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The Centre for Research in Biotechnology for Agriculture

(CEBAR) has a mission “to be at the Forefront in Generating and Disseminating Scientific Ideas and knowledge in Biotechnology Research Relevant to support a Sustainable Agriculture Bio economy”, and aims to qualify as a Ministry of Education Centre of Excellence (HiCoE).

In the year 2017, CEBAR researchers produced **45 WoS (ISI) publications** with over 60% of these in tier 1 and 2 ranked journals.

CEBAR members secured over **RM3.9 million in research grants** including from the **Bill and Melinda Gates Foundation** (under the International Institute of Tropical Agriculture (IITA)).

CEBAR also raised income of over **RM6,700.00 through training courses** run by our staff and members.

Currently, CEBAR has **over 99 postgraduate students** under supervision by our Principal Investigators with over half of these at the PhD level. In 2017, CEBAR also hosted **7 national and 3 international interns** in our various labs.

CEBAR staff and students have received a total of **57 International Awards**, were granted with **2 patents, 1 copyright and submitted 2 trademark applications** in 2017.

Activities in 2017 included **1 workshop, 2 training courses, 5 seminars/mini-symposia** and visits by **international** scientists including from **Kyushu Institute of Technology, Japan, Murdoch University, Perth Australia, Guangxi Academy of Agricultural Sciences, Nanning, Guangxi, China and NARA Institute of Science and Technology (NAIST), Japan.**

CEBAR continues to manage and operate the University of Malaya Plant Biotech Facility (PBF), which allows researchers to test novel hybrid plants on a large scale in a contained and climate controlled setting. CEBAR **successfully achieved re-certification** of the Plant Biotech Facility to international standards for Biosafety on **6th December 2017** and the certificate is valid until **21st December 2018**.

In terms of International and national networking, 2017 saw CEBAR activities as co-signatory of **MOAs** including with the **Nara Institute of Science and Technology (NAIST), Japan; University of Leicester, UK; International Institute of Tropical Agriculture (IITA), under Gates’s Foundation; Palacky University Olomouc, Czech Republic and Heleogenics Sdn Bhd.** CEBAR also conducted activities under several on-going **MOU**.

Centre for Research in Biotechnology for Agriculture (CEBAR)
Highlights of Activities & Achievements in 2017

CEBAR FACTS & FIGURES FOR THE YEAR 2017

Item	Detail	Comment
45 ISI publications	Tier 1: 12 (27%) Tier 2: 15 (33%) (60% Q1&Q2)	Tier 3: 14 (31%) Tier 4: 4 (9%)
Research Grants >RM 3.9 million	<p>National grants: RM 1,242,379.73</p> <p>RU grants: RM 2,119,655.00</p> <p>Private Funding: RM 135,000.00</p> <p>International grant: RM 469,001.09</p>	<p>9 MOHE grants FRGS: 7 - RM 877,200.00 KTP: 1 - RM 143,179.73</p> <p>1 MOSTI grants Science Fund: - RM 222,000.00</p> <p>3 Bantuan Kecil Penyelidikan (BKP) – RM 108,500.00 1 Bantuan Kecil Penyelidikan (BKP SPECIAL) - RM 50,000.00 9 UMRG Programme (8 Frontier Science AFR; 1 Innovative Technology ITRC) – RM 319,000.00 24 Postgrad Research Grant (PPP) - RM 185,900.00 12 RU grants (2 UMCARES Sahabat; 1 Knowledge Transfer Program KTP; 9 Other RU) – RM 1,409,555.00 1 UM Living Lab Grant Programme – RM 46,700.00</p> <p>Dafflow (M) Sdn Bhd - RM 100,000.00 Malaysia Toray Science Foundation - RM 20,000.00 Mr. Yiang Kwai Sang (Persendirian) - RM 15,000.00</p> <p>IITA (<i>Bill & Melinda Gates Foundation</i>) - RM 385,400.09 AKADEMI SCIENCE MALAYSIA (ASM) – RM 83,601.00</p>
Other income	RM 6,700.00	<p>Training courses: Bengkel Kultur Tisu Tumbuhan Pisang - RM 1,540.00 Laboratory Biosafety and Biosecurity Workshop - RM 4,470.00 Kokodema Hands-on Workshop - RM690.00</p>
99 Postgraduate students	<p>MSc 42</p> <p>PhD 57</p>	<p>Local: 40 International: 2</p> <p>Local: 46 International: 11</p>
10 Interns	<p>International : 3</p> <p>National : 7</p>	<p>Shah Abdul Latif University, Pakistan DAAD Rise Worldwide program (Germany) Necmattin Erbakan University Konya, Turkey Taylors University Kolej Komuniti Rembau Manipal International University, Nilai, Negeri Sembilan (AIMST) University, Kuala Lumpur Universiti Malaysia Sarawak (UNiMas) Politeknik Nilai Negeri Sembilan</p>
11 MOU/MOA	<p>7 MOA</p> <p>National : 1</p> <p>International : 6</p>	<p>MOA: Agreement on research collaboration and academic exchanges between University of Malaya & NARA Institute of Science and Technology (NAIST), JAPAN; Student exchange between University of Malaya and Nara Institute of Science and Technology (NAIST), JAPAN; University of Leicester, UK; International Institute of Tropical Agriculture (IITA), Africa; Palacky University Olomouc, Czech Republic; Heleogenics Sdn Bhd, Malaysia;</p>

