

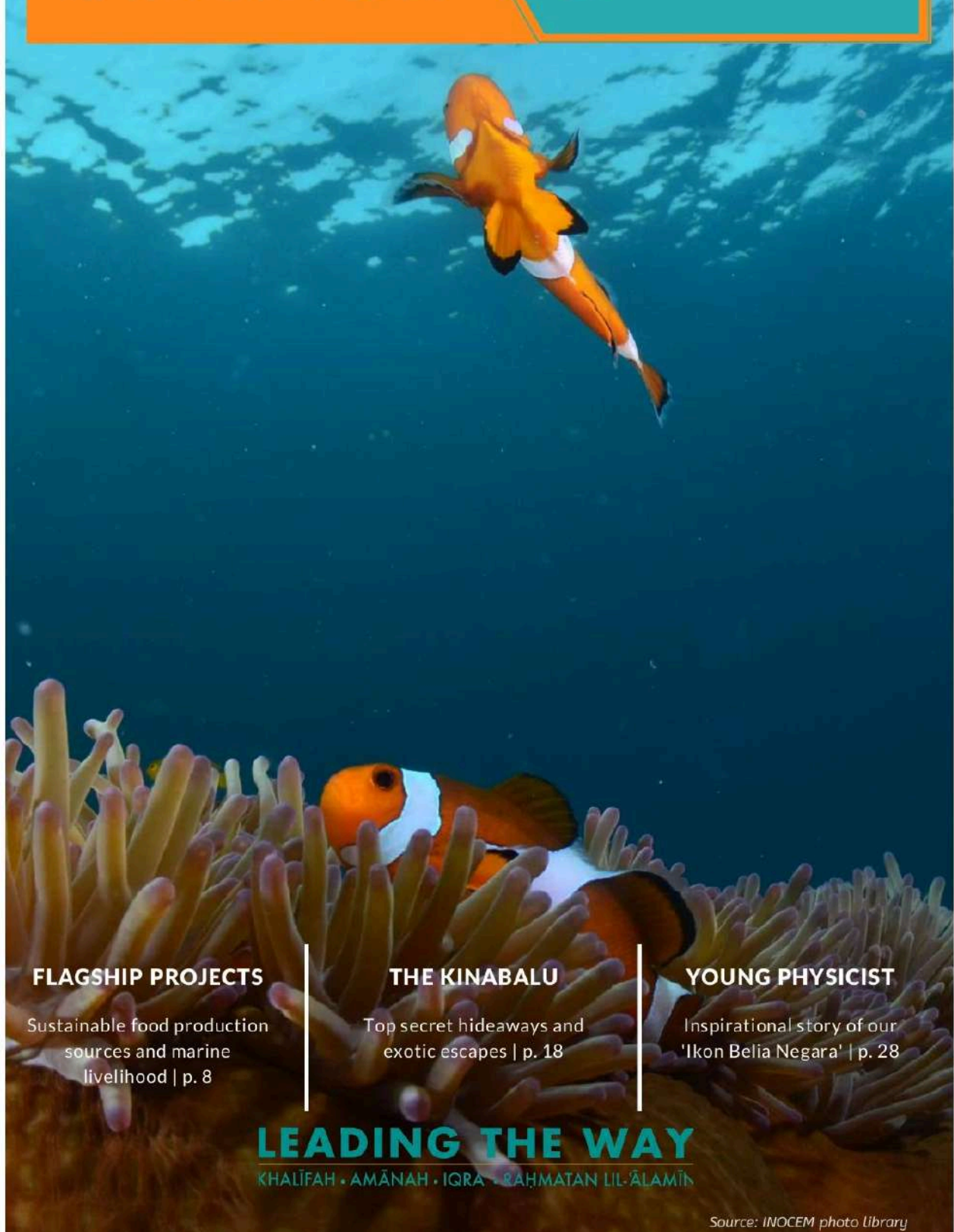


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ISSUE 2
DEC 2019

SCIENCE

@iium



FLAGSHIP PROJECTS

Sustainable food production
sources and marine
livelihood | p. 8

THE KINABALU

Top secret hideaways and
exotic escapes | p. 18

YOUNG PHYSICIST

Inspirational story of our
'Ikon Belia Negara' | p. 28

LEADING THE WAY

KHALIFAH • AMĀNAH • IQRA • RAḤMATAN LIL-ĀLAMĪN

Source: INOCEM photo library

A GLOBAL CRISIS

783 million people do not have access to clean and safe drinking water globally according to the United Nations Millennium Development Goals Report



Corruption has appeared throughout the land and sea by [reason of] what the hands of people have earned so He may let them taste part of [the consequence of] what they have done that perhaps they will return [to righteousness]. (Surah Ar-Rum ayah 41)

The still shot captures the scenic view from Kinabalu Park, a World Heritage Site. Kinabalu is the highest peak in Borneo's Crocker Range and the highest mountain in Malaysia. Discover more on the Kinabalu KoSFit program in the next pages.

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ON THE COVER

The front cover shows the 'Nemo' fish in its habitat. *MashaAllah*, what a fascinating sight. Being reminded of the beauty of nature is truly a privilege. Our future generations might lose this opportunity if we do not start living a sustainable lifestyle. How to live sustainably? Find the answers on page 8.



Paving the Way
for IIUM
Roadmap

07



KOS Networking

09



Workshop on
Dynamical Systems
and Their
Applications in
Mathematical
Physics, Engineering
and Economics
(WDS) 2019

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KoSFIT Kinabalu

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03

DEAN'S FOREWORD



PROF. DR. SHAHBUDIN SAAD

WE'RE IN THIS TOGETHER

Alhamdulillah. All praise is due to Allah, the Lord of the Worlds, the Beneficent and the most Merciful.

The dawn of 2019 brought us endless possibilities of success and scientific adventures. IIUM had laid out a roadmap for its members in achieving these excellent outcomes. The underlying theme is *Istiqamah* (Integrity) and it is designed by entwining the Strategic Direction of Humanising Education through Maqasid Shariah (MAS) and Sustainable Development Goals (SDGs). The result of this are members who are *amanah*, balanced and responsible to themselves, Allah and humankind.

Therefore, a group of strategic initiatives have been developed and these are supported and realised through IIUM Flagships.

In KOS, we are playing our parts under the "Responsible Research & Innovation" strategic initiatives and have inaugurated 2 flagships of our own. *Alhamdulillah*, one of these flagships had been recognised on Takrim Day 2019 and *biiznillah*, we are anticipating amazing results from the Marine School flagship in 2020.

I am very proud to share all the achievements and milestones of the Kulliyyah that are highlighted in this magazine. Although, I strongly believe that these colourful successes are only the tip of the iceberg of all the hard work, dedication and healthy support from the rest of the members.

May Allah bless us with everlasting *mawaddah* and strong *ukhuwwah* in realising the true meaning of *Rahmatan lil-Álamin*.

Dean, Kulliyyah of Science (KOS),
December 2019

EDITOR'S LETTER



DR. AZAIMA RAZALI

It is quite daunting to take my place as the editor in chief of this young magazine. For the 1st issue, I worked as a designer with great guidance from former editor in chief Dr. Wan Khartini and Dr. Mimi Hafizah as the proofreader. They have taught me a lot during the publication process. This year I am honoured to have worked with an amazing group of people who have shown unbelievable commitment in delivering a pleasing and informative piece of work for you to read.

The editorial team and I are very lucky that in 2019 we saw great achievements from the KOS members and it is our honour and privilege to be able to share their success stories. In academia, a tremendous success is only a page from chapters of failures and attempts. The essence of responsibility and always aiming for excellence are among the reasons why scientists forge ahead in spite of failed experiments, obstacles in funding and rejected findings. These challenges are always easy to overcome when we have a strong and healthy professional bonds and respectful intellectual discourse.

Science@IIUM is going to be reporting more on these major and significant academic triumphs along with all other accomplishments. This is a celebratory acknowledgment to the successful members and the supporting group of people behind them. This magazine is only the second edition but with more publications I hope that Science@IIUM will be an eminent reading for all.

Azaima Razali
Editor in Chief

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KOS ADMINISTRATIVE TEAM 2019



Group Pic.: (L-R) Dr. Mardiana, Dr. Nur Nazifah, Dr. Rozilawati, Dr. Nurul Farahain, AP Dr. Deny Susanti, AP Dr. Normawaty, Prof. Shahbudin, Dr. Abdul Latif, Dr. Mohd. Faez, Prof. Ahmed Jalal Khan, Dr. Mohd. Hamzah, Br. Mohd. Roslan, Dr. Mohd. Hazimin, Dr. Mohd. Fuad. **On the right:** Dr. Noraslinda, Dr. Mohd. Azrul Naim.

DEAN

Prof. Dr. Shahbudin Saad

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DEPUTY DEAN, POSTGRADUATE & RESEARCH

Assoc. Prof. Dr. Normawaty Mohammad Noor

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Ts. Dr. Mohd. Hamzah Mohd. Nasir

HEAD, LABORATORIES

Ts. Dr. Mohd. Faez Sharif

HEAD, INTERNATIONALIZATION & GLOBAL NETWORK

Prof. Ahmed Jalal Khan Chowdhury

SENIOR ASSISTANT DIRECTOR

Br. Mohd. Roslan Zainol Abidin



SUSTAINABLE DEVELOPMENT GOALS



SUSTAINABLE GROWTH DEVELOPMENT

SDG

Source: <https://news.un.org/en/story/2015/09/509732-un-adopts-new-global-goals-charting-sustainable-development-people-and-planet>

PAVING THE WAY FOR IIUM ROADMAP

FIVE NECESSITIES OF HUMAN EXISTENCE MAQASID SHARIAH

FAITH LIFE INTELLECT LINEAGE WEALTH



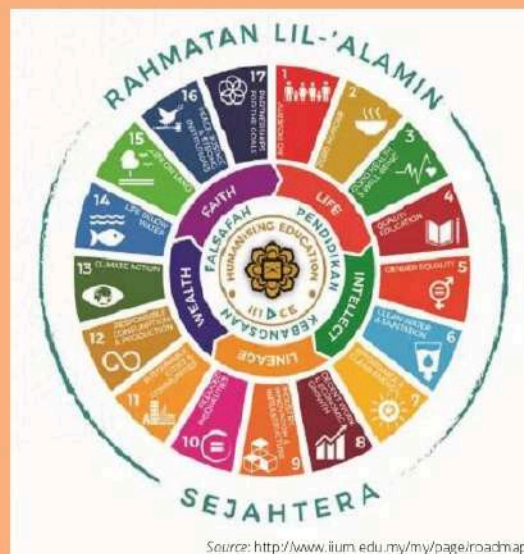
HUMANISING EDUCATION THROUGH MAQASID SHARIAH & SUSTAINABLE DEVELOPMENT

As 2019 rolled along, IIUM has revived the roadmap to revolutionise the students, staff and community in becoming accountable to themselves, Allah, community and humankind as a whole. This roadmap integrates the Strategic Direction of Humanising Education through Maqasid Shariah and Sustainable Development Goals (SDGs) as its foundation in humanising education. The SDGs is a collection of 17 global goals constructed to be a “blueprint to achieve a better and more sustainable future for all” and were set by the United Nations in 2015.



