#### INTERNATIONAL FEDERATION OF ASSOCIATIONS OF ANATOMISTS

# PLEXUS

#### THE NEWSLETTER OF THE INTERNATIONAL FEDERATION OF ASSOCIATIONS OF ANATOMISTS

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- 2nd FIPAR conference, 13<sup>th</sup> October, 2021

Dear colleagues worldwide,

It is with pleasure that Shiby and I introduce this latest edition of Plexus, the newsletter of the IFAA.

We are about to start another academic year with the COVID 19 pandemic cloud still upon us. Some of us are fortunate to have been vaccinated; others await the privilege. Wherever you are in the world, there is no question that COVID 19 has drastically affected our ability to teach anatomy face-to-face. Nevertheless, we have now learned that much can be achieved pedagogically by remote teaching, although this will never completely replace hands-on dissection or practical clinical/living anatomy sessions. We welcome all contributions to Plexus regarding the important issue of adaptations of anatomy teaching to the "new normal".

We remind you that the IFAA's World Anatomy Day will be celebrated again this year on October 15, 2021. Professor Erdoğan Şendemir has proposed a number of questions to start the discussions going within your Societies. You will find these topic questions in this issue. Of course, you are very welcome to go in any other direction that makes sense for you. Whatever your plans, do please send us a brief summary of the outcomes of these debates (with photos if at all possible) to enliven our next edition in the Spring of 2022.

In this issue we sadly mourn the loss, while also celebrating the achievements of one of the giants of our discipline, Mr. Mills, who has contributed significantly to teaching, research and publications in anatomy.

As announced by our President, the IFAA's Programme on Anatomical Education (FIPAE) will shortly be hosting an Anatomy Festival consisting of two symposia, and a parallel virtual engagement event. The theme of the events is Anatomy Education: Diverse, Inclusive, Accessible. Keep an eye out for details on the IFAA Website (www.ifaa.net) as well as Soundbytes.

Many of us are still conducting all conferences and research meetings online, but as the world moves slowly towards herd immunity, the coming months will see us resume some direct contact. The world of hybrid meetings with cameras, headsets, roving mikes etc has arrived. Whatever the format of the planned conferences of our member societies, please send us short summaries so we can showcase your efforts in the next edition of Plexus.

Thank you to all those who have contributed articles to this issue: it is great to hear from you! We look forward to hearing more about member societies, learning about individual anatomists as well as advances in the discipline. Please keep your contributions coming.

With best wishes

Isabel and Shiby

Warm greeting to all anatomists across the globe! I hope that you are doing well during these difficult times.

The IFAA Executive team has had a busy few months since I last communicated with you in the early part of 2021. I would thus like to share with you some recent and forthcoming events and activities:

- The IFAA would like to welcome the **Costa Rican Association of Morphologists** as provisional members of the IFAA. We are delighted that the association has rejoined the ranks of the IFAA and look forward to learning about their members and activities.
- The 1<sup>st</sup> Federative International Programme for Anatomical Research (**FIPAR**) research webinar took place in September 2021. Organised by the Chair of FIPAR, Professor Han-Sung Jung and his team, the webinar was hugely informative for both junior and senior anatomical researchers. Excellent talks on ethics (Professor Marco Konschake from Austria) and the need for morphological research (Professor Quentin Fogg from Australia) set the scene for a fascinating cutting-edge talk by Professor Jose Alvarez of Spain), which took participants from the microscopic to the molecular. The international spread of the speakers and the participants enriched the interesting discussion. A second FIPAR webinar will be organized soon.
- The IFAA's World Anatomy Day is almost upon us. Please join the IFAA in celebrating this day on October 15, 2021. Please inform us of the activities that you have planned for the day so that we can bring them to the attention of anatomists around the world by posting these on the IFAA Website. Also please remember to send us reports and photographs of your activities following the celebrations.
- The IFAA **President's Emergent Anatomist Programme** (PEAP) has run two successful **Scientific Writing workshops** so far this year, with another planned for later in the year. Should you wish to be part of the workshop please contact the co-Chairs, Dr Carol Hartmann (carol.hartmann@wits.ac.za) and Professor Jose Sanudo (jrsanudo@ucm.es) for further information.
- The IFAA's **Programme on Anatomical Education** (FIPAE) will be hosting an **Anatomy Education Festival** in October which will culminate in World Anatomy Day. More information on this exciting festival will be coming to you via the IFAA Website (www.ifaa.net) and soundbytes soon!
- A number of important **surveys** from some of the IFAAs committees will soon be sent out to member associations over the next few months. I appeal to you to participate in these surveys as the information is of importance to developing our discipline for the future.
- The IFAA's **Committee on Anatomical Publications (FICSP)** will be hosting a panel discussion with Editors of anatomy journals towards the end of 2021. Information regarding this panel discussion will be posted on the IFAA Website.
- The planning for the **IFAA's Congress in 2022** hosted by Turkish Society of Anatomy and Clinical Anatomy (TSACA) is well underway. Led by Professor Erdogan Sendemir as Chair of the Organizing Committee, TSACA has arranged a wonderful online platform for the Congress. The Congress will take place in August 2022. A limited number of **emergent anatomists and postgraduate students** from under-resourced countries will be supported by the IFAA to register for the Congress. Application forms are available on the IFAA 2022 Congress Website.

We would love to hear about the activities of your associations as well! Please send information to the Editor of the IFAA's Newsletter, Professor Isabel Stabile.

With warm anatomical greetings,

Bev Kramer President, IFAA

#### TRIBUTES AND OBITUARY



Mr. Richard Mills, BA (Cantab), MB BChir Camb, FRCS

Former Examiner – Royal College of Surgeons of England

Retired Clinical Anatomist, University of Cardiff

Formerly, Consultant Head & Neck/ENT Surgeon

It is with great sadness that I share the news of the passing away of Mr. Richard Mills. Mr. Mills worked as a Clinical Anatomist at Cardiff University between 2003-2008. Prior to that Mr. Mills worked as an distinguished ENT Head and Neck consultant surgeon. I had the opportunity and privilege to start my career as an Anatomy Demonstrator under his supervision. I learnt a great deal under his guidance, including the qualities that make a good teacher exceptional. His approach to teaching will inspire medical, science and other allied science students both present and future. His larger-than-life approach helped him to create numerous YouTube videos which are relevant to this date in the education of both undergraduate and post graduates.

