



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 2018, CEBAR was awarded as **The Most Excellent University of Malaya Center of Excellent (UMCoE)** in University of Malaya Excellent Awards 2018 for the first time.

CEBAR researchers produced **45 WoS (ISI) publications** with over 50% of these in tier 1 and 2 ranked journals.

CEBAR members secured over **RM4 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 **RM1,109.70 through training courses** run by our staff and members.

Currently, CEBAR has **over 74 postgraduate students** under supervision by our **13 Principal Investigators, 13 Associate Members and 1 Adjunct Member** with over half of these at the PhD level. In 2019, CEBAR also hosted **15 national and 3 international interns** in our various labs.

CEBAR staff and students have received a total of **28 International Awards**, were granted with **1 patent in 2018**.

Activities in 2018 included **6 workshop, 7 seminars/mini-symposia** and visits by **international** scientists including from the Nanjing University, Lancaster University, UK), Nara Institute of Science and Technology (NAIST), Japan

National Cheng Kung University, Indian Institute of Technology, Bombay, India and Faculty of Agricultural, Life and Environmental Sciences (ALES).

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 **29th November 2018** and the certificate is valid until **28th November 2019**.

In terms of International and national networking, 2018 saw CEBAR activities as co-signatory of **MOAs** including with the **Nara Institute of Science and Technology (NAIST), Japan; International Institute of Tropical Agriculture (IITA), under Gates's Foundation; Kyushu Institute of Technology, Japan; Palacky University Olomouc, Czech Republic; Heleogenics Sdn Bhd.; KGC Eco Resort Sdn. Bhd.; Caya Primer Sains Sdn. Bhd.; Sime Darby Technology Centre Sdn. Bhd. and Universiti Malaysia Kelantan (UMK)**. CEBAR also conducted activities under several on-going **MOU**.

Centre for Research in Biotechnology for Agriculture (CEBAR)
Highlights of Activities & Achievements in 2019

CEBAR FACTS & FIGURES FOR THE YEAR 2019

Item	Detail	Comment
45 ISI publications	Tier 1: 14 (31.11%) Tier 2: 11 (24.44%) (Q1&Q2: 55.55 %)	Tier 3: 11 (24.44%) Tier 4: 9 (20%)
Research Grants >RM 4.0 million	National grants: RM 1,824,450.22 Internal grants RM 3,833,524.97 Private Funding: RM 158,674.48 International grant: RM 581,562.76	14 MOHE grants: LRGS: 1 – RM 62,000.00 FRGS: 11 - RM 1,426,800.00 KTP: 3 – RM 135,548.50 MOSTI-SCIENCE FUND: 1 – RM 134,063.98 FRIM – RM 66,037.74 21 RU grants – RM 2,496,221.85 1 Bantuan Kecil Penyelidikan (BKP) - RM 31,000.00 1 Bantuan Khas Penyelidikan (BKP Special) – RM 50,000.00 3 UMRG AFR Programme – RM 166,592.57 2 UMRG SUS Programme – RM 77,714.22 2 UM Grant – FRG – RM 78,555.33 2 UM Living Lab – SUS – RM 43,800.00 11 Postgrad Research Grant (PPP) - RM 109,641.00 9 Top 100 – RM 780,000.00 CAYA PRIMER SAINS SDN. BHD. – RM 70,000.00 Mr. Yiang Kwai Sang (Private) - RM 15,000.00 Yayasan Tan Sri Lee Shin Cheng – RM 68,674.48 Yayasan Emkay - RM 5,000.00 IITA (Bill & Melinda Gates Foundation) - RM 214,521.06 Newton (AKADEMI SCIENCE MALAYSIA (ASM)) – RM 75,240.90 British Council - RM 160,546.19 NEWTON - UNGKU OMAR FUND - RM 131,254.61
Other income	RM 14,770.00	Training courses: Bengkel Penanaman Pisang dan Penghasilan Biochar - RM 2,240.00 Terrarium Workshop - RM 480.00 Banana Plant Tissue Culture Workshop - RM 1,400.00 Bengkel Penanaman Pisang dan Fertigasi - RM2,000.00 Workshop on MD2 Tissue Culture - RM 1,200.00 Plant Tissue Culture Workshop - RM 2,400.00 Plant Tissue Culture Workshop - RM 1,200.00 Organic Soap-Making Workshop - RM 1,050.00 Banana Tissue Culture Techniques Workshop - RM 2,800.00
74 Postgraduate students	MSc 33 PhD 41	Local: 33 International: 0 Local: 32 International: 9

