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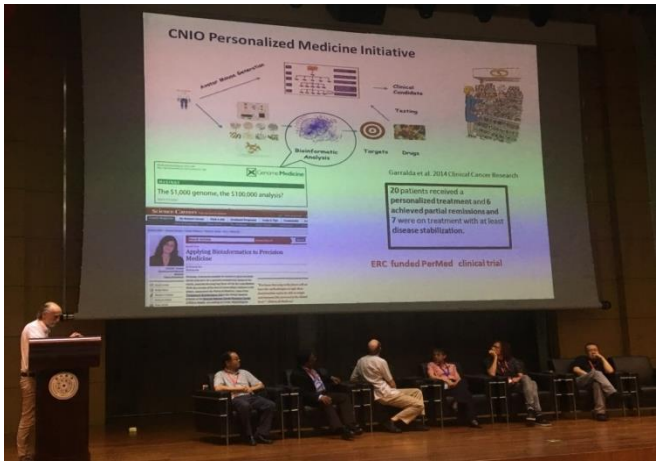
APBioNet Newsletter

HIGHLIGHTS

15th International Conference on Bioinformatics (InCoB2017), APBioNet AGM 2017 Travel Fellowship Awardees, Report from Travel Fellowship Recipient



Launch of Data Science eXchange Initiative (DSXi)

Inauguration of International Symposium on Bioinformatics (InSyB)

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APBioNet
Newsletter

Editor's Note

The year 2017 has been an eventful one for APBioNet! This year we witnessed several key new projects being launched and the continued success of our our annual flagship International Conference on Bioinformatics (InCoB), held in Shenzhen for the first time, and second time in China. The objective of InCoB is to provide a platform for experts and budding bioinformaticians to discuss and exchange ideas and thoughts on the development of bioinformatics in the Asia Pacific region, and this has been consistent throughout the 17 editions of the conference. This year, we were honoured to work with University Technology Sydney (UTS) and Tsinghua University to host the second InCoB in China.

We also witnessed the inauguration of two new projects: Data Science eXchange Initiative (DSXi) in January 2017, in collaboration with our MoU partner Perdana University; and APBioNet's second flagship networking vehicle, the International Symposium on Bioinformatics (InSyB), held in Jakarta from 11 to 12 July 2017. Both we were are big success in their own way! We hope these two initiatives would continue to grow over the coming years.

We are excited with the publication of the third volume of the newsletter under the current editorial team, and we look forward to publishing more exciting news on bioinformatics and related fields from the region. Do get in touch with our Secretariat (sec@apbionet.org) if you are interested in sharing any news with us.

Moving forward in 2018, we encourage our members to support our upcoming activities, such as of DSXi, and notably the 2nd InCoB in India, to be held from 26-28 September 2018 at Jawaharlal University, New Delhi. We also welcome bids to host the second InSyB.

Sincerely,
Mohammad Asif Khan
Editor-in-Chief

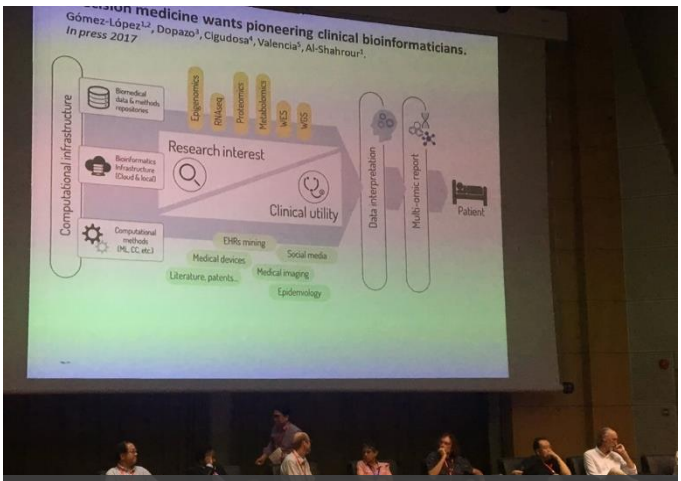
Advancing Bioinformatics and Allied Disciplines in the Asia-Pacific Region

APBIONET AGM 2017

By: Nik Elena Nik Mohamed, Perdana University, Malaysia

2017 was a full year for APBioNet. The Annual General Meeting (AGM), which took place on 20 September 2017 during the International Conference in Bioinformatics (InCoB) in Shenzhen, China, provided a reflection of all our activities this year.

The AGM began with the welcoming of new members of the Executive Committee who won their places through an election process. Congratulations to the new ExCo members! APBioNet is also thankful to have the continued expertise and leadership of several members who are serving for yet another 2 years on the committee.



AGM commence after plenary talk with APBioNet ExCo Members

Our President then delivered his annual report. Dr Christian Schönbach thanked the organizers of InCoB, and outlined the number of participants (95), publications (65), grants awarded (11) and travel fellowship awards (12) for the conference. He proudly announced the launch of the APBioNet Symposium Series (InSyb) in Indonesia and lauded APBioNet's continued participation in GOBLET and bioinformatics education activities around the world. To date, two bioinformatics workshops have been held in Indonesia and South Africa.

The workshop in South Africa is proof that this organization's reach is indeed global, and certainly not limited to the Asia Pacific region. The President discussed changes to our publication model, and spoke about the current membership fees. He proposed a change to the membership fees to adjust to the costs of maintaining the organization and to allow for APBioNet's growing number of participants from different backgrounds. APBioNet Travel Awards would also be available to students and post-doctorate individuals, which I am sure, is good news for our readers.

