APBIONET NEWSLETTER

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Advancing Bioinformatics and Allied Disciplines in the Asia-Pacific Region

NEWS HIGHLIGHT

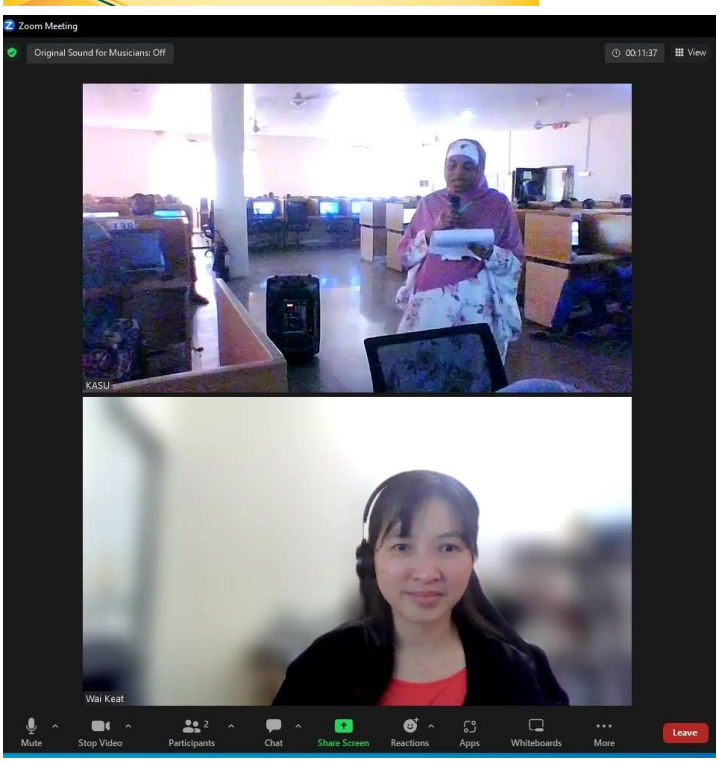
Collaboration with the Kaduna State University

By: Wai Keat Yam, PhD

(APBioNET, International Medical University Malaysia)

The Kaduna State University Library in collaboration with the Department of Biochemistry, Kaduna State University and APBioNet organised the "Open Day on Bioinformatics" from 22- 23 February 2023. The theme for the event was "Bioinformatics: The Melting Pot for ICT and Life Sciences" and the sub-theme was "Application of Bioinformatics in Research and Development". The programme was aimed at building a strong community of Bioinformatics in Kaduna State University, Nigeria.

I was honoured to be invited to speak on "Bioinformatics Education, Learning and Training" to the participants. Despite the limitation in resources and infrastructure, I was humbled and inspired by their motivation and drive, to move the capacity building effort in Nigeria.



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NEWS HIGHLIGHT

Bioinformatics Education Summit 2023

By: Wai Keat Yam, PhD

(APBioNET, International Medical University Malaysia)

The Bioinformatics Education Summit 2023 (BES2023) was held from 15-17 May 2023 at the Wellcome Genome Campus, Hinxton Cambridge UK. It was jointly organised by ELIXIR/EMBL-EBI partners, Wellcome Connecting Science, and supported by the RitrainPlus Knowledge and Staff Exchange programme. This hybrid working meeting provided a platform for bioinformatics education and training experts to discuss, develop and provide advances, guidelines and good practice for bioinformatics education and training efforts. This summit entered its 5th edition this year, with the first iteration in Cape Town in 2019 (hosted by H3ABioNet), 2nd was hosted virtually by EMBL-EBI in 2020, 3rd was also virtual, hosted by CABANA and GOBLET in 2021, and 4th was virtual too, by APBioNET from 9-11 May 2022. Main highlights of this year's summit included discussions in health data science competencies, ISCB accreditation, FAIR concepts, Community of Practice, training in LMICs and green training. It was an honour to represent Asia Pacific Bioinformatics Network (APBioNET) and the Global Organisation for Bioinformatics Learning, Education and Training (GOBLET) at BES2023. It was a fruitful and productive meeting, being surrounded by likeminded and passionate people in the area of bioinformatics education and training from different parts of the world. The 5th BES was a very special event as it was a working meeting. More importantly, it was nice to meet in person after many years of online BES meetings!

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MEMBERS HIGHLIGHT

APBioNET is proud to share that our former ExCo Member and past President, Dr. Shoba Ranganathan was recently recognised for her contributions and dedication to the field of bioinformatics.