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18 Interns	International : 3 National : 15	Universiti Kebangsaan Malaysia (UKM) Universiti Malaysia Sarawak (UNIMAS) Erlangen - Universität Erlangen - Nurnberg, German University of Surrey, United Kingdom Jacobs University, German Monash University TAR University College (TARUC), KL Politeknik Nilai
17 MOU/MOA	11 MOA National : 5 International : 6 6 MOU National : 2 International : 4	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 the Nara Institute of Science and Technology (NAIST), JAPAN; Dual Doctoral Degree Programme between University of Malaya & NARA Institute of Science and Technology (NAIST), JAPAN; Students and Staff Exchange between Kyushu Institute of Technology and University of Malaya; International Institute of Tropical Agriculture (IITA), Africa; Academic Cooperation between University Malaya and Palacky University Olomouc, Czech Republic; Heleogenics Sdn Bhd, Malaysia; KGC Eco Resort Sdn. Bhd.; Caya Primer Sains Sdn. Bhd.; Sime Darby Technology Centre Sdn. Bhd.; Universiti Malaysia Kelantan (UMK) MOU: Palacky University Olomouc, Czech Republic; University of Dundee, Scotland, United Kingdom; Assam University, India; Academic Cooperation between Kyushu Institute of Technology and University of Malaya; National Institutes of Biotechnology Malaysia represented by Malaysian Institute of Pharmaceuticals and Nutraceutical; Academic Cooperation between University of Malaya and Global Integrated Associates Sdn Bhd (Quest International University Perak)
38 Awards to CEBAR PI and students	International : 28 National: 8 University: 2	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	Patent	Granted: -
CEBAR activities	Workshop: 6 Seminar/symposia: 7	Topics included: Laboratory Biosafety and Biosecurity, Banana Tissue Culture, Plant Biotechnology, Commercialization
Visitors hosted	6 International 0 National	International visitors: Nanjing University, China Lancaster University (Dr. Micheal R Roberts) Nara Institute of Science and Technology, NAIST (Professor Akira Kurisaki & Professor Hiroshi Takagi) National Cheng Kung University (Professor Chen Hong Hwa) Indian Institute of Technology, Bombay, India (Mr. Hrushikesh M. Nagwekar)

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		Dr. Stanford Blade , Faculty of Agricultural, Life and Environmental Sciences (ALES)
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 29 th November 2018 and the certificate is valid until 28 th November 2019.

Details of awards to CEBAR staff/students in 2019

No.	Name of PI / student	Award	Level
1	Prof. Dr. Jennifer Ann Harikrishna	External Examiner PhD University of Nottingham	International
2	Prof. Dr. Jennifer Ann Harikrishna	External Examiner Masters Thesis, Cape Town University, South Africa	International
3	Prof. Dr. Jennifer Ann Harikrishna	Review of Manuscript for journal: Engineering in Life Sciences	International
4	Prof. Dr. Jennifer Ann Harikrishna	Review of manuscript for Plant Physiology and Biochemistry	International
5	Prof. Dr. Jennifer Ann Harikrishna	Review of Manuscript for Plant Cell, Tissue & Organ Culture (ISI)	International
6	Prof. Dr. Jennifer Ann Harikrishna	External Examiner PhD thesis, India	International
7	Prof. Dr. Jennifer Ann Harikrishna	Review of manuscript for for Tree Genetics & Genomes ISSN: 1614-2942 (Print) 1614-2950 (Online) ISI Q1	International
8	Prof. Dr. Jennifer Ann Harikrishna	Honorary Fellow of the College of Life Sciences University of Leicester Maurice Shock Building University Road Leicester LE1 7RH	International
9	Prof. Dr. Jennifer Ann Harikrishna	Reviewer of articles for Biotechnology Advances	International
10	Prof. Dr. Jennifer Ann Harikrishna	Reviewer of articles for Plant Molecular Biology	International
11	Prof. Dr. Jennifer Ann Harikrishna	Chair of Scientific Session: Microbiome for Agriculture Congress	International
12	Prof. Dr. Jennifer Ann Harikrishna	International Conference for Molecular Biology & Biotechnology (ICMBB)	International
13	Prof. Dr. Jennifer Ann Harikrishna	Judge for Biological Sciences Graduate Conference (BCSG) 2019	International
14	Prof. Dr. Noor Hasima Nagoor	Appreciation for scientific and educational exchange activities between the Centre for Research in Biotechnology for Agriculture, University of Malaya and the Division of Biological Science, Nara Institute of Science and Technology	International
15	Prof. Dr. Noor Hasima Nagoor	Reviewed 'Alpinia conchigera Griff.: A literature-based comprehensive review' for Oriental Pharmacy and Experimental Medicine	International
16	Prof. Dr. Noor Hasima Nagoor	Reviewed manuscript # JCB-18-3275 entitled "Inhibitory effect of aspirin combined with metformin on colon cancer HT-29 cells and its effect on activation of NF- κ B" for the Journal of Cellular Biochemistry	International