Dr Mohammad Asif Khan, member of the ExCo, then delivered the APBioNet Secretariat team's report. They played an instrumental role in executing many of our major activities this year. They organized the workshops, and the Data Science Exchange Intiative (DSXi) which took place in Malaysia late in the year. All the details are on our website (www.apbionet.org).

Dr Khan also presented the organization's Financial Report. He informed the attendees that to date, APBioNet has 459 members, and our closing balance as of 31 December 2016 was SGD 55,883. The AGM then moved on to future InCoBs where it was announced that InCoB 2018 would be in New Delhi, India. InCoB 2019 and 2020 would most likely take place in Australia.

The AGM closed with thoughts on the 'Asian Super Bioinformatics Conference' and a discussion on how to improve and grow the organization's network.

All in all, there was a positive atmosphere at the AGM, with many expressing their optimism and excitement for next year's InCoB. We hope to see you there!

INCOB2017: CONFERENCE CHAIRMAN REPORT

By: Jinyan Li, UTS, Australia

The 16th International Conference on Bioinformatics (InCoB 2017) was successfully hosted by the Graduate School at Shenzhen, Tsinghua University, Shenzhen, China from 20 to 22 September 2017. InCoB 2017 call-for-papers and call-for-posters attracted 168 submissions.

The speakers were Limsoon Wong (NUS, Singapore), Yong Hou (BGI-research, China), Jianzhu Chen (MIT, USA),

Saman Halgamuge (ANU, Australia), Xiujie Wang (CAS, China), Xinghua Shi (UNCC, USA), Yuelong Shu (SYSU, China) and Alfonso Valencia (BSC, Spain).

Opening ceremony of the 16th International Conference on Bioinformatics (InCoB), Shenzhen, China

The conference accepted one paper and recommended it to be published by *Bioinformatics* (still under additional reviews), accepted 3 papers to be published by *IEEE/ACM Transactions on Computational Biology and Bioinformatics* (TCBB), accepted 3 papers to be published by *Journal of Bioinformatics and Computational Biology* (JBCB), accepted one paper by *PeerJ*, and accepted 57 papers from the BMC track which have be published by *BMC Genomics*, *BMC Bioinformatics*, *BMC Systems Biology*, or *BMC Medical Genomics*. The program committee conducted at least two rounds of rigorous reviews for all of these accepted papers.

There were 8 keynotes and invited talks in the conference.

There were six conference sponsor organizations: International Society for Computational Biology (ISCB); Taihe Hospital, Hubei, China; School of Public Health (Shenzhen), Sun Yat-sen University, China; School of Electrical and Information Engineering, Anhui University of Technology, China; Graduate School at Shenzhen, Tsinghua University (GSST), China; and Advanced Analytics Institute, University of Technology Sydney, Australia. There were about 120 attendees from at least 10 Asia-Pacific countries and regions.

InCoB is the annual conference of Asia-Pacific Bioinformatics Network (APBioNet) that showcases the latest research and technologies in all areas of bioinformatics. InCoB 2018 will take place in India.

The seventeenth

International Conference on Bioinformatics and Computational Biology

(InCoB2018)

Theme: "**Bioinformatics for Big Data and Biomedical Sciences**"

Confirmed keynotes:

Burkhard Rost, Raj Acharya, Dmitrij Frishman, Mona Singh, B Jayaram, Yutaka Akiyama, Kenji Mizuguchi, Arne Elofsson, Lukasz Kurgan, Manju Bansal, Ozlem Keskin

As in the past, selected papers will be published in **BMC Bioinformatics, BMC Genomics, BMC Systems Biology, Bioinformatics, PeerJ, GigaScience** and **Computational Biology & Chemistry**. InCoB 2018 will consist of full papers, highlights track, poster session and invited talks. For detailed call for papers, posters and highlights, please visit

www.incob2018.org

Topics of interest (not limited to):

- Big data applications in biology
- Personalized medicine informatics
- Biomolecular structure and dynamics
- Bioinformatics for dignostics and clinical data
- Drug discovery and gene preioritization
- Artificial intelligence and Deep learning
- Computational Systems biology
- Next generation sequencing data analytics
- Gene-gene, protein-protein and other regulatory networks
- Health and agricultral informatics
- Parallel computing and algorithms in bioinformatics
- Data warehousing and integration for biological data

Conference chairs: Shandar Ahmad (General chair), GPS Raghava (Co-chair), Michael Gromiha (Co-chair)
Local Chair: Andrew Lynn **National Advisory Committee:** R K Aggarwal, Faizan Ahmad, Manju Bansal, Rakesh Bhatnagar, Alok Bhattacharya, Samir Brahmchari, Pinak Chakravarty, Pawan Dhar, B Jayaram, Madhan Mohan, Ram Ramaswamy, T P Singh, Vibha Tandon, D Velmurugan **Program Committee:** Pinak Chakrabarty, GPS Raghava, Shoba Ranganathan, Vinod Scaria, Christian Schönbach **Publication Committee:** Michael Gromiha, Mukesh Jain, Debasish Mohanty, Shoba Ranganathan, Muhammad Farhan SJAUGI, Christian Schönbach **Highlights Track Chair:** Paul Horton, Durai Sundar
Publicity and sponsorship Chairs: Sanjeev Kumar Singh, N Subbarao **Accommodation &Transport:** Arnab Bhattacharjee, A krishnamachari **Women in Bioinformatics Chair:** Shoba Ranganathan, R Sowdhamini
Organizing committee: Arnab Bhattacharjee, Anirban Chakraborty, Rupesh Chaturvedi, Yashmin Chowdhary, Debasish Dash, Sundar Durai, Tapash Ghosh, Abhinav Grover, Samudrala Gourinath, Mukesh Jain, Binod Kanaujia, Eros Kharshiing A Krishnamachari, Andrew Lynn, Srikant Mantri, Debasish Mohanty, Sukanta Mondal, HA Nagarajaram, Subbarao Naidu, Jeyakumar Natarajan, Srinivasan Ramachandran, Narinder Sahni, Vinod Scaria, Brojan Singh, Gajendra Pratap Singh, Sanjeev Singh, K Sekar, Sapna R Shah, Rita Sharma, R. Sowdhamini, N Srinivasan, K Veluraja, Gitanjali Yadav