Mr. Mills was living proof of how fine a person can be. He had an infectious laugh, a good sense of humour and a gentle demeanour. The manner of the life he lived might be summed up in a few words: sincere, enthusiastic and approachable. By his death, all the individuals who knew Mr. Mills will miss a highly intelligent, vibrant individual with rare friendliness.

Mr. Mills will be greatly missed and our sorrow is lessened only slightly by the comforting thought that we had the privilege of knowing and learning from him.

Shiby and the Anatomy team, Cardiff University

News from Anatomical Societies

20<sup>th</sup> IFAA Congress

Dear colleagues,

Following the award in Beijing of the 20<sup>th</sup> IFAA Congress to the **Turkish Society of Anatomy and Clinical Anatomy**, circumstances led the IFAA Executive Committee to rearrange the location of the 19th Congress to London in 2019 and the 20<sup>th</sup> to İstanbul in 2021. The Covid-19 pandemic then forced a further postponement of the Istanbul Congress until 2022.

Our dream was for all anatomists to enjoy the scientific aspects of the 20th Congress, as well as the social aspects of Istanbul and of course Turkish hospitality. Unfortunately, the progress of the Covid-19 pandemic throughout the world does not permit the Turkish Organizing Committee to encourage anatomists to travel to Istanbul in 2022. It is therefore, with considerable sadness that the Turkish Organizing Committee has reluctantly taken the decision to make the 20th IFAA Congress completely online, in order to allow delegates from across the world to attend virtually and avoid any possible health risks associated with international travel. The dates of the 20th Congress will remain August 5-7th, 2022.

Planning for our first ever online Congress is well underway and although the Turkish Organizing Committee is disappointed not to be able to welcome delegates to Istanbul in person, it is excited to be able to offer the IFAA's first virtual Congress. Our virtual Congress will have reasonable registration fees and no travel costs, allowing many more anatomists to participate than ever in the past. With your participation, the Turkish Society of Anatomy and Clinical Anatomy looks forward to making the 20th IFAA Congress a truly record-breaking Congress in terms of attendance and anatomical sciences presentations.

The latest information about the 20th IFAA Congress, the call for symposia, abstract submission and registration will be available on the Congress Website: www.ifaa2022.org



#### Erdoğan Şendemir

President of the XX IFAA Congress Professor of Anatomy Bursa Uludağ University, Turkey

#### XXV National Congress of the Bulgarian Anatomical Society, Medical University - Pleven, Bulgaria

Professor Stefan Trifonov Department of Anatomy, Histology, Cytology and Biology Faculty of Medicine, Medical University – Pleven Bulgaria

The XXV Congress of the Bulgarian Anatomical Society with international participation was successfully held at the Medical University – Pleven, Bulgaria from 28<sup>th</sup> to 30<sup>th</sup> May 2021. It was organized by the Department of Anatomy, Histology, Cytology and Biology of the Medical University – Pleven, Bulgaria together with the Bulgarian Anatomical Society. The Congress attracted more than 200 delegates, both in person and online from eight different countries.

The Congress offered a stimulating and varied programme including six excellent plenary lectures, 100 oral scientific presentations and E-posters, three workshop sessions, spanning the breadth of activities in the anatomical sciences. All scientific reports were available to view over the three days covering a wide range of topics, from anatomical to clinical science.

The scientific programme of the Congress provided a unique opportunity for anatomists from around the world to generate vibrant discussion on anatomical research, teaching and many other matters of importance to our discipline. Thanks to the parallel sessions, participants were able to tailor their personal agenda to suit their own interests.

During the opening ceremony of the event, Professor Beverley Kramer, President of IFAA welcomed all delegates to the Congress on behalf of the International Federation of Associations of Anatomy. Welcome addresses were also delivered by Professor Dobromir Dimitrov, Rector of Medical University – Pleven, Professor Nikolai Lazarov, Chair of the Bulgarian Anatomical Society and Associate Professor Stefan Trifonov, President of the Organizing Committee and Head of the Department of Anatomy, Histology, Cytology and Biology of Medical University – Pleven.

The plenary lectures were delivered by Professors Slavcho Tomov, Friderich Paulsen, Markus Kipp, Tetsuo Sugimoto, Partha Vauide and Jean-Pierre Timmermans. Professor Partha Vaiude from the Liverpool School of Art and Design organized a workshop during the Congress.

At the closing ceremony several awards were given acknowledging the most outstanding contributions. The "Professor Dimitar Kadanoff" Memorial Award of the Bulgarian Anatomical Society for publication excellency was given jointly to Dr. Silviya Yanakieva Nikolova and Dr. Diana Hristova Toneva from the Institute of Experimental Morphology, Pathology and Anthropology with Museum, Bulgarian Academy of Sciences.









Anatomical Society of South Africa (ASSA)

Dr. Erin Hutchinson

#### **University of Stellenbosch**

#### **Opening of Body Donation Program**

When the COVID-19 lockdown was announced in South Africa in March 2020, the body donation program temporarily



halted its intake. After training staff in personal protective equipment, Covid-19 swab training and the development of standard operating procedures, the program reopened in April 2021 with all donors subject to a COVID-19 test upon arrival. In both 2020 and 2021, the donor memorial ceremonies were held online with the recordings shared to the division's social media pages #suClinicalAnatomy. The ceremonies can be viewed on the Division's YouTube https://www.youtube.com/channel/ channel at UC07d8nB7IIx7YR\_C-Sx8JDA.



#### Anatomy at the University of Namibia

Anatomy at the University of Namibia (UNAM) has seen a number of upheavals in 2020. Some disruptions were due to COVID-19 and some despite COVID-19. Our personnel changes were fortunately, not COVID-related. Prof Jan Smit, the Head of Department, retired and moved back to the land of leprechauns and clover.