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17	Prof. Dr. Noor Hasima Nagoor	Reviewed manuscript ETM-10975-219706 "miR-6852 suppresses proliferation and invasion in glioma by directly targeting LEF1" submitted to Experimental and Therapeutic Medicine	International
18	Prof. Dr. Noor Hasima Nagoor	Reviewed manuscript ID# 207091 for Oncotargets & Therapy	International
19	Prof. Dr. Noor Hasima Nagoor	Invitation to contribute to the article "Guidelines for the Use and Interpretation of Assays for Monitoring Autophagy (4th edition)" as a co-author	International
20	Prof. Dr. Noor Hasima Nagoor	Reviewed manuscript CBF-19-0264 for the journal Cell Biochemistry & Function	International
21	Prof. Dr. Noor Hasima Nagoor	2nd Runner Up for PECHA KUCHA (MOLECULAR BIOLOGY) competition	International
22	Prof. Dr. Rofina Yasmin Othman	Biosafety expert member for open ended forum on synthetic biology	International
23	Prof. Dr. Rofina Yasmin Othman	Senior management programme on managing research technology organisations WAITRO	International
24	Assoc. Prof. Dr. Subha Bhassu	Educators participation for Higher Education in a Disruptive Landscape: The State and Future of STEM Education Symposium in Singapore	International
25	Assoc. Prof. Dr. Chandran Somasundram	Judge of Biological Science Graduate Congress (BSGC)	International
26	Assoc. Prof. Dr. Chandran Somasundram	Judge of Asian Intergovernmental Commission on Human Rights (AICHR) Youth Debate	International
27	Dr. Tan Boon Chin	Judge in 3rd International Conference on Molecular Biology and Biotechnology 2019 (ICMBB 2019) poster presentation competition	International
28	Dr. Teo Chee How	Invited for research visit to Nanjing Agricultural University	International
29	Dr. Teo Chee How	Graduate School of Human Development and Environment, Kobe University	International
30	Dr. Teo Chee How	Reviewer for Journal of Biotechnology (JBIOTEC-D-19-01306): Transcriptomic analysis of pepper plants provides insights into host responses to Fusarium solani infestation	International
31	Dr. Teo Chee How	Reviewer for Planta manuscript (PLAA-D-19-00079): Metabolome profiling of various seaweed species discriminates between brown, red, and green algae	International
32	Dr. Teo Chee How	Reviewer for Physiological and Molecular Plant Pathology manuscript (YPMPP_2019_133): Nitric oxide Improves Tolerance to Fusarium oxysporum f. sp. cubense Tropical Race 4 in Banana	International
33	Dr. Teo Chee How	Reviewer for Life Sciences manuscript (LifeSci-19-106): Development of a single nucleotide polymorphism marker associated with white spot syndrome virus resistance in black tiger shrimp (Penaeus monodon)	International
34	Dr. Teo Chee How	Doctor of Philosophy thesis entitled "De novo assembly of the black pepper transcriptome (Piper nigrum L.) and molecular characterization of Piper resistance genes", Swinburne University of Technology	International
35	Dr. Norhafizah Binti Mohd Arshad	Reviewed a manuscript entitled "Transcriptome analysis of Phytophthora infestans and Colletotrichum coccodes in tomato to reveal resistance	International