For inquiries: incob2018@sciwhylab.org

> Travel Fellowship Award

By: Nurul Salwanie Che Wahid, Perdana University, Malaysia

InCoB2017 Travel Fellowship Recipients

As part of InCoB tradition, well deserved APBioNet and ISCB members were screened and selected for the Travel Fellowship Award. This year, InCoB2017 received applications from diverse geographical locations - Malaysia, China, Korea, Taiwan, Singapore, Australia and Iran. A total of USD 4,250 were given out to these students, who were screened based on strict criteria by the committee. Apart from receiving certificates during the closing ceremony of InCoB2017, the students received cash disbursements.

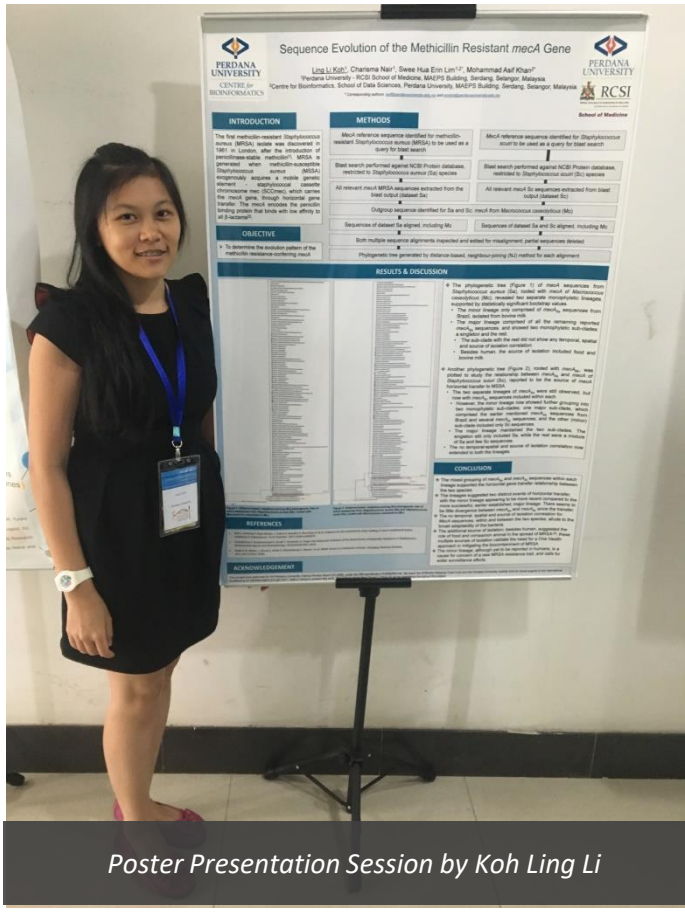
The recipients of this award were: Fatemeh Abbasi (Shahid Beheshti University, Iran), Huaming Chen (University of Wollongong, Australia), Yuansheng Liu (University of Technology Sydney, Australia), Lim Wan Ching (Perdana University, Malaysia), Herty Liany (National University of Singapore, Singapore), Joel Loe Zi-Bin (University of Malaya, Malaysia), Xin Wang (The University of New South Wales, Australia), Li Liu (Kunming University of Science and Technology, China), KyoungYeul Lee (KSBSB, Korea), Nikhil Pathak (NTHU, Taiwan), Truong Cong Doan (University of Ulsan, Korea) and Shaogui Wu (Guangxi University, China).

We congratulate all the students, and look award to awarding more people in the upcoming InCoB!

> Travel Fellowship Awardee Report

By: Koh Ling Li, Perdana University, Malaysia

First and foremost, I would like to thank APBioNet Malaysia Trust Fund and Perdana University for giving me this opportunity to attend the InCoB2017 via the travel grant and student mobility funding which helped cover part of my expenses. This invaluable experience has enriched my knowledge and boosted my self-confidence immensely.



Poster Presentation Session by Koh Ling Li

The 16th International Conference on Bioinformatics (InCoB2017) was a conference that showcased the latest research and technologies in all areas of bioinformatics. The theme for InCoB2017 was: *Big Data and Big Impact in Bioinformatics.* Key topics included integration of algorithms, bioinformatics, imaging informatics and health informatics for understanding of complex biological and medical phenomena. Other relevant topics covered translational bioinformatics, population genetics, drug design and discovery, biomarker identification, systems biology, biological sequence analysis, biomedical text mining, ontologies, expression data analysis, structural bioinformatics, metabolism data analysis and scalable data storage.

This was organised by the Asia Pacific Bioinformatics Network (APBioNet). The conference consisted of keynote speeches, invited talks, paper and poster presentations. The conference timetable started with registrations on 20 September 2017, that I attended all sessions until the closing ceremony on 22 September 2017.

The conference included 90 participants, 6 keynote talks, and 2 invited talks from different countries to present their recent works in the bioinformatics area. It provided me with valuable learning experience. It was an excellent opportunity to gather together, interact and exchange findings and views during the conference sessions, tea breaks and conference dinner. Consequently, I have been given the opportunity to get to know a number of academics, professionals and participants from different countries who have similar research interests.

