine doctor, **Dr Darius Pan (DP)**.*

Emeritus Prof Ling Eng Ang attained his Bachelor of Science Degree in Zoology from the National University of Taiwan in 1966, his PhD from the University of Cambridge in 1970 and moved onto a postdoctoral fellowship programme at McGill University. In 1972, Prof Ling started at the NUS Department of Anatomy as a lecturer, teaching and training many batches of doctors and medical students since. During his time as HOD from 1998 to 2008, he made many notable contributions, one of which is developing the Anatomy Museum into one of the department's best learning resource centres.



Prof Bay Boon Huat began his journey in education as a senior tutor at the NUS Department of Anatomy in 1989, and he later became the HOD in 2013. During his time teaching at NUS, Prof Bay adopted a student-centred approach. He developed a handbook for pharmacy students and video demonstrations for pre-laboratory sessions. He uses a clinically oriented approach when imparting knowledge about anatomy and emphasises on building basic foundational concepts to medical students.

Prof George Yip is the current HOD of the NUS Department of Anatomy. He has been greatly involved in the education of students, being the coordinator of the Undergraduate Research Opportunities Programme in Science and Honours Project in Life Sciences (LSM4199), and his commitment to education excellence has been recognised by the NUS Annual Teaching Excellence Award and the Yong Loo Lin School of Medicine Faculty Teaching Excellence Award.



Dr Darius Pan graduated with honours from NUS in 2016 and is an emergency medicine doctor practising at the National University Hospital. He was appointed adjunct lecturer in Anatomy under the Clinician Educator Scheme in 2022.



JS, HC: Hello Prof Ling, Prof Bay, Prof Yip and Dr Pan. Very nice to meet you and thank you all for your time today. We hope to commemorate 100 years of NUS Anatomy with this article, sharing the insights and reflections of our educators and former students at the NUS Department of Anatomy.

To start off with a question to our professors, what did you enjoy most about teaching at NUS Anatomy?

LEA: July 2022 marked 50 years since I joined the department. For me, the best part is when the students appreciate that we have taught them. Better yet is my attending doctors being appreciative when I go for my medical check-ups. In fact, I very much enjoy teaching. That's why I am still here at NUS. If I could teach as a hobby, I would feel blessed.

Dissection and the Silent Mentors

JS, HC: Thank you Prof Ling. We are most appreciative that our tutors in Anatomy are committed to education, motivating us with their passion for anatomy. We know that the department has been constantly improving its methods of education and have started new programmes over the years. One of these efforts is the Body Donation programme. How did that get started?

LEA: Let me introduce a bit of our history of using cadavers. We started off with using cadavers in the 1980s as we had a supply of cadavers from the Health Sciences Authority. Most were unclaimed bodies but the number of bodies started dwindling over the years. We could not afford having every student perform dissections, and another concern was fitting over 180 students in the

dissection hall. Around the year 2003, we thought that one way to preserve the number of the cadavers would be to use prosections. We engaged staff from Kunming, China to prepare prosections for students' learning, which was called "exploratory learning" back in my time. However, the number of available cadavers was still declining until we started the Body Donation programme.

Currently, Year 1 students look at prosections and learn the anatomy. During the summer break, dissection is available as an elective for Year 1 students. Those who are keen to dissect can opt to come back for it, and the attendance has been quite good.

If you ask me, dissection is the way to learn anatomy – you learn by looking at the person. In Chinese, there is a popular saying, "百闻不如一见", and more recently, "百见不如动手", which means seeing once is better than hearing a hundred times, and getting into the action and doing is better than just seeing.

BBH: Prof Ling has actually revolutionised this whole aspect. We were very fortunate that he had the foresight in 2003 to shift to prosection. If we did not have all these prosected specimens during the COVID-19 pandemic, everything would have come to a standstill due to cadaver shortages.

The Silent Mentor programme was adapted from Tzu Chi University as we found the concept particularly good and applicable to Singapore's context. We wanted our students to appreciate their Silent Mentors when undergoing dissection sessions, and to engage in events post-dissections to show their appreciation.

DP: Back when I was a first-year medical student in 2011, the Silent Mentor programme was still in the developmental stages. Ten years later, as I return to the department to teach, many things have changed. Essentially, the cadaver is like our first patient. Through the Silent Mentor programme, we learn to show respect and appreciation for our patients, and this sets the tone which carries through to the next phase of our career from students to doctors.

New approaches to anatomy

JS, HC: With the rapid expansion of medical knowledge in the current era and with the changing responsibilities of doctors, how has the teaching of anatomy at NUS changed?