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	4 MOU National : 2 International : 2	MOU: National Institutes of Biotechnology Malaysia represented by Malaysian Institute of Pharmaceuticals and Nutraceutical; Palacky University Olomouc, Czech Republic; Assam University, India; Global Integrated Training Associates Sdn Bhd (Quest International University Perak)
57 Awards to CEBAR PI and students	International : 35 National: 22	Includes: Keynote, Plenary & Invited Speaker invitations, Membership of scientific committees & Evaluation panels, Invitations as judges / adjudicators and external examiners, Travel Awards, Fellowships, Exchange Programmes, Student Scholarships, Awards at Conferences
Intellectual property	2 Patents 1 Copyright 2 Trademarks	Granted: 2, National National National
CEBAR activities	1 Workshop 2 Training courses 5 Seminar/symposia	Topics included: Laboratory Biosafety and Biosecurity, Banana Tissue Culture, Plant Biotechnology, Commercialization
Visitors hosted	4 International 0 National	International visitors: Academy of Agricultural Sciences, Nanning, Guangxi, China NARA Institute of Science and Technology (NAIST), JAPAN Murdoch University, Perth, Australia Kyushu Institute of Technology, Japan
Physical Resources and System	Re-certification of Plant Biotech Facility to international standards for infrastructure and operation to BSL-2	The certification inspection was performed on 6 th December 2017 and the certificate is valid until 21 st December 2018.

Details of awards to CEBAR staff/students in 2017

No.	Name of PI / student	Award	Level
1	Prof. Dr. Jennifer Ann Harikrishna	Travel award: International symposium on Plant Biotechnology for Crop Improvement. Indian Institute of Technology, Guwahati Assam India	International
2	Prof. Dr. Jennifer Ann Harikrishna	Travel award: International Conference on Functional Plant Biology, Assam University, Silchar India	International
3	Prof. Dr. Jennifer Ann Harikrishna	Travel award: European Molecular Biotechnology Organization (EMBO) Conference on Micro and Metabolic Regulators in Plants (Plenary speaker)	International
4	Prof. Dr. Jennifer Ann Harikrishna	Invited Speaker at Orchid Symposium 2017 Nanyang Executive Centre, Singapore	International
5	Prof. Dr. Jennifer Ann Harikrishna	Invited Speaker at 2 nd International Conference on Molecular Biology and Biotechnology in conjunction with the 24 th Scientific Meeting of the Malaysian Society for Molecular Biology & Biotechnology (MSMBB) co-organized by the Asian Federation of Biotechnology Malaysian Chapter (AFOB-MC) & Monash University Malaysia (MUM)	International
6	Prof. Dr. Jennifer Ann Harikrishna	Session Chair & member of organizing committee at 2 nd International Conference on Molecular Biology and Biotechnology in conjunction with the 24 th Scientific Meeting of the Malaysian Society for Molecular Biology & Biotechnology (MSMBB) co-organized by the Asian Federation of Biotechnology Malaysian Chapter (AFOB-MC) & Monash University Malaysia	International