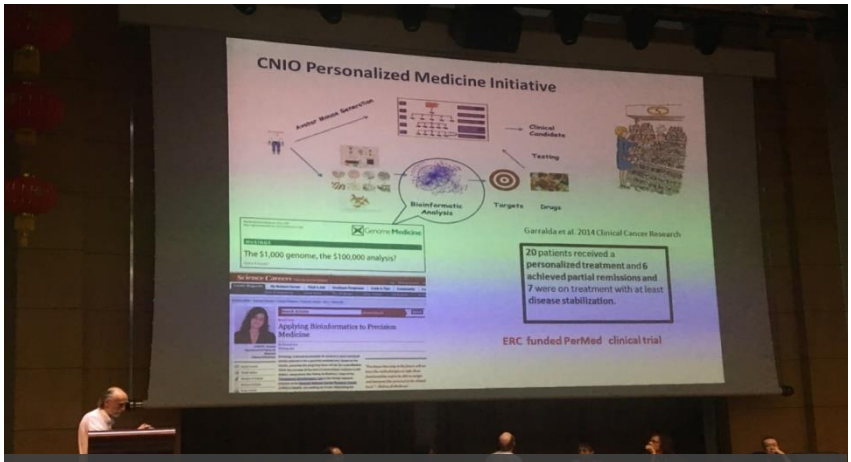
This conference is an ideal platform for the early results of my work, as it is an international forum which consisted of researchers, educationist, professors and field representatives who are experts in the bioinformatics. The poster that I submitted to the conference was: "*Sequence evolution of the methicillin resistant mecA gene*". There were 2 sessions each day for the poster presentations. This provided me with an opportunity to present my interesting research results, leading to a stimulating discussion with experts in this field, enabling knowledge exchange and a generation of new ideas. Besides that, I felt a sense of gratification having able to answer most of the questions directed to me.

However, during the first day of the conference, I was totally lost since I am from the medical field, and bioinformatics was totally alien to me. Being a medical student, I didn't realize that biology could be viewed in so many fascinating ways using informatics.

What impressed me the most was the introduction of precision medicine, also known as personalised medicine. In the future, I think this field of medicine will play an extremely important role in medical practice.

This can lead to vaccine strains selection and disease burden estimation, by tracing the origins and evolution of infectious diseases.

Furthermore, there was another research showed that there's evidence for the inverse comorbidity between central nervous system disorders and cancers detected by transcriptomic. In other words, people with Parkinson's disease will have lower risk of having cancers.



Plenary Talk by ISCB President, Alfonso Valencia on "Networks based approaches in epigenomics, evolution and biomedicine"

Personalised medicine can be achieved by simple investigations through easily available specimens, such as via urine and blood; advantages included being economical fast. For example, recent research has shown that tumourigenic DNA can be detected in the blood.

Besides, we learned about the emerging and re-emerging pathogens such as SARS in 2003, Ebola virus in 2014 and Zika virus in 2015, imposed a huge clinical burden on our society today. Bioinformatics played an important role to help us understand more about the disease, and hence, lead to better management for the patient. This can be done by integrating of the multi-dimensional and multi-source data (epidemiological data, biological information and medical record), and combination of different computational methods.

I believe that advancement of the bioinformatics research will greatly contribute to the medical practice in future. However, this needs to be implemented by the middle person such as the medical practitioners. Hence, I believe that teamwork between bioinformaticians and medical practitioners will yield a better result. I reflected with amusement on whether this would be a useful aspect to be included into the syllabus of the medical students.

Last but not least, many thanks go to my supervisors, Dr. Mohammad Asif Khan ,Dr. Erin Lim and to PU-RCSI and APBioNet for their generous financial support that allowed me to have this experience.

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INAUGURATION OF INTERNATIONAL SYMPOSIUM ON BIOINFORMATICS (INSYB), JAKARTA

By: Rika Yuliwulandari & Nova Eka Diana, YARSI University, Indonesia

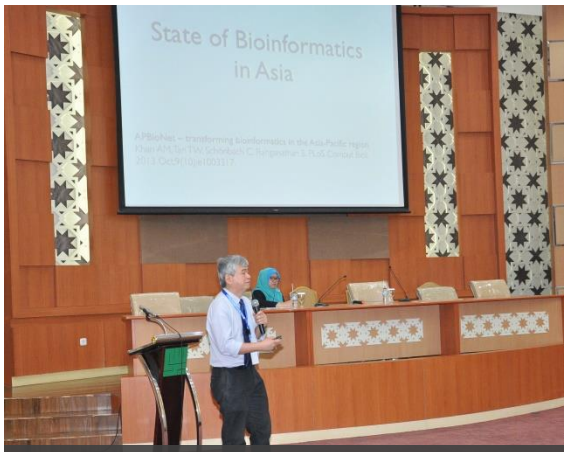
The first InSyB held at Universitas YARSI in Jakarta, Indonesia from 11 to 12 July, 2017, marks another historic milestone for APBioNet. In line with YARSI's medical focus, the theme selected for InSyB2017 covers Bioinformatics for Precision Medicine, included a session on High-Performance Computing and Big Data Analysis. InSyB 2017 was organized by dr. Rika Yuliwulandari, PhD., Head of Genomic Research Center (Universitas YARSI, Indonesia) with the strong support of senior APBioNet members, Prof. Shoba Ranganathan (Macquarie University, Australia) and Asst. Prof. Asif M. Khan (Perdana University, Malaysia). The inauguration of InSyB in Jakarta marks the efforts of the increasingly active Indonesian bioinformatics community who established the Indonesian Society for Bioinformatics and Biodiversity (ISSB) in May 2016.

