





# PROGRAMMES IN BIOINFORMATICS

SCHOOL OF DATA SCIENCES



#### **ABOUT PERDANA UNIVERSITY**

Perdana University is envisioned to be an education-research hub for the region fulfilling the needs of the nation for competent health science graduates. It was established as a Public Private Partnership (PPP) initiative by Academic Medical Centre Sdn. Bhd., a subsidiary of Chase Perdana San. Bhd. with the support of the Prime Minister's Department. The University is well equipped with leading edge teaching and learning facilities.

#### **DEAN'S MESSAGE**

The 'omics' revolution allows description of the molecular landscape of individuals with astonishing depth and breadth. However, the translation of the 'omics' discoveries and unravelling of the mysteries of complex chronic diseases will require significant cross-disciplinary collaboration. Data Science is an interdisciplinary field that uses a combination of approaches to extract knowledge or insights from data. It is an exciting area with tremendous opportunities to improve the quality of life for people across the world. Bioinformatics is a transformative science that brings together this form of collaboration. The School aims to make significant contributions in the field of data sciences with an initial phase focus on life sciences. The School is BSC (Hons) (With Distinction) (UM), currently supported by the Centres for Bioinformatics and Computing, a network of local and international partners that keeps the School connected and aware of the latest developments, demands and headwinds of the industry.



Assoc. Prof. Dr. Yam Wai Keat Acting Dean PhD (USM)

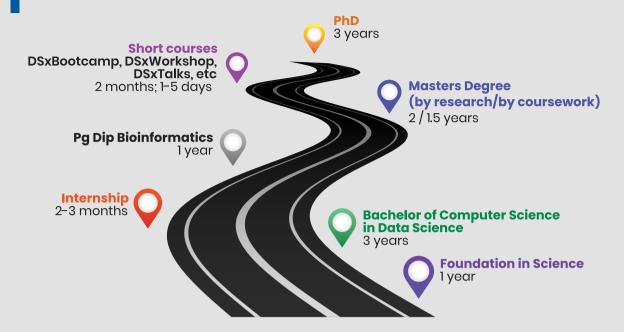
#### **WHY STUDY BIOINFORMATICS AT PERDANA UNIVERSITY?**

The Perdana University School of Data Sciences, through its two Centres for Bioinformatics and Computing, provides a nurturing environment for students to prepare themselves for the New Biology of tomorrow, which will be more data and precision-driven.

The following are the key strengths of the University in the field of bioinformatics:

- · Highly qualified and published faculty with international exposure and experience
- · All the faculty collectively cover a broad range of current areas of research interest in the life sciences
- · Access to key strategic partners from the academia and industry who are thought leaders in the field
- Access to computational resources, such as HPC/Grid clusters and network of supercomputers

#### **EDUCATION PATHWAY**



### UNIQUENESS OF THE PROGRAMMES

- Low student intake for quality education
- Students from a wide variety of background may enroll for the programmes:
  - Life Sciences (Biotechnology, Biology, Molecular Biology, Botany, Zoology, Physics, Chemistry, and Forensic science, among others)
  - Medicine related (Biomedicine, Biomedical, Microbiology, Biophysics, Biochemistry, Medicine, Ophthalmology, Otolaryngology, Pharmacology, Pediatric, Pathology, Nursing studies, Anaesthesia, Anatomy, Radiology, Medicine, Orthopaedic Surgery, and Psychology)
  - Dentistry
  - Computing, IT, Computer Science
  - · Mathematics, Statistics
  - Food Science, Nutrition
  - Environmental Science
  - Agriculture
  - Sports Science
- The programmes provide a balance between theoretical understandings and practical
- A focus on exposure to the research pipeline, from inception and critique of ideas to communication and defence of research findings.

