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உயிர் இரசாயனவியல், மூலக்கூற்று உயிரியல் மற்றும்
உயிரியல் தொழில்நுட்ப நிறுவகம்
கொழும்பு பல்கலைக்கழகம்

Institute of Biochemistry, Molecular Biology
and Biotechnology
University of Colombo



වාර්ෂික වාර්තාව
Annual Report
ஆண்டறிக்கை

2017

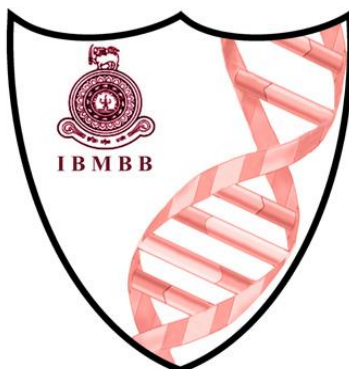


***Institute of Biochemistry, Molecular Biology
and Biotechnology
University of Colombo***

Annual Report – 2017

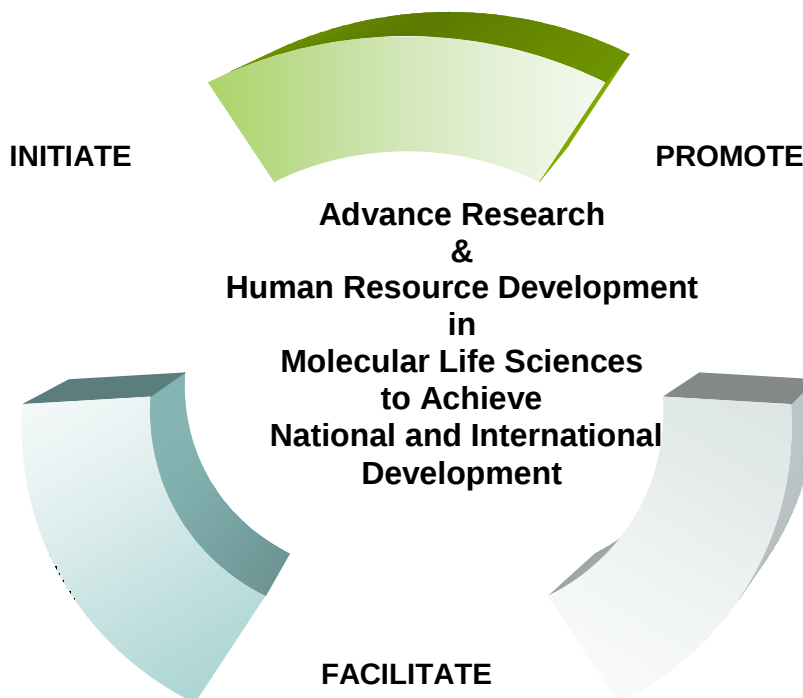


VISION



**“To be an
International Centre of Excellence
In
Molecular Life Sciences”**

MISSION





Directors Review:

The main thrust areas of activities of IBMBB are postgraduate programmes including MSc, MPhil and PhD degree programmes. Although the IBMBB does not admit undergraduate students, the institute contribute to undergraduate teaching programmes of the University of Colombo and other higher educational institutes.

IBMBB conducts three full time Master of Science (MSc) programmes. These are in i) Molecular Life Sciences, ii) Cellular and Molecular Immunology and iii) Bioinformatics. The main objectives of these courses are to provide focused training in current areas of molecular life sciences, immunology, bioinformatics and the allied fields relevant to the development of Sri Lanka and also to encourage young graduates to proceed for further advanced studies leading to degrees in Doctor of Philosophy (PhD). In addition to these postgraduate degree programmes, IBMBB is conducting several short training courses, workshops, guest lectures and internship programmes for dissemination of knowledge.

Summary of Achievements in 2017

MPhil/PhD students	(direct) registered at the IBMBB	28
	(indirect) registered at other Higher Educational Institutes & carried out research at the IBMBB	4
	Submission of PhD dissertations for examination	2
	Successful completion of PhD Degrees	4
	Successful completion of MPhil Degrees	1
MSc students	Registered for Molecular Life Sciences	7
	Registered for Cellular and Molecular Immunology	4
	Successful completion of MSc Degrees	11
Short training courses/ workshops held		2
Awards received by staff & students	International travel awards	2
	National travel awards	2
	Awards for research & publications	13
Publications	Original research papers published in International Journals	18
	Publications under review	1
	Research presentations (Total)	39
	Research presentations (International)	9

The details are described elsewhere in this report.



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Historical Review

The 21st century will be dominated by two disciplines, namely Information and Computer Technology and Molecular Life Sciences. Nations that invested in science and knowledge based development have progressed significantly compared to those that did not. Sri Lanka is yet to have a vibrant industry based on Biotechnology and allied fields whereas our neighbors are far ahead of us. A key factor for lack of industries based on Biotechnology and allied fields in Sri Lanka is the dearth of trained manpower.

The Institute of Biochemistry, Molecular Biology and Biotechnology (IBMBB) was established as an independent Institute of the University of Colombo with a view to provide for instruction, training, research and development and consultancy in such branches of Biochemistry, Molecular Biology and Biotechnology as may be approved by the Commission upon the recommendation of the Institute and the University.

The establishment of the IBMBB was the culmination of a very successful research programme in Molecular Biology led by Prof. Eric H. Karunanayake and supported by Swedish International Development Agency / Swedish Agency for Research Cooperation with Developing Countries (Sida/ SAREC). Construction and equipment of the building of the IBMBB was provided by the Investment Department of Sida (Sida/ INEC).

Civil construction and equipment of the Institute of Biochemistry, Molecular Biology and Biotechnology (IBMBB) was funded by a soft loan of 15 million Swedish Kroners (SEK) provided by the Swedish International Development Agency (SIDA) to the Government of Sri Lanka. The initial design of the IBMBB was funded by the Asian Development Bank's Science and Technology Personnel development project. The IBMBB was ceremonially declared open on 28th April, 2004 by Her Excellency Anne Marie Fallenius, the Head of Mission, Embassy of Sweden, Colombo, and Prof. Ulf Pettersson, Vice-Rector, University of Uppsala, Sweden. The Ordinance of the Institute was gazetted by Gazette Extra-ordinary No. 1282/25 of 3rd April, 2003.

The IBMBB building is located in the main campus of the University of Colombo. The IBMBB is equipped with all modern instruments used in molecular life sciences such as fully automated DNA sequences, microarray scanner, FPLC, HPLC, Fluorescence and Phase contrast microscopes and laminar flow hoods and other facilities such as cell culture, insectary, cold rooms, local area network, access to internet via dedicated optical fiber cable and is fully air-conditioned.

IBMBB commenced its research activities in June 2004. Students whose Master of Philosophy and Doctor of Philosophy studies were in progress supervised by Prof Eric Karunanayake in 2004 continued their studies at IBMBB and new registration for research degrees commenced in 2004. Two taught Masters degree courses commenced in February 2005, one in "Molecular Life Sciences" and the other in "Cellular and Molecular Immunology". The third Master of Science degree programme in Bioinformatics commenced in May 2012, as a joint programme with University of Colombo School of Computing.