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		mechanisms" for the Asia Pacific Journal of Molecular Biology and Biotechnology (APJMBB)	
36	Dr. Norhafizah Binti Mohd Arshad	Reviewed a manuscript # CBR-2019-2983-OA entitled "miR-205 promotes apoptosis of cervical cancer cells and enhances drug sensitivity of CDDP by inhibiting YAP1" for Cancer Biotherapy and Radiopharmaceuticals	International
37	Dr. Norhafizah Binti Mohd Arshad	Reviewed a manuscript entitled "Investigation of potential in vitro anti-cancer properties of fermented locust bean seeds" for International Journal of Food Scienc	International
38	Prof. Dr. Jennifer Ann Harikrishna	External Examiner PhD Thesis Taylor's University	National
39	Prof. Dr. Jennifer Ann Harikrishna	Invited Judge for the MINDS conference on Women in Science	National
40	Prof. Dr. Jennifer Ann Harikrishna	Review MYGRANTS proposal: FRGS for Taylor's University	National
41	Prof. Dr. Jennifer Ann Harikrishna	Review MYGRANTS proposal: FRGS for Ministry of Natural Resources & Environment	National
42	Prof. Dr. Jennifer Ann Harikrishna	Invited member of advisory board to the National Pepper Board (Lembaga Lada Malaysia)	National
43	Prof. Dr. Jennifer Ann Harikrishna	Appointment as an expert panel research, development and commercialisation fund project, R,D&C (MESTECC)	National
44	Prof. Dr. Jennifer Ann Harikrishna	Judge for Quest International University Intervarsity Science Symposium (QISS) 2019	National
45	Prof. Dr. Jennifer Ann Harikrishna	Judge for National Science Slam, Malaysian Society for Molecular Biology and Biotechnology (MSMBB)	National
46	Prof. Dr. Noor Hasima Nagoor	External Examiner for undergraduate degree programme Taylors University Malaysia	National
47	Prof. Dr. Rofina Yasmin Othman	External Examiner for undergraduate degree programme Taylors University Malaysia	National
48	Prof. Dr. Norzulaani Khalid	External examiner Bachelor of Biotechnology (Hons), Faculty of Integrative Sciences & Technology, Quest International University Perak	National
49	Assoc. Prof. Dr. Chandran Somasundram	Interview Panel for Yang Di-Pertuan Agong Scholarship	National
50	Dr. Tan Boon Chin	Teknologis Berijazah	National
51	Dr. Teo Chee How	Expert advisor for Transformation protocol of chrysanthemum (<i>Chrysanthemum morifolium</i>) with luciferase gene using <i>Agrobacterium tumefaciens</i> , Kimagri Corporation Sdn Bhd	National
52	Dr. Teo Chee How	Master Thesis entitled "Population Genomics Study on Sabah Weedy Rice Using Genotyping-by-Sequencing (GBS)", Monash University Malaysia	National
53	Dr. Norhafizah Binti Mohd Arshad	'Meet the Scientist Program' in conjunction with the 2019 National Science Week, National Science Centre (Pusat Sains Negara)	National
54	Dr. Fiqri Dizar Khaidizar	Judge for Poster Presentation, 13th Malaysian Genetic Congress	National
55	Prof. Dr. Rofina Yasmin Othman	Internal Examiner for PhD Thesis Faculty of science Genetics	University
56	Prof. Dr. Rofina Yasmin Othman	Internal Examiner for PhD Thesis Faculty of science UM Phage technology	University