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(MUM)			
7	Prof. Dr. Jennifer Ann Harikrishna	Invited Speaker at 3 rd International Conference on Crop Improvement (ICCI 2017) (Conference), University of Reading (Malaysia)	International
8	Prof. Dr. Jennifer Ann Harikrishna and Prof Dr. Rofina Yasmin Othman	Jasdeep Kaur has won an ICGEB fellowship (15 th November 2017 – 15 th May 2018: 6 months)	International
9	Prof. Dr. Jennifer Ann Harikrishna	Shet Lee Ng has awarded a MEXT scholarship	International
10	Prof. Dr. Jennifer Ann Harikrishna	Franziska Hörsch DAAD RISE Worldwide research internship (1 st June – 27 th July 2017: 2 months)	International
11	Prof. Dr. Jennifer Ann Harikrishna, Dr. Teo Chee How	Abdul Aziz Mirani for Best Public Sector Agency Award (6 th September 2017 – 5 th February 2018: 6 months)	International
12	Prof. Dr. Jennifer Ann Harikrishna	Review revised manuscript for BMC Genomics (WoS, Q1)	International
13	Prof. Dr. Jennifer Ann Harikrishna	Reviewer for the Manuscript for Journal of Experimental Botany	International
14	Prof. Dr. Noor Hasima Nagoor	Invited Speaker: The International Conference on Natural Product at Lumut, Perak	International
15	Prof. Dr. Noor Hasima Nagoor	Invited Speaker: The International Malaysian-French Scientific Conference 2017 (IMFSC 2017) 18 th – 19 th December 2017 at University of Malaya, Kuala Lumpur	International
16	Prof. Dr. Noor Hasima Nagoor	Awarded financial support for dual-PhD UM-NAIST candidate, Sophia Sok Ping Meow.	International
17	Prof. Dr. Noor Hasima Nagoor	Reviewed manuscript entitled: Prognostic value of three miRNA signature in lung adenocarcinoma: evidence from bioinformatics analysis	International
18	Prof. Dr. Noor Hasima Nagoor	Reviewed a manuscript entitled: Cytotoxicity of Mycobacterium indicus pranii on Mia-Pa-Ca2 cells, ACRE-D-17-00021	International
19	Prof. Dr. Noor Hasima Nagoor	Review manuscript with the title: "The Critical Role and Potential Target of the ATX/LPA Axis in Pancreatic Cancer"	International
20	Prof. Dr. Noor Hasima Nagoor	Reviewed a manuscript BIOCHI-D-17-00245 "MicroRNA-137 is negatively associated with clinical outcome and regulates tumor development through EZH2 in cervical cancer"	International
21	Prof. Dr. Noor Hasima Nagoor	Reviewed a manuscript # CAM4-2017-07-0971 entitled "MicroRNA-373 inhibits cell proliferation and invasion via targeting BRF2 in human non-small cell lung cancer A549 cell line" for Cancer Medicine.	International
22	Prof. Dr. Noor Hasima Nagoor	Reviewed manuscript # TCA-OA-06-2017-1452 entitled "miRNA-137 inhibits proliferation, migration and EMT in non-small cell lung cancer through targeting LSD1"	International
23	Prof. Dr. Noor Hasima Nagoor	Reviewed a manuscript BCAN-D-16-02659, 'MiR-216b inhibiting cell proliferation by targeting FOXM1 in cervical cancer cells and is associated with better prognosis'	International
24	Prof. Dr. Noor Hasima Nagoor	Reviewed a manuscript EPI-2017-0104 entitled "The correlation analysis of miRNAs and target genes in metastasis of cervical squamous cell carcinoma" for Epigenomics.	International
25	Prof. Dr. Norzulaani Khalid, Prof. Dr. Rofina Yasmin Othman	Award on Japanese Government MONBUKAGAKUSHO:MEXT scholarship to pursue PhD studies at Hiroshima University for Fatin Iffah Rasyiqah	International