Directors of the IBMBB

Founder Director:

Prof. Eric H Karunanayake 2004 – 2007

Past Directors:

Prof. Kamani H Tennekoon	2007 – 2012
	Jan-Mar 2013 (Acting Director)
Prof. M H Rezvi Sheriff	April 2013 - September 2014 (Acting Director)
Prof. Shiroma M Handunnetti	October 2014 - January 2015 (Acting Director)

Present Director:

Prof. Shiroma M Handunnetti February 2015 – to date

Quick Reference

Registered Office: No: 90, Cumaratunga Munidasa Mawatha, Colombo 3, Sri Lanka

Telephone Numbers:

General:	+94-11-2552528
Director:	+94-11-2552534
Senior Assistant Registrar:	+94-11-2553672
Senior Assistant Bursar:	+94-11-2553683

Fax Numbers:

Director:	+94-11-2552529
General:	+94-11-2553683

E-mail:

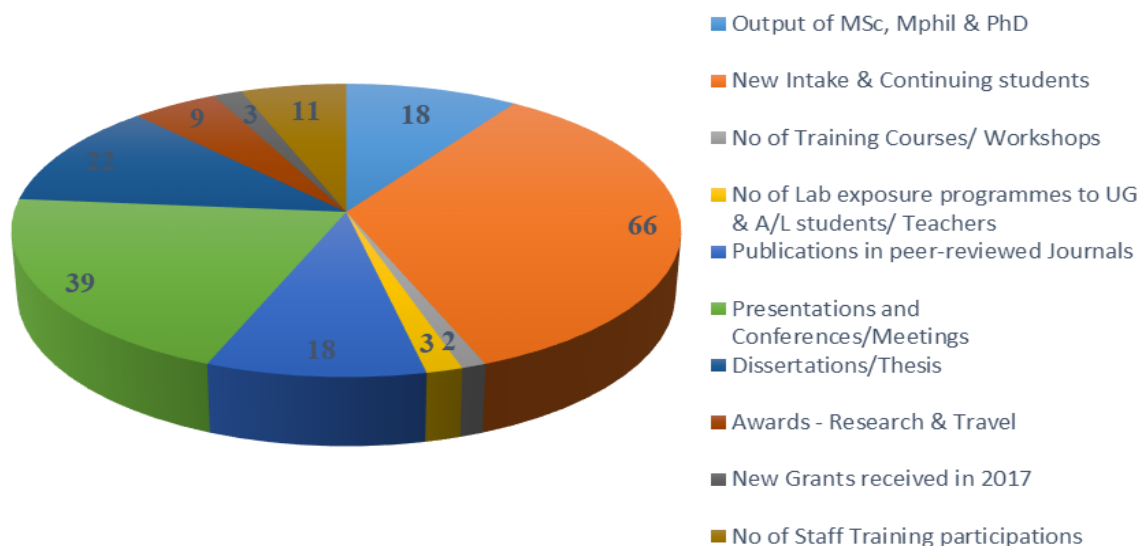
director@ibmbb.cmb.ac.lk
sar@ibmbb.cmb.ac.lk
sab@ibmbb.cmb.ac.lk

Inquiries:

info@ibmbb.cmb.ac.lk



Performance in 2017 at a glance



Registered Students & Graduates (2012 – 2017)

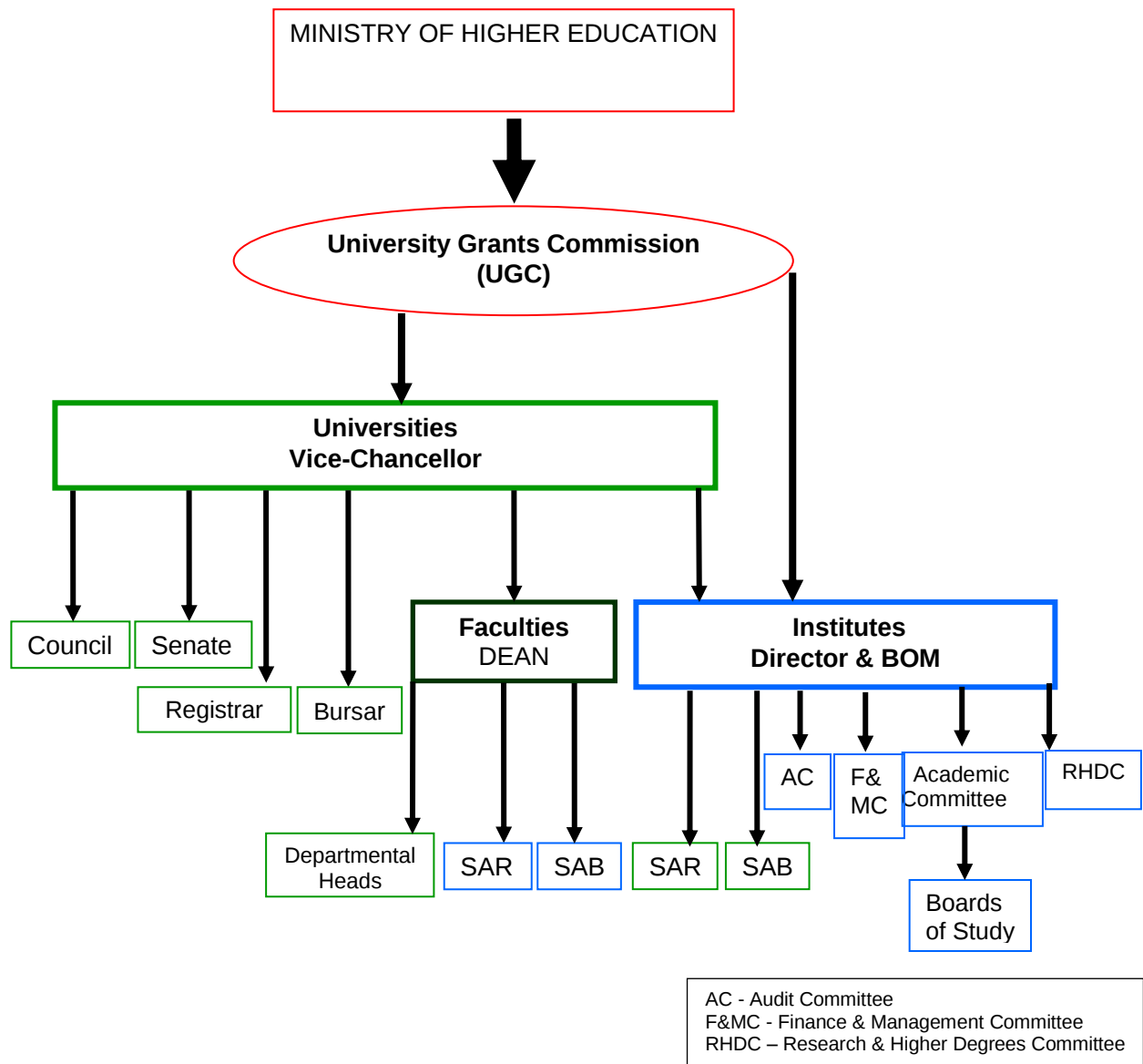
Year	Course		No of Registered students	No of Graduated
2017	MSc	Molecular Life Sciences	7	4
		Cellular and Molecular Immunology	4	7
	Post Graduate Diploma in Bioinformatics		-	1
	MPhil & PhD		5	4
2016	MSc	Molecular Life Sciences	11	17
		Cellular and Molecular Immunology	10	0
	MPhil & PhD		4	1
2015	MSc	Molecular Life Sciences	5	5
		Cellular and Molecular Immunology	8	6
		Bioinformatics	-	5
	Post Graduate Diploma in Bioinformatics		-	2
	MPhil & PhD		6	0
2014	MSc	Molecular Life Sciences	18	8
		Cellular and Molecular Immunology	-	0
	MPhil & PhD		3	1
2013	MSc	Molecular Life Sciences	5	9
		Cellular and Molecular Immunology	6	2
	MPhil & PhD		8	3
2012	MSc	Molecular Life Sciences	11	10
		Cellular and Molecular Immunology	-	7
		Bioinformatics	11	0
	MPhil & PhD		7	1

- not advertised



ORGANIZATIONAL CHART

Current administrative structure of the University system





Director

Professor Shiroma Handunnetti

Members of Board of Management

Professor Shiroma Handunnetti, Director-IBMBB, (Chairperson)

Ms S S Evangeline, Secretary Nominee, Director (Development), Ministry of Higher Education

Professor Eric H Karunanayake, UGC Nominee

Professor Ira Thabrew, UGC Nominee

Mr C Maliyadde, UGC Nominee

Professor Ramanee Wijesekera, UGC Nominee

Mr Thilak Karunaratne, Council Nominee

Mr Rajan Asirwatham, Council Nominee

Professor Ariyaranee Gnanathanan, Senate Nominee (upto Sep 2017)

Professor Senaka Rajapakse (from Oct 2017)

Ms W Indira Nanayakkara, Senate Nominee

Professor Jennifer Perera, Dean/Medicine, University of Colombo, Ex-officio

Professor KRR Mahanama, Dean/Science, University of Colombo, Ex-officio

Professor KP Hewagamage, Director, University of Colombo School of Computing,

Ex-officio

Dr. Kithmini Siridewa, Head/Biochemistry & Molecular Biology, Faculty of Medicine,

Ex-officio

Professor Kamani Tennekoon – On Invitation



I**nternational Recognition:** IBMBB continued as a Resource Centre for Molecular Life Sciences in Asia for the International Programme in Chemical Sciences (IPICS), University of Uppsala and as the National Node of the European Molecular Biology Network (EMBnet).