Programme Committee Chair of InSyB2017

Chairman of Seminar Committee, Nova Eka Diana said this symposium is part of the series of Universitas YARSI's 50th Anniversary activities. "We are deliberately working with Perdana University and APBioNet so the target that we want to achieve can quickly materialize." This event was also significant for both Universitas YARSI and APBioNet, as this prepares Universitas YARSI to host the International Conference on Bioinformatics (InCoB) in Indonesia, the first ever to be held in Indonesia in InCoB's history.

In addition to the oral presentation, workshop, and poster presentation, Universitas YARSI also supported its attendees by sponsoring travel fellowship. A total of USD 450 was awarded to three deserving students (Intan Nurma Yulita, Shrmilita Mahendran, and Lim Wan Ching), who required financial support to attend the symposium.

The symposium was opened with a plenary talk by Prof. Kenneth Hon Kim Ban on "High-Throughput Bioinformatics for Biomedical Research and Precision Medicine", who delivered a talk about some recent research at NSCC Singapore which focuses on how computing and network resources can be integrated to analyze Next Generation Sequencing (NGS) from various sources. On the second day, InSyB 2017 was reopened with plenary talk about "Bioinformatics in Pharmacogenomics" by Associate Professor Su-Jun Lee of the Department of Pharmacology and Pharmacogenomics Research Center, Inje University College of Medicine, Inje University, Busan, Korea. InSyB 2017 was also honored to have Dr. Pawel Suwinski (Malaysian Genomics Resource Centre (MGRC), Berhad) and Dr. Ito Wasito, Ph.D. (Universitas Indonesia) for delivering the recent progress of bioinformatics research in Asia, especially in Indonesia.



Opening plenary by Prof. Kenneth of NUS

Keynote talk by Prof. Su-Jun Lee of Inje University

YARSI University is honoured to work with APBioNet for the inauguration of InSyB in Jakarta, and we look forward to more collaboration effort in advancing its mission in the Asia-Pacific region, particularly in Indonesia.

Photo Session during closing ceremony of InSyB2017, Jakarta

APBioNet invites the submission of Expression of Interest (EOI) for hosting InSyB from 2018 onwards through its EOI webpage (https://incob.apbionet.org/expression-of-interest-eoi/)

1 ST CONGRESS OF INDONESIAN SOCIETY FOR BIOINFORMATICS AND BIODIVERSITY (ISBB)

By: Arli Aditya Parikesit, I3L, Indonesia

On the 15th of February 2018, the 1st Congress of ISBB was held at Esa Unggul University, Jakarta Indonesia. The Congress was attended by local representatives from Esa Unggul University, Swiss German University (SGU), Indonesia International Institute for life sciences (i3L), Padjadjaran University (UNPAD), Institute Pertanian Bogor (IPB), Atmajaya University, Surya University, Brawijaya University, Biofarma (industry representative), the Indonesian Institute of Sciences and the Indonesian Academy of Sciences. Firstly, to get to know each other, each participant introduced his/her expertise and also gave their response and expectations for Bioinformatics in Indonesia. As a result, some participants were found to have the same interest in research and therefore, they could collaborate with each other. Then, the agenda was discussed, followed by the history of ISBB, short term and long term programs, membership process. The session ended with recently established ISBB committees.

Dr. Kholis Abdurachim Audah from Swiss German University was elected as the Chairman of the Association, and the meeting also determined the commissioners, the vice president, treasurer, secretary, head and member of divisions in ISBB such as publication division, cooperation division, competence division, organisation division. Each division discussed their programs where each person was given the opportunity to share his or her ideas. Moreover, ISBB also created a group chat in WhatsApp which can be used as a communication tool for ISBB members. As part of their short-term plans, ISBB will conduct a Bioinformatics seminar in Indonesia. ISBB confidently believes that all members can introduce Bioinformatics to the Indonesian society and make use of bioinformatics expertise to maintain and develop various field of research and products generated from Indonesian biodiversity.

SINGAPORE STUDY TRIP: Report from APBioNet Interns

By: Berbudi Bintang Pratama & Faisal Ali Akbar, Surya University, Indonesia

We, as undergraduate students of Surya University Indonesia, majoring in the field of Biotechnology, have come to realize the immense importance of bioinformatics. We believe in the potential of bioinformatics as the backbone of future biotechnology. Given the lack of exposure and opportunities to learn bioinformatics in Indonesia, we saw the internship component of the programme as a gateway to get exposure of the field. Seeking neighboring institutions leading the effort in bioinformatics, we have been accepted and are currently undergoing an internship at Perdana University Centre for Bioinformatics (PUCBi) for a period of two months. Given that our internship program is located in Malaysia and not far away from Singapore, we felt that it would be a missed opportunity not to visit and learn about the leading bioinformatics landscape in Singapore. As such, we arranged and underwent a study tour to several bioinformatics-linked institutions in Singapore from the 14 to 17 February 2017.

From left: Berbudi Bintang, Faisal Akbar

At the Bioinformatics Institute of Singapore (BII), We were greeted by Dr. Verma Chandra. We had the wonderful opportunity to have a discussion with him in his office. Dr. Chandra explained to us the inner workings of an established bioinformatics institution. He described to us how an advanced and specific research could have started from only a simple question. Yet to answer such questions, scientists would need to break down every layer of complexity that needs to be looked into. Therefore multiple teams of scientists and bioinformaticians would need to work together in order to look into one single biological phenomenon, each team handling a specific aspect or a specific problem of the question itself.

Only until all the results from each of the research teams have been assessed and thoroughly combined, will a scientific research result in answers. Which is why exists various fields of study, dedicated on the research of specific aspects, which then cooperates with other fields in order to carry on a successful research.