Source: <http://www.unf.org/2018/08/a-guide-to-sustainable-development-and-its-challenges-in-developing-countries/>

There are nine strategic initiatives that have been identified in the effort of humanising education through Maqasid Shariah and Sustainable Development. Kulliyah of Science (KOS) has been awarded the 'Responsible Research & Innovation' strategic initiative which calls for a commitment that engages users with positive values for environmental and societal purposes through research and innovation practices.



Source: <http://www.iiu.edu.my/page/roadmap>

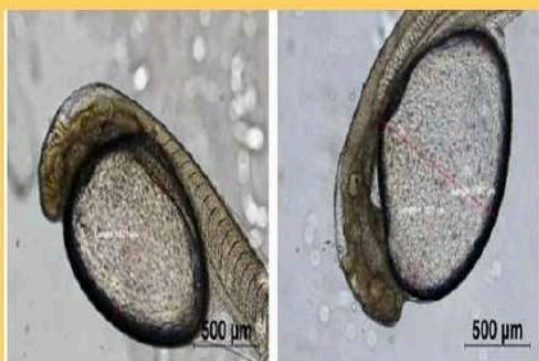


With this in mind, KOS has initiated two flagship projects; Patin Buah as Sustainable Food Production Sources and School for Sustainable Marine Livelihood, or Marine School for short.



PATIN BUAH AS SUSTAINABLE FOOD PRODUCTION SOURCES

This flagship project comprise of members from Kuliyah of Information and Communication Technology as well as from KOS. *Pangasius nasutus* (Patin Buah) is a famous delicacy in Pahang. The retail price of this species ranging from RM 100-150 per kg due to high demand. This species is mainly caught from the wild and the aquaculture production of Patin Buah is still deficient due to low seed supply.



O DAH under microscope at 4x10 magnification, 821µm (diploid, left) and 997µm (triploid, right)

In order to fill in this gap, the flagship was designed with internal and external collaborators led by Dr. Nur Nazifah Mansor. This project aims not only to investigate the scientific and economic dilemmas but also targets to be impactful to the local communities. This highly viable flagship was presented with the Mid-year Flagship Achievement Award (Most Innovative Flagship) on IIUM Takrim Day 2019. ■



Conserve and sustainably use the oceans, seas and marine resources for sustainable development

MARINE SCHOOL

Institute of Oceanography and Maritime Studies (INOCEM) has been given the honour of leading this flagship project. The project is divided into two phases; awareness and sustainability programs. The awareness program is planned to be carried out in a short-term period conducted throughout the year such as beach sports and biodiversity tours. The year 2019 has witnessed the accomplishment of phase one of this project in the success of World Cleanup Day in September and Beach Audit in October.

The second phase of this project aims to be a long-term, sustainable and structured modules for students to create knowledge and awareness related to marine pollution.



This project has internal collaborators from Kuliyah of Education, IIUM Academy and Kuliyah Of Languages and Management (Tourism). ■



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



KOS NETWORKING 2019

KAGOSHIMA UNIVERSITY

MoU between IIUM and Kagoshima University, Japan - 6th March 2019 to 5th March 2024.

DEPARTMENT OF FISHERIES MALAYSIA

MoU between IIUM and Department of Fisheries - 12th March 2019 to 11th March 2024.

ESA UNGGUL UNIVERSITY (EUU)

An understanding was reached between IIUM and EUU Jakarta on 19th March 2019. Both parties agreed to pursue with student and staff mobility, joint research, visit or study tour, participation in conference and scientific discussion as well as collaborations in any other areas.

ONDOKUZ MAYIS UNIVERSITY (OMU)

The MoU between IIUM and OMU, Turkey was signed on 24th April 2019 for a 5-year period of future collaborations.

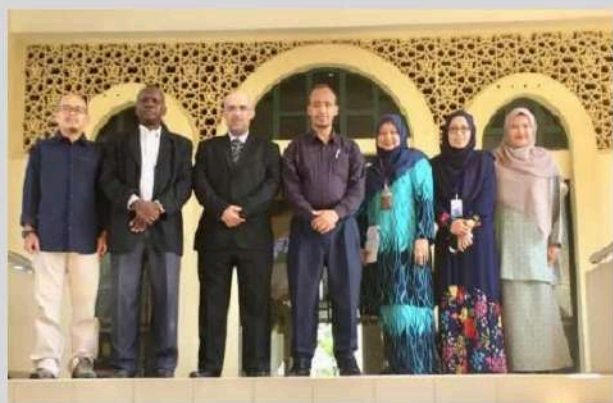


KOPERASI TOK MUDA KARAK

On 2nd May 2019, the MoU is signed to signify the collaboration between KOS (Department of Plant Science), Kuliyah of Pharmacy, IIUM Endowment Fund and Koperasi Tok Muda Karak in improvising production and processing of Halia Bentong.

PRINCE SONGKLA UNIVERSITY

IIUM - Prince Songkla University, Thailand MoU proposal has been approved by University Management Committee (UMC) and the MoU is currently in progress.



ISLAMIC UNIVERSITY OF MADINAH

IIUM - Islamic University of Madinah, Saudi Arabia MoU was signed in 2010. In July 2019, the Dean of the College of Science, Dr. Abdullah Raja Allah Dulaim al-Muhammadi has visited KOS for establishing an MoA between KOS and College of Science, Islamic University of Madinah.

DEPARTMENT OF ENVIRONMENT (DINAS LINGKUNGAN HIDUP) SOUTH TANGERANG AND BADAN PENGKAJIAN & PENERAPAN TEKNOLOGI (BPPT) AND SOCIOPRENEUR

Dr. Suhaila Mohd. Omar represented IIUM embarking on a 'benchmarking' visit to Indonesia from 24th to 28th June 2019. This is part of a community-based research project on waste segregation behaviour in Bandar Indera Mahkota, Kuantan, funded by Yayasan Canselor UNITEN together with Dr. Azmer Azzar Abdul Hamid and Dr. Mohd. Faez Shariff.

The official benchmarking visit was organised together with SociopreneurID, the project collaborator in Indonesia, led by Dr. Dessy Alliandrina. During this trip, they have visited government agencies including the Department of Environment (Dinas Lingkungan Hidup) South Tangerang and Badan Pengkajian & Penerapan Teknologi (BPPT). The Department of Environment was responsible for the waste management in South Tangerang with a population of 1.5 million. Whereas, BPPT or Agency for the Assessment and Application of Technology is a non-ministerial government agency under the coordination of the Ministry for Research and Technology of the Republic of Indonesia. BPPT is responsible for the government's assessment and application of technology. During this visit, the team was introduced with the owner of a startup company related to waste treatment technologies which is currently under BPPT supervision.

Apart from visiting the government agencies, the team also visited three community-based waste management projects which are Tapak Pembuangan Sementara 3R (TPS3R) Griya Resik in Serpong, Kampung Konservasi Rimbun, and Naknik Cantik Upcycling Centre. The community commitment and determination in ensuring the project success is inspiring. For example, the main objective of the TPS3R is to segregate the non-organic from the organic waste for recycling and the latter for conversion to compost and biogas.

Their effort significantly reduced the amount of solid waste sent out to the landfill. In addition, the beautiful Kampung Konservasi Rimbun is a combination of a recreational park and small vegetable farm. They processed food waste from their nearby restaurant and converted it into bio-fertiliser for both self-use and sold out in the local market.

Finally, Naknik Cantik Upcycling Centre gathered housewives from the neighbourhood to produce crafts from waste materials and sell it as their side income. The benchmarking visit was a success and could be a stepping stone for further collaboration with researchers from Indonesia.

***" Cherish the Natural World,
because you are a part of it
and you depend on it " - Sir
David Attenborough***



COMMUNITY ENGAGEMENT

THE IMPORTANCE OF GIVING BACK TO THE COMMUNITY

DR. MUHAMMAD ZAHIR RAMLI

A little about yourself? I was born on the 4th August 1987 in Sungai Petani, Kedah and I love cultural travelling and outdoor activities.

Inspiration and motivation behind the involvement of Islamic Relief Malaysia (IRM). My involvement began through the Islamic Awareness week events by University of Southampton Islamic Society. We assisted IRM organising several programs in conjunction with the event. The IRM is a robust organization spreading over 40 countries with more than 100 projects. Inspired by their vision to exemplify Islamic values in fulfilling one's social obligations to humanity lead the initiation of this project with IRM. Volunteering with many NGOs has made a huge impact on my life as each time is like a whole new experience for me. From working with children on autism spectrum with Muslim Volunteer Malaysia, helping the homeless program to the latest IRM project, each activity was unique and really motivating in the sense of empowering my inner value of 'omoiyari' (altruistic sensitivity).



What inspires you or motivates you to work on this project? I believe this is a good opportunity to engage with diverse community-based projects. The Telaga Air Bangladesh (TAB) project goes hand in hand with Facilitating Water Access in Central Northern Part of Bangladesh (FWAB) by Islamic Relief Bangladesh (IRB) to help reduce the health vulnerabilities among the targeted families through the installation of appropriate water technology.

How do you balance the responsibility of a researcher and volunteering with your personal life? Time management is the key. There are times when I find it difficult to juggle between work, research and my personal life. That is when I should always go back to basics by refining my intentions. *Insha'Allah* with consistency and effort you will definitely find the way.