Shoba's service has been driven by a desire to better connect the global bioinformatics community. She still sees a "digital divide" among the bioinformatics communities in the Asia-Pacific, especially in under-resourced areas. Ranganathan has worked to connect these groups through activities with APBioNet, Bioinformatics Australia/ABACBS, ISCB, and other societies, which has been critical to improving bioinformatics education and supporting newly formed bioinformatics societies. Her work in this area has also been pivotal in building bioinformatics education and infrastructure in Australia. Her work has been recognized with multiple awards, including the 2018 ABACBS Honorary Senior Fellowship, and as the first UNESCO Chair of Biodiversity Informatics in 2006. Shoba remains deeply involved with the bioinformatics community, especially as she anticipates the global reach of bioinformatics to expand to applications including environmental and health research, synthetic biology and gene modifications, and artificial intelligence for biological knowledge integration and analysis.

She was honored and is grateful of the recognition in being inducted as an ISCB Fellow and the 2023 Outstanding Contributions to ISCB Award. She encourages junior scientists and trainees to seek out varied service opportunities to expand their knowledge and give back to the scientific community.
(Link: https://academic.oup.com/bioinformatics/article/39/Supplement_1/i3/7210513).

We are proud and inspired with Shoba's dedication and passion in building and supporting events and societies in bioinformatics.

Shoba Ranganathan
Consultant @NSCC & Hon Professor of Bioinformatics @Macquarie University

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UPCOMING EVENTS

Event Name: InCoB 2023

Event type: Conference

Date: 12 – 15 November 2023

Venue: Queensland University of Technology (QUT), Brisbane

Mode: Physical

Website link: incob.apbionet.org/incob23

Event Name: Asia-Pacific Bioinformatics Joint Congress 2024 (APBJC 2024)

Event type: Congress

Date: 22 – 25 October 2024

Venue: Okinawa, Japan

Mode: Physical

Website link: https://apbjc.asia

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IN MEMORIAM: CHRISTIAN SCHOENBACH

It is with great sadness that we share with you on the untimely passing of Dr Christian Schoenbach, a stalwart of APBioNET:
https://web.nu.edu.kz/news/in-memory-of-professor-christian-schoenbach

Dr. Schoenbach was an ExCo member of APBioNET since 2008. He has been a pillar of support for us at APBioNET. He was instrumental in many milestone of APBioNET since he joined us in 2008. We are thankful to our members for sharing their tribute to Dr. Schoenbach, and below tribute from Dr. Schoenbach's close acquaintances and colleague.

"Having spent a significant portion of his career in Japan (RIKEN Genome Science Center 2000-2006 and Kyushu Institute of Technology 2009-2013), Dr. Shoenbach played a pivotal role in advancing bioinformatics and fostering international collaboration in Japan. His passion and dedication to his work helped pave the way for the well-known mouse cDNA FANTOM project. His expertise and dedication in the multiple phases of the project were instrumental. I still remember his warm, infectious smile, complemented with his long, curly hair. His positive attitude created a welcoming atmosphere on multiple occasions. Here I solemnly wish his soul to rest in peace."

Masanori Arita, NIG, Japan

[A tribute to Dr. Schönbach] Christian Schönbach: Scientist, Mentor, Friend

"Science has no country because knowledge is the patrimony of humanity, the torch which lights the world" -- Louis Pasteur, 1876 [1]

The above quote is cited in an inspiring opinion piece written by Christian Schönbach titled "Bright is the Future" for the newsletter of the Japanese Society for Bioinformatics (JSBi) [2]. Indeed, science had no country for Christian. In 1993 Christian came to Japan to pursue post-doctoral research at the University of Tokyo, and he would spend the entire remainder of his life and scientific career in East, Southeast, and Central Asia. Christian was equally at home in Tokyo, in Kumamoto prefecture, in the city-state of Singapore, or even in Astana, the capital of Kazakhstan. A life lived against the background of different cultures and languages, yet always deeply embedded and at home in the world of science.

Christian was an expert in immunology, but also made a high impact in diverse areas of the life sciences including functional genomics, microbiomics, even integration of genomic data with geographic information from satellite images. In all his research he applied bioinformatics. Christian acquired his Ph.D. towards the end of the pre-genomics era. He sometimes mentioned how GenBank came as a stack of floppy disks or CD-ROMs, and "sequence alignment" meant to move around letters of A, C, T and G in a text editor. Already at that time, Christian realized the potential of bioinformatics and how the then niche discipline would be of critical importance for the future of the life sciences. Throughout his career, including his time as elected president of APBioNet, his tenures in Japan, Singapore and Kazakhstan, in addition to his scientific output he spearheaded efforts to foster the growth of bioinformatics in East, Southeast, and Central Asia. Christian also had the foresight to include APBionet as a member of the Global Organisation for Bioinformatics Learning, Education & Training (GOBLET) from its very founding, putting the activities of the Asia-Pacific Bioinformatics Network into a global context.