Fortunately, our department has grown as well. Mr Jan van der Merwe joined as a senior technician, returning to academia and teaching after years in the private sector. Mr. Joseph Lakanemo joined us as a junior technician and is finding his feet in the biological sciences. The two gentlemen jumped in with enthusiasm and completed a plastination course early in 2021. Part of our vision for the department is to provide quality learning resources. A plastination plant is on the drawing table as well as a 3-D printing facility. Funding for these resources were made possible through the Dirisana+

On an institutional level, the **University of Namibia** has remodeled its organizational structure. The Department of Anatomy has become a separate unit and now resides in the Department of Human & Biological Sciences & Translational Medicine (HBSTMS), within the Faculty of Health and Veterinary Sciences. This new department is one of four departments in the School of Medicine bringing together a comprehensive spectrum of the biomedical sciences including anatomy, biochemistry, epidemiology, microbiology, pathology, physiology, nutrition and dietetics, as well a focus on context specific and disease-targeted research. Our hope is that the amalgamation of several departments will lead to improved collaboration and integration of pre-clinical sciences. Prof Quenton Wessels from the Unit of Anatomy has been appointed Chair of HBSTMS.

In many ways COVID-19 shook the foundation of tertiary education, forcing reform and change that few of us were prepared for. None of us could foresee that in 2021, eighteen months later, we are still on the same battlefield. We have moved online with lectures, assessments, and practical sessions during periods of lockdown. We are entering a new era of anatomy education where everyone will need to adapt, improvise, and evolve. In the words of Charles Darwin:

"It is not the strongest of the species, nor the most intelligent that survives, it is the one that is most adaptable to change".





Anatomy Museum, University of Namibia

#### University of the Witwatersrand



Emeritus Professor Beverley Kramer

The School of Anatomical Sciences extends its congratulations to Emeritus Professor Beverley Kramer, Professor of Anatomy. Professor Kramer was recently awarded the **Leonardo da Vinci Award** by the International Committee of the Symposium on Morphological Sciences (ICSMS). This award is bestowed on "a morphologist who has rendered the most outstanding services in the establishment and improvement of international relations among morphological institutions, including development and organisation of International Symposia".







## ASCON'20 Anatomy on the Edge of Tomorrow

24<sup>th</sup> December 2020 PMC/KMU Rec. code no.07/CME/PMC

Anatomical Society of Pakistan

Anatomy Department Institute of Basic Medical Sciences Khyber Medical University, Peshawar Pakistan





#### Message of the President ASP

"It is an honour to serve as President of the Anatomical Society of Pakistan and my goal is to work with colleagues, students, and alumni to promote anatomical sciences' distinctive place in Pakistan. By supporting existing and new collaborations with other institutes both nationally and internationally, ASP will continue to play a crucial role in furthering the mission of learning, discovery, service and inclusion."

#### Message of the Head of Anatomy Department and ASP KPK Representative

"It is with great pleasure that I congratulate the organizing team of ASCON' 20. Since assuming the responsibility of leading the anatomy department, it has been a dream turned to reality of having one platform for all anatomists to gather under the umbrella of ASP to foster a collaborative environment for students and faculty. I believe that the sciences today are merging and re-emerging, transforming and breaking the concrete boundaries of subjects. In carrying forward the torch of innovation and leadership the sky is not the limit: as I stand with all excellent and dynamic persons of this institute as part of the galaxy, which is our Society."



President Anatomical Society of



Dr Zilli Huma Associate Professor Anatomy, IBMS,KMU









#### Introduction

ASCON'20, the Anatomical Society conference 2020 was conducted successfully on the 24th of December 2020. As a joint venture of the Anatomy department, Institute of Basic Medical Sciences, Khyber Medical University (KMU) and the Anatomical Society of Pakistan (ASP) it was the first Virtual conference conducted by ASP and KMU. The Conference theme "Anatomy; on the edge of Tomorrow" was set to highlight the role of human anatomy in teaching, learning and research at the turn of this decade.

ASCON'20 served as a platform for the best brains in the anatomical sciences to deliberate on the current situation, as well as challenges and advancements relating to Anatomy. Our aim was to celebrate the accomplishments of those who have excelled in anatomical research and to inspire others who want to achieve excellence in it.

The conference included two plenary sessions, a panel discussion for policy identification and a scientific session for emergent researchers. The event was attended by 185 ASP members, anatomy faculty, and as well as P.hD. and M.Phil. Anatomy students of different institutions and medical colleges from all over the country.

The opening session was chaired by the honourable VC KMU Prof Dr Zia UI Haq together with Prof Dr Nosheen Omar, President ASP. The guests included Prof Dr Jawad Ahmed, ex-Dean Basic Sciences, Dr Zeeshan Kibriya Deputy Director ORIC and Dr Saleem Gandapur, Registrar, KMU.

The activity commenced with an introductory session, hosted by Dr Habiba Rashid AP Anatomy, IBMS, KMU with rapporteur Dr Shah Khalid (MPhil Anatomy scholar IBMS KMU). An overview of all academic and research activities of our Anatomy department was presented by Dr. Najeeb Ullah AP Anatomy IBMS KMU.

The Vice Chancellor of KMU Prof. Dr. Zia UI Haq, Prof. Dr. Nosheen Omar and Prof. Dr. Jawad Ahmed shared their thoughts about the event and congratulated the organizers for coordinating a virtual event amid the Covid-19 pandemic.



Prof. Dr. Zia Ul Haq Vice Chancellor Khyber Medical University Peshawar, and Prof. Dr. Nosheen Omer, President ASP, addressing the opening ceremony of ASCON'20.



Opening ceremony Dr. Zilli Huma, Chief Organiser ASP, Prof. Dr. Jawad Ahmed and Dr. Zeeshan Kibriya Deputy Director ORIC KMU.

#### Plenary I

The first plenary session entitled "What Was, Is and Will Be" was hosted by Dr. Habiba Rashid with rapporteur Dr. Rakhshinda (MPhil Anatomy scholar IBMS KMU). Prof. Dr. Sarah Khalid from Shalamar Medical and Dental College Lahore presented "Online Anatomy Teaching- It's Myths, Realities and enabling strategies"; Dr. Aslam Qamar from RMI Peshawar shared his thoughts on "Out of box teaching & learning Anatomy" and Dr. Najma Baseer, AP Anatomy IBMS KMU discussed "Mixed Reality Model for Better Learning and Teaching In Anatomy; A Pilot Study".



The Panel discussion that followed included renowned anatomists from different parts of the country such as Prof. Dr. Atiya Mubarak Khalid (Chairperson Punjab HealthCare Commission), Prof. Dr. Nosheen Omar (President ASP), Prof. Masood Ahmed (Principal Fazaia Ruth Pfau), Prof. Dr. Laiq Hussain ASM&DC Lahore, Prof. Dr Samreen Memon, LUMHS and Dr. Zilli Huma, Head of Anatomy department IBMS, KMU. Dr. Najma Baseer AP Anatomy IBMS, KMU moderated and Dr. Kamran Ameer (Ph.D. Anatomy scholar IBMS KMU) was the rapporteur for the session.