How do you feel after you have completed a mission/charity work with IRM? The tremendous amount and humbling experience are indescribable. Meeting new amazing people, organising diverse events, exploring beautiful countries and culture; all of this is just a small part of an exciting adventure in volunteering.

What would you say to others about volunteering? Volunteering in any sort of form is a great way to experience new things, while benefiting others. It would definitely impact a difference in your own life, coming back with a different and mature perspective, and *Insha Allah* this would shape the greater version of yourself.

IMMERSION OF KNOWLEDGE

DEPARTMENT OF PLANT SCIENCE

As an alternative teaching method from the traditional classroom surrounding, students were brought to various places so they could learn through observation and real-life experience. Ethnobotany students were exposed to the unique relationship of plant and humans from a visit to Orang Asli village in Kuala Gandah, Pahang.



The students also explored the real forest natural structural design by visiting Taman Negara Pahang and identified the plants' name. Sampling specimen activities were also carried out at Fraser's Hill in collaboration with Universiti Kebangsaan Malaysia (UKM).



CHEMISTRY FUN DAY

The Ministry of Education Malaysia has introduced Science Technology Engineering Mathematics (STEM) education initiative embedded in the Malaysia Education Blueprint 2013 - 2025. The aim of STEM is to prepare students with the skill to meet the science and technology challenges and to ensure Malaysia has a sufficient number of qualified STEM graduates. STREAM is an additional layer of reading and writing which inculcates critical thinking and creativity.

As an outreach initiative to cultivate the interest and curiosity of middle school students in Kuantan towards STEM and the wonders of science, in relation to the 4th Sustainable Development Goal (Quality Education) set by the United Nation, the Department of Chemistry (KOS) led by Dr. Azaima Razali, Postgraduate Kulliyah of Science Student Society (PGKOSSS), in collaboration with Pahang State Library organised the "Chemistry Fun Day" on the 16th October 2019. The invited students were exposed to the importance of chemistry in their daily lives to cultivate confidence among the students in chemistry exploration.



"THERE WERE FIVE HANDS-ON EXPERIMENTS NAMELY NATURAL pH INDICATOR, ELECTRONS IN MOTION, WATERPROOF SPRAY vs. BATH BOMB, HOT ICE AND DIY SOAP. THESE HANDS-ON SESSIONS ARE GUIDED AND MONITORED BY EXPERIENCED SCIENTIST."

In accordance with the essence of STREAM education, which is to promote project-based learning and experiential learning, the students were able to apply knowledge that they have learned in classrooms into group projects to simulate real-world problems. The projects stimulated critical thinking, creativity and communication skills of the students. These skills are generally lacking in the traditional classroom setting. The simple demonstrations and hands-on activity could spark the young students' interest in STREAM.



"This is a collaborative effort with Young Scientists Network-Akademi Sains Malaysia in educating the public on the latest science trends and discoveries"



Science Café with Young Scientist Network-Akademi Sains Malaysia



Our first ever Science Café Kuantan kicked off on the 22nd March 2019 with Dr. Zakuan Azizi as the first speaker presenting his research work on phytomining and its endless possibilities. This is a collaborative effort with Young Scientists Network-Akademi Sains Malaysia in educating the public on the latest science trends and discoveries. Shawn Keng was the mastermind behind this little project in expanding the Science Café to the East coast and was also present during this first session.

The sessions for Science Café is usually done through café hopping to provide cozy and relaxed environment to the audience.

Each talk is aired live through Facebook for the convenience to those who are not present at the venue.



Assoc. Prof. Dr. Jesni was the speaker for the second Science Café in Kuantan. He talked about the concept of harmonics of guitars and even played a couple of evergreen numbers with the students entertaining the audience.

This little effort opened the doors and inspired students from the Biotechnology department to carry out several Science Café sessions for their Project Seminar course. The event turned out to be very successful as they managed to gather people for many walks of life to understand science.

WORKSHOP ON DYNAMICAL SYSTEMS AND THEIR APPLICATIONS

WDS 2019

IN MATHEMATICAL PHYSICS, ECONOMICS AND ENGINEERING

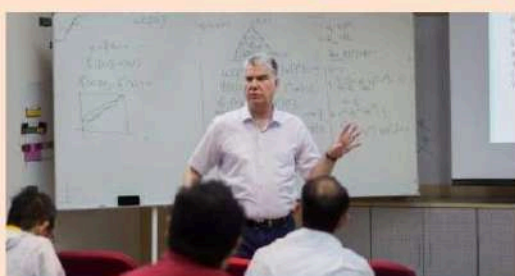
DATE: 26TH TO 28TH AUGUST 2019
VENUE: KULLIYAH OF SCIENCE, IIUM Kuantan

"A dynamical system is simply about the evolution of something that is time dependence."

In modelling real-life systems, the applications could cover a wide range of studies that include mathematical models; from depicting the pendulum motion of a wall clock, the flow of liquid through pipes, the decay of radiation particles emission, and the evolution of animal populations in closed ecosystems.

Hence, this workshop was organised with aims to provide a platform for researchers who are currently working on dynamical systems, combining various backgrounds of mathematical physics, engineering, and economics fields to exchange ideas, communicate, discuss and promote research findings of new advancements in mathematics in respective fields. As a matter of fact, this 3-day workshop is the continuation of the first one, which was held in 2017 as a tribute to Prof Nasir Ganikhodjaev's 70th birthday; the WDS 2019 Chairman.

The workshop consists of 5 main talks by invited speakers from the area of pure and applied dynamical systems. There was also a special session of contributed presentations from participants and another session offered exclusively for PhD students. There were 32 participants who are from local and overseas universities, while for that special session, an additional of 29 students from IIUM Kuantan registered. Praise be to Allah SWT that this event was carried out successfully with great cooperation and participation from all who are directly or indirectly involved in making this event a reality.



Plenary talks

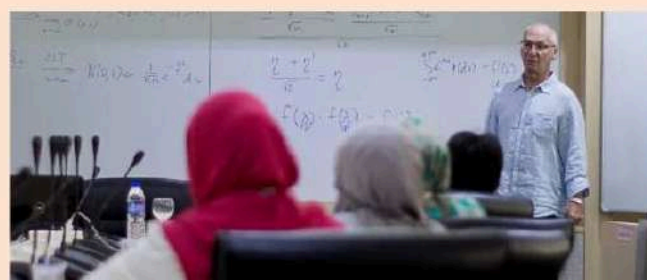
RENORMALIZATION AND RIGIDITY
 PROF. DR. KONSTANTIN KHANIN
 (UNIVERSITY OF TORONTO, CANADA)

DYNAMICAL AND THERMODYNAMICAL SYSTEMS IN BIOLOGY
 PROF. DR. UTKIR ROZIKOV (INSTITUTE OF MATHEMATICAL UZBEKISTAN)

MATHEMATICAL MODEL OF BOUNDARY LAYER FLOW: ISSUES AND CHALLENGES
 ASSOC. PROF. DR. SHARIDAN SHAFIE (UTM)

COMMON MISTAKES MADE BY POSTGRADUATE STUDENTS IN THESES WRITINGS
 PROF. DR. NORZAIDI MOHD DAUD (UITM)

ORBIT GROWTH OF SOME SHIFT SPACES
 PROF. DR. MOHD SALMI MD NOORANI (UKM)



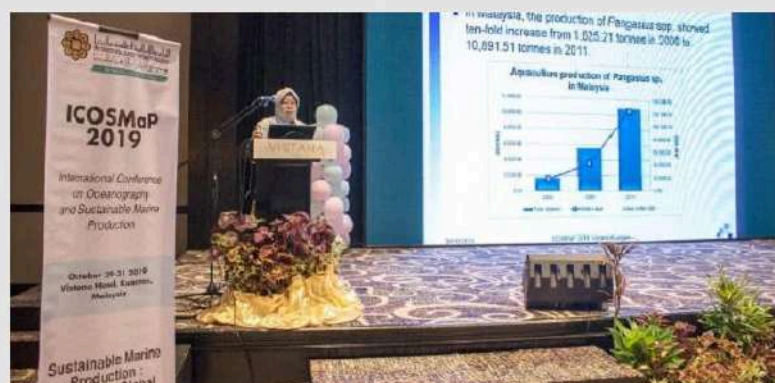


INTERNATIONAL CONFERENCE ON OCEANOGRAPHY AND SUSTAINABLE MARINE PRODUCTION (ICOSMaP) 2019

Sustainable Marine Production: Local and Global Challenges

The effects of global climate change have reached an alarming level especially on the physical and chemical oceanography and marine resources. Therefore, awareness should be grown rapidly in the society on how marine resources will minimise and adapt to the marine environment which is changing rapidly due to the climate change. Tackling global issues requires endless teamwork. This conference provided a platform to increase awareness, exchange knowledge, ideas and recent research findings between specialists about adaptation and minimization strategies of climate change effects through sustainable management of marine resources.

ICOSMaP 2019 is a collaborative effort between Kulliyah of Science (Department of Marine Science), Department of Fisheries Malaysia and Kagoshima University which was successfully held on the 29th - 31st Oct 2019 at Vistana Hotel, Kuantan. Renowned experts such as Assoc. Prof. Dr. Keigo Ebata (Kagoshima University), Prof. Dr. Ahmad Ismail (Universiti Putra Malaysia /Malaysian Nature Society) and Prof. Dr. Saleem Mustafa (Universiti Malaysia Sabah) was there to share their insights on sustainable marine management and practices. ICOSMaP received 50 local and international participants from a wide range of expertise in the marine field.



"You are never too small to make a change"

GRETA THUNBERG



IBADAH CAMP

In its efforts supporting IIUM towards becoming a Global Premier Islamic University, KOS Ibadah Camp was conducted on 22nd - 23rd August 2019 with a total of 155 participants, involving all academic and administrative staff.



The theme for this year's camp is 'Da'wah : A Fundamental Islamic Obligations' and among its objectives is to create awareness on the importance of spiritual and physical enhancement to gain the ultimate success in this world and the hereafter (*ad-dunya wal-akhirah*). Plus the program aspires to engage in spiritual enhancement activities that can purify one's soul (*tazkiyyatun-nafs*) while improving one's relationship with Allah.