### BENEFITS OF THE PROGRAMMES

- Graduates will be able to:
  - Develop and apply innovative bioinformatics solutions to complex research problems
  - Further their education in bioinformatics or any field in the life sciences (basic, applied or services)
  - Pursue a career in the life sciences, either in the academia or industry

### POSTGRADUATE PROGRAMMES OFFERED

		Programme Details		
Programme	Overarching Goals	Mode/ Duration of Study	Credit Hours	Academic Entry Requirements
Postgraduate Diploma in Bioinformatics KP/JPS(N/545/7/0032)1/19	Empower bioscientists (students, researchers, and IT professionals supporting biologists) with the ability to develop and/or apply innovative bioinformatics solutions to solve biological problems.	Full-time (1 year) By Coursework	33	Bachelor's degree in Biology, Computer Science/IT or a related field with minimum CGPA of 3.00 or other equivalent qualifications approved by the Senate of Perdana University.
Master of Science (MSc) Bioinformatics By Coursework	Strengthen and advance the research capability and scholarly practice of those who aspire to become researchers in the field of science, with concentration in bioinformatics.	Full-time (1.5 years)  By Coursework	40	A bachelor's degree with minimum CGPA of 2.50 or equivalent, as accepted by the PU Senate OR A bachelor's degree or equivalent not meeting CGPA of 2.50, can be accepted subject to a minimum of 5 years working experience in relevant field.
кр/Jps(n/545/7/0102)10/23  By Research кр/Jps(R/545/7/0039)6/24		Full-time (2 years)  By Research	N.A*	Bachelor of Science (BSc) with minimum CGPA of 2.75 or other equivalent qualifications approved by the Senate of Perdana University. CGPA of 2.5 and above may be considered on case by case basis. Good competency in English.
Doctor of Philosophy (PhD) KP/JPS(N/720/8/0061)6/19	Develop the research capability and scholarly practice of those who aspire to become researchers in the field of science.	Full-time (3 years) By Research	N.A*	A Master's Degree (MQF level 7) accepted by Perdana University's Senate; or other qualifications equivalent to a Master's Degree (MQF level 7) that are recognized by Perdana University's Senate.

### WORDS FROM THE PRESIDENT OF THE ASIA-PACIFIC BIOINFORMATICS NETWORK





"The global need for qualified bioinformaticians, particularly in the Asia-Pacific region, is growing and cannot be met unless we can provide targeted skills training in the field of bioinformatics. The postgraduate programmes in Bioinformatics offered by Perdana University are far-sighted and carefully thought out to meet these needs. I strongly recommend these programmes as they systematically guide students from a solid foundation to advanced knowledge, along with elements of critical thinking and scientific communication, both written and oral, which are key skills for students to succeed."

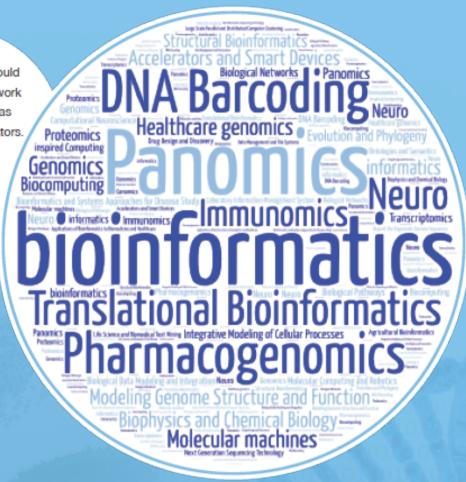
#### Associate Professor Dr. Mohammad Asif Khan

President of the Asia Pacific Bioinformatics Network (APBioNET; one of the largest and oldest bioinformatics organization in the region)

### CAREER OPPORTUNITITES

This programme would prepare graduates to work locally or internationally as researchers and/or educators.

They can also work as industrial workers in the following areas:



### FACILITIES IN THE PROGRAMME

Computer laboratories with high-end workstations that are equipped with cutting-edge toolkits and resources will be used for the teaching and learning activities of the students.