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26	Assoc. Prof. Dr. Chandran Somasundram	Invited Speaker at Global Biotechnology, Global Business Leaders Program Batch 33, 2017-02-18 to 2017-02-19, Cornell University ILR School, Lead Business Institute, Bangkok, Thailand	International
27	Assoc. Prof. Dr. Chandran Somasundram	External examiner for Pharmacological Study on Antioxidant, Antidiabetic and Antimicrobial Effects of Methanol Extracts of Citrullus Lanatus (THUNB) Seeds and Saraca Asoca (ROXB.) Flowers	International
28	Assoc. Professor Dr. Subha Bhassu	Award of Distinguished Women in Science 2017 by Venus Foundation	International
29	Assoc. Professor Dr. Subha Bhassu	Award Established Scientist by The Royal Society, London	International
30	Assoc. Professor Dr. Subha Bhassu	Winner at the International Conference and Exhibitions on Inventions by Institutions Higher Learning (PECIPTA 2017) for Prawn Checker TM: Multiplex Molecular Diagnostic Detection for Shrimp Viruses.	International
31	Assoc. Professor Dr. Subha Bhassu	Reviewer for Journal of Molecular Pharmaceutics & Organic Process Research	International
32	Dr. Jamilah Syafawati Yaacob	Reviewer for Journal of Molecular Pharmaceutics & Organic Process Research	International
33	Dr. Tan Boon Chin	Royal Society-Newton Advanced Fellowship (1 st December 2017 – 30 th November 2018: 12 months)	International
34	Dr. Tan Boon Chin	Travel award: Asia-pacific Biosafety Association conference, by U.S Department of state biosecurity engagement program (BEP)	International
35	Dr. Teo Chee How	International Exchange Program of Chiba University (1 st September – 31 st October 2017: 2 months)	International
36	Prof. Dr. Jennifer Ann Harikrishna	PhD Thesis proposal defence, Taylors University	National
37	Prof. Dr. Jennifer Ann Harikrishna	External evaluator for promotions of academic staff at UCSI	National
38	Prof. Dr. Jennifer Ann Harikrishna	Professional evaluation of an academic staff for suitability for promotion	National
39	Prof. Dr. Jennifer Ann Harikrishna	Evaluation of FRGS proposal (MyGrants)	National
40	Prof. Dr. Rofina Yasmin Othman	Fellow, Academy of Sciences Malaysia	National
41	Prof. Dr. Rofina Yasmin Othman	Invited Speaker at National Biosafety Seminar 2017, 2017-05-09 to 2017-05-09, Dept. of Biosafety, Ministry of Natural Resource & Environment	National
42	Prof. Dr. Rofina Yasmin Othman	The Scientific Malaysian Advisory Board Members	National
43	Prof. Dr. Norzulaani Khalid	Jury panel for 11 th Edition of the L'oreal-UNESCO For Women in Science Award 2017	National
44	Prof. Dr. Norzulaani Khalid	External examiner for Bachelor of Biotechnology (Hons), Faculty of Integrative Sciences & Technology, Quest International University Perak	National
45	Prof. Dr. Norzulaani Khalid	External examiner for KEJURUTERAAN METABOLIK Escherichia coli BAGI PENGHASILAN SESKUITERPEN DARIPADA Polygonum minus HUDS (UKM)	National
46	Prof. Dr. Norzulaani Khalid	Principal Associate Researcher Malaysian Genome Institute (MGI)	National
47	Prof. Dr. Norzulaani Khalid	Panel Penasihat Penyelidikan Inovasi, Lembaga LADA Malaysia	National

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48	Prof. Dr. Norzulaani Khalid	Appointment as Technical advisor, Q-Plantech Sdn Bhd	National
49	Assoc. Professor Dr. Subha Bhassu	External examiner for UMS postgraduate student on sequencing of coral genomes with potential commercial applications	National
50	Assoc. Professor Dr. Chandran Somasundram	Community Service 'We Care As a Team', Management and Science University (MSU)	National
51	Assoc. Professor Dr. Chandran Somasundram	Chief Adjudicator for QIUP WORLD UNIVERSITIES PEACE INVITATIONAL DEBATE	National
52	Assoc. Professor Dr. Chandran Somasundram	Invitation to the Expert Talk: Speak with Confidence at Roche Diagnostic (M) Sdn. Bhd	National
53	Dr. Jamilah Syafawati Yaacob	Judge for Poem in Recitation in Motion Funtastic Science II	National
54	Dr. Jamilah Syafawati Yaacob	Panel of Jury "Pertandingan Reka & Inovasi" SMK Duma & University of Malaya 2017	National
55	Dr. Jamilah Syafawati Yaacob	Invited Speaker at Showcase UMRG Program (Top-Down), 2017-11-30 to 2017-11-30, Frontier Science Research Cluster, University of Malaya	National
56	Dr. Jamilah Syafawati Yaacob	Reviewer for Journal of Oil Palm Research	National
57	Prof. Dr. Rofina Yasmin Othman, Prof. Dr. Norzulaani Binti Khalid	Malaysia 3 Minute Thesis Competition Second Place, Mr. Nazrin Abd Aziz (Institute of Biological Sciences)	National