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57	Prof. Dr. Rofina Yasmin Othman	Advisory Committee for MSc programme , review panel for MSC Parasitology UM	University
58	Dr. Tan Boon Chin	Panel Member for the Screening Interview of Academic Staff	University
59	Dr. Tan Boon Chin	Coordinator for UMCoe Working Group for Undergraduate Programme	University
60	Dr. Teo Chee How	Invited lecture for MIC4002 Ambang Sains Bioperubatan (Biomedical Science Horizons)	University
61	Dr. Norhafizah Binti Mohd Arshad	Evaluator of FRGS grant application (CEBAR applicants)	University
62	Dr. Norhafizah Binti Mohd Arshad	A panel of assessor for the Candidature Defence- Sophia Sok Ping Meow (HVA170026), Doctorate of Science Faculty	University
63	Dr. Fiqri Dizar Khaidizar	Internal Examiner for the MIC 4005 Research in Biomedical Science course (Undergraduate)	University
64	Dr. Fiqri Dizar Khaidizar	Assessor for Postgraduate Proposal Defence (ISB), Sem 1 2018/2019	University
65	Dr. Fiqri Dizar Khaidizar	Assessor for Postgraduate Proposal Defence (ISB), Sem 2 2018/2019	University
66	Dr. Fiqri Dizar Khaidizar	Postgraduate Candidature Defense (ISB) Sem 2 2018/2019	University

Details of patents to CEBAR staff/students in 2019

No.	Name of PI	Name of Patent	Certificate No.	Level
1				

Details of MOA & MOU activities by CEBAR staff/students in 2019

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	1. The 2019 NAIST pre-screening internship for doctorate course, April/October 2020 enrollment Two candidates: i) Hani Sapili ii) Wong Hao Jie	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	. Visit by Professor Hisaji Maki, Professor Masaaki Umeda, Professor Yasumasa Bessho as invited speaker for CEBAR Expert Seminar Series 2/2018 on 17th August 2018	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	Sophia has admitted as a Doctoral student in NARA on 1 st October 2017	Prof. Dr. Noor Hasima Nagoor	16 th May 2017 – 31 st Mar 2020

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	Programme between University of Malaya & NARA Institute of Science and Technology (NAIST), JAPAN	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	Student: Sophia Sok Ping Meow	
4	Memorandum of Understanding for Academic Cooperation between University Malaya and Palacky University Olomouc	General MOU	Prof Dr Jennifer Ann Harikrishna	2016-2021
5	Memorandum of Student Programme Exchange Agreement between University Malaya and Palacky University Olomouc	Student Exchange Programme	Prof Dr Jennifer Ann Harikrishna	2016-2021
6	Memorandum of Agreement between International Institute of Tropical Agriculture (IITA) and University of Malaya (UM)	Research on-going	1. Prof. Dr. Jennifer Ann Harikrishna 2. Prof. Dr. Rofina Yasmin Othman 3. Dr. Teo Chee How	1 st Oct 2014 – 30 th Sep 2019
7	Memorandum of Understanding for Academic Cooperation between University of Malaya and Assam University, India	Academic cooperation	Prof Dr Jennifer Ann Harikrishna	2017-2022
8	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
9	Memorandum of Understanding between National Institutes of Biotechnology Malaysia represented by Malaysian Institute of Pharmaceuticals and Nutraceuticals and University of Malaya	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 been accepted for publication in Drug Design, Development and Therapy journal	Prof Dr. Noor Hasima Nagoor	4 th Sept 2014 – 3 rd Sept 2019
10	Memorandum of Understanding for Academic Cooperation between University of Malaya and Global Integrated Associates Sdn Bhd (Quest International University Perak)	Academic cooperation	Prof Dr Jennifer Ann Harikrishna	19th Dec 2016 - 18th Dec 2021
11	Memorandum of Understanding between the University of Dundee and University of Malaya	Research attachment in University of Dundee, Dr. Tan Boon Chin (Senior Lecturer CEBAR) from 25th March to 24th June 2018.	. Prof Dr Jennifer Ann Harikrishna . Dr. tan Boon Chin	2018 - 2023
12	Memorandum of Understanding for Academic Cooperation between Kyushu Institute of Technology and University of Malaya	. Joint research . Exchange of academic material and publication . Exchange of faculty members for research, discussion & lectures	. Prof. Dr. Jennifer Ann harikrishna	4th Oct 2018 - 3rd Oct 2023