I first met Christian in 2005 when doing an internship in his Immunoinformatics Research Team at RIKEN Yokohama. Ten years my senior and far ahead of me on the career path, he enabled me to do my first research in the life sciences in his laboratory, of course with a bioinformatics approach, and encouraged me to apply for graduate school at Keio University. His advice profoundly influenced my career trajectory and set me on the path to become a scientist myself. I still look up to Christian as my *senpai* and mentor who, like me, had his roots in Germany but was running a successful and vibrant research program in Japan, unbound by country borders. For Christian, supporting countless students like me with his invaluable mentoring was just "business as usual" and a normal part of his scientific work.

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Christian was also keenly interested in cultural events and how to bring the worlds of science and art together. I remember how Christian, as the organizer of the InCoB 2010 conference, invited the rock band "Negative Selection" to perform at the conference welcome party and how their music - classic rock - brought generations of scientists together.

When I think of Christian, I foremost remember his contagious energy, his concern for others and his excitement about science. Christian Schönbach passed away too young. We miss our fellow scientist, mentor and friend.

Anton Kratz, Ph.D.

Scientist, The Systems Biology Institute

References

[1] Harley JE. International Understanding: Agencies Educating for a New World, Stanford University Press, 1931. p15.

[2] Schönbach C. Bright is the Future. Voices from Foreign Members. Japanese Society for Bioinformatics Newsletter No. 32, March 2017. p 2-3. https://www.jsbi.org/media/files/_u/topic/file/NL32.pdf

Thank you to our members for the tribute in remembering Dr. Schoebach's legacy.
In this sorrowful time, our thoughts and prayers goes to his family.

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WORKSHOP HIGHLIGHT

Cross-Disciplinary Training in Computational Biology.

By: Masturina Mansor

CompBio was a 2-part, 14-day workshop which aimed to provide computational biology/bioinformatics training for selected postgraduate students from the USA and Asia. The first part started in 2022 (13th June – 25th June) which focused on genome sciences, protein structure prediction, molecular dynamics simulations and other emerging topics, while the second part in 2023 (9th July – 21st July) focused on deeper and more complex levels of analysis such as analysis of sequence data, biomolecule-ligand affinity estimation, coarse grain analysis, and enhanced sampling among many others. The workshop was hosted by the Biochemistry department of the National University of Singapore (NUS) and organised by the University of Montana in collaboration with the National Supercomputing Centre (NSCC), the Agency for Science, Technology, and Research of Singapore (A*STAR), National Science and Technology Development Agency of Thailand (NSTDA) and APBioNet.

Masturina Mansor

(Returning participant from Asia/Malaysia)

"With the sponsorship from APBioNet, I was able to attend CompBio23 as a returning participant. The seminars and hands-on training began on the 10th of July with an introduction to the program from Dr. Travis Hughes from the University of Montana. The workshop was structured in a way that allowed students to receive practical training sessions from scientists around the world on how to run various software for protein structure predictions, bioinformatics pipelines and genomics analysis from instructors and other students. The peerto-peer learning style was especially useful in encouraging students to network and learn from one another."

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WORKSHOP HIGHLIGHT

The practical sessions ranged from basic to complex, thereby allowing for new participants and those who were not computationally familiar to also follow the sessions. The introductory sessions were a good refresher as they covered more commonly used applications such as PyMol, VMD, AMBER molecular dynamics (MD) simulations and Autodock Vina. Whilst we were encouraged to use any protein of our choice, the protein of focus this year was the Peroxisome Proliferator Activated Receptor Gamma (PPARG). During the first introductory session to MD simulation, we simulated PPARG set to 10 µs which we would then analyse using CPPTRAJ in the second week, and visualise using PyMol or Blender. This session was very helpful for me in understanding how to analyse the data we had generated. I was also exposed to new software applications and repositories that I thoroughly enjoyed learning from the new guest speakers. These included D-I-Tasser for protein structure and function prediction, STRING-DB for protein-protein interactions, Nextflow for bioinformatics analysis, STAR for RNA-seq alignment, and OmegaFold. Some of these guests were also those who were directly involved in the development or maintenance of the software/repository. Interestingly, the workshop this year also included more informative sessions on the use of AI in life sciences such as the application of Alphafold, ESMFold, and OmegaFold for protein structure prediction as well as a comparative overview of their predictive strengths.

Overall, the CompBio workshop was an eye-opening experience into the world of computational biology/bioinformatics. The opportunity to connect and learn from and with exceptional scientists has enriched my journey as a postgraduate and junior researcher in the field. The exposure to new information and the refresher courses will no doubt be beneficial to me as I continue in my scientific pursuits within the field of computational biology.