Regarding that aspect Dr. Chandra then showed us the kind of research that he partakes in. He showed us one of his results on a molecular docking project which involves aspects of molecular dynamics. As an example of the applications of molecular docking, scientists could attempt to stop a protein's activity by incorporating a molecule in its active site. In order to make this concept a reality, molecular docking allows scientists to predict and model the three dimensional structure of molecules so that an assuring model could be established before attempting wet lab research as the next phase. Results from the calculations would lead to answers like determining the most optimal moment and location to introduce a ligand to a protein, locating other locations for ligand binding purposes, or even the molecular design of the ligand itself.

These aspects are connected to the level of binding affinity between the drug and its target cell. What's more to consider regarding binding affinity is that the drug will only bind to a specific target and not unwanted binding interactions that may lead to side effects. In this case, dynamic modelling aids scientists to identify the unique binding interactions between ligands and a molecule. An example would be that a ligand would be successfully activated when it has had five interactions with a molecule, so if scientists can confirm that the interactions needed happens only in the target location then the ligand can be assured to be target specific. This way a scientist could design a ligand structure that would only bind to a specific target of a molecule.

Lastly Dr. Chandra also pointed out the importance of statistical and analytical skills that were required in the bioinformatics field. He did this by giving us an example of a linear regression analysis result. The results of the graph looked seemingly great and significant, but at a second glance most of the data had deviated from the slope trend. This kind of analysis would need deep understandings of the concept, and Dr. Chandra had reminded us never to take any result for granted and to always question every possibility when faced with an outcome.

As aspiring scientists Dr. Chandra had truly widened our horizons towards bioinformatics and to the scientific research world as a whole. He gave us the insight and way of thinking that were necessary for the making of great scientists. We are truly grateful for Dr. Chandra and the opportunity that we had in BII.

*With Dr. Chandra at A*Starr*

We then had the opportunity to our visit National Supercomputing Centre (NSCC) Singapore. We were greeted by Ms. Cindy Lim and Ms. Jasmine Yap who then introduced us to Mr. Leong Wai Meng, they provided us with a tour of the supercomputer setup that they had. The supercomputer system that NSCC has is named ASPIRE1 which stands for Advanced Supercomputer for Petascale Innovation, Research, and Enterprises. The system is capable of up to 13 petabytes of storage as well as the ability to run multiple processing operations on a petascale. This feature is among the first of its kind in Southeast Asia and is a big factor for the advancements of research in Singapore.

We were also shown the cooling system of ASPIRE1. Contrary to popular belief, the temperature of computer systems doesn't necessarily have to be that of an air-conditioned room. Instead, the temperature of the setup merely needs to be below the maximum temperature that it is able to operate in. To grant these conditions the processing section of ASPIRE1 uses advanced water cooling technology that keeps the system in room temperature. The hot water is cycled to a cooling chamber located on the floor above ASPIRE1 and cycled back after being cooled. This system alone has allowed NSCC to minimize a significant amount of energy to maintain the supercomputer system. In Singapore, NSCC has a direct connection with A*STAR, National University of Singapore (NUS), as well as Nanyang Technological University (NTU). All in all we were shown how an advanced processing network incredibly enhances the research capabilities of a country. As we have come to an era that utilizes immense amounts of raw data for various fields, including biological research, big data processing abilities is vital for the success of all kinds of research.

With Mr. Leong Wai Meng NSCC

At the Genomics Institute of Singapore, we first visited the computational phenomics platform where we were greeted by Prof. Judice Lie Yong Koh. There we were shown the phenomics laboratories as well as the analysis equipment which GIS utilizes. One of which is the High Content Screening (HCS) equipment which has great usage in computational phenomics. Prof. Judice showed us the application of HCS methods in cancer research. The research is done by the culturing of the latest of cancer tumors extracted directly from patients.

The culture then grows into spheroid cells which is biologically identical to the environment of actual cancer cells. These spheroids are then treated with anti-cancer drugs in an attempt to analyze drug effectivity towards tumor cells. This type of research also supports the future development of personal medication as the research is done by using tumor cells extracted directly from specific patients.

We are truly grateful for Prof. Judice and everything she had showed us at GIS, all the equipment and researches are exceptionally interesting. Our insights have yet again broadened to what bioinformaticians are able to do in biological researches as well as the importance of bioinformatics study as a whole.