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		Exchange of undergraduates and graduate students for study and research		
13	Memorandum of Agreement for Students and Staff Exchange between Kyushu Institute of Technology and University of Malaya	Student and staff exchange	Prof. Dr. Jennifer Ann harikrishna	4th Oct 2018 - 3rd Oct 2023
14	Memorandum of Agreement between Sime Darby Technology Centre Sdn. Bhd. and University of Malaya	<ol style="list-style-type: none"> 1. Collections of drought treated oil palm seedlings completed deliverables. 2. Small RNA sequencing completed deliverables. 3. Bioinformatics analysis completed deliverables. 4. Validation of miRNA expression through qPCR completed deliverables. 5. Shared publications 	<ol style="list-style-type: none"> 1. Dr. Katharina Mebus 2. Dr. Teo Chee How 3. Dr. Tan Boon Chin 	14th May 2018 - 13th May 2020
15	Memorandum of Agreement between Caya Primer Sains Sdn. Bhd. and University of Malaya	To carry out the Development, Testing and Validation of Molecular Diagnostics for Shrimp Disease	Assoc. Prof. Dr. Subha Bhassu	8th Nov 2018 - 7th May 2019
16	Memorandum of Agreement between KGC Eco Resort Sdn. Bhd. and University of Malaya	To carry out the Strengthening of Freshwater Prawn Industry through Technology Transfer and Commercial Production for Poverty Elevation. This project is focusing on improving the survivability of the giant freshwater prawn and increase the income yield from each cycle of harvesting.	Assoc. Prof. Dr. Subha Bhassu	8th Nov 2018 - 7th May 2019
17	Memorandum of Agreement between Universiti Malaysia Kelantan and Universiti Malaya	Research collaboration for the project entitled "Improvement of banana for smallholder farmers in the Great Lake region of Africa"	Prof. Dr. Rofina Yasmin Othman	1st May 2018 - 30th April 2020

Details of CEBAR activities in 2019: Workshops

No.	Title	Date/venue	Output
1	NGS Data Analysis workshop	30 th - 31 st January 2019/ Computer Lab Level 2, RMIC	Knowledge Transfer
2	Scientific Writing Workshop	12 th February 2019/ CEBAR Meeting Room	Knowledge Transfer
3	Introduction of Safety in workplace and HIRAC workshop	3rd May 2019/ CEBAR Meeting Room	Knowledge Transfer

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4	Communications workshop on short videos for the general public	7th August 2019/ CEBAR Meeting room	Knowledge Transfer
5	Nanopore workshop	1st & 2nd August 2019/ CEBAR Meeting room	Knowledge Transfer
6	Plant Biosafety RNAi Workshop	5th December 2019/ iCUBE room	Knowledge Transfer

Details of CEBAR activities in 2019: Seminar/symposia

No.	Title	Date/venue	Output
1	CEBAR Expert Seminar Series 1/2019 by Dr. Nisha Govender, Dr. Sima Taheri & Dr. Takuyaki Kondo	15 th January 2019/Jupiter Meeting Room	Knowledge Transfer
2	CEBAR Expert Seminar Series 2/2019 by Dr. Michael R Roberts from Lancaster University 2/2019	19 th April 2019/ Video Conference Room	Knowledge Transfer
3	CEBAR Expert Seminar Series 3/2019 by Professor Akira Kurisaki & Professor Hiroshi Takagi from Nara Institute of Science and Technology (NAIST), Japan	23 th April 2019/ Jupiter Meeting Room	Knowledge Transfer
4	CEBAR Expert Seminar Series 4/2019 by Dr. Hong-Hwa Chen from National Cheng Kung University	23rd July 2019/ Jupiter meeting room	Knowledge Transfer
5	CEBAR Expert Seminar Series 5/2019 by Professor Gordon Simpson & Dr. Matthew Parker (University of Dundee, United Kingdom)	1st August 2019/Jupiter meeting room	Knowledge Transfer
6	CEBAR Expert Seminar Series 6/2019 by Assistant Professor Dr. Agus Budi Setiawan	30th September 2019/Jupiter Meeting Room	Knowledge Transfer
7	CEBAR Expert Seminar Series 6/2019 by Dr. Raihan Ismil	21st November 2019/Jupiter Meeting Room	Knowledge Transfer

Details of CEBAR activities in 2019: Other activities/Research activities

No.	Title	Date/venue	Output
1	CEBAR team building & appreciation lunch	30th March 2019/ Nu Sentral & Hilton Hotel	
2	Meet the Scientist (Science Week)	6th April 2019/ Pusat Sains Negara	
3	UM Plant Biotech Facility (PBF) Open Day	4th December 2019/ PBF	