International Awards

Travel awards were received by **Dr Sudeshini Hewage** from Japan International Science and Technology Exchange Center (JISTEC) and **Dr Roshan Niloofa** from International Leptospirosis Society in November 2017.

National Awards received in 2017:

- a) President's Award for Scientific Publications in Year 2015 was received by

Prof Eric Karunanayake	Prof. Kamani Tennkoon
Prof. Shiroma M. Handunnetti	Dr Sameera Samarakoon
Dr Narmada Fernando	Dr MJR Niloofa
- b) **Dr OVDSJ Weerasena**
Vice Chancellor's Award for Research Excellence 2016
- c) **Dr. Sudeshini Hewage**
Top 10 finalist and gold medalist from 3 MT thesis competition, Sri Lanka Association of Young Scientists Open Forum 2017
- d) **Ms Rashini Baragamarachchi**
NSF Postgraduate Research Scholarship Award -2017
- e) **Awards received at 9th Annual scientific Sessions of the IBMBB, UOC (7th July 2017)**
Following students/participants received cash awards and certificates for the following research communications presented at the 9th IBMBB Annual Scientific Sessions

Ms FN Mifra

Best Oral Presentation in Session I - Molecular Biology, Genetics and Bioinformatics

Presentation titled "Preliminary study on identification of autosomal recessive p47^{phox} mutations in patients with chronic granulomatous disease in Sri Lanka." by Mifra FN, de Silva AD, de Silva NR, Handunnetti SM, Dassanayake D.

Ms M Mapalagamage

Best Oral Presentations in Session II - Immunology and Infectious Diseases

"Low total serum nitrite and nitrate levels on admission in dengue patients as prognostic markers for developing dengue hemorrhagic fever" by Mapalagamage M, Handunnetti SM, Premawansa G, Thillainathan S, Fernando T, Kanapathippillai K, De Silva AD, Premawansa S.



Ms AAU Perera & Mr PW Balasooriya (joint award given)

Best Oral Presentation in Session III - Medicinal plants and Biotechnology

“Identification of *Ralstonia solanacearum* phylotypes causing bacterial wilt of potato in Badulla district of Sri Lanka.” by Perera AAU, Weerasena OVDSJ, Dasanayake PN.

“Isolation of native antagonistic fungi against *Rigidoporus microporus*, the causative fungus of White Root Disease from different rubber growing soils” by Balasooriya PW, Fernando THPS, Weerasena OVDSJ

Ms GP Jayasundara

Best Poster presentation

Poster presentation titled “Detection of pathogenic mutations in previously identified Hotspot region/s in *BRCA1* gene in a cohort of Sri Lankan young breast cancer patients.” by Jayasundara GP, De Silva S, De Silva K.

Travel Awards

Dr Sudeshini Hewage: Travel award from Japan International Science and Technology Exchange Center (JISTEC) to participate to the “Program to Develop Human Resources for Enhancing Collaborative Science and Technology Research with Japan” in November 2017.

Dr Roshan Niloofa: Travel award from the International Leptospirosis Society (ILS) to attend the 10th ILS Scientific meeting in Palmerston, New Zealand from 27th November to 1st December 2017.

Ms Uma Rajagopalan: OSTP Training Scholarship Award, National Science Foundation, to visit H.E.J Research Institute, Karachchi, Pakistan to receive training in structure elucidation of anti-cancer compounds from 1st September 2016 – 13th January 2017.

Ms Tharmini Sundralingam: Travel award from National Science Foundation to present part of her doctoral research at the European Human Genetic Conference 2017 at Copenhagen, Denmark in May 2017.

Orations/Plenary/Symposium Speeches

Prof. Shiroma Handunnetti: Plenary Lecture delivered at the 50th Anniversary Celebrations of the Faculty of Science, University of Kelaniya, **International Research symposium on Pure and Applied Sciences (IRSPAS) 2017**, University of Kelaniya, 20th October 2017 titled “Towards New Paradigms in Scientific Research: Revolutions in Biomedical Sciences and Technology”.

Prof Kamani Tennekoon: Symposium Lecture on ***BRCA 1 & BRCA 2 Mutations in Breast Cancer*** for the **symposium on Conquering cancer at the Annual Scientific Sessions of the** Faculty of Medical Sciences, University of Sri Jayewardenepura organized in collaboration with Colombo South Teaching Hospital, Sri Jayewardenepura General Hospital and Base Hospital, Homagama, 25th May 2017.



Human Resource Development

Postgraduate Programmes

MPhil/PhD Programmes: Six new MPhil/PhD students registered during 2017. Twenty-eight students who registered previously at the IBMBB continued their work. Research programmes on which MPhil/PhD work is based, are described under Research activities. Three students registered at other Higher Educational Institutes for MPhil/PhD carried out a part of the studies at the IBMBB. Two PhD students and two MPhil students submitted thesis for examination. Four PhD students and one MPhil student completed their viva examinations and completed the PhD degrees in 2017.

(See Table 1 & 2 for the list of MPhil/PhD students and Table 3 for funding received for ongoing and new research programmes on which their studies were based). Table 4 , 5 & 6 includes the details on PhD and MSc students completing examination process.

MSc Programme: In March 2017, the Thirteen and Eleventh batches were registered for the Masters Degree programmes which includes MSc in Molecular Life Sciences (MLS) with seven students and MSc in Cellular and Molecular Immunology (CMI) with four students respectively.

Twelve students of MSc in Molecular Life Sciences and eleven students of Cellular and Molecular Immunology continued their 3rd semester research work in 2017 including one MLS student is from 2015 batch and one CMI student from 2013 batch. 20 .total of 21 students of 2016 Intake submitted their Dissertation for examination (see Table 5 for details).

In 2017, Ms. C.P.V.V. Priyadarshani received the Professor Eric H Karunanayake Gold Medal for the Best Student in MSc in Molecular Life Sciences. Ms. G.K.D.Ishaka received the Glaxo Smith Kline Gold Medal for the Best Student in MSc in Cellular and Molecular Immunology. A total 11 students successfully completed their Masters degree, 04 in Molecular Life Sciences and 07 in Cellular and Molecular Immunology (CMI). One student was successful in completing Post graduate Diploma un Bioinformatics.

Following staff members continued as Course Coordinators and Co/Assistant Coordinators:

Dr. OVDSJ Weerasena - Course Coordinator, MSc in Molecular Life Sciences

Dr. Sisira Pathirana - Course Coordinator, MSc in Cellular & Molecular Immunology

Dr. Narmada Fernando - Assistant Course Coordinator, MSc in CMI

Ms. Rupika Wijesinghe - Course Co-Coordinator, MSc in Bioinformatics

Dr. Ruwandi Ranasinghe- Co-Coodinator Course Coordinator, MSc in BI



The following academics /visiting faculty gave lectures for the **MSc in Molecular Life Sciences**:

Prof. Eric H Karunanayake, Emeritus Professor of Biochemistry & Founder Director, IBMBB
Prof. Kamani H Tennekoon, Senior Professor of Molecular Life Sciences, IBMBB
Prof. Ira Thabrew, Visiting Professor, IBMBB
Prof. Vasanthy Arsaratnam, Senior Professor of Biochemistry, Faculty of Medicine, University of Jaffna
Prof. Marie Allen, Professor, Dept. of Genetics & Pathology, Rudbeck Laboratory, University of Uppsala, Sweden
Prof. Rohini Fernandopulle, Professor in Pharmacology, Faculty of Medicine, Kotelawala Defense University
Prof. TLS Tirimanne, Professor in Plant Sciences, Dept of Plant Sciences, Fac. of Science, University of Colombo
Dr Nilanthi Dassanayake, Senior Lecturer, Dept of Botany, University of Sri Jayawardenepura
Ms. Kantha Lankathilake, Senior Lecturer, Dept. of Community Medicine, Univ. of Colombo
Dr. OVDSJ Weerasena, Senior Lecturer, IBMBB
Dr. Nalinda Silva, Senior Lecturer in Physiology, Faculty of Medical Sciences, University of Sri Jayawardenepura
Dr. Sumadee De Silva, Lecturer, IBMBB
Dr. Sudeshini Hewage, Lecturer, IBMBB
Dr. Sameera Samarakoon, Lecturer, IBMBB
Dr. Ruwandi Ranasinghe, Scientific Assistant, IBMBB
Dr. Minoli Perera, Research Scientist and collaborator, Clark University, Biology Department, Worcester, Massachusetts, USA
Ms. Nishara Batagoda, Scientific Assistant, IBMBB
Ms. Lakshika Jayasekera, Scientific-Teaching/Research Assistant, IBMBB (upto Sep 2017)
Ms Dananji Jayatilake, Teaching Assistant, IBMBB (from September 2017)