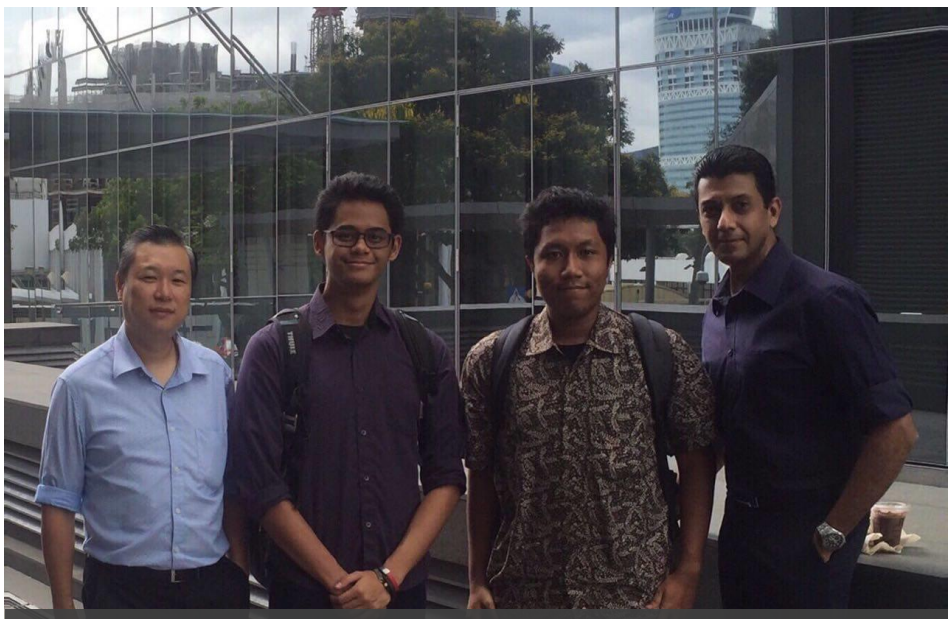
With Prof. Judice Lie Yong Koh at GIS

Our last institution visit was the Bioinformatics Centre, National University of Singapore. There we had the pleasure to meet Mr. Mark de Silva and Mr. Lim Kuan Siong, they are the ones in charge of IT infrastructure development for the bioinformatics center which includes clusters of computers which handles all processing jobs and storage. Together with Prof. Tan Tin Wee they have built the entirety of the IT infrastructure from scratch, establishing a foundation for the computational research of scientists in the country.

Similar to that of the setup in NSCC, we were shown the computers that made up the institution's IT infrastructure. The whole setup had similar components to the ASPIRE1 system in NSCC only that of a smaller scale. Among the computers that made up the system were five servers of processing nodes and storage drives. The storage drives contains both SSD and HDD memory, HDD being the older storage technology is still utilized for storing data with less relevance to optimize costs. The storage sections are capable of storing research data for up to 7 years with appropriate backup files. So in the event of a hard drive error, lost data would not be an issue.

We are truly grateful for the time we were able to spend with Mr. Mark and Mr. Kuan Siong. Our discussions have led to a better understanding about the different roles that are available in bioinformatics and how bioinformaticians are able to impact biological researches. Through this bioinformatics study tour in Singapore, we have discovered immense insight on applied bioinformatics, bioinformatics research, as well as actual cooperation with industries outside of academics. Each institution held different fields of expertise in the study of bioinformatics. Despite the contrast in difference of fields, mainly biological analysis and information technology based, all the institutions we visited are interconected as bioinformatics is fundamentaly composed of biology and computer science. As such we have gained has a better understanding of the different roles in which a bioinformaticians can take part.

As undergraduate students ,who have taken an interest in bioinformatics we could not have asked for a better opportunity to get exposure in the field. Once again we are immensely grateful to APBioNet for the financial support and to all the institutions and all the esteemed bioinformaticians that welcomed us during our bioinformatics study tour in Singapore.



With Mr. Mark De Silva and Mr Lim Kuan Siong after tour at Bioinformatics Center, Singapore

LAUNCH OF DATA SCIENCE EXCHANGE INITIATIVE (DSXI)

By: Nurul Salwanie Che Wahid, Perdana University, Malaysia

After 6 months of planning, the Secretariat, together with its partner, Perdana University School of Data Sciences (PU-SDS), decided that 2017 would be a perfect year to launch its first initiative – Data Science eXchange Initiative (DSXi: http:dsxi.perdanauniversity.edu.my) which would combine several engaging activities that would bring people from research, academics and industry under the same roof.

Bearing the younger generation in mind, the activities included in this initiative were: Public Lecture Series, a Bioinformatics Roadshows and a Data Science Carnival. This initiative was officially launched with the first public lecture by Dr. Olivo Miotto, who delivered a talk entitled "Big Data in Malaria Elimination" on 23 May 2017. This was followed by four other lectures (scheduled throughout 2017. The public lecture series was planned to include inspiring speakers from a plethora of fields in the data science domain - Dr. Farouk Abdullah in particular was invited to give a talk on "Towards a Data Driven Organisation (DDO)", and more topics and speakers are currently being considered to be apart of this series in the future.

Dr. Olivo Miotto with Prof. Zabidi Hussin after delivering his talk on "Big Data in Malaria"

Mr. ChuangKee Ong before his talk on "Large Scale Bioinformatics Data"

Dr. Firdaus Raih after his talk on "Biological 3D Structure Data"

Dr. Farouk Khan after delivering his talk on "Data Driven Organisation, DDO"

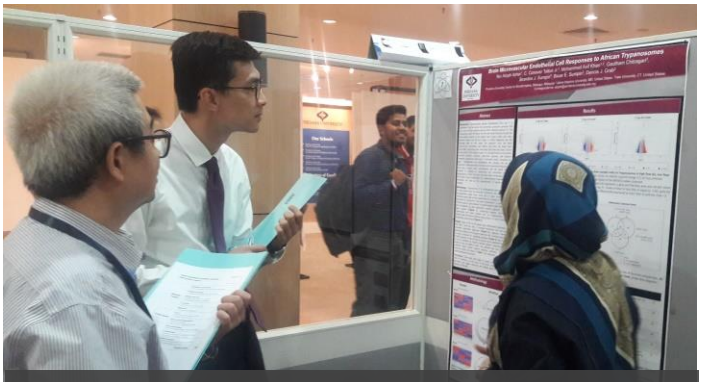
In addition to the Public Lecture Series, this initiative also included a parallel activity. The Bioinformatics Roadshows were directed and attended by Dr. Mohammad Asif Khan. The first roadshow was held in
North-West University, South Africa (5 to 10 September 2017), and was followed by Universitas Yarsi from 6 to 14 March 2017. This roadshow finally concluded at Universiti Sains Malaysia (10 to 18 July 2017). The roadshow was very well-received among the participants and has particularly sparked discussion on bringing it to Brazil in 2018.