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Details of visitors to CEBAR in 2019

No.	Visitor(s)	Institute/Organization	Date of Visit	Activity
1	Delegation from Nanjing University under the project of CRISPR Cas9 and Rice project (a collaboration between MARDI, UM, UKM, USM and Nanjing University China)	Nanjing University	22nd January 2019/ PBF	Visit PBF & CEBAR
2	Dr. Michael R Roberts	Lancaster University, UK)	19 th April 2019/ Video Conference Room	As speaker for CEBAR Expert Seminar Series
3	Professor Akira Kurisaki & Professor Hiroshi Takagi	Nara Institute of Science and Technology (NAIST), Japan	23rd April 2019/Jupiter Meeting Room	As speaker for CEBAR Expert Seminar Series 2/2019
4	Mr. Hrushikesh M. Nagwekar	Indian Institute of Technology, Bombay, India	25th June 2019/PBF & CEBAR Meeting Room	A visit from IITB representative under AUA Staff Exchange Program to CEBAR
5	Dr. Chen Hong Hwa	National Cheng Kung University	23rd July 2019/Jupiter Meeting Room	As speaker for CEBAR Expert Seminar Series 3/2019
6	Dr. Stanford Blade	Faculty of Agricultural, Life and Environmental Sciences (ALES)	24th October 2019/CEBAR Meeting Room	Discussion the Research Project Dr. Stanford Blade

Details of interns hosted by CEBAR in 2019

No.	Name	Institute/ Country	Duration of attachment
1	Mohd Azahar Bin Baharim	Kolej Vokasional Pertanian Teluk Intan	7th January – 24th May 2019
2	Chalani Ganeson	Taylor University	7th January 2019 - 22nd March 2019
3	Muhammad Zayd Bin Khairil Anwar	Taylor University	7th January 2019 - 22nd March 2019
4	Nurul A'qilah Farhana Binti Anuarsadat	Universiti Sultan Zainal Abidin (UNISZA)	22nd January 2019 - 5th July 2019
5	Yap Kah Sing	TAR University College (TARUC), KL	18th February 2019 - 27th April 2019
6	Ewe Zhuang Hua	UNIMAS (Universiti Malaysia Sarawak)	17th June 2019 - 23rd August 2019

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7	Loo Mu Teng	UNIMAS (Universiti Malaysia Sarawak)	17th June 2019 - 23rd August 2019
8	Joslyn Song Jia Yi	UNIMAS (Universiti Malaysia Sarawak)	17th June 2019 - 23rd August 2019
9	Raja Nurajeerah	Universiti Kebangsaan Malaysia (UKM)	24th June - 30th August 2019
10	Neshima Mavani	Jacobs University, German	1st July 2019 - 9th August 2019
11	Low Kah Wah	UNIMAS (Universiti Malaysia Sarawak)	17th June 2019 - 23rd August 2019
12	Muhammad Hafiz Bin Zulkifli	Universiti Kebangsaan Malaysia (UKM)	24th June - 30th August 2019
13	Husna Atirah Mohd Yazid	Universiti Kebangsaan Malaysia (UKM)	24th June - 30th August 2019
14	Nadja Nolte	Erlangen - Universität Erlangen - Nurnberg, German	5th August - 12 October 2019
15	Wing Sam Lum	University of Surrey	25th August 2019 - 15th May 2020
16	Arba Aleem	Quest International University, Perak	11th November - 24th April 2020
17	Nur Dalilah Binti Mohd Razi	Politeknik Nilai	9th December 2019 - 24th April 2020
18	Muhammad Shazrol Azwan Bin Seman	Politeknik Nilai	9th December 2019 - 24th April 2020

Details of CEBAR PI's Professional Memberships (ongoing in 2019)