The following academics/visiting faculty gave lectures for the **MSc in Cellular and Molecular Immunology**:

Prof. Shiroma Handunnetti, Director & Professor in Immunology, IBMBB
Prof. Kamani H Tennekoon, Senior Professor of Molecular Life Sciences, IBMBB
Prof. Rohini Fernandopulle, Professor in Pharmacology, Faculty of Medicine, Kotelawala Defense University
Prof. Andrew Nguyen, Associate Professor, Department of Biological Sciences and Geology, The City University of New York, Queensborough, Pennsylvania, USA
Prof. Sunil Premawansa, Professor in Zoology, Dept of Zoology, Faculty of Science, University of Colombo
Prof. TLS Tirimanne, Professor in Plant Sciences, Dept of Plant Sciences, Faculty of Science, University of Colombo



Dr. Enoke Corea, Senior Lecturer, Dept Microbiology, Faculty of Medicine, University of Colombo
Dr. Dhanushka Dasanayake, Acting Consultant Immunologist at Medical Research Institute, Colombo 08
Dr. Thusitha Gajanayake, Senior Lecturer, Horizon Campus, Malabe
Dr. Samitha Ginige, Assistant Epidemiologist, Epidemiology Unit, Ministry of Health, Colombo 8
Dr. Baddhika Jayaratne, Consultant Haematologist, National Hospital Sri Lanka
Ms. Kantha Lankathilake, Senior Lecturer, Faculty of Medicine, University of Colombo
Dr. Kanthi Nanayakara, Consultant Virologist & Vaccinologist, Medical Research Institute, Colombo 8
Dr. Sisira Pathirana, Course Coordinator-IBMBB & Senior Research Officer, Malaria Research Unit, Faculty of Medicine, Univ. of Colombo
Dr. Preethi Perera, Senior Lecturer, Post-graduate Institute of Medicine, Colombo 8
Dr. Rajitha Samarasinghe (Consultant Pathologist –Chemical, Cancer Hospital, Maharagama)
Dr. Suranjith Seneviratne (Consultant Clinical Immunology, St. Mary's Hospital and Senior Lecturer in Immunology, Imperial College of London, UK)
Dr. Rajiva de Silva, Consultant Immunologist, Medical Research Institute, Colombo 8
Dr. Dharshan de Silva, Director & Senior Research Scientist, Genetech Research Institute, Colombo & Senior Lecturer, Kotelawala Defence University, Ratmalama (from July 2017)
Dr. Sumadee de Silva, Lecturer, IBMBB
Dr. OVDSJ Weerasena, Senior Lecturer, IBMBB
Dr. Sujeewa Weerasinghe, Consultant Oncologist, National Cancer Institute, Maharagama
Dr. Narmada Fernando, Lecturer & Assistant Course Coordinator IBMBB
Ms. Dilini Ishaka, Teaching Assistant, IBMBB & (Assistant Lecturer from November 2017)

(See Table 5 & 6 for MSc Dissertations of those who completed Dissertations work in 2017 and will graduate in 2018).

Revision of MSc Curricular, By Laws and Regulations

Respective Boards of Studies revised the curricula of the three MSc courses to bring them on par with the requirements laid down in the Sri Lanka Qualifications Framework as updated and published by the University Grants Commission in 2015. Thus the programmes were restructured to offer a Masters Degree (SLQF level 9) and a Master of Science Degree (SLQF level 10) with an exit point at Postgraduate Diploma (SLQF 7) for those who do not wish to or are not eligible to proceed either to Masters or Master of Science Degrees.

Molecular Life Sciences:

Prof. Kamani Tennekoon (Chairperson, BoS-MLS), Dr. Jagath Weerasena (Coordinator, MLS), Dr Sumadee De Silva, Dr. Sudeshini Hewage, Dr. Sameera Samarakoon and Dr Ruwandi Ranasinghe together with other Board of Study members including Prof Eric Karunanyake and Prof Ira Thabrew contributed to revisions pertaining to the study programmes in Molecular Life Sciences.



Cellualr and Molecular Immunology:

Prof Shiroma Handunnetti (Chairperson, BOS-CMI), Dr Sisira Pathirana (Coordinator, CMI), Dr Narmada Fernando (Assistant Coordinator, CMI), Dr Jagathpriya Weerasena and other members of the BOS-CMI contributed to curriculum development of the study programme in Cellualr and Molecular Immunology.

Bioinformatics:

Prof Kamani Tennekoon (Deputy Chairperson, BoS-BI), Dr. Jagath Weerasena, Dr Ruwnadi Ranasinghe (Co-cordinator, BoS-BI), Dr Sameera Samarakoon and Mr. Kanchana Senanayake together with other members of the Board of Study including Prof Eric Karunanayake, Academic staff from University of Colombo School of Computing, Department of Statistics and Department of Plant Sciences contributed to the revisions pertaining to the study programmes in Bioinformatics.

9th IBMBB Annual Scientific Sessions was held on 7th July 2017. Prof. Lakshman Dissanayake, Vice Chancellor was the chief guest and Late Prof. Stanely Wijesundera family members Wijesundera and many other distinguished guests participated in this occasion. Consultant Immunologist & President – Allergy & Immunolgy Society of Sri Lanka Dr. Rajiva de Silva delivered the Prof Stanley Wijesundera Memorial Lecture titled “Primary Immunodeficiency: Cradle to Grave”. This was a very successful event at IBMBB having received a total of 23 abstracts, including 2 from external researchers. There were 17 and 06 abstracts selected as Oral and Poster presentations respectively.

With the sponsorship from the Wijesundera family, awards for the best research (oral) presentations in the three scientific sessions on i) Immunology & Infectious diseases and ii) Molecular Biology & Biotechnology and a Poster Presentation session were awarded to students at the Annual Scientific Sessions. Ms. Ruchini Wijesundera, grand daughter of Prof. Wijesundera gave a speech on behalf of the late Prof Wijesundera’s family.



Inauguration Ceremony-Welcome address by Prof Shiroma Handunnetti, Director, IBMBB



Special speech delivered by Snr. Prof. Lakshman Dissanayake, Vice Chancellor, UOC



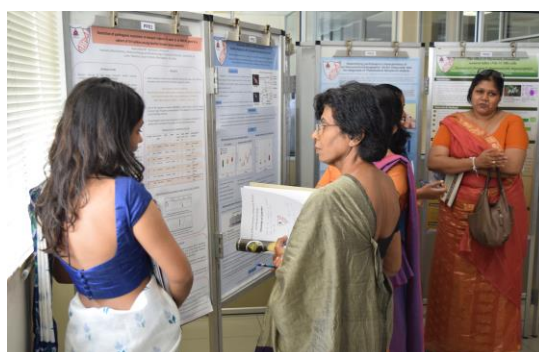
Prof. Stanley Wijesundera Memorial Lecture delivered by Dr Rajiva de Silva, President, AISSL



Guest Speech delivered by Ms. Ruchini Wijesundara, representing Wijesundera family



Oral Presentation by an IBMBB student



Poster Session

An **Open Day** programme was conducted on 04th October 2017. This was a successful event organized by the IBMBB. About 81 students and parents who came to familiarize with the MSc, Phil/PhD and other short training courses at IBMBB. This programme included providing course details, lab tours, pre-registration, consultations/discussions with staff and senior students on courses conducted / available at IBMBB. Some potential applicants obtained the MSc applications at 50% discount rate (application fee) offered at the open day.



