



Research & Innovation Newsletter

Publication of the Postgraduate Studies and Research Office

Issue 1

October 2009

Message from the Assistant Vice Chancellor for Research and Innovation



Assalamualaikum Warahmatullahi Wabarakatuh,

Dear Colleagues,

It has been an exciting year for research at Universiti Brunei Darussalam. My office has the mission of fostering world-class scientific research and talent. To accomplish this mission, we must be at the leading edge of knowledge creation while continuously challenging ourselves to harness new knowledge. I know it is difficult to reach this mission within a short period of time.

In enhancing research culture, we have introduced several initiatives including organising workshops for the young academics, providing seed money to young and new researchers, organising UBD Talk time, forming research clusters and launching the Research & Innovation Newsletter. The newsletter is aimed to highlight research activities at Universiti Brunei Darussalam.

We try as much as possible to facilitate research and researchers by making a few changes to the research policy and guidelines. The University Research Committee (URC) is now consisting of URC-Core and URC-Business. Research proponents will have the opportunity to defend their proposals during the URC-Business meetings.

As you are aware, research funding does not necessarily come from research grant provided by UBD. Therefore, we encourage you to outsource funding from other government and non-government sectors.

Lastly, do not forget to publish your research.

Yours Sincerely,

Associate Professor Dr Zohrah Hj Sulaiman



Message from the Dean PSR.

It's a pleasure for me to serve as Dean of PSR and like A/P Dr Zohrah said, "It has been an exciting year for research at Universiti Brunei Darussalam".

In this issue, we will highlight research grant awarded by the University Research Committee since 1996 to 2008. Year 2009 is being compiled.

We will also highlight some current research undertaken by staff. Thirteen research projects will be featured from across faculties.

Recently, five research clusters were formed and it is hope that more will be formed in the near future. The five clusters will be mentioned in this issue.

Under research activities, A/P Dr Ulmar Grafe will talk about his current research. Research activities will be one of the regular features in the newsletter. Contributors are most welcome.

We also have just started "UBD Talk Time". The talk time was the idea of the Vice Chancellor. So far four talk time were held and response was encouraging. We will organise more talk time next year and I hope you will contribute as speaker and also participate in this fruitful activity.

There are so many exciting articles to put in this first issue but we have to restraint ourselves otherwise it would not be a newsletter. The next issue will touch on MOE S&T research grant among others.

Lastly, if your research has the potential for patent registration and economic development, please come and discuss with us or the AVC (R&I).

Yours sincerely,

Associate Professor Dr Tan Kha Sheng

Greetings

This is the first newsletter from the Office of Postgraduate Studies and Research or PSR for short.

Universiti Brunei Darussalam aims to produce quality graduates suitably equipped in terms of knowledge, skills, attitudes, moral and spiritual values, to support the development needs of the nation and consistent with the national philosophy. Universiti Brunei Darussalam also promotes and undertakes research, particularly applied research, in areas where it has a comparative advantage and in accordance with national needs.

Today the University accommodates more than 350 academic staff and 3,600 students in 7 faculties and strives to serve the Nation in many different fields of application. In 2008, Universiti Brunei Darussalam (UBD) graduated just over 1,000 graduates.

From August 2009, UBD has a new generation of undergraduate and postgraduate degrees. This change will align the University with the best of Asian and European practices. In reviewing its programmes, UBD has been inspired by His Majesty's Titah given during the recent UBD 20th Convocation ceremony in which he urged the University to offer programmes that are more innovative, broad-based and multi-disciplinary. As the premier institution of learning, UBD needs to take up the mantle of being the pioneer among the higher education institutions in the country, with a strongly evident competitive edge.

Research grant awarded by University Research Committee

Total Research Grant from 1996 - 2004		
NO.	FACULTY	TOTAL
1	FOS	\$ 286,482.30
2	FBEPS	\$ 25,835.00
3	FASS	\$ 130,482.00
4	SHOASIIS	\$ 3,000.00
5	LANGUAGE CENTRE	\$ -
6	SHBIE	\$ 17,012.50
7	APB	\$ -
8	INSTITUTE OF MEDICINE	\$ -
Total		\$ 462,811.80
Total Research Grant from 2005 - 2006		
NO.	FACULTY	TOTAL
1	FOS	\$ 95,153.70
2	FBEPS	\$ 21,148.00
3	FASS	\$ 3,426.00
4	SHOASIIS	\$ -
5	LC	\$ 10,717.00
6	SHBIE	\$ 13,299.65
7	APB	\$ -
8	IM	\$ -
Total		\$ 143,744.35
Total Research Grant from 2007 - 2008		
NO.	FACULTY	TOTAL
1	FOS	\$ 175,974.00
2	FBEPS	\$ 23,980.00
3	FASS	\$ 87,169.00
4	SHOASIIS	-
5	LC	\$ 3,240.00
6	SHBIE	\$ 62,316.85
7	APB	-
8	IM	\$ 169,482.25
Total		\$ 522,162.10

Some current research undertaken by staff.