Details of patents to CEBAR staff/students in 2017

No.	Name of PI	Name of Patent	Certificate No.	Level
1	Professor Dr. Noor Hasima Nagoor	A Composition For Treating A Neoplasm	MY-160887-A	National
2	Prof. Dr. Rofina Yasmin Othman, Prof. Dr. Jennifer Ann Harikrishna and Prof. Dr. Norzulaani Khalid	A Method for Constructing Recombinant Soluble Flag-tagged Single Chain Variable Fragment (SCFV) Against Cucumber Mosaic Virus (CMV)	MY-162822-A	National

Details of other IPR to CEBAR staff/students in 2017

No.	Year	Title	No Filing	Filing date	Authors
1	2017	Trademark of CEBAR Logo	2017050358 & 2017050362	9 th January 2017	CEBAR
2	2017	Trademark of Orchid Shield	2017011241	13 th October 2017	Profesor Dr. Jennifer Ann Harikrishna
3	2017	Copyright of Biosafety Guidelines for GPBSL2	LY2017004620	6 th December 2017	Profesor Dr. Jennifer Ann Harikrishna

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Details of MOA & MOU activities by CEBAR staff/students in 2017

No.	MOU/MOA	Activity under the MOA/MOU	CEBAR Staff & *students involved	MOA/MOU Active Period
1	Memorandum of Agreement on student exchange between University of Malaya and Nara Institute of Science and Technology (NAIST), JAPAN	<p>1. 2017 Pre-screening Internship for 'Special Recommendation Program' January 16–25, 2017: Master course program with MEXT priority scheme i. Siti Aqilah Doctor course program with MEXT embassy recommendation scheme i. Ng Shet Lee</p> <p>2. Prescreening for MSc and PhD Fellowships at the Nara Institute of Science and Technology (NAIST), Nara, Japan (for enrollment in October 2018 or April/October 2019 (interview was held on 16th Nov 2017) Successful candidates: <u>Master course program scheme:</u> 1) Agnes Ong Lee Chen 2) Mohd Fauzee Yasmin Nabilah <u>Doctoral course program scheme:</u> 1) Kalaiselvam Kaveena</p>	Prof Dr Jennifer Ann Harikrishna Prof Dr. Noor Hasima Nagoor	16 th Mar 2009 – 15 th Mar 2014 (renewed 25 th Feb 2014 – 24 th Feb 2019)
2	Memorandum of Agreement on research collaboration and academic exchanges between University of Malaya & NARA Institute of Science and Technology (NAIST), JAPAN	<p>1. Visit by Prof. Dr. Taro Kawai, Assoc. Prof. Dr. Takayuki Tohge and Prof. Dr. Kazuhiro Shiozaki as invited speaker for CEBAR Expert Seminar Series 4/2017</p> <p>2. Dr. Ardiyana has visited NARA on 1st – 4th Nov 2017 to discuss on collaboration project (cell wall wall/regeneration of cell wall-related research) and sharing research material</p>	Prof. Dr. Jennifer Ann Harikrishna Prof. Dr. Norzulaani Khalid Prof. Dr. Noor Hasima Nagoor	16 th Mar 2009 – 15 th Mar 2014 (renewed 25 th Feb 2014 – 24 th Feb 2019)
3	Memorandum of Agreement for Dual Doctoral Degree Programme between University of Malaya & NARA Institute of Science and Technology (NAIST), JAPAN	Sophia has admitted as Doctoral student in NARA on 1 st October 2017 until 31 st March 2019 (18 months). Then she will return to UM to complete the 18 months study in UM until 31 st March 2020	Prof. Dr. Noor Hasima Nagoor	16 th May 2017 – 31 st Mar 2020
4	Memorandum of Agreement between University of Malaya and on research collaboration between University of Malaya and University of Leicester	Agreement on research collaboration	Prof Dr Jennifer Ann Harikrishna Prof Dr Norzulaani Khalid	2 nd July 2014 – 1 st July 2017
5	Memorandum of Understanding for Academic	General MOU	Prof Dr Jennifer Ann Harikrishna	2016-2021