The highlight of this initiative was the Data Science Carnival that was organized from 2 to 4 October 2017. This 3-day event included engaging activities such as free-admission Data Science Short Courses, Poster Showcase Presentation competition, lucky draw, quizzes and games. The carnival brought in over 120 participants from various universities and local research institute.

The Data Science Carnival was also included as a satellite event of the Big Data Week 2017 (http://nextbigtechasia.com/techjam/). Winners from the Poster Presentation Competition were invited to present their work to the public on the closing ceremony of this event.

Linux Exploration Demo

Dr. Khang Tsung Fei during his Data Science Short Course on "Introduction to R"



Poster Showcase Presentation during Data Science Carnival

Photo Session with all Data Science Carnival participants

This initiative has undoubtedly kick-started active discussion among local and international students, academics and corporate individuals. We are hopeful and excited to repeat the success of 2017 in 2018, perhaps with more diverse set of activities that we can introduce to the public that can spur the discussion on data science, its applications and opportunities.

UPDATES FROM OUR PARTNERS

> GOBLET (Global Organisation for Bioinformatics, Learning, Education & Training

GOBLET
Global Organisation for Bioinformatics
Learning, Education & Training

Established as a not-for-profit Foundation in 2012, the Global Organisation for Bioinformatics Learning, Education & Training (GOBLET; mygoblet.org) brings together 30 international organisations, networks, and societies to harmonise worldwide bioinformatics training activities. Our mission is to cultivate the global bioinformatics trainer community, set standards and provide high-quality resources to support learning, education and training.

GOBLET marked its 5-year anniversary in November at its Annual General Meeting held in Oeiras, Portugal. The meeting highlighted GOBLET's achievements over the past 5 years including Train-the-Trainer, Train-the-High School Teacher, and end-user workshops held in Boston, Toronto, Cape Town, Brisbane, Manchester, and Melbourne and 8 publications in journals and pre-print archives.

Learn more about GOBLET at mygoblet.org

> Association for Medical and Bio-Informatics, Singapore

The Association for Medical and Bio-Informatics, Singapore (AMBIS; http://www.ambis.org.sg/), an affiliate of Asia-Pacific Bioinformatics Network (APBioNet), was set up with the objective to promote growth and excellence in the exciting disciplines of both medical informatics and bioinformatics, in Singapore.

AMBIS

Originally set up in 1986 as the Association for Informatics in Medicine, Singapore (AIMS) and later renamed in 2003 as AMBIS, the association is actively involved in promoting collaborations and exchanges among the medical and bio-informatics community through conferences, meetings, seminars, workshops and symposia. AMBIS is the official national entity representing Singapore in the Asia Pacific Association for Medical Informatics (APAMI) and in the International Medical Informatics Association (IMIA).

BE PART OF THE ASSOCIATION

AMBIS welcomes participation in the form of a variety of memberships: Ordinary members, student members, corporate members, honorary members, and life members. Sign up here: http://www.ambis.org.sg/membership.html

WHAT'S NEXT?

With the newly appointed executive committee for 2017-18, AMBIS is looking forward to an exciting year of creating awareness, expanding its reach, and actively promoting medical informatics and bioinformatics in the region.

GOBLET AGM 2017, Portugal

By: Mohammad Asif Khan, Perdana University, Malaysia

The 2017 Annual General Meeting of the Global Organisation for Bioinformatics Learning Education and Training (GOBLET) took place from the 22nd to the 24th of November in Oeiras, Portugal. The meeting marked the fifth year anniversary of the organization, established in 2012. The AGM was preceded by one day of workshops on e-learning, organized jointly by GOBLET and ELIXIR-EXCELERATE and followed by a Train-the-Trainer Mini workshop on developing mastery rubrics for training, on the afternoon of November 24. The meeting was hosted by Pedro Fernandes and took place on the grounds of the Instituto Gulbenkian de Ciência (IGCQ) near the Atlantic Ocean shores of Oeiras, not too distant from the capital city, Lisbon.

The meeting was attended by member representatives from Europe, Africa, Asia, Americas, as well as several Australians (few via video link). APBioNet was represented by Dr. Mohammad Asif Khan (2016-2018 Deputy Vice-President Education). The off-cycle Committee Chair election results for new GOBLET officers were also announced. The new team, as well as the updated vision and mission statements for GOBLET has been announced on the GOBLET website (www.mygoblet.org), including the minutes of the meeting, directly available here http://bit.ly/gobletagm2017oeiras.

Thanks to the efforts of the local organiser Pedro Fernandes from IGCQ, the meeting ran seamlessly, with plenty of time for reflection on the progress of GOBLET since its inception, especially in light of the 5 year anniversary, and fruitful discussions about the objectives of the society over the coming year. During the meeting, the group spent time on defining standard specifications for bioinformatics training and the mini-workshops aimed at upgrading the skills of the trainers.

As a Gold member, APBioNet has the potential to shape the future of GOBLET and to leverage its collective expertise in bioinformatics training to further APBioNet's mission. This is dependent on APBioNet's members getting involved in GOBLET, which provides a great environment for bioinformatics trainers and educators to network, share expertise and support each other's efforts. During the meeting, APBioNet representative contributed several ideas and suggestions, including highlighting the need for GOBLET's presence to be felt in Asia, which is currently lacking. A proposal was made to organize GOBLET 2019 in Southeast Asia, which was well-received and GOBLET leadership requested for formal submission of expression of interest by interested parties. The next AGM will be in Toronto, to be held in November 2018.

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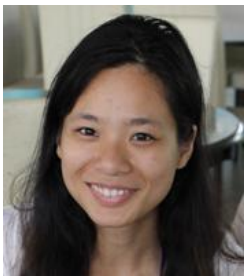

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