#### Plenary II

This session on the theme of cutting edge research included guest speakers from Canada and the United Kingdom. The first speaker was Dr. Tahir Ali from University of Calgary, Alberta, Canada who discussed the "Drug repurposing approach for the treatment of Alzheimer's disease". His talk was followed by a presentation by Dr. Samit Chakrabarty from University of Leeds, United Kingdom on "The use of EMG to identify muscles based activation patterns during a dynamic task". The last speaker was Dr. David Maxwell who discussed the "Form and Function of Spinal Commissural Systems".

The last scientific session of the conference with 13 presentations was hosted by Dr. Shabnam Wazir, Lecturer anatomy, IBMS, KMU with rapporteur Dr. Ibrahim Khan and Dr. Fazi U Rehman (M.Phil. Anatomy scholars IBMS KMU).



#### Presentation of Awards

At the closing ceremony, Dr. Zilli Huma, Chief Organiser ASCON'20 presented a vote of thanks and announced the scientific session's best presenter awards to Dr. Samia Khalid, Bahria University Medical and Dental College for her contribution on "Comparison of Sacral Hiatus Parameters with Incidence of Low Back Pain", Dr. Iqra Javed from Sahiwal Medical College on "Pattern of Chest X-ray Findings In Covid-19 Patients Admitted In Covid-19 Unit, Sahiwal" and Dr. Maria Ilyas from Al-Aleem Medical college, on "Cytotoxic Effects of Energy Drinks on Histological Structure of Ovaries in adult female albino rats".



#### TEPARG Symposium at the 6th Congress of the European Association of Clinical Anatomy (EACA)

The 6th Congress of the European Association of Clinical Anatomy (EACA) was held online jointly with the XII Meeting of the International Symposium of Clinical and Applied Anatomy (ISCAA) from 14 to 16th September 2021 (https://www.neuroscienze.unipd.it/eaca-iscaa)

The Trans European Pedagogic Anatomical Research Group (TEPARG) hosted a Symposium entitled "Anatomy Education Adaptations to the New Era of Digital Delivery". The following lectures were delivered:

- 1. Professionalism, Digital Code and Utilising Cadaveric Imaging in the Digital Era **Professor Susan Anderson**, University of Nottingham, UK.
- 2. Digital adaptations to learning resources Dr lain Keenan, Newcastle University, UK.
- 3. Developing a Parallel Anatomy Curriculum Dr Jo Matthan, Newcastle University, UK.
- 4. Digital Anatomy Assessment Dr Sarah Rolland and Dr Luisa Wakeling, Newcastle University, UK.
- 5. Europe-wide impact of the Covid-19 pandemic on anatomists **Dr Erich Brenner**, Medizinische Universitat Innsbruck, Austria

#### Introduction of New IFAA Member Associations

#### The Global Community of Anatomical Sciences Educators (GCASE)

The Global Community of Anatomical Sciences Educators (GCASE) evolved from an Anatomical Sciences Scholarly Interest Group (ASSIG), led by Dr. Inaya Hajj Hussein, in the Department of Foundational Medical Studies at the Oakland University William Beaumont (OUWB) School of Medicine in Rochester, Michigan, USA. The ASSIG leveraged the fact that the COVID-19 pandemic forced educators around the world online and took advantage of the virtual technology options to overcome the well-established traditional format of in-person meetings. ASSIG members of OUWB took this unique opportunity to create a virtual global community of passionate anatomical sciences educators, dedicated to pursuing international scholarship, without the traditional hindrances of geographical barriers.

The GCASE desires to expand globally by attracting additional anatomical sciences experts, and by supporting, promoting, and increasing high-quality scholarly endeavors in anatomical sciences education. The GCASE currently has 25 members. Membership in GCASE is open to individuals in good professional standing who have an active interest in anatomical sciences education and are inspired to support anatomical sciences programs, projects, courses, and activities internationally. The future of GCASE is to create innovative opportunities that foster and enhance collaborations among members world-wide and persist as an enduring silver lining when the pandemic subsides.

For additional information, please contact Inaya Hajj Hussein at hajjhuss@oakland.edu.

#### Interesting Readings

#### About the Terminologia Neuroanatomica: Past, Present and Future

Hans J. Ten Donkelaar<sup>1,2,3</sup> and Robert Baud<sup>4,5,6</sup>

Former Co-ordinator FIPAT Working Group Neuroanatomy<sup>1</sup>, Department of Neurology<sup>2</sup>, Radboud University Medical Centre and Donders Institute of Brain, Cognition and Evolution<sup>3</sup>, Nijmegen, The Netherlands; Webmaster IFAA Website Fribourg<sup>4</sup>; Anatomy, Section of Medicine<sup>5</sup>, Faculty of Science and Medicine, University of Fribourg and SIB Data Mining<sup>6</sup>, Swiss Institute for Bioinformatics, Geneva, Switzerland

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#### Introduction

In this document, recent developments in the *Terminologia Neuroanatomica* (TNA) and the opening of a new section on the IFAA website in Fribourg, Switzerland, are discussed. The authors have updated and restructured the TNA so that it will be more appealing to its users. Moreover, the TNA will be available in five languages: Latin, English, French, Spanish and Russian.

#### The TNA (2017-2019)

The TNA is a recent revision of the terminology on the Central Nervous System (CNS; Systema nervosum centrale), the Peripheral Nervous System (PNS; Systema nervosum periphericum) and the Sense Organs (Organa sensuum). These were abstracted from the Terminologia Anatomica (1998) and the Terminologia Histologica (2008) and were extensively updated by the FIPAT Working Group Neuroanatomy, and merged to form a Terminologia Neuroanatomica (TNA), presenting about 40% of the Terminologia Anatomica. Because of its clinical and functional significance, the TNA includes the blood supply to the CNS (Vasa sanguinea encephali and Vasa sanguinea medullae spinalis) to ensure it contains a more or less complete list of terms for the human nervous system. The document is divided into three chapters. The official FIPAT terms are in Latin. This enables translation into any vernacular, in the present instance English. The Latin terms have been reviewed by members of the FIPAT Latin Subcommittee.