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	Cooperation between University Malaya and Palacky University Olomouc			
6	Memorandum of Student Programme Exchange Agreement between University Malaya and Palacky University Olomouc	Student Exchange Programme	Prof Dr Jennifer Ann Harikrishna	2016-2021
7	Memorandum of Agreement between International Institute of Tropical Agriculture (IITA) and University of Malaya (UM)	<ol style="list-style-type: none"> 1. Field visit to UMK on 20th February 2017 2. Dr. Teo Chee How attended a meeting in Uganda on 24th – 27th April 2017. 	Prof. Dr. Jennifer Ann Harikrishna Prof.Dr. Rofina Yasmin Othman Dr. Teo	1 st Oct 2014 – 30 th Sep 2017
8	Memorandum of Understanding for Academic Cooperation between University of Malaya and Assam University, India	Prof. Jennifer has visited Assam University, Silchar to attend International Conference on Functional Plant Biology (ICFPB) 2017 on 24 th Jan 2017	Prof Dr Jennifer Ann Harikrishna	2017-2022
9	Memorandum of Agreement between Heleogenics Sdn Bhd and the University of Malaya	Experiment finished.	Prof Dr Rofina Yasmin Othman	31 st Dec 2013 – 30 th Dec 2018
10	Memorandum of Understanding between National Institutes of Biotechnology Malaysia represented by Malaysian Institute of Pharmaceuticals and Nutraceuticals and University of Malaya	<ol style="list-style-type: none"> 1. Experiment done 2. Research manuscript entitled "Anti-proliferation, apoptotic induction and anti-migratory effects of hemi-synthetic ACA analogs on MDA-MB-231 breast cancer cells" has accepted for publication in Drug Design, Development and Therapy journal 	Prof Dr. Noor Hasima Nagoor	4 th Sept 2014 – 3 rd Sept 2019
11	Memorandum of Understanding for Academic Cooperation between University of Malaya and Global Integrated Associates Sdn Bhd (Quest International University Perak)	<ol style="list-style-type: none"> 1. Jointly research collaboration with Dr. Fauziah Abu Bakar (former student of CEBAR) will be carried out soon under FRGS fund. 2. Prof. Dr. Jennifer Ann Harikrishna was appointed as External Co-Supervisor for Master of Science candidate at Quest International University of Perak. 3. Prof. Dr. Norzulaani Khalid was appointed as External Examiner for Biotechnology Programme at Quest International University Perak. 	Prof Dr Jennifer Ann Harikrishna	2017 - 2022

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Details of CEBAR activities in 2017: Workshops

No.	Title	Date/venue	Output
1	Workshop to Establish CEBAR Business Canvas Model	7 th April 2017/Uranus Meeting Room	Knowledge Transfer
2	Discussion on MSc Programme with Dr. Mohmmad Firdaus Abdul Aziz	13 th April 2017/ Uranus Meeting Room	Knowledge Transfer
3	CEBAR Grant Brainstorming Workshop	29 th May 2017/ Mars Meeting Room	Knowledge Transfer
4	CEBAR Pre-Audit workshop PBF	12 th October 2017/ PBF Meeting Room	Knowledge Transfer
5	Laboratory Biosafety & Biosecurity Workshop	21 st – 23 rd November 2017/ High Impact Factor Building	Knowledge Transfer

Details of CEBAR activities in 2017: Training courses

No.	Title	Date/venue	Output
1	Bengkel Kultur Tisu Tumbuhan Pisang	27 th July 2017/ PBIU, UM	Knowledge Transfer
2	Kokodema Hands-on Workshop	19 th December 2017/ PBIU, UM	Knowledge Transfer