Proponent	Title of Research	Duration	Grant B\$
Dr Debbie Guan Eng Ho	Exploring the Introduction of a Text-based approach to writing in the Upper Secondary English Classroom in Brunei Darussalam	1st January 2007 - 1st December 2009	14,274
Professor Harkirat S. Dhindsa et al	A Study of Science Process Skills of Bruneian Secondary Science Students	1st August 2007 - 31st July 2010	50,000
A/P Dr Ulmar Grafe	Spatial ecology and movement patterns of amphibians and reptiles in rainforests of Brunei Darussalam	1st April 2008 - 31st March 2010	32,980
A/P Dr Mohd Gary Jones	Bilingualism and bilingual education in small states	1st January 2008 - 31st December 2009	10,405
Dr Mark Benjamin Smith et al	Developing a phonics programme for teaching reading skills to Primary one pupils in Brunei Darussalam	1st May 2008 - 30th April 2011	20,963
A/P Dr Chandratilak Desilva Liyanage	Smart Monitoring, control and Communication	30th April 2008 - 30th April 2010	19,111
Dr Abdul Qayyum Malik	The Effects of shading on the Output Characterization of Solar Cells under the Climate Conditions in Brunei Darussalam	10th June 2008 - 9th June 2010	28,000
A/P Dr Patrick Low Kim Cheng et al	Improving e-Government	20th September 2008 - 19th September 2010	22,557.17
Dr Seyed Mohamed Buhari et al	Location Based Prayer Time Calculation	21 March 2009 - 21 March 2010	8,638
A/P Dr Francis M.J. Nickols	Production of Three Working 6-legged Robots for Multi-Agent Research	6th April 2009 - 6th April 2010	36,000
A/P Dr Ampuan Hj Brahim bin Ampuan Hj Tengah	Researching, collecting and Analysing the Manuscript of The Rajang Belief which is kept outside of Brunei Darussalam (Kuala Lumpur, Leiden and London)	1st June 2009 - 31st May 2010	6,974
Dyg Susilawatiniah Hj Ibrahim et al	Gender Dimension of Poverty in Brunei Darussalam: A Case study of Temburong District	1st July 2009 - 31st June 2010	9,989
A/P Dr Mohammad Ohidul Haque	Dimension and Measurement of Gender Inequality in Brunei: A Pilot Study	1st July 2009 - 30th June 2010	14,500

Research Clusters

There are five research clusters at UBD, they are as follows:

Research Cluster	Coordinator(s)
Energy	Dr Lim Chee Ming cheeming.lim@ubd.edu.bn Dr Sathyajith Matthew sathyajith.matthew@ubd.edu.bn
Materials	A/P Dr Peter Hing peter.nam@ubd.edu.bn A/P Dr Tan Kha Sheng Khasheng.tan@ubd.edu.bn
Modelling and Simulation	Dr Saiful Azmi Hj Husain saiful.husain@ubd.edu.bn
Environment and Sustainability Development	A/P Dr David Marshall david.marshall@ubd.edu.bn Gabriel Yong gabriel.yong@ubd.edu.bn
Science, Technology and Society	Alistair Wood alistair.wood@ubd.edu.bn

A seed fund of B\$20,000 has been allocated for the utilization of this cluster. The general guideline for this cluster follows the University's research guidelines. A Research Cluster can also utilize this grant to:

1. Organize local workshops and seminars and to bring in scientists for such workshops and seminars; and
2. Bring in visiting academics for collaborative research activities of this cluster.

Stay tune for further development of these clusters. If you would like to join any of the clusters, please get in touch with the respective coordinator(s).

Research Activities

Frog-biting midges

Human health depends on biodiversity. Pathogens are integral parts of ecosystems, complex networks of other organisms that govern their emergence, transmission, and spread. Biodiversity loss can change the abundance of and relationship among organisms and their physical and chemical environments. Alteration of forest environments can lead to the emergence of new infectious diseases from animal reservoirs. Knowledge of the diversity of insect vectors of animals is necessary to understand these dynamics. Blood-sucking flies and mosquitoes are important vectors of disease in animals and humans.