BBH: I think nowadays the approach is more towards practical application and knowledge. There is no point in learning all the individual branches for the arteries, but it is good to know the functions and significance of the blood supply. We are now more aligned towards clinical anatomy. You will find that our tutorial objectives are based on clinical scenarios and how you would apply what you have learnt. That is what I think students would benefit from the most when they go to the wards. They can relate the anatomy that they have learnt to what they are seeing; it does not make sense for them to just learn the anatomical structures by rote memory. This is also what medical schools around the world are doing.

LEA: When I first joined in the 1970s, the total number of anatomy contact hours were over 700 hours. It is now being gradually reduced to about 200 hours. To me, a great outcome from our many medical curriculum reviews is that we trimmed away a lot of the unnecessary details. If you look at our tutorial objectives now, you will see that they are much more functional, focusing on applied anatomy with clinical relevance.



If not, you may end up memorising all the branches of the brachial plexus without knowing what their relevance is. For example, we have done away with all the cutaneous branches, and that knowledge is more than enough for most practising GPs. If the students want to become specialists, they can go into more detail later. We have also simplified the curriculum – retaining its essence while making the content more clinically relevant.

Nostalgic memories

JS, HC: We have heard about how life is like for educators at NUS Anatomy and were wondering if Prof Yip could share with us how it was like as a former student and now as an educator. Do you have any fond memories during your time as a student?

GY: Well, I do have this interesting story. For anatomy back in those times, Prof Rajendran would bring two 35 mm projectors to class. He was very artistic and used plasticine to make models for both gross anatomy and embryology teaching. By making use of both projectors, he would demonstrate the transition between layers and show us what happens if you remove each structure, and what lay behind. Using the same approach, he could also show changes in different parts of the embryo, such as how the midgut herniates out, undergoes rotation and goes back in again during gut development.

JS, HC: Dr Pan, could you share with us your fondest memory at NUS Anatomy?

DP: I remember when I was in Year 1, our seniors would tell us about the “Papa”, “Mama” and “Baby” versions of the medical textbooks which differ by their thickness. As anatomy textbooks were very thick, I bought the “Mama” version. For convenience, I would cut the textbook into chapters and bring these to read on the train and into the lecture halls.

My fondest memory in anatomy is of the time I spent with my tutor, Dr Satish LR. We struck a very deep friendship over the past decade. He is the sort of tutor who encourages you to never stop learning. When we asked him questions which he did not have the answer to, he would take it as a learning point for himself and go on to investigate and



return with answers during the next tutorial. I am thus inspired by him to never stop learning and to take every opportunity to further my knowledge.

JS, HC: Agreed, Dr Pan. Anatomy is the first thing we get to know in medicine, and it sticks with us throughout our careers many years after we graduate.

To another 100 years!

JS, HC: Two final questions before we end the interview. What do you hope for the Anatomy department to achieve in the coming years, and do you have any well wishes or congratulatory words for the department?

DP: The evolving focus of anatomy will be on more intentional clinical application and its foundational role in clinical practice. In future years, we will also move towards a more systems-based approach in teaching anatomy.

The NUS Department of Anatomy has been a long-standing institution and its heritage can be traced back to the pre-war era. I congratulate the department on the past 100 years, and hope that the department can continue to impart important knowledge to future generations of doctors and students.

GY: The department has come a long way since it was established. The NUS Anatomy department has been recognised as one of the leading institutions in Asia. Moving forward, we would like to build on this and become even better not just in Asia, but also in the global arena.

LEA: Our primary aim is really to teach our students well. As one of our vice-chancellors used to say, “teachers exist because of students”.

JS, HC: Thank you all very much for your time today, and for sharing with

our readers. We congratulate NUS Department of Anatomy on their centennial celebration! ♦



For the full interview, please visit <https://bit.ly/5501-Interview> or scan QR code.

Legend

1. Modern Human Anatomy Museum
2. Medical students observing a moment of silence for their Silent Mentor
3. Cadaveric dissection workshop for surgical residents
4. Exchange students learning at the Human Anatomy Museum

Joycelyn, student correspondent (Singapore) at SMA News, is almost at the end of her fourth-year as a medic at the National University of Singapore. She is passionate about teaching and writing, and is an avid swimmer in her free time.



Helen, student correspondent (UK) at SMA News, is a second-year medic at the University of Cambridge. She is a huge animal lover and enjoys playing the drums and indulging in theatre in her free time.