The following outlines the major changes in **Chapter I** (Central Nervous System):

(1) Throughout the document, the subdivision of **neurons** proposed by Bota and Swanson (2007) is used, following the Brain Architecture Management System (BAMS; http://brancusi.usc.edu/bkms), and including sensory neurons, interneurons (with short or long axons) and motoneurons. The short interneurons are subdivided into excitatory and inhibitory interneurons. The category interneurons with a long axon comprises those interneurons that are usually described as projection, commissural and association neurons.

(2) For the **white matter tracts**, the Foundation Model of Connectivity (Swanson and Bota 2010) is followed for a better presentation. The following subdivision is used: (a) Central roots (radices centrales) for the cranial and spinal nerve roots within the CNS; (b) intrinsic tracts (tractus proprii) remaining within a certain compartment of the CNS such as the spinal cord or the telencephalon; (c) commissural connections (tractus commissurales); and (d) longitudinal tracts (tractus longi) divided into ascending tracts, descending tracts and efferent tracts of the cerebellum.

(3) A new section **blood vessels** is added, a modernized version of the relevant part of the TA Section Systema cardiovasculare. Clinically relevant subdivisions of the arteria carotis interna (CI-C7), arteria cerebri anterior (AI-A5), arteria cerebri media (MI-M4), arteria vertebralis (VI-V4) and arteria cerebri posterior (PI-P4) are added.

(4) For the **spinal cord**, the order of presentation is changed from posterior (dorsal) to anterior (ventral) to be consistent with the presentation of the Rexed layers from I-X, and for consistency with other sections. The known neuron types are added and the white matter is subdivided into central roots, propriospinal tracts and long tracts, ascending and descending.

(5) For the brain stem, the various nuclei are rearranged according to their connectivity, following the third edition of

Olszewski and Baxter (Büttner-Ennever and Horn 2014): somatosensory nuclei, viscerosensory nuclei, vestibular nuclei, acustic nuclei, somatomotor nuclei, branchiomotor nuclei, visceromotor nuclei, reticular nuclei, neuromodulatory nuclei (serotonergic, adrenergic, noradrenergic, cholinergic and dopaminergic cell groups), limbic nuclei and precerebellar nuclei. The white matter is subdivided into central roots, intrinsic tracts and long tracts, ascending, descending and cerebellar efferent.

(6) For the **mesencephalon**, the following subdivision is used: pedunculus cerebri (the long corticofugal fibres), tegmentum mesencephali (including the substantia nigra and the ventral tegmental area), substantiae centrales mesencephali and tectum mesencephali.

(7) For the **cerebellum**, the terminology of the lobuli was simplified, the zonal, sagittal organization of corticonuclear projections is introduced and the composition of the cerebellar peduncles is added.

(8) A more natural hierarchical classification of brain structures is used for the **forebrain** (prosencephalon) as implemented in the revised version of the *Terminologia Embryologica* (TE2). The forebrain is subdivided into the caudal prosencephalon, giving rise to the diencephalon, and a rostral or secondary prosencephalon, giving rise to the hypothalamus and the entire telencephalon. The telencephalon is divided into the pallium and the subpallium (striatum, pallidum, basal forebrain and preoptic area). For practical reasons, the preoptic area is listed following the hypothalamus.

(9) The **diencephalon** in its classic, columnar view was divided into four dorsoventrally arranged columns separated by ventricular sulci: the epithalamus, the dorsal thalamus, the ventral thalamus and the hypothalamus. Extensive embryological studies made it clear that the thalamic 'columns' are derived from transversely oriented zones, the prosomeres (Puelles 2013; TE2). Currently, the diencephalon is subdivided into three segmental units, which from caudal to rostral, contain in their alar domains the pretectum (prosomere I or PI), the epithalamus and thalamus (P2) and the ventral thalamus or prethalamus (P3). The diencephalic basal plate (PI-P3) contains the rostral part of the substantia nigra - VTA complex and the interstitial nucleus (nucleus of Cajal), the rostral interstitial nucleus of the medial longitudinal fasciculus, and the elliptic nucleus (nucleus of Darkschewitsch), collectively forming the diencephalic or prerubral tegmentum between the midbrain and the hypothalamus. The entire hypothalamus arises from the alar and basal components of the secondary prosencephalon. The preoptic area is one of the subpallial developmental domains.

(10) For the **thalamic nuclei**, a new subdivision based on Hirai and Jones (1989) and updated by Morel et al. (1997) is introduced.

(11) The description of the **external features** (morphologia externa) of the **cerebral hemisphere** is extended, including many newly discovered or rediscovered subdivisions. Macroscopically visible olfactory structures are included here. A more extensive discussion of the allocortex is provided.

(12) The description of the **internal features** (morphologia interna) of the **cerebral cortex** follows the embryological subdivision of the pallium into four parts. The dorsal pallium gives rise to the isocortex or neocortex, the lateral pallium to the claustro-insular complex, the medial pallium to the hippocampal formation and the ventral pallium to the olfactory cortex and the pallial amygdala. Where possible, neuron types are added, starting from the TH terminology. Isocortical neurons are subdivided into pyramidal neurons (projection, commissural and association neurons) and excitatory and inhibitory interneurons. For the inhibitory, mainly GABAergic, interneurons, the Petilla terminology (DeFelipe et al. 2013) is introduced.

(13) Under the heading **subpallium**, the amygdaloid body or complex, the basal forebrain and the basal nuclei (or ganglia) are listed with neuron types and fibre connections.

The following outlines the major changes in **Chapter 2** (Peripheral Nervous System):

(1) All **communicating branches** that are readily apparent and all those known to have functional significance are included. Any communicating branches that are difficult to demonstrate or have no known function are deleted. The communicating branches are listed as branches of the nerve at their central (proximal) end. Their naming is simplified, eliminating prepositions (*ad* and *cum*).

(2) To the **sympathetic**, **thoracolumbar part** of the **autonomic division** two additional subsections are added to include other parts of the autonomic division that contain sympathetic neurons and postganglionic sympathetic fibres: (a) the paravertebral ganglia of thorax and abdomen; and (b) perivascular plexuses and their branches that contain postganglionic fibres.