This annual program addresses the virtue of seeking Allah's pleasure (*mardhotillah*) in one's day-to-day activities that helps to shape one's personality and ethics while internalising the spirit of *ibadah*.



Several core activities were performed during this two days sessions of Ibadah Camp; congregational prayers, *ma'thurat* recitation, *Qiam-ul-layl*, three interesting *tadhkirah*, two informative lectures, *tilawah* and *tafsir* al-Qur'an. On the last day, KOS Glasshouse and Nursery Complex spring cleaning was also carried out as the closing activity.

IUM PLANT SCIENCE OPEN DAY (IPOD)

IIUM Plant Science Open Day (IPOD) which was held on the 20th to 22nd September 2019 is a collaborative effort between students and lecturers of the Department of Plant Science, KOS. This event is an initiative to promote the department to the public and current plant research discoveries while providing them with the opportunities in understanding the huge potential and endless possibilities that it holds.



Some events organised during IPOD 2019 are IPOD Green Run and seminar on the world of herbs; methods of extracting potential metabolites used in drug applications. This seminar was conducted in the hopes to educate the public on the wide application and potential of local herbal plants aside from the traditional common agricultural practices.



IPOD was also crafted to involve young children by organising a plant theme painting and colouring contest which received overwhelming participation. Other programs also include a cooking contest, fruit fiesta and herbal plants sales from our very own glasshouse. IPOD has provided valuable experience in the importance of teamwork, management and leadership.

Overall, IPOD has successfully attracted and educated the public on the awareness and the significance of the mother nature and the environment which is in line with the IPOS theme "GO GREEN BEFORE THE GREEN GOES".



KOS HEALTH AND SAFETY ENVIRONMENT COMMITTEE (KOSHSEC)

KOSHSEC

KOSHSEC is a team responsible for creating awareness on the key principles of health and safety at work, as well as to educate on systematic risk and hazard management processes. The organising committee has provided KOS members with countless training and workshops to create awareness on the significance of a safe and healthy working environment. The timeline exhibits the workshops that have been conducted throughout the year:

2019

- 5** Awareness Briefing on Health, Safety and Environmental Management System (HSEMS)
- HIV and AIDS awareness briefing
- 7** Safety talk on Safe Gas Cylinder
- HSE Documentation Workshop and HSE related Procedure
- HSE Legal & other requirements, Safety and Health Committee Training
- 8** New Employee Safety Orientation Programme
- 9** Scheduled Waste Management Training
- HSEMS workshop
- Top Management walkabout IKCPEPMC



Santai Srikandi STK
bersama **Ustazah Asma Harun 2.0**

SABTU, 19 OKTOBER 2019 | 2.00 - 5.00 PETANG
AUDITORIUM, KoS, UIAM Kuantan

Bukan Ahli RM25 | Ahli STK RM20 | Pelajar UIA (Perkuma 250 seat sahaja)

Menggapai Cinta Ilahi

Forum of Religio-Scientific Discourse, FoSRD Kulliyah of Science

Cik Aliaa 016-260 0905 | Cik Lily 017-939 6548
Puan Wan Khalijah 019-914 5734 | Puan Shera 013-993 7234

Cabutan Bertuah Menarik Menanti Anda!

FORUM OF RELIGIO-SCIENTIFIC DISCOURSE

FORSD

The 'Forum of Religio-Scientific Discourse' (FoSRD) is one of the interdisciplinary platforms of IIUM which has been promoting the integration of knowledge and values throughout the last eight years. It was established by KOS in 2008 as an intellectual platform for the dissemination of knowledge and moral values among the professionals, students and public.

The major objective of FoSRD is to create a healthy academic environment of integrity for better utilisation of science and technology. It addresses various issues in relation to science, technology and society; such as the transmission of integrated knowledge and green technology; promotion of halal industry and business; and the promotion of work ethics.

The strategic goal of FoSRD is to promote the effective role of the university in the development of the society

Ahlan wasahlan Ya Ramadhan

3 May 2019 / Friday
11.00 am - 12.30 pm
Conference Room,
Kulliyah of Science,
IIUM Kuantan

"O you who have believed, decreed upon you is fasting as it was decreed upon those before you that you may become righteous" (Al-Baqarah:183)

Amie and Jie Li

LEARNING QURANIC ARABIC THE EXPRESS WAY
NO.03/2019

DR. SUPIAN MAT SALLEH
LECTURER CTS

26 APRIL 2019 (FRIDAY)
3.00 PM - 4.00 PM
CONFERENCE ROOM,
KULLIYAH OF SCIENCE, IIUM

KOSFIT CONQUERING KINABALU

26TH TO 27TH JUNE 2019

KOTA KINABALU •

TIMPOHON • LABAN RATA •

KINABALU'S PEAK

"It is He who made the earth tame for you - so walk among its slopes and eat of His provision - and to Him is the resurrection" [Surah Al-Mulk ayah 15]



L-R: (Back) Sr. Maiiza Azrain, Dr. Shukri, Sr. Suhaila, Sr. Nursofiah, Sr. Maisarah, Dr. Deny Susanti, Br. Muzammil, Sr. Nursazwi (KOD), Sr. Muezzah, Br. Afiq
(Front): Dr. Nurasyikin, Br. Malek (KAHS), Dr. Faizul (INHART)



CONQUERING THE PEAKS

KOSFIT program was initiated by a group of fitness enthusiasts in the year 2018. It is an ongoing program that aspires to create awareness and getting the member of the Kulliyah to adopt a healthy lifestyle. A number of health awareness programs have been organised since its establishment.

The biggest feat of the year is the "Conquering Mount Kinabalu" program. Mount Kinabalu is in the Malaysian state of Sabah, some 80 km east of Kota Kinabalu. It resides in the Kinabalu Park, a UNESCO World Heritage site. A year of thorough preparation for the expedition was outlined and led by Br. Ahmad Muzammil Zuberdi.

A total of 16 delegates departed from KLIA on the 25th of June to Kota Kinabalu International Airport. The ascent towards the peak began at the Timpohon gate on the 26th June venturing the new trail (carved after the 2015 earthquake) towards Laban Rata located at 3,272 metres above sea level. This is the first resting area before the climbers resume their climb to the peak of the mountain.

Mount Kinabalu was successfully conquered on the morning of 27th June. The team descended the mountain the same day.

ما شاء الله تبارك الله

2019 PROMOTIONS

Congratulations on your promotion. May your success paves inspiration to other young and aspiring Scientists. Ameen.



PROF. DR. SHAHBUDIN SAAD



PROF. DR. SHAFIDA ABD HAMID



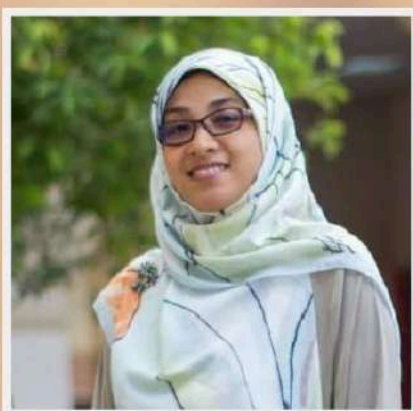
**ASSOC. PROF. DR. ZAIMA AZIRA
ZAINAL ABIDIN**



**ASSOC. PROF. DR. ZARINA
ZAINUDDIN**



**ASSOC. PROF. DR. MIMI
HAFIZAH ABDULLAH**



**ASSOC. PROF. TS. DR. SUHAILA
MOHD. OMAR**



**BR. MOHD. ROSLAN ZAINOL
ABIDIN**

KOS IS HONoured TO PRESENT

2019 WINNERS AND GRANT RECIPIENTS

Congratulations!

TAKRIM DAY 2019 WINNERS



Sr. Azah (R) receiving the award from Data' Abdul Rahim Ahmad (MSD Executive Director)
Administrative Staff Award Non-Technical (Grade N29-N40)
 Sr. Noor Azah Arshad



Highest Number of Publications (Indexed Journal Article) and Promising Researcher Awards - Kulliyyah Level
 Dr. Nurul Farahain Mohammad



Mid-year Flagship Achievement Award (Most Innovative Flagship)
 Dr. Nur Nazifah Mansor



Dr. Adli (R) receiving the award from Prof. Hafiz (Deputy Rector, Research & Innovation).
Highest Number of Publications Indexed Journal Articles, Science & Technology) and Highest Citation in Indexed Journal Awards (Science & Technology)
 Dr. Mohd. Adli Md. Ali

FORSD MAAL HIJRAH AWARD 1441H/2019



Best Laboratory Award Winner
 Sr. Norrul Afzan Zainol Abidin (second from Left)

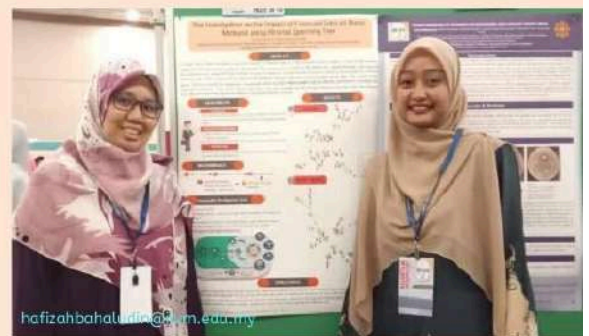
Best Administrative & Technical Award Winner
 Sr. Norsad'ah Md Yunos (fourth from Left)

KUANTAN RESEARCH DAY 2019

Research Management Centre (RMC) in collaboration with Heads of Research (HOR) of all Kulliyyahs in Kuantan campus, and Centre for Postgraduate Studies (CPS), had organised the 3rd Kuantan Research Day on the 23rd October 2019.

We would like to acknowledge all participants from KOS and congratulate the following winners:

Dr. Muhammad Fitri Yusof and Dr. Rozilawati Shahari (2nd and 3rd place in Basic Science category, respectively), Dr. Hafizah Bahaludin (2nd place in Applied Science) and Sr. Fatin Nur Amirah Mahamood (1st place in Applied Science for Students category).



Dr. Hafizah (L) and her MSc. supervisee Sr. Fatin (R)



Dr. Azri (centre) with his successful team.