Registration Table



Information Table



Short Courses : Two short (5 day) courses and several workshops on Geneanotation were held in 2017,

- i) Training Course in Molecular Biological Techniques - August 2017
- ii) Training Course in Immunological Techniques – December 2017

i) Training Course in Molecular Biological Techniques

In order to provide an exposure to Molecular Biology and Genetics, a 5-day certificate course in Molecular Biological Techniques was conducted from 14th to 18th August 2017. Fourteen candidates participated in this course. The course was highly rated by the participants. The participants included staff members from other Universities / Research Institutes/ Government Departments/ students completed A/L expecting University entrance and also staff members from IBMBB. Some of them were supported by their respective Institutes. This course was coordinated by Dr. Sumadee de Silva and Dr. A Sudeshini Hewage.

Period	No of Participants
14 th - 18 th August 2017	14



Participants and Resource persons



Laboratory sessions

ii) Short Course in Immunological Techniques - December 2017

In order to provide an exposure to theory and practical knowledge with hands on experience in Immunological Techniques, a 5-day Short course in Immunological techniques with hands on practice was conducted from 04th to 8th December 2017 for the fourth time. Ten candidates participated in this course. This course was conducted with the support of five resource persons, two from IBMBB and three other visiting lectures (from Faculty of Science, University of Colombo, Faculty of Medicine, University of Colombo and Teaching Hospital, Kandy) and eight Research Assistants at IBMBB. The course content and hands on experience provided by the course was highly appreciated by the participants. Of the 10 participants, two had completed basic Degree in Biological Sciences, one is in the third year



of the Degree programme at Institute of Chemistry. Five participants are following the Diploma in Biomedical Sciences in Management and Science University (MSU), Sri Lanka branch and the other two participants were school leavers after GCE A/L. Prof Shiroma Handunnetti had initiated this course and also was a resource person. This course was coordinated by Dr Sisira Patahirana, Dr Narmada Fernando and Ms Dilini Ishaka.

Period	No of Participants
04 th - 8 th December 2017	10



Participants and Resource persons



Laboratory sessions

Exposure to Molecular Biology and Immunology offered to Undergraduate students

Dr Ruwandi Ranasinghe (Scientific Assistant), and Ms. Lakshika Jayasekara (Teaching Assistant) conducted practical demonstrations on DNA isolation and analytical separation for three batches of BSc (Hons) Biomedical Science students from BMS. In the first batch, 19 students participated on 20th June 2017, in the second batch 20 students participated on 21st June 2017 and in the third batch 19 students participated on 22nd June 2017.

Period	No of Participants
20 th June 2017	19
21 st June 2017	20
22 nd June 2017	19

Exposure of undergraduates of University of Wayamba to Cell culture

Dr Sameera Samarakoon, Dr Meran Ediriweera (Research Scientist), Ms Uma Rajagopalan conducted the above one day training under the overall guidance of Prof Tennekoon.

Training Course on preliminary biological techniques to A/L teachers

In order to provide preliminary exposure to Molecular Biology techniques present in Advanced level syllabus, a 5-day training course in Molecular Biological Techniques was conducted from 03rd to 07th April 2017 and 03 participants were in this course. The course



was conducted for A/L school teachers on request. Course was coordinated by Dr. Sumadee de Silva.

Period	No of Participants
03 rd - 07 th April 2017	03

Workshop on Tree building techniques and fundamentals of phylogenetic analysis

The workshop on Tree building techniques and fundamentals of phylogenetic analysis was conducted in collaboration with Institute of Biology, Sri Lanka on 24th and 25th of May 2017 at IBMBB. The workshop was conducted by Dr. Praveen Karanth from Center for Ecological Sciences, Indian Institute of Science, Bangalore. There was an overwhelming demand for the workshop, however, due to limited capacity, the number of participants had to be limited to 20 (academics, Post graduate students & Scientists from Universities and Research Institutions) participants. The workshop was coordinated by Dr. Jagathpriya Weerasena

Period	No of Participants
24 th - 25 th May 2017	20

Staff Development and Welfare

Welfare activities

To commemorate 12th anniversary of IBMBB, a sermon was delivered by the most Venerable, Varayaya Samitha Thero of the Nimalarama Samadhi Buddhist Center, at 2.00 p.m on 23rd May 2017. Staff and students of the IBMBB were present for this event.

Blood Donation Programme -2017

This programme was held on 28th September 2017 in collaboration with the National Cancer Institute, Maharagama. This was a very successful programme held with the contributions and participation of staff and students of the IBMBB having 60 participants who donated blood.



Members of the IBMBB staff, students of IBMBB and donors from outside participating in the blood donation campaign



Staff Training

Eleven staff members received training and attended training courses in various aspects as described in the Table given below.

Staff training received in 2017

Name of staff member	Designation	Workshop/Training Course	Duration
Prof Shiroma Handunnetti	Director	Capacity Building Special Training Programme conducted by UCSC and SDC, UOC.	11 th October – 20 th November 2017
Dr. Sumadee De Silva	Lecturer	Liquid Biopsies, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany	9 th -13 th October 2017
Dr. S.Sameera R. Samarakoon	Lecturer	Trining Workshop on Lab Animals	30 th October-03 rd November
Dr Narmada Fernando	Lecturer	Capacity Building Special Training Programme conducted by UCSC and SDC, UOC.	11 th October – 20 th November 2017
Ms. Thanuja D. Athapaththu	Book Keeper, Gr. II	Workshop on Ensuring Proper Utilisation of University Fund in Universities	2 nd May 2017
Ms. W.Nadeesha Jayawardhana	Computer Application Assistant, Gr. III	Training in Clerical Skill Workshop	15 th February to 2 nd May 2017
Ms. A.Anoma Jayasoma	Technical Officer, Grade II Seg “A”	Competence Development Programme at University of Puthra Malaysia	09 th to 15 th July 2017
Mr. G.G.Sashika Niranjan	Computer Application Assistant, Gr. III	Workshop on Procurement & Evaluation of IT Products	24 th & 25 th April 2017
Ms. P.V.A.C. Helani	Library Information Assistant, Gr. III	Workshop on OpenBibiiio (OB) Library Automation Software	13 th "& 14 th August 2017
Ms. W.Nadeesha Jayawardhana	Computer Application Assistant, Gr. III	English Coure Level II, 2017	15 th August to 31 st October 2017
Ms. E.Priyangani Dabare	Computer Application Assistant, Gr. III	English Coure Level II, 2017	15 th August to 31 st October 2017



National Development through National/International Agencies

Collaborative research programmes with the National Cancer Hospital, Maharagama, National Hospital Sri Lanka, North Colombo Teaching Hospital, Ragama, Base Hospital Homagama, Faculties of Medicine and Science, University of Colombo and Sri Jayawardenepura University, Faculty of Medicine, University of Kelaniya, Open University, Wayamba University, Medical Research Institute, Tea Research Institute and Industrial Technology Institute were continued during the year 2017.

Emeritus Professor Eric Karunanayake served as a reviewer to International Science Foundation, Stockholm and Third World Academy of Sciences.

Prof Kamani Tennekoon was appointed as a Study Group Member by National Science and Technology Commission for the “Establishment of a governing mechanism and policies for accessing the National Genome Centre and National Genome Data Repository”. She was also a resource person for the National Health Research Council of the Ministry of Health, Nutrition and Indigenous Medicine for formulating National Guidelines on Ethics of Research in Humans. She served as the Chairperson, Board of Study, Molecular Life Sciences at IBMBB and was also Deputy Chairperson, Board of Study, Bioinformatics at IBMBB. Prof Tennekoon served as a Visiting Lecturer to MD-Clinical Oncology Programme at PGIM and an examiner for the same. Prof Tennekoon was an evaluator of research proposals for National Science Foundation. She served as a reviewer for the following International Journals, BMC Complimentary and Alternative Medicine, Journal of Food Biochemistry, International Journal of Molecular Medicine, Molecular Medicine Reports. PLOS One, Oncology Letters, Scientific Reports. Prof Tennekoon served as a mentor for the junior Faculty in the Molecular Life Sciences programme and mentor for junior staff on Research Supervision at MSc, MPhil and PhD level as appropriate.

Prof Shiroma Handunnetti continued to served as the Chairperson, Board of Study, Cellular & Molecular Immunology (BOS-CMI) at IBMBB. Within the BOS-CMI, Prof Handunnetti together with other members of the BOS-CMI contributed to curriculum development of Post-Graduate Certificate Course (PGCert Immunology; SLQF level 6/7), with Blended Learning components. Professor also served as the Chairperson, Quality Assurance Cell-IBMBB after its establishment and coordinated the initiatives/seminars/workshops and guest lectures organized by the QACell-IBMBB since Feb 2017.