(3) The **parasympathetic** or **craniosacral part** of the **autonomic division** includes three subdivisions that contain parasympathetic ganglia and nerve branches that contain parasympathetic fibres to visceral organs: (a) cranial parasympathetic ganglia and their branches; (b) the two vagus trunks and their branches; and (c) the pelvic splanchnic nerves. The pelvic ganglia are replaced under visceral plexuses because they are not classic parasympathetic ganglia.

(4) The **visceral plexuses** include those containing sympathetic and parasympathetic fibres and small ganglia associated with these plexuses. These ganglia were formerly considered parasympathetic ganglia, but have been shown to contain also many neurons that are not classically sympathetic or parasympathetic.

(5) The **enteric plexus** is treated separately because this intramural plexus of the digestive canal is usually considered a nervous system separate from the autonomic or peripheral nervous system: the **enteric nervous system** (systema nervosum entericum).

For the third part of the TNA, **Chapter 3** (Sense Organs), an attempt is made to merge TA and TH terms on the sense organs (organa sensuum). Several clinical experts were involved in this process, including ENT surgeons (Matthew Carlson, Rochester, USA; and later Vedat Topsakal, Brussels, Belgium, and Brandon Isaacson, Dallas, USA) and a neuroophthalmologist (Hans Cruysberg (Nijmegen, The Netherlands). Major changes include a restructuring of the layers of the eye and the classification of sensory neurons.

#### Acceptance at the 19th IFAA World Congress 2019

The TNA as published on FIPAT's Dalhousie website (http://FIPAT.library.dal.ca) was accepted August 9, 2019 at the 19th IFAA World Congress in London (UK) as the official terminology for the nervous system and the sense organs. Also a Symposium on the TNA was held at the 19th IFAA Meeting.

#### Further Developments in the TNA

To promote the TNA, an illustrated version, entitled An Illustrated Terminologia Neuroanatomica: A Concise Encyclopedia of Human Neuroanatomy (ten Donkelaar, Kachlik and Tubbs) was published 2018 (Springer, Cham) with contributions from, among others, many FIPAT colleagues. To enhance the TNA, a research topic Recent Developments in Neuroanatomical Terminology for Frontiers in Neuroanatomy was started by Hans J. ten Donkelaar and Luis Puelles. During 2018 and 2019, 12 papers, one commentary and an editorial were published on four topics: (1) further development of a developmental ontology (Puelles 2019; Watson et al. 2019); (2) common terminology for the cerebral cortex (ten Donkelaar et al. 2018) and the thalamus (Mai and Majtanik 2019); (3) white matter tracts, including a new scheme for the presentation of white matter tracts (Baud et al. 2018) and a new approach to the long association tracts (Mandonnet et al. 2018); and (4) neuron types, including a new approach to cortical neuron names (Shepherd et al. 2019) and one on auditory nomenclature (Fritzsch and Elliott 2018). Many of these new data were used to improve the TNA as discussed in the next item. Combining TNA data and the Fritzsch/Elliott paper, an updated terminology for the internal ear with combined anatomical and clinical terms was published (ten Donkelaar et al. 2020). Recently, such an updated terminology was published for the middle ear as well (Topsakal et al. 2021).

#### Towards a Digitalized TNA: The Database Implementation of the TNA

Computerization of the TNA is a necessary task due to the size and complexity of the data. Manual handling is no more appropriate. Our goal is to be compatible with the essentials of database development in life sciences as recommended by the OBO Foundry (Smith et al. 2007). The database implementation of the TNA is prepared in a well defined context: (1) the need to access a taxonomy and we naturally have selected the Foundation Model of Anatomy (FMA) taxonomy (Rosse and Mejino 2003); (2) to adopt the basic principles of Basic Formal Ontology (BFO 2.0; Smith et al. 2015); (3) since the TNA derives from the TA98, and cross references are present, the TA database is shared, allowing tracing from TA98 to TNA; and (4) the ultimate goal of FIPAT is the translation into numerous languages, giving an international dimension to the whole. Manual translation is dependent on unavailable humanpower resources and must be replaced by an adequate automatic translation. This is the necessary solution for a terminology subject to permanent updates and improvements. Each term receives a unique, computer-generated identifier. In the partonomic lists, reference is made to the FMA and the TA98. For further information, see Baud and ten Donkelaar (2019).

During the preparation of the TNA database, the following major changes were made in its presentation: (1) presenting the terms in a top-down approach, i.e from telencephalon to spinal cord, to make terms compatible to the FMA and other parts of the TA98; (2) the new view on tracts presented by Baud et al. (2018) was implemented; (3) a universal model for terms was applied, defined as: The basic part of a term and its expansions to already existing related terms are modeled, starting from the Latin representation, giving the universal formula independent of any language. It decomposes the basic part of any term in words that are exclusively issued from dedicated taxonomic entities, representing each meaning of each word (currently, more than 1,000 of such entities in the TNA). The universal model of the terminology is a process that produces a universal representation independent of any language. In such a context, an exact translation can be reached but human validation is recommended for some terms.

The white matter of the CNS is difficult to represent in anatomy because it is located predominantly 'between' other anatomical entities. In a classic presentation, like a cross section of a brain segment, white matter is present and can be labelled adequately. Several appearances of the same entity are feasible on distant presentations. The problem is the absence of a global view on long tracts, and more generally, the lack of a comprehensive classification of white matter pathways. From the *Terminologia Neuroanatomica* (TNA 2017), Baud et al. (2018) have developed a new schema for the representation of white matter. In this approach, white matter is directly attached to the CNS, and no more considered as part of the brain segments. Such a move does not affect the content but redistributes the anatomical entities in a more natural fashion. The new classification of white matter tracts selects the origin as the primary criterion and the type of tract as the secondary criterion. On this basis, the tracts of the CNS were classified by their origin in the following nine segments: telencephalon (pallium), telencephalon (subpallium), hypothalamus, diencephalon, mesencephalon, cerebellum, rhombencephalon rostrale, rhombencephalon caudale and medulla spinalis. For the type of tracts, the criteria of the TNA are followed: central roots, commissural tracts, intrinsic tracts and long tracts.