PECIPTA 2019

Dr. Md. Hoirul Azri Ponari won the Bronze Award at the International Conference and Exposition by Institutions of Higher Learning (PECIPTA 2019) which was held at Universiti Tun Hussein Onn Malaysia (UTHM) from the 22nd to 23rd September 2019 on his work on 'Plant Growth-Promoting Rhizobacteria: A New Strategy For Sustainable Agricultural Practice'.



THE BIGGEST LOSER



In conjunction with "IIUM Kuantan Staff Health Awareness Programme (IK-SHAPE) 2019", the Sports Development Department, Office of The Campus Director, IIUM Kuantan Campus organised IIUM Kuantan THE BIGGEST LOSER CHALLENGE 2019 (July 2019 - Dec 2019).



First place winner
(Sisters) 2019 - Dr.
Aisyah Mohamed
Rehan



Second place
winner (Sisters)
2019 - Sr. Che Nor
Zarida Che Seman



In the photo are the Winners of the Biggest Loser 2018 (from left) Br. Mohd. Taufik Yaakup, Br. Yahya Abu Bakar, Br. Mohamad Romizan Osman, Sr. Nurul Aini Samuri and Sr. Noor Hafiah Izzati Aris.

VARSITY CYCLING CHALLENGE 2019 WINNERS



Winners of Varsity Cycling Challenge at UTEM, Melaka of the VIP category:

- + 3rd Place
Dr. Mohd. Hazimin Mohd. Salleh (R)
- + 4th Place
Dr. Mohd. Faez Sharif (L)



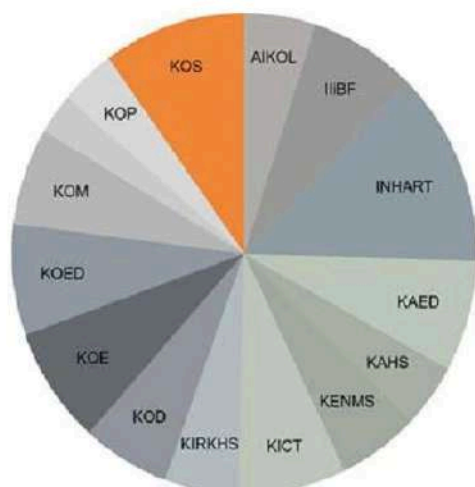
IIUM Cycling team (L-R): Dr. Hazimin, Br. Muzammil and Dr. Faez.



PROTOTYPE RESEARCH GRANT SCHEME (PRGS)

Hailing from Melaka Bandaraya Bersejarah, Dr. Mohd. Armi Abu Samah is the successful recipient of PRGS with the amount close to **RM 150,000**.

FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS) 2019 RECIPIENTS



Total FRGS secured by KOS members is **RM 2,645,556**.

Assoc. Prof. Dr. Deny Susanti Darnis
 Assoc. Prof. Dr. Jesni Shamsul Shaari
 Assoc. Prof. Dr. Mohammad Mustafizur Rahman
 Dr. Mohd. Shukor Nordin
 Ts. Dr. Normah Haron
 Dr. Rozilawati Shahari
 Dr. Wan Nur Fairuz Alwani Wan Rozali
 Ts. Dr. Mohd. Faez Sharif
 Dr. Wan Khartini Wan Abdul Khodir
 Dr. Mohamad Wafiuddin Ismail
 Dr. Mardiana Mohd. Ashaari
 Dr. Mohd. Razik Midin
 Dr. Mohd. Fuad Miskon
 Dr. Zuhairi Ahmad

Dr. Erna Normaya Abdullah
 Dr. Nur Sabrina Ahmad Azmi
 Ts. Dr. Zakuan Azizi Shamsul Harumain
 Dr. Nurul Najihah Mohamad
 Dr. Nurul Farahain Mohammad
 Dr. Nurul Hidayah Samsulrizal
 Dr. Che Nurul Aini Che Amri
 Dr. Nurul Huda Abdul
 Dr. Mohd. Fauzihan Karim

KNOWLEDGE TRANSFER PROGRAMME GRANT (KTP) - RESEARCH INITIATIVE GRANT SCHEME (RIGS) SUSTAINABLE DEVELOPMENT GOALS (SDG) 2019-2020 RECIPIENTS



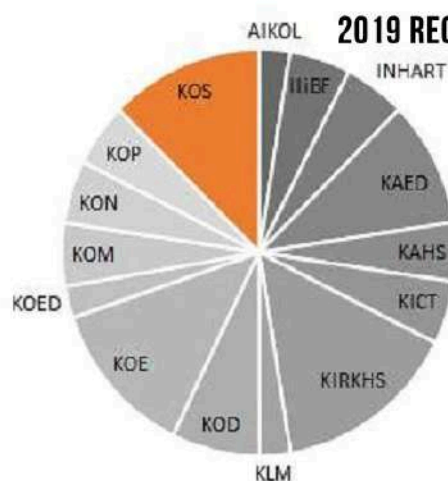
There are 3 projects lead by and collaborate with KOS members:

1. Assoc. Prof. Dr. Zaleha Kassim (**RM 10,000**)
 + Dr. Siti Waznah Abd. Rahman
 + Dr. Zuhairi Ahmad
 + Dr. Ahmad Azfar Mohamed
2. Prof. Dr. Shafida Abd. Hamid (**RM 9,800**)
 + Dr. Wan Khartini Wan Abdul Khodir
 + Assoc. Prof. Dr. Deny Susanti Darnis
3. Dr. Wan Khartini Wan Abdul Khodir (**RM 9,950**)
 + Prof. Dr. Shafida Abd. Hamid
 + Assoc. Prof. Dr. Deny Susanti Darnis

Another one project lead by Assoc. Prof. Dr. Mohd. Zulfaezal Che Azemin (RM 10,000) involving KOS member
 + Dr. Mohd. Hazimin Mohd. Salleh

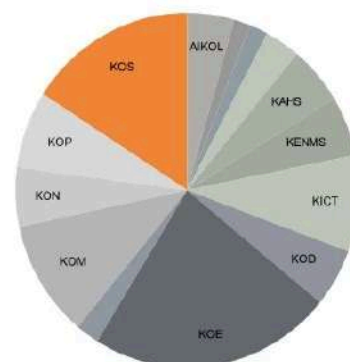
IIUM RESEARCH INITIATIVE GRANT SCHEME (IIUM FLAGSHIP)

FRGS-RACER 2019 RECIPIENTS



Total IIUM Flagship grant secured by KOS members is **RM 100,000**.

+ Dr. Nur Nazifah Mansor
 + Dr. Muhammad Zahir Ramli
 + Dr. Erna Normaya Abdullah
 + Dr. Mohd. Fuad Miskon
 + Dr. Rashidah Abdul Razak



Total FRGS secured by KOS members is **RM 399,920**.

+ Dr. Nur Shuhada Muhamad Tajudin
 + Dr. Siti Fairuz Che Othman
 + Dr. Asnor Azrin Sabuti
 + Dr. Nur Hafizah Azizhan

OUTSTANDING

UNDERGRADUATE STUDENTS

BEST STUDENT AWARD: ACADEMIC ICON

Anis Shafiqah Mohd. Subky

BSMS



Being an IIUM student is the best decision I have ever made.

My journey of a one-year foundation in Petaling Jaya campus and 4 years of bachelor's degree in Kuantan campus had been amazing. I met a lot of wonderful lecturers that are willing to help and share their knowledge and are happy to see their students becoming successful in life. Besides, I have also made new friends who are from various backgrounds. Getting to know them taught me to be more understanding and considerate towards others. Throughout my studies, there are a lot of knowledge that I have learnt through both formal and informal learning.

Receiving blessings from our family and lecturers are very important in everything we do in life. As for me, I ensure that I have a good relationship with my lecturers. Always have respect and thank our lecturer for guiding and inspiring us to become who we are today. Apart from that, don't forget to blessings from our parents and ask them to make dua for our success in *Dunya* and *Akhirah*. I always inform my parents whenever I have an examination and ask for their duas, be it a quiz or a major test.

Sometimes it is good to push yourself to the limit, but we must remember that we need a good rest too. So, do not stress yourself too much and enjoy this beautiful journey that you will surely miss. Grab opportunities and do anything that you want to do so that you will not have regrets later. All the best, KOS-ians!

BEST STUDENT AWARD: CO-CURRICULUM ICON

Izzudin Fahmi Mohd. Nathir

BSPS



When people ask me why I have chosen to study in IIUM, I simply said that "IIUM has chosen me." The same goes with the reason why I chose to pursue Bachelor of Plant Science degree. In the beginning, it seems uncertain of what I shall have in my future, in terms of study and career, but then I remember Maher Zain's song "Put your trust on Him, raise your hand and pray". Indeed Allah is truly the best planner. Following a deep interest in the agricultural field, I am grateful to have finally graduated with flying colours.

Never forget that success never comes alone. Our parents, lecturers, staff and friends; these people are like the stem of a tree, holding us up until we bloom and free.

From my perspective, it is important to enhance our skills through involvement in co-curriculum activities. Some people ask me how can I be occupied with the programs and society during my final year when there were tons of academic works and responsibilities. The answer is simple, with pure intentions the more I contribute, the more I get. Just like a mutual relationship between flower and bee, disperse the pollen and then get some honey. The ultimate goal of learning is to attain *mardhotillah* and serves the ummah.

OUTSTANDING

POSTGRADUATE STUDENTS

BEST STUDENT AWARD - Masters

Khaled Ftameh



My name is Khaled Ftameh, a Syrian national who fled from fear and murder for a brighter and safer world in searching of science which kills ignorance and despair. This is my determination together with the encouragements from my brothers and sisters. My ambition is to achieve a path of knowledge and light for my children and wife.

I have lived in a country where I could hear guns killing innocent people so often and that it kills my heart too. Up to the extent that my heart could no longer tolerate the loud noises. I failed to see the path towards my happiness and the bright future for my children except by moving away. I decided to complete my study to grasp what I had hoped for since my childhood. I realised how difficult it is to find happiness and safety while I am away from my big family thinking of that dirty war. But I have to stay strong and bear all this in order to achieve my endless aspirations.