Prof Handunnetti served as the Vice-President, Allergy and Immunology Society of Sri Lanka, member, Board of Management, Staff Developing Center, University of Colombo, member of the Specialty Board for Molecular Medicine at PGIM, member, Committee on Biotechnology, National Science Foundation. She was the Advisor for the Organizing Committee for the 9th IBMBB Annual Scientific Sessions (July 2017) University of Colombo. Prof Handunnetti served as Examiner/Moderator for the Bachelor of Medical



Laboratory Science, The Open University of Sri Lanka, examiner for the Selection test for MSc/PG Diploma in Molecular Medicine in August 2017 and Dissertation examiner of Ms H S Sakunthala, Faculty of Science, University of Kelaniya.

Prof Handunnetti participated in the following Meetings and Workshops, Awareness workshop on International Center for Genetic Engineering & Biotechnology (ICGEB) Grant Schemes, National Science Foundation held on 7th November 2017, Capacity Development Programme Workshops conducted by UCSC: Workshop 1 on Exploring Blended Learning (16th October 2017) and Workshop 2 on Designing Blended Learning activities (23rd October 2017) , Workshop on “Reviewing student activities for Outcome Based Education & Constructive alignment” conducted by Staff Development Center on 11th Oct 2017, Interactive Workshop on converting a draft manuscript to a “Ready to Publish” manuscript, National Science Foundation, 1st -4th August 2017, Curriculum Revision Workshop, MSc in Medical Entomology and Applied Parasitology, Open University of Sri Lanka, 24th July 2017, International Research symposium on Pure and Applied Sciences (IRSPAS) 2017, Faculty of Science, University of Kelaniya on 20th October 2017 and Pre-Congress Seminar on Challenges in Elimination of Vector Borne Diseases in Sri Lanka, KDUIRC on 31st July 2017. Prof Handunnetti participated in the following international conferences and Workshops, 10th International Leptospirosis Society Scientific Meeting, 27th Nov-1st Dec 2017, Palmerston North, New Zealand and Workshop on “Genomic Techniques from Leptospirosis Research”, Massey University, 3rd-5th December 2017, Palmerston North, New Zealand.

Prof Handunnetti was a reviewer/evaluator for Sri Lanka Journal of Biology, for Research Proposals for National Science Foundation, for Research Project Proposals & Progress Reports for Research & Higher Degrees Committee, Faculty of Medicine, University of Colombo and for Abstracts for Institute of Biology, Sri Lanka. She also served as an advisor for the Welfare Society, IBMBB and was a mentor to the junior staff on MSc Research Supervision.

Dr Jagathpriya Weerasena served as a Member of Steering committee for Establishment of Faculty of Technology, and IBMBB Coordinator, Development of a Health and Safety Policy for the University of Colombo. Dr Weerasena continued to serve as the Secretary, Research Ethics and Higher Degrees Committee of IBMBB, Course Coordinator, MSc in Molecular Life Sciences at IBMBB, Coordinator, Commonwealth Scholarship program for IBMBB and Secretary, Board of Study, Molecular Life Sciences at IBMBB. He served as a member, Board of Study Cellular & Molecular Immunology at IBMBB. Dr Weerasena was the Chairperson, Organizing Committee, 9th IBMBB Annual Scientific Sessions held in 7th July 2017. He served as a Visiting Lecturer to Bachelor of Medical Laboratory Sciences programme, Kothalawala Defence University, Council Member, Institute of Biology, Sri Lanka.



Dr Sumadee De Silva was appointed as a member of the Board of Study Molecular Life Sciences at IBMBB. Dr. De Silva continued as the Secretary, Academic Committee of IBMBB. She served as an Institute Representative in IT and Web Committee, University of Colombo. Dr. De Silva served as a Visiting Lecturer to Cancer Genetics lectures in MD-Clinical Oncology Programme at PGIM and also as an Undergraduate Research Dissertation examiner for Department of Zoology, Faculty of Science, University of Colombo.

Dr. Sudeshini Heawage was appointed as a member of the Board of Study Molecular Life Sciences at IBMBB. Ms Hewage submitted her PhD thesis in June 2017 and completed her PhD in November 2017.

Dr. Sameera R Samarakoon continued his services as a member of the Board of Study Molecular Life Sciences at IBMBB and as the Business Development Officer: Business Development Unit, IBMBB. Dr Sameera R Samarakoon served as a Visiting Lecturer to Cancer Genetics lectures in MD-Clinical Oncology Programme at PGIM, University of Colombo and Faculty of Natural Sciences, Open University of Sri Lanka. Dr Samarakoon participated in the TWAS ROCASA young scientist conference on the topic Infectious disease: Biology to intervention strategies which was held in Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, India from 07th to 9th September 2017 and selected as one of 10 best presenters.

Dr Ruwandi Ranasinghe continued her services as a Co-coordinator for MSc in Bioinformatics at IBMBB, member of the Board of Study, Bioinformatics, member of the Board of Study Molecular Life Sciences at IBMBB and as a member, Business Development Unit (BDU), IBMBB. Dr Ranasinghe also served as the Coordinator for Practical Demonstrations on DNA isolation and analytical separation for the Biomedical Students at Business Management School (BMS).

Mr Kanchana Senanayake was granted study leave to complete his MPhil/PhD studies on Bioinformatics at the IBMBB. Mr Senanayake also served as an invited member for the Board of Study, Bioinformatics at IBMBB during the period of his study leave.



Research Activities: A number of research programmes were in progress at the IBMBB in the fields of Tropical - Parasitic and Infectious Diseases (Filariasis, Leptospirosis, Dengue and Malaria), Molecular Medicine (Cancer Genetics and Cancer Stem Cells, human DNA variation, Genetics of autoimmunity, Molecular studies on Hymenopteran Venom) and Plant Molecular Biology and Plant Metabolomics (Rice, Tea, Papaya, Potato), Biochemistry and Molecular Biology of Microbes (Bacteria and fungi), Medicinal Plants (anti-inflammatory & immunomodulatory, anti-cancer, anti-filariacidal and anti-bacterial activities), Anti-cancer activities of natural compounds and nano-assisted delivery, and Industrial Applications, Molecular identification of animal species. Each research programme has several projects which provide research training for MPhil/PhD and MSc students under the supervision of the Director, Academic and Academic Support staff of the Institute and Collaborating Scientists. Students, research projects and supervisors are listed in Table 1 and Table 2.

There were a total of 18 full papers in peer-reviewed, indexed, International Journals. There were 39 research communications presented at scientific meetings including 9 international abstracts.

Details of funds obtained by Academic Staff / Visiting Professors are given in Table 3.

1) Research Programmes on Parasitic and Infectious Diseases

Parasitic and infectious diseases still contribute significantly to the disease burden of Sri Lankan population. A long standing disease, lymphatic filariasis, though is not fatal by itself has considerable morbidity and treatment options are limited. Leptospirosis (rat fever) and Dengue fever prevalence has recently increased alarmingly and both conditions are associated with significant morbidity and mortality. Delayed diagnosis and lack of understanding of the mechanisms underlying disease process are responsible for higher number of deaths seen with these two diseases. Several research programmes are in place to address these issues. Malaria transmission has been brought under control, however sensitive molecular methods require to be established in this phase where re-introduction is being prevented by the National Anti-Malaria Campaign.

A) Filariasis

A project was in progress in 2017.

i) Studies on *Setaria digitata* genome using new generation sequencing (NGS) technologies for identification of potential drug targets

Aimed at identifying potential drug targets using sequence data of *Setaria digitata*.

Investigators: Prof. Erik Bougcam-Rudloff (University of Uppsala, Sweden), Prof. Eric Karunanayake (IBMBB) and Prof. Kamani H. Tennekoon (IBMBB)
MPhil/PhD Student/IBMBB: Mr. Kanchana S. Senanayake



Funding: Swedish Links Grant.
MPhil/PhD project was in progress in 2017.