#### RECOGNITION

- The programme is recognized by the Malaysian Qualification Agency (MQA) and approved by the Ministry of Education (MOE) Malaysia.
- The programme is endorsed by Asia-Pacific Bioinformatics Network (APBioNET), an organisation dedicated to the advancement of the field of Bioinformatics.





### POSTGRADUATE DIPLOMA IN BIOINFORMATICS

Ms. Siti Safura Jaapar

Pioneering Batch, Jan 2015 Intake Graduate.

"This one-year Programme was very concise and it provided me with the necessary information and skills in bioinformatics, from basics to advanced topics. The knowledgeable and friendly lecturers made the teaching and learning sessions so efficient and enjoyable. This is an awesome Programme, as it increased not only my hard skills in scientific research, but also boosted my soft skills. I feel blessed and grateful to receive tutelage from a great and supportive teaching team and be part of the pioneering batch. The Programme gave me confidence to pursue further studies in bioinformatics. I signed up for a PhD in Bioinformatics with Perdana University."



#### **MASTER OF SCIENCE (MSc) BIOINFORMATICS**

#### Ms. Tan Swan

Pioneering Batch, 2015 Intake Student



"The MSc in Bioinformatics Programme by Research at Perdana University is one of the best things I decided to do for myself. Besides carrying out research, I learned the fundamental elements of scientific writing, presentation and communication skills, and received great exposure to the world of research in this field. I consider myself fortunate at being able to study in a conducive and open-minded-environment that encouraged a healthy research culture. By having an awesome and supportive supervisory team who are continuously involved in my academic performance and personal development, together with fellow students who are always willing to lend a helping hand, my postgraduate journey thus far has been smooth and rewarding. I am on my way to becoming a well-positioned data science graduate, given all the skills I have acquired, which will serve as a stepping-stone in my career pathway. I am proud to be a part of the pioneering batch. What I have gained from the Programme is indeed priceless."

#### Ms. Hadia Syahirah Abd Rahman Pioneering Batch, 2015 Intake Student

"The combination of independent and supervised research-based learning has taught me the real life experience of a researcher and trained me in becoming a good one myself. The Programme provided a very friendly and healthy environment to learn and work on one's research interest. The faculty are skilled and knowledgeable in their area of research, very helpful and exceptionally supportive. The postgraduate students form an excellent support network. All in all, it has been a very positive and rewarding experience to do my MSc by Research at Perdana University."



#### **DOCTOR OF PHILOSOPHY (PhD)**

Ms. Siti Safura Jaapar Pioneering Batch, 2016 Intake Student



"A few months into the PhD Programme, and I have already gained exposure to many aspects of an academic research endeavor, such as how to choose a research project of scientific value, apply for ethics approval, write a grant application to source for research funding, and prepare manuscripts for scientific publication, among others. I believe that my supervisory committee's extensive experience, deep knowledge and valuable insight will be of tremendous value to my PhD research work and personal growth."

#### **FINANCIAL AID**

To attract the best students to Perdana University, we are committed to finding resources to help fund their education.

Please continue visiting our website at http://perdanauniversity.edu.my/puscds to know more on the programmes and scholarships provided.

#### **OUR PARTNERS**

























Universidade Federal DE PERNAMBUCO







## PUScDS-APBioNet Joint INTERNSHIP PROGRAMME

We invite students to apply to The Perdana University School of Data Sciences (PUScDS) and the Asia-Pacific Bioinformatics Network (APBioNet) joint internship programme.

The programme aims to provide a comprehensive industrial training on the use of data science in the areas of research, education, and/or services. Data science skills are in great demand both locally and worldwide. APBioNet will serve as a nexus for connection and exposure to the data science community.

During the training period, students will have the opportunity to:

- enhance their scientific knowledge
- gain professional experience
- interact with faculty and graduate students
- present their work at the end of the training

Interested candidates can send their resumes to: **pu.sds@perdanauniversity.edu.my** 

#### **FIND US HERE**

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