No.	Organization	Academic Staff	Professional Membership	Duration	Level
1	PiscoMed Publishing	Assoc. Prof. Dr. Subha Bhassu	Editor in Chief	26/01/2017 - 25/01/2019	International
2	Asian Federation of Biotechnology	Dr. Jamilah Syafawati Yaacob	Member	Life Member	International
3	European Biotechnology Network	Dr. Jamilah Syafawati Yaacob	Member	Life Member	International
4	The Society for Experimental Biology	Dr. Tan Boon Chin	Member	05/02/2018 - 07/01/2019	International
5	Asia Pacific Journal of Molecular Biology and Biotechnology, Malaysian Society For Molecular Biology and Biotechnology (MSMBB)	Dr. Tan Boon Chin	Editorial Board	01/12/2017 - 30/11/2019	International
6	Asia Oceania Agricultural Proteomics Organization	Dr. Tan Boon Chin	Council Member	Jan 2018-Dec 2019	International
7	Asia Pacific Biosafety Association	Dr. Tan Boon Chin	Member	Life Member	International

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8	International Plant Proteomic Organization	Dr. Tan Boon Chin	Member	Life Member	International
9	eLife Community Ambassador	Dr. Tan Boon Chin	Member	11/04/2019 - 30/04/2020	International
10	Open Access Journal of Microbiology & Biotechnology	Dr. Teo Chee How	Editorial Board	Life Member	International
11	Asian Chromosome Colloquium	Dr. Teo Chee How	Committee Member	Life Member	International
12	The Scientific Malaysian Advisory Board Members	Prof. Dr. Rofina Yasmin Othman	Advisory Board Members	Life Member	National
13	Fellow, Academy of Sciences Malaysia	Prof. Dr. Rofina Yasmin Othman	Fellow		National
14	Board of Directors of Malaysian Global Innovation and Creativity Centre (MaGIC)	Prof. Dr. Rofina Yasmin Othman	Board of Directors		National
15	Malaysian Society Of Molecular Biology And Biotechnology (MSMBB)	Prof. Dr. Noor Hasima Nagoor	Committee Member	Life Member	National
16	Genetics Society of Malaysia	Prof. Dr. Noor Hasima Nagoor	Member	Life Member	National
17	English-Speaking Union Of Malaysia	Assoc. Prof. Dr. Chandran A/L Somasundram	Member	Life Member	National
18	Malaysian Genetics Society	Prof. Dr. Jennifer Ann Harikrishna	Member	Life Member	National
19	Malaysian Society Of Molecular Biology And Biotechnology (MSMBB)	Prof. Dr. Jennifer Ann Harikrishna	Member	Life Member	National
20	Malaysian Society Of Molecular Biology And Biotechnology (MSMBB)	Prof. Dr. Norzulaani Binti Khalid	Member	Life Member	National
21	Malaysian Genetics Society	Prof. Dr. Rofina Yasmin Othman	Member	Life Member	National
22	Malaysian Genetics Society	Assoc. Prof. Dr. Subha Bhassu	Member	Life Member	National
23	Malaysian Society Of Molecular Biology And Biotechnology (MSMBB)	Assoc. Prof. Dr. Subha Bhassu	Member	Life Member	National
24	Malaysian Society Of Plant Physiology	Dr. Tan Boon Chin	Member	Life Member	National
25	Malaysia Board of Technologists (MBOT)	Dr. Tan Boon Chin	Member	09/04/2019	National
26	Malaysian Society For Molecular Biology and Biotechnology (MSMBB)	Dr. Tan Boon Chin	Council Member	19/05/2017 - 18/05/2019	National
27	Malaysian Biosafety and Biosecurity Association	Dr. Tan Boon Chin	Member	28/02/2017 - 28/02/2020	National
28	Malaysian Agricultural Proteomics Society	Dr. Tan Boon Chin	Honorary Secretary	05/09/2016 - 04/09/2020	National
29	Scientific Malaysian	Dr. Tan Boon Chin	Committee Member		National

Centre for Research in Biotechnology for Agriculture (CEBAR)
Highlights of Activities & Achievements in 2019

30	Persatuan Genetik Malaysia	Dr. Norhafizah Binti Mohd Arshad	Member	23/02/2018 - 22/02/2019	National
31	Persatuan Saintis Muslim Malaysia (PERINTIS)	Dr. Norhafizah Binti Mohd Arshad	Member	14/06/2019 - 13/06/2020	National
32	Persatuan Genetik Malaysia	Dr. Fiqri Dizar Khaidizar	Member	21/06/2019-20/06/2020	National