B) Leptospirosis (rat fever)

Four MPhil/PhD projects One MSc project and two BSc 4th year projects were in progress in 2017.

i) Rapid immunodiagnostic tests for early detection of leptospirosis (rat fever)

Aimed at comparison of rapid immunodiagnostic tests available for leptospirosis diagnosis and to establish an in-house ELISA as a new rapid diagnostic assay.

Investigators: PI: Prof Shiroma Handunnetti (IBMBB), Prof. Senaka Rajapakse (UOC), Prof. Sunil Premawansa (UOC) and Prof. Janaka de Silva (University of Kelaniya).

Collaborator: Dr. Lilani Karunanayake (Medical Research Institute)

MPhil/PhD student/IBMBB: Dr. M.J.R. Niloofa

Funding: National Science Foundation to Prof Shiroma Handunnetti (NSF/RG/2011/HS/19).
One PhD was awarded in 2017.

Two oral presentations were made, one at the 9th IBMBB Annual Scientific in July 2017 and another at the 10th International Leptospirosis Society Meeting, New Zealand.

ii) Studies on factors contributing to pathogenesis of severe leptospirosis (rat fever) in Sri Lanka

Aimed to investigate different factors (host factors such as cytokines and genetic factors etc) that would have a predisposition for developing severe leptospirosis

Investigators: PI: Prof Shiroma Handunnetti (IBMBB), Prof. Sunil Premawansa (UOC) and Prof. Senaka Rajapakse (UOC); Collaborator: Dr. Lilani Karunanayake (Medical Research Institute).

MPhil/PhD student/IBMBB: Dr. TRG Narmada Fernando.

Funding: National Research Council to Prof Shiroma Handunnetti, IBMBB (NRC -12-077)
One PhD was awarded in 2017.

Two poster presentations were made at the 10th International Leptospirosis Society Meeting, New Zealand.



iii) Sero-epidemiology of human leptospirosis in the District of Colombo, Sri Lanka

Aimed at characterizing the immune status of residents of Colombo district, so that it will provide cut-off immune titers used in MAT for diagnosis and other epidemiological parameters.

Investigators: PI: Prof. Senaka Rajapakse (UOC), Prof Deepika Fernano and Prof Shiroma Handunnetti (IBMBB); Collaborator: Dr. Lilani Karunanayake (Medical Research Institute). MPhil/PhD student/IBMBB: Mr Krishan Balaji

Funding: University of Colombo to Prof. Senaka Rajapakse (UOC Grant: AP/3/2/2014/RG/14)
MPhil programme was in progress in 2017.

iv) Detection of genotypes and serotypes of *Leptospira* isolated from leptospirosis patients of different severities

Aimed to detect genotypes and serotypes of *Leptospira* isolated from leptospirosis patients and to study the probable associations with disease severity.

Investigators: PI: Prof Shiroma Handunnetti (IBMBB), Dr Jagathpriya Weerasena, Prof. Sunil Premawansa (UOC) and Prof. Senaka Rajapakse (UOC); Collaborator: Dr. Lilani Karunanayake (Medical Research Institute).
MPhil/PhD student/IBMBB: Ms . Nadeema S Chandrapathma

Funding: National Research Council to Prof Shiroma Handunnetti, IBMBB (NRC -17-098)
MPhil/PhD programme was initiated in 2017.

v) *In vitro* study on the antimicrobial agents on inflammatory cytokine response in leptospirosis

Aimed to investigate the immunomodulatory effect of selected an antimicrobial agents on inflammatory cytokine response in leptospirosis.

Investigators: PI: Prof Shiroma Handunnetti (IBMBB), Prof Senaka Rajapakse (UOC), Dr Narmada Fernando (IBMBB)
MSc student/IBMBB: Ms Sam Gayathri

Funding: IBMBB MSc programme
MSc project was completed in 2017 and dissertation was to be submitted in December 2017.

vi) Comparison of *in vitro* effect of pathogenic and saprophytic *Leptospira* on lymphocyte functions

Aimed to investigate the effect of pathogenic *Leptospira* on human lymphocytes compared to saprophytic *Leptospira*.



Investigators: PI: Prof. Sunil Premawansa (UOC), Prof Shiroma Handunnetti (IBMBB), Dr Narmada Fernando (IBMBB), Dr OVDSJ Weerasena (IBMBB), Ms Shashika Dayarathna (IBMBB), Ms Maheshi Mapalagamage (IBMBB)
BSc student/UOC: Ms Dineesha Gamanayaka

Funding: BSc programme/Department of Zoology (UOC)
One BSc 4th year dissertation was submitted for examination in December 2017.

vii) Assessing the survival of pathogenic *Leptospira interrogans* in relation to intracellular killing by neutrophils

Aimed to investigate the potential of pathogenic *Leptospira* to survive in relation to intracellular killing by Neutrophils

Investigators: PI: Prof. Sunil Premawansa (UOC), Prof Shiroma Handunnetti (IBMBB), Dr Narmada Fernando (IBMBB), Ms Maheshi Mapalagamage (IBMBB)
BSc student/UOC: Ms Nipuni Barupola

Funding: BSc programme/Department of Zoology (UOC)
One BSc 4th dissertation was submitted for examination in December 2017.

C) Dengue

Two MPhil/PhD projects, one MSc project and one BSc 4th year project were in progress in 2017.

i) Studies on prognostic markers and pathogenesis of severe dengue

Aimed at understanding mechanisms underlying the pathogenesis of severe dengue and its complications so that information can be used by clinicians for providing better treatment

Investigators: PI: Prof. Sunil Premawansa (UOC), Prof Shiroma Handunnetti (IBMBB), Dr. Dharshan De Silva (KDU), Dr. Gayani Premawansa (North Colombo Teaching Hospital)
MPhil/PhD Student (IBMBB): Ms. Maheshi S Mapalagamage

Funding: National Science Foundation to Prof. Sunil Premawansa (NSF/RG/2014/HS/04)
PhD programme was in progress in 2017.

Two communications were done as a co-author and one oral presentation was made and it was awarded with the prize for the best oral presentation in immunology and Infectious Diseases at the Proceedings of the 9th IBMBB Annual Scientific Sessions.



ii) The Establishment of a Colourimetric Reverse Transcription Loop-mediated Isothermal Amplification for the rapid detection of dengue virus

Aimed to establish a Colourimetric Reverse Transcription Loop-mediated Isothermal Amplification for the rapid detection of dengue virus.

Investigators: PI: Prof Andrew Nguyen, Dr Dharshan De Silva (KDU), Dr Jagathpriya Weerasena (IBMBB), Prof Shiroma Handunnetti (IBMBB)
MSc Student (IBMBB): Dr. Dinuka Ariyaratne

Funding: IBMBB MSc programme
MSc project was completed in 2017 and dissertation was to be submitted in December 2017.

iii) In vitro study on serum factors of Angiopoitin-1 and Angiopoitin-2 leading to plasma leakage through endothelial dysfunction in severe dengue infections

Aimed to assess the involvement of serum factors including Angiopoitin-1 and Angiopoitin-2 of dengue patients with different disease conditions toward the dysfunction of human endothelial cells

Investigators: PI: Prof. Sunil Premawansa (UOC), Prof Shiroma Handunnetti (IBMBB), Dr. Gayani Premawansa (North Colombo Teaching Hospital), Ms Maheshi Mapalagamage (IBMBB), Dr Narmada Fernando (IBMBB)
MPhil/PhD Student (IBMBB): Ms. Hansini Gunasekara

Funding: BSc programme/Department of Zoology (UOC)
One BSc 4th year dissertation was submitted for examination in December 2017.

iv) Determining the role of dengue NS1 in the pathogenesis of dengue infection

Aimed at understanding mechanisms underlying NS1 mediated pathogenesis of dengue.

Investigators: PI: Prof. Neelika Malavige (USJP)-PI, Dr Sameera Samarakoon (IBMBB), and Prof Kamani Tennekoon (IBMBB)

MPhil/PhD Student (USJP): Ms. Deshini Chaturanga Jayathilaka
Funding: National Research Council to Prof. Neelika Malavige
MPhil/PhD programme was in progress in 2017.



D) Malaria

A project was in progress in 2017.

i) Studies in the phase of prevention of reintroduction of malaria in Sri Lanka: Comparison of parasitological and molecular diagnostic methods and molecular characterization infections

Aimed at characterization of imported malaria cases in the phase of prevention of reintroduction of malaria in Sri Lanka and to identify the optimum diagnostic method suitable for such malaria infections.