UBD Researcher Dr. Ulmar Grafe from the Faculty of Science is investigating the role of frog-biting midges in the lives of frogs to better understand disease dynamics in animal populations and as a model system of co-evolutionary relationships (Figure 1).

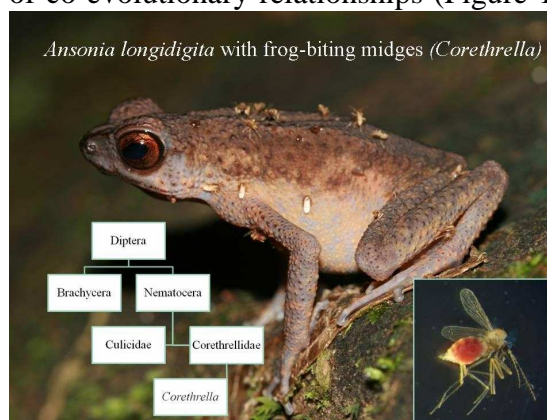


Fig. 1

The forests in Brunei Darussalam are ideal for such studies because one can study epidemiology and host-parasite relationships under natural conditions. Furthermore, frog-biting midges are fascinating subjects of study in sensory ecology, since they home in on the sounds produced by their hosts and have evolved novel mechanisms of hearing. Recent experiments have shown that these flies can hear up to 4 kHz, well above the hearing range of mosquitoes.

Dr. Grafe uses modified mosquito traps fitted with loudspeakers as lures to capture flies and all of the species are new to science. Analyses of the mitochondrial cytochrome c oxidase subunit I (COI) support and extend the diversity reported from morphospecies classification based on gross external morphology and pigmentation. Recent preliminary evidence suggests that the relationships between midges and their frog hosts are more complex than initially thought (Figure 2).

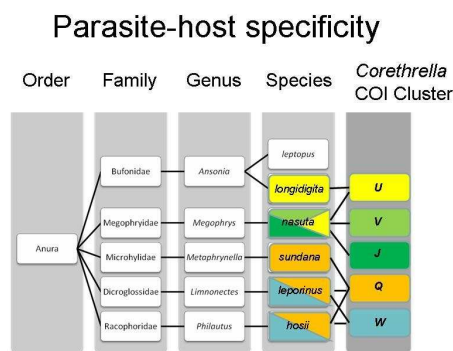


Fig. 2

Some frog-biting midges appear to be specialists that suck blood from only one host. Others are less discriminating and are found to parasitize several frog species. As the flies are known to transmit trypanosomes, the selective pressures on frog calling behavior are likely to be high. Indeed, surveys of parasite prevalence on 28 frog species from the lowland dipterocarp rainforest around the UBD field station at Kuala Belalong have revealed that no species with advertisement calls above 4 kHz was parasitised, suggesting a significant selective pressure on male frogs to call below 4 kHz.

BRIDEX Exhibition 12-15 August 2009

UBD participated in the BRIDEX exhibition by showcasing their smart robots. The team was led by A/P Frank Nicols and was accompanied by the Deputy Dean, PSR Patrick Low. Their robots

attracted a lot of visitors that went to the exhibition.

Belalong Initiative

Recently, there was a called for project proposal under the Belalong initiative. Dr kamariah, Director of KBFSC gave a presentation on KBFSC- past, present and future. From this meeting, more than 10 project proposals were submitted under this initiative.

UBD talk time.

The 1st UBD Talk Time was held in the afternoon of Wednesday, 28 October 2009 at ILIA Room 2, ILIA Building.

The talk was moderated by Dr Diana Cheong, Director of ILIA

Awg Salleh Bostaman bin Zainal Abidin, Managing Dircetor and Chief Executive Officer Brunei LNG Sdn Bhd gave a talk on “Issues on Challenges in the Implementation of Wawasan 2035: A Perspective from the Non-Government Sector”

2nd UBD Talk Time was held in the afternoon of Wednesday, 4th November 2009 at ILIA Room 1, ILIA Building. Unfortunately, there was no presentation by Prof. Dr Ranjan Ramasamy but a discussion on Sustainable Development was held moderated by Prof. Dr Ranjan Ramasamy.

3rd UBD Talk Time was held in the afternoon of Wednesday, 11th November 2009 at ILIA Room 1, ILIA Building.

The talk was presented by A/P Dr Zohrah Bte Hj sulaiman, AVC (R&I) on Science Technology and Society that she attended recently at Kyoto.

If you like to give a talk on Talk Time, you are most welcome. Please contact A/R PSR.