#### The TNA in Five Languages

To promote the translation of the TNA into other languages, automated translations of the TNA into French, Spanish and Russian were produced by Robert Baud in addition to translation from the universal representation to Latin and English, and validated by a team of enthousiastic anatomists and neuroscientists, including Odile Plaisant, Alexis Guenon, Nathalie Tzourio-Mazoyer and Laurent Petit for French, Ricardo Insausti (with Luis Puelles and Javier DeFelipe) for Spanish and Yuriy Vasiliev (with Sergey Dydykin) for Russian. The following versions will be available: LA-EN, LA-FR, LA-SP, LA-RU, and a five-language version. It should be noted that in 2020 a Polish version of the TNA was published online (http://dlibra.wum.edu.pl/Content/2278/FIPAT\_TNA\_Plpdf). Italian and Russian versions are in preparation and possibly in other languages as well. Asian languages would need cooperation with native-speaking experts.

Depending on progress, the various sections will be placed on the open part of the IFAA Fribourg website (http://unifr.ch/ ifaa), including versions in Latin, English, French, Spanish and Russian, so that Anatomical Societies can comment and, wherever necessary, correct terms. Through FIPAT and the IFAA Executive Committee the digitalized version should then be presented at the next IFAA World Congress (August 2022) in Istanbul (Turkey).

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#### What is all the Excitement about Fascia? Dr. Erin Hutchinson

If your healthcare professional students have not heard about the importance of fascia they definitely should, and if your residents have not heard about the manifestations of fascia health they definitely will from their patients. While fascia may not be the sexiest of organ systems it is one of the body's most influential.

The Fascia Research Society (FRS) serves as the international cross-roads for those with an interest in fascia. Whether you teach students in schools of medical, veterinary, dental, physiotherapy or occupational therapy, connective tissue has a place in academia. Whether you are a general surgeon, a rehabilitation specialist, an internist or an orthopaedist, fascia matters. The FRS promotes the dissemination of scientific knowledge to a community passionate about patient wellness with sound scientific study of the largest organ of the body: the extracellular matrix, or interstitium.

Fascia continues to gain interest worldwide from researchers, physicians and many subdivisions of manual medicine including massage therapists because it permeates every structure and its function in the human body. When the Fascia Academy Webinar Series went "live" in 2020 we certainly went big. We tracked down the giants whose shoulders we stand on in disciplines of biochemistry, molecular genetics, pathology, sports medicine and neuroscience. Honored guests were Drs. Carla Stecco, Robert Schleip, Joeri Calsius, Helene Langevin, Keith Baar and Paul Hodges to name a few. In total, the Fascia Academy highlighted fourteen outstanding professors in their field to over 1100 attendees. Audiences were intrigued by new possibilities for fascial diagnoses with T1rho MRI, confocal microscopy of sensory fibers, excitation of nociception receptors, strength training and force vectors, and tissue memory associated with chronic pain. Each webinar proved to be clinically relevant, applicable to the attendee's practice and easy to follow.

The Fascia Research Congress scheduled for September of 2022 is hosted by our friends in fascia in Montreal, Canada. It will be an inspiring event and will include a *BodyWorld* plastination exhibit specifically highlighting the body's fascial system. Programmers hope the Congress will facilitate discussions on the need to change what we teach at the undergraduate and graduate medical levels in terms of fascia.

To see a complete listing of all recorded 2020 webinars and to learn more about the 2022 Fascia Research Congress please visit the Fascia Research Society (FRS) www.fasciaresearchsociety.org For additional correspondence please contact ASSA member Dr. Rebecca Pratt at rebeccapratt@oakland.edu current Board of Directors member of the FRS.

#### Can You Help us Provide Support for Anatomists Across the World?

The Federative International Programme for Anatomy Education (FIPAE) and Federative International Committee for the Support of Anatomy Professionals (FICSAP) have some synergistic aims. FIPAE seeks to create a vibrant international academy of anatomists co-operating to enhance anatomical education across the world through collaboration, innovation, and evidence-based scholarship. The aim of FICSAP is to work collaboratively to identify associations that seek manpower development and training in the field of anatomy and then assist with support in the form of training.

In order to achieve our aims, we need your help! We would like to know what you as individual anatomists would value in terms of your professional development. In particular, which areas would you like support, mentoring or training? We want to build our plans to provide appropriate support, like any good scientist, on evidence.

Over the last year FIPAE and FICSAP have been working to develop a survey which will hopefully provide us with some of this necessary information. The survey is based on that used by Kramer et al., 2020 (Supporting early career anatomists: An international challenge. Annals of Anatomy. https://doi.org/10.1016/j.aanat.2020.151520). We have sought and received ethical approval from the University of Otago and the University of New South Wales, as well as receiving approval from the IFAA Executive Committee. All responses will be anonymised so individuals will not be identified. The survey will be open until the end of 2021 and we will provide a report of our findings to Plexus and member societies in due course.

So we would like to strongly encourage you to undertake the survey by following the link https://unsw.aul.qualtrics.com/ jfe/form/SV\_5ziFQ5a2h39a2sC

The survey is open to all anatomists whether you are just starting your career or have been an anatomist for several decades. Please also pass the link on to your colleagues and encourage them to take part. We really want to ensure that the work of the IFAA programmes and committees is relevant to our fellow Anatomists and we can only do this if we know what is important to you.

Thank you very much for considering this.

Nalini Pather Chair of FIPAE n.pather@unsw.edu.au Helen Nicholson Chair of FICSAP helen.nicholson@otago.ac.nz CARTOON STRIP FROM DR ANATOPHIL

Dr. Anatophil MS Chung (anatomy.co.kr)

Episode 34: Incredibly useful dissection tools



# Dr. Anatophil MS Chung (anatomy.co.kr)

Episode 90: Three laboratory mottos





Kirstin LLore Snyckers. 21 years old

I am a B.S.c Anatomy and Physiology student at the University of Cape Town and I am hoping to continue my postgraduate studies in Clinical Anatomy and Forensic Anthropology. I have always been fascinated by the human body and with anatomy in general. It amazes me that we have so many small intricate parts and systems and that somehow when put together we can think, live and survive. Throughout my life I have always found the human body beautiful and my passion truly lies in the intricacies of the human skeleton and surrounding tissue. I am a self taught artist that enjoys a challenge. I enjoy doing research about how the human body works as well as drawing from nature. It definitely helps that I am heading into a field where my passion for the human body as well as my art can be used interchangeably. The art is in the anatomy.