On my graduation ceremony, how I wish I could see all my family by my side so that they could be proud of me getting my Master's degree and received as the Best Student Award - Msc of the Kulliyah. After this, I would like to complete my PhD study eagerly because it is my ambition. I believe it is the secret of my happiness and also for my children and wife. There are no other difficult obstacles than war, bloodshed, and screams of innocents which I have faced in my life. However after all this I have never thought about giving up.

"Do not make the easy difficult to stop you but make the difficult easy to complete your way." - Khaled Ftameh

"Work hard. Read a lot. Never give up. Keep refreshing our intention and motivation (pray to Allah, read the Quran, read the story of Prophet, his companions and scholars). Manage your time (do not procrastinate)" - Ali Khameni Ahmad

BEST STUDENT AWARD - PhD

Mohd. Ali Khameni Ahmad



Mohd. Ali Khameni Ahmad was born on the 21st July 1990 in Segamat, Johor, Malaysia. He enjoys reading comics and mathematics. He is also into Mathematics, History and Geography. Ali had received his early education at SMK Seri Bintang Selatan. Later Ali enrolled into the Center of Foundation Studies IIUM and passed with CGPA 3.749 in Physical Science. He then pursued his bachelor's degree in Pure Mathematics, with a minor in ICT at the Department of Computational and Theoretical Sciences (CTS), IIUM. After that he continued for a master's degree under the supervision of Dr. Mansoor Saburov and co-supervisor, Prof. Farrukh Mukhamedov.

He is very thankful for the opportunity to meet young researchers from other countries who visited the Kulliyah during his time as a MSc student. One of them eventually became his PhD supervisor. They have gave him remarkable inspiration and kept him on track to attain deeper knowledge in this field. The search of knowledge is a never-ending quest.

During his PhD, he worked on p-adic Gibbs measures on Cayley trees and related p-adic dynamical systems supervised by Assoc. Prof. Dr. Pah Chin Hee, Assoc. Prof. Dr. Mansoor Saburov and Assoc. Prof. Dr. Lingmin Liao. His PhD research was rather outstanding thus he managed to produce a total of 13 publications. It was because of this hard work Ali was awarded the Best Student : Doctor of Philosophy award during the IIUM 35th Convocation Ceremony 2019.

When asked about his motivation Ali said, "It is the search for knowledge and the truth, specifically in mathematics". His interest in mathematics unfolds when he first entered his undergraduate classes. In each class, Ali was impressed with the knowledge delivered by the lecturers. This had led him wanting to know more about mathematics. He searched for books, study them and did all the exercises. He was blessed with a very good supervisor for his final year project. Each week his supervisor trained him by giving problems in mathematics and asked Ali to present the solutions. During the semester breaks Ali stayed at the university and started doing research with his supervisor. This continues until today.

MEVLANA EXCHANGE PROGRAM

This is a program which enables education mobility exchange involving students and academic staff between the Turkish higher education institutions and higher education institutions from other countries.

We are honoured that our students from Department of Biotechnology: Nur Atilla Masri, Nuramira Safwana Ag Tangah and Nur Amira Yusof; and from Department of Computational & Theoretical Sciences: Nur Fatihah Takril were part of this program in 2018.

In 2019, three students were selected to be part of this program: Nurul Izzah Kamaluddin, Nur Fatin Ikhvani Muhammad Husairi and Nur Aisyah Aminuddin.



3-MINUTES THESIS (3MT) COMPETITION



3MT competition is founded by the University of Queensland to cultivate students' communication skills. It promotes students' ability to succinctly explain their research to a non-specialist audience within 3 minutes. At the Kulliyah's level of 3MT, four winners were selected:

- **First prize:** Najatul Su Ad Abdullah (PhD candidate in Biosciences – supervisor: Dr. Mohd. Azrul Naim Mohamad).
- **Second place:** Muhammad Hamizan Yusof (PhD candidate in Biosciences – supervisor: Prof. Dr. Shahbudin Saad).
- **Third place:** Nor Raihan Mohamad Asimoni (Phd candidate in Computational & Theoretical Sciences – supervisor: Dr. Nurul Farahain Mohammad).
- **Fourth place:** Maryam Zahaba (PhD candidate in Biosciences – supervisor: Dr. Mohd. Shukri Mohd. Aris).



This is an excerpt from Najatul Su Ad sharing her experience.

I represented the Kulliyah by delivering my research entitled “The Bacteria Workers in The Seaweed Factory” for the University level 3MT 2019. Even though I was not selected to continue to the next level, I learned that being able to communicate science is very important.

The national winners of 3MT who are IIUM representatives eloquently advocated this in their presentation. We might not precisely understand the mechanics of every research conducted but to be able to appreciate the importance and contribution of each study is worthwhile, and this can only be achieved through effective communication.

THE STORY OF A YOUNG PHYSICIST: HAFIZAH NOOR ISA

By Hafizah Noor Isa

Born on 16th June 1990 at Hospital Machang, Kelantan, I am the youngest amongst seven siblings. Enjoys collecting and reading novels as well as watching movies. Nothing makes me happier than spending my leisure time at home with my family.

I received my primary education at Sekolah Kebangsaan Belukar and Sekolah Kebangsaan Pangkal Mak Wan, Kelantan, I then pursued my secondary education at Sekolah Menengah Machang, Kelantan from 2000–2004.

Upon completing high school, I was enrolled into Kolej Matrikulasi Johor in Tangkak, Johor from 2005–2006. I was awarded with my Bachelor and Masters degrees from Universiti Teknologi Malaysia (UTM) Skudai, Johor in Material Physics.

My research project for Masters degree was under the supervision of Prof. Dr. Rahim Sahar, the Head of Department of Physics. After graduation, I worked for almost 2 years at Universiti Teknologi Mara (UITM) Jengka, Pahang as a lecturer, in the Faculty of Science. I was then offered a post as an Academic Trainee at the IIUM to pursue PhD studies at the University of Glasgow.

My PhD was under the supervision of Dr. Ian McLaren, a senior lecturer of Physics and Astronomy. In the School of Physics & Astronomy, all postgraduate physics students are affiliated to the Scottish Universities Physics Alliance (SUPA). I have been entrusted by my supervisor to work in two groups; namely the Materials Condensed Matter Physics (MCMP) Group and the Institute of Gravitational Research (IGR). I have finished my PhD in August 2019 with the thesis entitled "Towards reliable quantification of mixed oxide coating for LIGO using DualEELS" which is available to access here <http://theses.gla.ac.uk/74354/>

My PhD research is to study the properties of mirrors coating in laser interferometers. The huge interferometers involved in the discovery used highly developed optics for the manipulation (reflection, beam splitting, and detection of interference) of infrared laser beams.



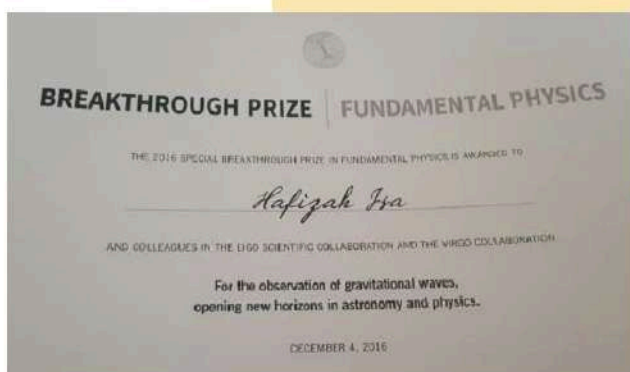
The reflectors at the end of each interferometer arm are an integral part of the detector, allowing the enlargement of the optical path of the laser beam and increasing the sensitivity. In order to further improve the sensitivity of these detectors, improvement of these reflectors' surface and optical characteristics is of paramount importance.

Regarding my involvement in the Gravitational Research project, I'd start by introducing the university's IGR team.

The University of Glasgow's IGR is focused on the development of detector's hardware and software for sensing gravitational waves (GW) from astrophysical sources.

The work of the IGR includes materials characterisation, advanced interferometry, and novel data processing for signal analysis. We carried out research related to Advanced LIGO, GEO600, LISA Pathfinder and other GW detectors.

THE STORY OF A YOUNG PHYSICIST: HAFIZAH NOOR ISA



In addition, Glasgow leads a UK consortium of Universities working with the LIGO team to design, develop and install the fused silica suspensions that support the mirrors of Advanced LIGO. Since my main PhD activity is materials, my involvement in this project is to understand the noise properties of the coatings applied to these mirrors; in particular to try to help understand how to make better mirrors in future and allow us to make even more sensitive GW detectors. The IGR scientists in Glasgow who have been working in the field of GW detection since the 1970s are founder members of the LIGO scientific collaboration which was formed in 1997 and are part of the Advanced LIGO project since 2003.

This detection is of high significance, not just for the IGR, but for the whole field of astronomy. At present, the IGR members include a team who has worked on the GEO600 team including 6 academic staffs and 7 Research Assistants with the additional of many more people, including PhD students that have worked on it over the years.



Hafizah Noor with her co-supervisor Professor Sheila Rowan, a Chief Scientific Adviser (CSA) for Scotland in June 2016 and Director of the IGR, University of Glasgow.

IKON BELIA NEGARA HAFIZAH NOOR ISA

Upon my involvement in the breakthrough of the GW with the journal entitled "Observation of Gravitational Wave from a Binary Black Hole Merger", I was awarded with "Anugerah Khas" for Hari Belia 2016 by the Ministry of Youth and Sports Malaysia and 2016 Special Breakthrough Prize in Fundamental Physics.

It is my hope that what little contribution I had made to this significant finding, can inspire many more Malaysians, especially the young ones, to dream big and keep working towards their goals because nothing is impossible. Moreover, I wish that this will open up new horizons for a new generation of young scientists to study the Universe.

My research interest is in material physics and if I could expand my PhD research, I am very keen to concentrate on using electron microscopy to study the chemistry and structure of devices and material at the nanoscale and below. An obvious, very important motivation to study in material physics is the fact that the microscopic properties it deals with, are responsible for the majority of modern technology. These properties define the material mechanical strength, how they conduct electricity, how they interact with light, etc.

Finally, my sincere hope would be that the Malaysian government would continue to offer scholarships to talented and deserving Malaysians who will certainly thrive and make our country proud. ■

THE SCIENTISTS

THE BEST JOB ON EARTH



Kuantan born Prof. Dr. Shafida Abd Hamid shafida@iium.edu.my

A career in academia is different from the industry. I always think that I have the best job on earth because I have the freedom to set my own schedule and not doing a routine job.