Details of CEBAR activities in 2017: Seminar/symposia

No.	Title	Date/venue	Output
1	CEBAR Expert Seminar Series 1/2017 in conjunction with the 28 th MSMBB Annual Grand Meeting	19 th May 2017/ Mars Meeting Room	Knowledge Transfer
2	SDTC-UM CEBAR Mini-Symposium	9 th August 2017/ MTDC Training Room, Block B, Serdang	Knowledge Transfer
3	CEBAR Expert Seminar Series 2/2017: Identify recently duplicated genes associated with local adaptation in Arabidopsis, and identify novel small coding genes hidden in Arabidopsis by Assoc. Prof. Dr. Kousuke Hanada	14 th Sept 2017/ Mars Meeting Room	Knowledge Transfer
4	CEBAR Expert Seminar Series 3/2017: "Two seminars on biosecurity (plant, animal and ocean) and food safety" By Professor YongLin Ren, Associate Dean International School of Veterinary and Life Sciences, Murdoch University, & Professor Simon Mckirdy, Director of the Harry Butler Institute School of Veterinary and Life Sciences, Murdoch University, Perth Australia	29 th September 2017/ Conference Video Room	Knowledge Transfer

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5	<p>CEBAR Expert Seminar Series 4/2017:</p> <ol style="list-style-type: none"> 1. Professor Taro Kawai :The role of innate immune signaling pathways in anti-cancer immunity 2. Assoc. Prof. Dr. Takayuki Tohge Metabolomics-assisted breeding focused on tomato secondary metabolism 3. Prof Dr. Kazuhiro Shiozaki Regulation of TOR complex 1 (TORC1) in cellular response to nutrients 	31 st October 2017/ Mars Meeting Room	Knowledge Transfer
6	<p>CEBAR Expert Seminar Series 5/2016:</p> <ol style="list-style-type: none"> 1. Dr. Nurzatil Sharleeza binti Mat Jalaluddin : The Role of Export Promotion Programs in Stimulating the Internationalisation of Malaysian SMEs: Evidence from the Herbal Industry 2. Dr. Tan Tian Tian : Studies on functional diversity of Arabidopsis VND family proteins, master transcription factors of xylem vessel cell differentiation 3. Dr. Pua Teen Lee : Transient expression of recombinant Avian Influenza H5N1 proteins in <i>N. benthamiana</i> 	4 th December 2017/ Mars Meeting Room	Knowledge Transfer

Details of CEBAR activities in 2017: Other activities/Research activities

No.	Title	Date/venue	Output
1	CEBAR RU 2017 Proposal	2 nd June 2017	Knowledge Transfer
2	Embracing Biosafety, Biosecurity and Bioethics in Research Seminar 2017	15 th August 2017/Seri Kembangan, Selangor	Knowledge Transfer
3	CEBAR RU 2017 Proposal Defense Meeting	2 nd June 2017/ CEBAR Meeting Room	Knowledge Transfer
4	Discuss establishment of a joint Biosecurity Research Centre and Joint PhD	29 th September 2017/CEBAR Meeting Room	Knowledge transfer
5	PBF Certification Inspection by Basler & Hofman	6 th December 2017/ PBF	Re-certification of Plant Biotech Facility to international standards for infrastructure and operation to BSL-2

Details of visitors to CEBAR in 2017

No.	Visitor(s)	Institute/Organization	Date of Visit	Activity
1	Associate Professor Kousuke Hanada	Department of Bioscience and Bioinformatics, Kyushu Institute of Technology, Japan	14 th Sept 2017	CEBAR Expert Seminar Series 2/2017 & Visit CEBAR

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2	Professor YongLin Ren & Professor Simon Mckirdy	Murdoch University, Perth Australia	29 th September 2017	CEBAR Expert Seminar Series 3/2017 & Visit CEBA
3	Research team members from Guangxi Academy	Agricultural research team members from Guangxi Academy of Agricultural Sciences, Nanning, Guangxi, China	16 th Oct 2017	Visit to Plant Biotech Facility & CEBAR
4	Professor Taro Kawai, Assoc. Prof. Takayuki Tohge and Prof Kazuhiro Shiozaki	NARA Institute of Science and Technology (NAIST), JAPAN	31 st October 2017	CEBAR Expert Seminar 4/2017