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WORKSHOP HIGHLIGHT

Unveiling the Marvels of Computational Biology and Bioinformatics

By: Somenath Dutta

I am absolutely thrilled to share my remarkable experience at the CompBio-2023 research training cum workshop, an exhilarating 14-day voyage that unraveled the captivating realms of computational biology and bioinformatics. Organized collaboratively by the venerable University of Montana and the prestigious National University of Singapore (NUS), this transformative event aimed to empower handpicked doctoral and post-doctoral scholars from the USA and Asia with advanced insights and pragmatic expertise. The expedition commenced by laying the foundation with essential subjects encompassing genome sciences, protein structure prediction, and molecular dynamics simulations. Progressing into 2023, the subsequent phase delved even deeper, exploring intricate analyses such as sequence data interpretation, biomolecule-ligand affinity estimation, and cutting-edge sampling techniques.

Somenath Dutta

ApBioNet SAP Fellow 2023, Doctoral Fellow,

Pusan National University, Busan, South Korea

"A crowning jewel of the workshop was its unparalleled spirit of collaboration. Our experience was nothing short of extraordinary, as we were bestowed with hands-on mentorship from distinguished luminaries hailing from esteemed institutions around the globe. These luminaries came from prestigious institutions worldwide, including the National Institute of Health (NIH-USA), SIB Swiss Institute of Bioinformatics, University of Arizona (USA), University of Nottingham (UK), ASTAR - Agency for Science, Technology and Research (Singapore), Norwegian University of Science and Technology (NTNU), Macquarie University, The University of Queensland (Australia), and Turun yliopisto - University of Turku (Finland). Additionally, the involvement of notable entities like Prescience Insilico Pvt. Ltd. and APBioNet added an extra layer of engagement through captivating seminars and interactive training sessions."

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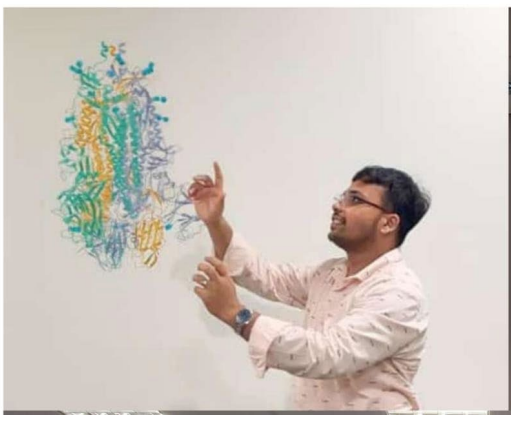
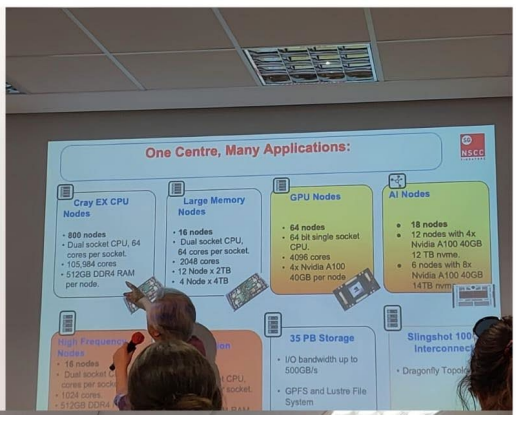
The workshop provided us with a unique opportunity to engage directly with the visionary minds behind the renowned #Itasser and #String databases. This immersive encounter not only provided comprehensive content but also nurtured an environment of collaboration that went above and beyond expectations. The practical expertise gained and the profound insights garnered are sure to etch a lasting impression on both our academic pursuits and professional growth. My heartfelt gratitude extends to the National University of Singapore (NUS) for being gracious hosts of this outstanding event. I am equally indebted to the unwavering support and generous contributions from the National Science Foundation (NSF) of the USA, the National Research Foundation of Korea, and the National Supercomputing Centre (NSCC) Singapore.





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The workshop's distinctive peer-to-peer learning approach fostered a dynamic exchange of ideas among participants. This all-encompassing format effortlessly bridged diverse levels of computational proficiency, making the content accessible and invigorating for all attendees. A truly remarkable highlight illuminated the workshop—a powerful union between artificial intelligence and the life sciences.

In addition to our academic pursuits, the cultural excursion was an absolute highlight of CompBio 2023. We embarked on a journey that immersed us in the rich tapestry of the host city's culture. This adventure included a serene River Cruise, offering breathtaking views of the city's night lights, a delightful Hawker Centre Dinner that introduced us to a spectrum of local flavors, and a mesmerizing Traditional Tea Ceremony at a historic Chinese tea shop. This particular tea shop holds a place of honor in history, as it was graced by the distinguished presence of Queen Victoria herself, who savored its exquisite teas.

These cultural experiences not only enriched our overall journey but also forged bonds among participants that went beyond academic connections.