Holding an admin post in academic is a huge responsibility and takes a lot of your time. So, it is important to manage your time properly by planning ahead and prioritise your work. The reality is, time is limited and we cannot do everything ourselves. Therefore, work delegation is important when holding an admin post.

As an academic, focusing on the main role which are teaching & doing research drives

me to constantly develop myself by learning something new everyday. I normally use Researcher app on my iPad to browse through the latest publications in selected journal to keep me updated on the latest issues concerning chemistry.

On my free time I like to run and take part in running events to take my mind off work and hopefully sparking a little endorphin boosts. It is not easy to think about work anyways when you are gasping for air! ■

Prof. Shafida was the Kulliyah's Dean from the year 2017 until 2018. During that time, she was still active in research projects and below are some of the papers that were published:

- + Ali, Y., Bunnori, N. M., Susanti, D., Alhassan, A. M., & Hamid, S. A. (2018). Synthesis, in-Vitro and in Silico Studies of Azo-Based Calix[4]arenes as Antibacterial Agent and Neuraminidase Inhibitor: A New Look Into an Old Scaffold. *Frontiers in Chemistry*, 6. doi: 10.3389/fchem.2018.00210
- + Jusoh, N., Zainal, H., Hamid, A. A. A., Bunnori, N. M., Halim, K. B. A., & Hamid, S. A. (2018). In silico study of carvone derivatives as potential neuraminidase inhibitors. *Journal of Molecular Modeling*, 24(4). doi: 10.1007/s00894-018-3619-6

DISCOVERING & PROGRESSING NEW MEDICINES

I was born in Hospital Kemaman, Terengganu on 13th March 1987. I used to love geography but out of nowhere, I develop a deep fascination for chemistry. The fascination grew from curiosity. I realised that my questions and interests are shared by many people as shown by the evident in the research journals.

I am interested to study how a tiny molecule could modulate or inhibit the action of the target receptor, which later can cure the disease. My research focuses on the medicinal chemistry field, especially in the early drug discovery program. Medicinal chemistry is an interdisciplinary area consist of chemistry, biology and pharmacology.



Medicinal chemist Dr. Nurasyikin Hamzah
nurasyikinhamzah@iium.edu.my

As a medicinal chemist, my expertise will be in designing and synthesizing the potential compounds to meet the properties of drug-like molecules. *Biiznillah*, I hope to start my research group and established a lab in the year to come. ■



On her graduation day at University of Leeds, UK



THEORETICAL PHYSICS

About us

The theoretical physics research group is led by Assoc. Prof. Dr. Jesni Shamsul Shaari and the members are Dr. Iskandar Bahari and Dr. Suhaili Kamaruddin. Former KOS academic, Dr. Suryadi Soekardjo (now in Indonesia) played a vital role in the experimental aspects of quantum information during his time here.

Currently, the group is supported by 2 postgraduate; Rinie Nalinie Mohd Nasir (PhD) and Nur Rahimah Sakinah Abd Salam (MSc), and 4 final year undergraduate students.

Our current postgraduate students enjoy the co-supervision of our long-standing collaborator from the University of Camerino, Italy, Prof. Stefano Mancini. They also have an on-going research work with international researchers from Italy, the UK, Poland and the United States.

Our Work

The attraction to this field began with an interest in quantum cryptography. In the early days, the main challenge was less than solid guidance in the field. However, the group was very lucky to have collaborators who were very helpful in supporting the group, even to this day.

Our work is mainly in the field of quantum information. This ranges from very fundamental studies, such as the mathematical structures of specific quantum channels to the search for the physical limits of knowledge. The group also commits itself

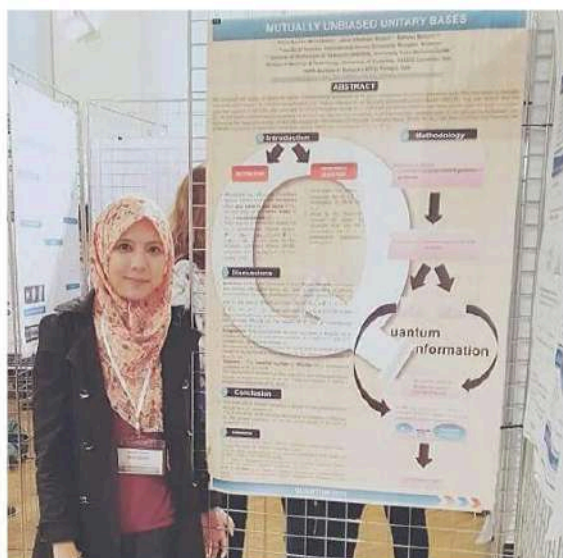
to less abstract studies of information exchange between quantum systems (a necessary precursor to quantum memories), exploitation of entanglement theory for quantum metrology, and even the more applied field of quantum cryptography.

On the whole, quantum information is the most exciting field resulting from a careful blend of physics, mathematics and information theory. ■



Dr. Suryadi now works at Binus University in West Jakarta, Indonesia.

Dr. Suryadi working on a bi-directional Quantum Key Distribution setup. The work was based on a theoretical protocol which Dr. Jesni invented with him at the KLIA airport, while waiting for their flight to South Korea (visiting POSTECH). The work was eventually published in the Institute of Physics' journal, Europhysics Letters (2017) which is brought together in a single paper, the theoretical analysis of the protocol and its experimental realisation.



Rinie with her poster at a conference in Torino (2019). A major part of the work was published in the journal of Quantum Information Processing (2019). She spent her Eid at Camerino; after an invitation extended by Prof. Stefano to host her there.

Rinie celebrating eid with Prof. Stefano and his postgrad students in Camerino.



RUBIC

Research Unit for Bioinformatics and Computational Biology

About us

The Research Unit was established in 2018. Currently, we have 14 members loosely grouped into subgroups; molecular modeling and molecular dynamics simulation, drug development and next generation sequencing and drug delivery using metabolites or compounds from various sources, bio-materials for drug delivery and other applications.



"INTERGRATING COMPUTATIONAL TECHNIQUES WITH WEB LAB EXPERIMENTS TO BRING MORE PERSPECTIVE INTO BIOLOGICAL OBSERVATIONS"

Our Research

We have been collaborating with colleagues from IIUM, UTM, UPM, SIRIM, and UNISEL using a number of HPC workstations that we have on-site. We also provide technical advice on setting up a Molecular Dynamics Simulations system with our collaborators. We are operating at the Protein Simulation and Bioinformatics Lab at Level 3, Biology Building, KOS. Find out more about us via <http://www.iium.edu.my/my/kulliyyah/kos/research-unit-1>



Bioinformatics outreach at Pahang Public Library on 13th March 2019 involving 12 secondary schools from around Kuantan.

CAPTOR

Centre of Advanced Photonics and Optoelectronics

On the 8th of March 2019, the members of Centre of Advanced Photonics and Optoelectronics (CAPTOR) had organised a seminar on applied optics and photonics.

The forum took place at the student lounge of KOS attended by 40 students and lecturers from the Department of Physics. The seminar involves talk from all members of CAPTOR including Assoc. Prof. Dr. Zamzuri Abdul Kadir, Dr. Zamani Mohd. Zulkifli, Dr. Ahmad Fakhruddin Ahmad Noorden and Dr. Siti Fatimah Norizan.

The aim of the seminar is to introduce CAPTOR to kulliyyah members including its current research interest, available equipment and technology installed in CAPTOR's Lab.

Apart from that, this seminar was conducted to share and expose the knowledge on the latest technology of applied optics and photonics. It is hoped that this seminar could develop students' interest to join CAPTOR in the near future.





KOS RESEARCH INSTITUTE

INOCEM

INSTITUTE OF OCEANOGRAPHY
AND MARITIME STUDIES

L-R: Muhammad Shukri Shafie, Tuan Aruzi Nik Him, Dr. Akbar John, Prof. Dr. Shahbudin Sood, Tuan Haji Azmi Ismail, Prof. Dr. Kamaruzzaman Yunus, Prof. Emeritus Tan Sri Dato' Dzulkifli Abdul Razak (IIUM Rector), Puan Sri Datin Masrah Abidin, Dr. Mohd. Fuad Miskon, Muhammad Khairulanwar Rosli, Dr. Muhammad Fitri Yusof, Dr. Nur Nazifah Mansor, Prof. Dr. Ahmed Jalal Khan Chowdhury, Assoc. Prof. Dr. Mohammad Mustafizur Rahman, Shahrul Ariffin Maskuri, Adam Ali

1

DEPUTY RECTOR VISIT TO INOCEM

A visit to INOCEM hatchery and facilities

3

RECTOR VISIT TO INOCEM

A visit to INOCEM hatchery and facilities

MARINE DEBRIS AWARENESS PROGRAM

Beach cleanup, debris monitoring and assessment by IIUM Marine Science students

4

YOUTH EMPOWERMENT THROUGH ENVIRONMENTAL KNOWLEDGE & LEADERSHIP SKILLS

Leadership package with SK Cherok Paloh students

7

VISIT FROM KULLIYAH OF MEDICINE AND INTERN STUDENTS FROM THE US

Collaboration discussions

VISIT FROM KUALA SELANGOR RESOURCES (KRS)

Collaboration discussions

8

VISIT FROM JABATAN KESIHATAN NEGERI PAHANG

Health inspections

9

CFS CAMPING DAY

Camping at INOCEM

10

WORLD CLEANUP DAY 2019

Cleanup at INOCEM Beach area

VISIT FROM KULLIYAH OF DENTISTRY & INDONESIAN STUDENTS

Collaboration discussions

IBADAH CAMPS

OSeM, MSD and CPS conducted their 2019 ibadah camps at INOCEM

Since the start of KOS' flagship projects: *Patin Buah* as Sustainable Food Production Sources and School for Sustainable Marine Livelihood (Marine School), INOCEM has been the centre of operation for both projects.

Marine School kicked-off its project "INOCEM World Cleanup Day" with the participation of local communities surrounding INOCEM in Cherok Paloh which is about 40 km from IIUM Kuantan.