Leoné Pretorius

I am an enthusiastic postgraduate student with a humanitarian personality, a great love for Science and Medicine, eager to learn and empower. I am currently enrolled in UCT's BMedSc. Honours degree for Applied anatomy. I remember the first time walking into a dissection hall. I did not know how to feel or how to grasp what I was seeing and experiencing. Looking back at it now I remind myself that I am just human. What I was feeling was natural and it brings Anatomy as a whole and what weaim to achieve with our knowledge into perspective; for the better understanding and treatment of humankind.

This year I had the opportunity to carry out dissections which proved immensely beneficial while studying and recalling what I had seen. I am grateful for the opportunity I have had this far to have access to this knowledge and to have had the privilege to work so closely with such sensitive material. I am forever in awe and admiration of this field.





Judyta Olszewski

I am a PhD student in the Division of Clinical Anatomy and Biological Anthropology at the University of Cape Town. My research involves the study of morphological macrowear on teeth and oral health on archaeological human remains. Therefore, my illustrations demonstrate various angles of individual tooth types. Eventually, these drawings will include all permanent teeth that create the adult dentition in multiple phases of wear, to create a macrowear scoring visual guide. Considering how small the teeth are, the drawings have been produced through a stippling technique, in an attempt to incorporate as much minute detail as possible.





Obakeng Modisane

I am Obakeng Modisane, a Masters student in Clinical Anatomy at the University of Pretoria.





Recent events have highlighted the ethical dilemma around the history and use of human remains for education and/or research purposes. Many of these remains exist as legacy collections in use, in storage or on display at institutes of higher education or museums. These tissues might originate from marginalized populations or individuals who may not have been given an opportunity or voice to authorize such uses.

Given the discussion these events have generated, AAA hosted a three-part open-access webinar series called "Anatomical Legacy Collections."

The goals of this series were to:

- Engage researchers and educators in conversation about the ethical use of legacy collections (i.e., unconsented remains)
- Offer guidance for inventory and disposition of legacy collections

You can access the recordings and notes from these events and see all upcoming AAA webinars here: **anatomy.org**/ **webinars** 



#### WORLD ANATOMY DAY - 2021

- Do Anatomy teachers feel that they are adequately trained?
- Do anatomists have adequate support from their institutions and governments?
- Would partnering of low-resourced with highly-resourced global Anatomy departments lead to strengthening of Anatomy?
- What are your perceptions of the health risks of being an anatomist?
- On behalf the International Federation of Associations of Anatomists we invite all Anatomists to discuss such questions among colleagues and members of scientific societies during the celebration of the WORLD ANATOMY DAY - Octeber 15th, 2021 - A day of action and awareness!



Dear Colleague,

The Organizing Committee is pleased to invite you to the fully virtual "II International Congress of Bodies Donation", which will take place from Monday 18<sup>th</sup> to Friday 22<sup>nd</sup>, October 2021.

This activity aims at creating a space of dialogue for both professionals and students in the field of health sciences and any other related area. Our goal is to highlight the importance of Body Donation Programmes as well as to foster new teaching and research programmes fully inspired by an appropriate set of ethical rules in educational institutions. The following topics will be addressed throughout the congress:

- Creation and management of donation programmes
- Conservation techniques
- Professionals involved.
- Donation programmes around the world
- Donors: experiences and new challenges

Since we will have the participation of various specialists from different countries, we are sure that the academic exchange will be of great importance.

For further information, please consult the web site: https://iiconinterdonacion.wixsite.com/my-site

Dra. González-Fernández Jéssica Dr. Pineda-Martínez Diego Dra. Vázquez-Osorio M<sup>a</sup> Teresa Organizing Committee



Join us in Philadelphia April 2-5 at the AAA Annual Meeting held in conjunction with Experimental Biology 2022. Reconnect in person with colleagues and friends from around the world.

Submit your abstracts by November 30, 2021. You can submit your abstracts and register here: https:// anatomy.org/annual-meeting-2022

Experimental Biology (EB) is the annual meeting of five societies that explores the latest research in anatomy, biochemistry and molecular biology, investigative pathology, pharmacology, and physiology. Beginning in 2023, AAA will host its own independent meeting. Learn more about that decision here: https://www.anatomy.org/AAA/News-Journals/Press-Releases/AAA-to-Hold-Independent-Annual-Meeting-in-2023.aspx

#### **UPCOMING EVENTS**

#### INTERNATIONAL FEDERATION OF ASSOCIATIONS OF ANATOMISTS

#### **2ND FIPAR WEBINAR**

Federative International Programme on Anatomical Research - IFAA

#### 13 OCTOBER, 2021 10:00AM - 11:30AM (CET) 17:00 - 18:30 (JAPAN)

Meeting Platform: WEBEX Link: https://yuhs.webex.com/yuhs/j.php?MTID=m0d25825f5bbce6a6c1ca0713a6ba240f Meeting Room: 2510-762-9072

Password: 1234

Please download the WebEx program before join the meeting. Download link: https://www.webex.com/downloads.html

#### **IFAA WEBINAR SERIES 2021**

On behalf of the International Federation of Associations of Anatomists we would like to invite you to attend the 2nd Federative International Programme on Anatomical Research Webinar

#### PROGRAM

10:00 – 10:10 -Welcome and housekeeping Dr. Han-Sung Jung, Yonsei University (Korea)

10:10 – 10:30 -"New Insight into the development of the inguinal canal"Dr. Jose Sanudo, Universidad Complutense of Madrid (Spain)

10:30 - 10:35 Q&A

10:35 – 10:55 "Development of the hagfish and early evolution of vertebrates" Dr. Shigeru Kuratani, RIKEN Cluster for Pioneering Research (Japan)

## INTERNATIONAL FEDERATION OF ASSOCIATIONS OF ANATOMISTS

# **2ND FIPAR WEBINAR**

Federative International Programme on Anatomical Research - IFAA

> 13 OCTOBER, 2021 10:00AM - 11:30AM (CET) 17:00 - 18:30 (JAPAN)

**Meeting Platform: WEBEX** 

Link: https://yuhs.webex.com/yuhs/j.php? MTID=m0d25825f5bbce6a6c1ca0713a6ba240f

Meeting Room: 2510-762-9072

Password: 1234

<u>Please download the WebEx program before join the meeting.</u> <u>Download link: https://www.webex.com/downloads.html</u>