Details of interns hosted by CEBAR in 2017

No.	Name	Institute/ Country	Duration of attachment
1	Khoo Sam Wai	Taylors University	2 nd January 2017 - 17 th March 2017
2	Zulkifli Bin Azami	Kolej Komuniti Rembau	13 th March 2017 - 12 th June 2017
3	Janecenta Kaur A/P Ranjit Singh	Manipal International University, Nilai, Negeri Sembilan	13 th February 2017 - 21 st April 2017
4	Lina Lim Wei Chean	(AIMST) University, Kuala Lumpur	24 th July 2017 - 13 th October 2017
5	Ayesha Shoaib	(AIMST) University, Kuala Lumpur	24 th July 2017 - 13 th October 2017
6	Franziska Horsch	DAAD Rise worldwide program, Germany	1 st June 2017 - 27 th July 2017
7	Ameeratul Maryam Binti Zubair Khan	Universiti Malaysia Sarawak (UNiMas)	3 rd July 2017 - 8 th September 2017
8	Al Fayyadh Mustafa Ali Noori	Mobility Program (Master), Necmattin Erbakan University Konya, Turkey	1 st July 2017 - 30 th September 2017
9	Gopi A/L Surandiran	Politeknik Nilai Negeri Sembilan	27 th November 2017 - 13 th April 2018
10	Abdul Aziz Mirani	Shah Abdul Latif University, Pakistan	6 th September 2017 - 5 th February 2018

Details of CEBAR PI's Professional Memberships (ongoing in 2017)

No.	Organization	Academic Staff	Professional Membership	Duration	Level
1	Association of University Technology Managers	Prof. Dr. Rofina Yasmin Othman	Member	11/02/2013 - 31/12/2017	International
2	PiscoMed Publishing	Assoc. Prof. Dr. Subha Bhassu	Editor in Chief	26/01/2017- 25/01/2019	International
3	International Society Of Horticultural Science	Assoc. Prof. Dr. Chandran A/L Somasundram	Member	01/01/2015- 19/01/2018	International
4	Institute Of Food Technologies	Assoc. Prof. Dr. Chandran A/L	Member	01/02/2017- 31/01/2018	International

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Somasundram					
5	Applied Entomology and Zoology	Associate Prof. Dr. Fauziah Binti Abdullah	Member	01/01/2013-31/12/2017	International
6	Asian Federation of Biotechnology	Dr. Jamilah Syafawati Yaacob	Member	Life Member	International
7	European Biotechnology Network	Dr. Jamilah Syafawati Yaacob	Member	Life Member	International
8	Malaysian Genomic Institute (MGI)	Prof. Dr. Norzulaani Binti Khalid	Academic, Joint Research	2012-2017	National
9	The Scientific Malaysian Advisory Board Members	Prof. Dr. Rofina Yasmin Othman	Advisory Board Members		National
10	Fellow, Academy of Sciences Malaysia	Prof. Dr. Rofina Yasmin Othman	Fellow		National
11	Malaysian Universities Debate Council (MADUM)	Assoc. Prof. Dr. Chandran A/L Somasundram	Committee Member	01/04/2015-31/12/2017	National
12	Malaysian Society Of Molecular Biology And Biotechnology (MSMBB)	Prof. Dr. Noor Hasima Nagoor	Committee Member	Life Member	National
13	Genetics Society of Malaysia	Prof. Dr. Noor Hasima Nagoor	Member	Life Member	National
14	English-Speaking Union Of Malaysia	Assoc. Prof. Dr. Chandran A/L Somasundram	Member	Life Member	National
15	Malaysian Genetics Society	Prof. Dr. Jennifer Ann Harikrishna	Member	Life Member	National
16	Malaysian Society Of Molecular Biology And Biotechnology (MSMBB)	Prof. Dr. Jennifer Ann Harikrishna	Member	Life Member	National
17	Malaysian Society Of Molecular Biology And Biotechnology (MSMBB)	Prof. Dr. Norzulaani Binti Khalid	Member	Life Member	National
18	Malaysian Genetics Society	Prof. Dr. Rofina Yasmin Othman	Member	Life Member	National
19	Malaysian Genetics Society	Assoc. Prof. Dr. Subha Bhassu	Member	Life Member	National
20	Malaysian Society Of Molecular Biology And Biotechnology (MSMBB)	Assoc. Prof. Dr. Subha Bhassu	Member	Life Member	National