A meeting and visit to INOCEM was also done for *Patin Buah* as Sustainable Food Production Sources as the first step in the flagship project.



CREAM

CENTRAL RESEARCH AND ANIMAL FACILITY



CREAM is the youngest department in Kulliyah of Science (as in August 2017).

It was originally established as Integrated Centre for Research Animal, Care and Use (ICRACU) which later rebranded to Central Research and Animal Facility Management (CREAM).

Starting May 2017, higher management of IIUM decided to downscale the centre into a department, which is now known as department of CREAM.

CREAM is equipped with state-of-the-art instruments in order to produce the highest quality laboratory animals and supplying them to the market and research community.

The flowchart shows the activities that have been achieved by CREAM in 2019. Please visit their website for future events in 2020: <http://www.iium.edu.my/kulliyah/kos/cream>

scan the code to connect and discover more



Photos: (TOP) Top-Glowing zebrafish, (BOTTOM) *Danio rerio* Leopard fish; (L-R) CREAM Director, Dr. Hamzah with IUM Rector, Tan Sri Dzulkifli; (L-R) CREAM Staff, Br. Saiful and a CREAM visitor.

Background: 36-h zebrafish embryo.

All photos are courtesy of Dr. Hamzah and Br. Muhammad Shahrizar.

1 RECTOR VISIT TO CREAM

A visit to new CREAM zebrafish lab and the new general lab.

3 CREAM SEMINAR SERIES 1

Introduction to work lab and analysis on protein

DEPARTMENT OF BIOTECH VISIT

A student visit from KOS' Biotechnology Department

CREAM SEMINAR SERIES 2

Usage of animals in life science research (Collaboration with Prima Nexus Sdn. Bhd.)

VISIT FROM UNIVERSITAS ISLAM INDONESIA (UII)

Collaboration discussions

4 CREAM SEMINAR SERIES 3

Western blot workshop

6 CREAM SEMINAR SERIES 4

Introduction to zebrafish in research activity

7 CREAM SEMINAR SERIES 5

Zebrafish husbandry and management

8 BULAN SAINS NEGARA

To introduce how zebrafish is used in research

9 CREAM SEMINAR SERIES 6

Zebrafish as disease model

KOS SNAPSHOT 2019



MAREC

RECREATIONAL CLUB UNDER DEPARTMENT OF MARINE SCIENCE

The members comprise of students under the programme of Bachelor of Marine Science and Technology. A lot of activities have been organised and planned by MaReC every year. This year, in March 2019, the students received their SCUBA diving license at Tioman Island, Pahang and in April 2019, 15 marine students gained new and fun experience in squid jigging activity held at Cherok Paloh, Kuantan, Pahang. Come and join us!



EDUCATIONAL TRIP

AN ANNUAL PROGRAM BY DEPARTMENT OF MARINE SCIENCE

The objective of this program is to enhance and expose students to other institutions and research institutes of good management practice. This year, students from Batch 171 and 172 had organised a Marine Educational Trip to Phuket, Thailand. This trip consisted of 26 students and 2 accompanying lecturers and 1 academic trainee staff from 14th to 18th January 2019.

The students have visited many institutions such as Phuket Marine Biological Centre, Phuket Aquarium and Hatchery, Marine National Park Operation Centre and also performed community service with Thariq Pittayapat School.



DEPARTMENT OF PLANT SCIENCE ACTIVITIES

The Department of Plant Science focuses on plant biology, covering agriculture, biotechnology and other plant science fields such as; ecology, taxonomy and soil sciences. Our students have the opportunity to experience practical and field visits instead of just the traditional classroom learning. In 2019, students went on several field trips to related organisations. Ethnobotany students learned the significance of the relationship between plant and people by visiting Orang Asli village in Kuala Gandah, Pahang.

Students were also taken to visit Taman Herba Universiti Kebangsaan Malaysia (UKM) and MARDI Serdang to experience the real herbarium and germplasm collection of different species. Moreover, the students delved into the wonders of seeds, their genetics and propagation with Lembaga Koko Malaysia, MARDI and Taman Pertanian.

They had specimens sampling activities at Fraser Hill, which was a collaboration with UKM. Through sampling activities, students were allowed to collect specimens to be brought back for learning in classroom purposes.



SCIENCESS IIUM ALUMNI



DATA
WAREHOUSE
DEVELOPER

ASMA' AHMAD BAHARI



Asma' received her secondary education which was a highly specialised field in the year 1998-2003 (SPM) from Technical Science & Accounting, Sekolah Agama Menengah Tinggi Hishamuddin. She pursued her study in Physical Science in Matriculation Centre, IIUM from 2006 to 2010. Later, she was awarded Bachelor Degree in Mathematical Science, majoring in Mathematics and Optics; minoring in ICT from IIUM. Currently, she holds a job position as a Data Warehouse Developer at Petron Fuel International Sdn. Bhd.

"Always trust Allah's planning & timing"
- Asma' Ahmad Bahari

BIOTECHNOLOGIST

MOHAMMAD FARIZ MD. SALLEH



Fariz is a biotechnologist at Abbvie Pte. Ltd. (Singapore) and a Department of Biotechnology graduate from KOS. He is the former President of Sciences Acoustic Team (SAT). During his study he was an all rounder and he was also the captain of Mustang Rugby team (Kuantan campus). He is a passionate knowledge seeker who is an ardent fan of arts and sports.

"Do not stick to one path. Always open your heart to any possibilities" - Mohammad Fariz Md. Salleh

POLICE OFFICER

MUHAMMAD SHAFIZAL SHAFIE

Shafizal is a 26-year-old Penangite working as a Police Officer and holds a degree in Bachelor of Science (Applied Chemistry). He is now an inspector and based in Ibu Pejabat Polis Diraja Malaysia, Bukit Aman, Kuala Lumpur.



SENIOR ASSISTANT
DIRECTOR

AMIRAH ABDUL RAZAK



This 34-year-old lady from Kuantan, Pahang was awarded a Bachelor of Science (Biotechnology) in 2009. She also holds a Masters of Management (Agribusiness) from Massey University, New Zealand. She is currently working as a Senior Assistant Director, Ibu Pejabat RISDA.

"Be driven with a cause to love and serve others. Let love fill your heart until there is no more room for hatred" - Amirah Abdul Razak

PGKOSSS IIUM ALUMNI



MEET THE ALUMNI

POSTGRADUATE KULLIYAH OF SCIENCE



Ummu Afifah Fadzir (MSc Biosciences)

Ummu Afifah Fadzir is a hard working student and due to her relentless effort, she graduated on time and was offered immediate employment. She is currently working in IKOP Sdn. Bhd. as QA Executive. She is also responsible for research and development in the microbiology field. Ummu Afifah in the interview shared how her postgraduate journey had really taught her about survival skills.

She gained a lot of soft skills by getting involved in sports and other outdoor activities with her fellow postgraduate colleagues. Interestingly, she was never considered as an active student until she became a postgraduate. The most unforgettable experience for her was how she struggled in lab works and succeeded in completing her thesis in less than one month. Praise be to Allah, she managed to graduate with two publications. She is deeply thankful for all who have been involved directly and indirectly throughout her masters' study.



Adam Shaari (MSc CTS)

While working on research related to light-emitting diode (LED) development, Adam has undergone an industrial attachment at OSRAM for six months from early July to December 2018 to experience learning from the experts from the industry. He was stationed there as one of the optical simulation engineers. While working there, he did an electrical and optical simulation for LED chips in addition to developing new LED designs. OSRAM is a multinational company based in Munich, Germany. The renowned company offers to globalise work culture as many come from different cultures and races. Adam managed to include himself in the development of products that are the results of hard work of engineers from all over the world. He assisted the team by linking the theoretical aspects of the product development with the experimental aspects. He successfully graduated on time and is currently working as a Research and Development Engineer at ViTrox Corporation in Penang.

Khairul Bariyah Abd Hamid (PhD Biosciences)

Setting off from Bachelor of Technology (Environment) at Universiti Malaysia Terengganu (UMT) on 2012, Master of Environment at Universiti Putra Malaysia (UPM) on 2015 and PhD in Biosciences at IIUM on 2019, Khairul Bariyah is now working for Daya Bersih Sdn. Bhd. (DBSB) as an Environmental Officer. Her job scope is to manage and monitor the waste produced in IIUM Kuantan; specifically the food waste.

The collected food waste will undergo

certain processes and produced as organic fertiliser. This organic fertiliser will be used on campus for landscaping and the remaining of it will be put on sale. Her current work is related to her PhD study. Thus, this has helped her in some of the current work process. On a final note, Khairul Bariyah would like to wish "Good luck for those who are still doing their research and best wishes to all postgraduates of Kulliyyah of Science".



Your generous gift at any level supports & strengthens the Kulliyyah, and helps in many other ways. All contributions can be made using the link provided »

<https://epayment.iium.edu.my/alumni/>

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UPCOMING EVENTS

- 2

Pahang Chemistry Carnival (PCC) 2020
Contact Person: Assoc. Prof. Dr. Deny Susanti >> deny@iium.edu.my
<https://www.facebook.com/pahangchemistrycarnival/>
- 3

Scuba Diving License
Contact Person: Dr. Mohd. Fuad Miskon >> inocem@iium.edu.my
<http://www.iium.edu.my/kulliyyah/kos/inocem>
- 8

Ibadah Camp 2020
Contact Person: TBD
<http://www.iium.edu.my/kulliyyah/kos/>
- 9

IIUM Mathematics Competition 2020
Contact Person: Dr. Siti Fatimah Zakaria >> fatimahsfz@iium.edu.my
<https://competition.iium.edu.my/imc/>

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Pahang CHEMISTRY CARNIVAL IIUM Kuantan

15 - 16 FEBRUARY 2020
PHYSICAL BUILDING,
KULLIYAH OF SCIENCE

HANDS ON EXPERIMENT JABIR AL HAYYAN QUIZ BAZAAR
CAREER TALK ACTIVITIES & COMPETITIONS AMAZING CSI
CHEMINNOVATOR EXHIBITION & LAB DEMO



Pahang Chemistry Carnival



IIUM_chemistry

#PCC_2020

FOR MORE INFO, VISIT

<http://www.iium.edu.my/kulliyyah/kos/chemistry>