Investigators: Prof. Deepika Fernando (UOC), Prof. Sunil Premawansa (UOC), Prof Shiroma Handunnetti (IBMBB), Dr OVDSJ Weerasena (IBMBB), Dr Risintha Premaratne (Anti-Malaria Campaign)

MPhil student/IBMBB: Ms WM Kumudu T de Alwis-W Gunasekara

Funding: National Science Foundation to Prof Deepika Fernando (NSF/RG/2014/HS/03)
MPhil programme was in progress in 2017.

Two presentations were made. one poster presentation at the 9th IBMBB Annual Scientific in July 2017 and a second oral presentation was made at the 73rd Annual Scientific Sessions, Sri Lanka Association for the Advancement of Science.

2) Research Programmes in Molecular Medicine

Several projects in biomedical sciences were carried out requiring either human or animal experimentation. These include studies on cancer, , human DNA variation, molecular genetics of growth hormone deficiency and congenital adrenal hyperplasia, genetics of BK virua and autoimmune disease and molecular studies on hymenopteran venom etc.

A) Cancer and Cancer stem cells

Cancer prevalence in Sri Lanka has increased recently and breast cancer affects approximately 1: 25 women. Some breast cancers are hereditary (cancer causing genes pass from mother to daughters) whereas others are sporadic (women with no family history of cancer developing the disease). Obesity is a factor predisposing to sporadic breast cancer, but how obesity causes cancer is not clear.

Five MPhil/PhD projects and three MSc project were in progress in 2017.

i) Role of obesity hormone leptin in breast cancer

Aimed at identifying possible role of the obesity hormone leptin, its receptor and leptin and leptin receptor genotype in breast cancer



Investigators: Prof Kamani H Tennekoon (IBMBB), Prof Eric H Karunanayake (IBMBB), Dr. Indrani Amarasinghe (National Cancer Institute, Maharagama), Dr. Kanishka De Silva (National Cancer Institute, Maharagama)

PhD student/IBMBB: Ms Chrishani Rodrigo

Funding: National Research Council to Prof. Kamani H Tennekoon (NRC -11-018)

One paper was published

ii) Detection of BRCA1 large genomic rearrangements/deletions in a cohort of young familial breast cancer patients in Sri Lanka

Aimed to screen BRCA1 large genomic rearrangements/deletions in a cohort of young Breast cancer patients in Sri Lanka

Investigators: Dr. Sumadee De Silva (IBMBB), Dr. Kanishka De Silva (Apeksha Hospital, Maharagama) and Dr. Dhananji Jayathilaka, IBMBB

MSc student/IBMBB: Mr. W.L.S.C Dilshan

Funding: IBMBB (MSc studies)

MSc project is in progress in 2017.

iii) Analysis of somatic mutations (hot spots) of TP53 gene in cancer from paraffin embedded or fresh cancer tissue of cancer patients in Sri Lanka and mutation analysis at RNA and Protein levels

Aimed to screen somatic mutations of TP53 gene in several cancer types using paraffin embedded or fresh cancer tissue of cancer patients in Sri Lanka then analyse mutations at RNA and Protein levels

Investigators: Prof Kamani H Tennekoon (IBMBB), Prof Eric H Karunanayake (IBMBB), Dr. Sumadee De Silva (IBMBB), Prof Preethika Angunawela (Medical Faculty, Colombo) and Dr. Kanishka De Silva (National Cancer Institute, Maharagama)

MPhil/PhD student/IBMBB: Ms Vahinipriya Manoharan

Funding: University Grants Commission grant (UGC/VC/DRIC/SRSP/2014/CMB-01) and National Research Council grant (NRC 15-33) to Dr. Sumadee De Silva

One MPhil programme was in progress in 2017. Student spent one year at the New Castle University, UK on a split PhD Commonwealth scholarship received by her.

Two abstracts were presented at the 3rd European Association for Cancer Research Conference on Cancer Genomics 2017, Cambridge, UK and the 3rd European Association for Cancer Research Conference on Cancer Genomics 2017, Cambridge, UK

iv) Characterisation of Mitochondrial DNA mutations in the D-loop and mtDNA haplogroups in Sporadic Breast Cancer.

This project aims to identify potential biomarkers for sporadic cancer based on mitochondrial D loop polymorphisms.



Investigators: Ms J T Kotelawala (MPhil/PhD student), Prof Kamani H Tennekoon (Principal supervisor), Dr. Ruwandi Ranasinghe (Co-supervisor), Dr Kanishka De Silva (Co-supervisor, National Cancer Institute)

Funding: PhD scholarship obtained by Ms Kotelawala

v) Mutations and polymorphisms of mitochondrial genes as risk factors for sporadic breast cancer in Sri Lankan patients of Sinhalese ethnicity

This project which commenced in October 2017 aims to identify potential biomarkers for sporadic cancer based on mitochondrial coding region polymorphisms.

Investigators: Prof Kamani H Tennekoon (Principal supervisor), Dr. Ruwandi Ranasinghe (Co-supervisor), Dr Kanishka De Silva (Co-supervisor, National Cancer Institute)

MPhil/PhD student: Ms L Jayasekara

Funding: NRC Grant awarded to Prof Kamani Tennekoon

vi) Cancer stem cells targeted drug-leads from Sri Lankan endemic plants for breast cancer

Aimed at isolation, structural and functional characterization of natural compounds from endemic medicinal plants, which can target breast cancer stem cells.

Investigators: Dr Sameera Samarakoon (PI-IBMBB), Prof Kamani H Tennekoon (IBMBB), Prof Neelika Malavige (USJP), Dr. Kanishka De Silva (National Cancer Institute, Maharagama), Prof Dilip E De Silva (UOC)

MPhil/PhD student/IBMBB: Ms Uma Rajagopalan

Funding: National Research Council grant (NRC 14-067) to Dr. Sameera Samarakoon
MPhil/PhD programme was in progress in 2017.

vii) *In-silico* and *in-vitro* screening of a small compound library on breast cancer stem cells

Investigators: Dr Sameera Samarakoon, Dr A Adhikari (HEJ Research Institute, Pakistan)

MSc student: TP Saliu

Funding: MSc studies (IBMBB)

MSc Dissertation was submitted for examination in December 2017.

viii) Development of *in vitro* transgenic model for anti-cancer drug discovery

Investigators: Prof Kamani Tennekoon (IBMBB), Dr Sameera R Samarakoon (IBMBB), Mr Kanishka Senathilake (IBMBB)

MSc Student : AADN Perera

Funding : MSc funds. (IBMBB)

MSc dissertation was submitted for examination and completed in 2017.



B) Human DNA variation

One MSc project was completed in 2017.

- i) Extensive analysis of human mitochondrial and Y-chromosome haplogroups among Sinhalese individuals with different *Alu* polymorphisms

Investigators: Dr. Ruwandi Ranasinghe, Dr Niraj Rai (Birbal Sahni Institute of Palaeosciences, Lucknow, India), Prof Kamani Tennekoon

MSc student: AS Fernando

Funding: MSc studies (IBMBB)

MSc Dissertation was submitted for examination in 2017

C) Molecular studies on short stature

One PhD project was in progress in 2017.

- i) Growth hormone and GHRH-R mutations and short stature

Aimed at characterizing mutations in the growth hormone and GHRH-R genes in a cohort of children clinically and biochemically confirmed to have GH deficiency.

Investigators: PI: Prof Kamani Tennekoon (IBMBB), Prof KSH De Silva (UOC), Ms Sudeshini Hewage (IBMBB) and Dr. Sumadee De Silva (IBMBB)

PhD student/IBMBB: Ms Tharmini Sundralingam

Funding: National Science Foundation to Prof Kamani H Tennekoon (NSF/RG/ 2011/BT/03)
One PhD project was in progress in 2017. One publication and three communications were made during the year 2017.

D) Genotyping and Genetic Polymorphisms

Three MSc projects were completed in 2017.

- i) A preliminary study on VP1 gene based genotyping of BK virus isolated from kidney transplant patients

Aimed to identify BK virus genotypes isolated from kidney transplant patients in Sri Lanka

Investigators: Dr Jude Jayamaha (Medical Research Institute), Dr Thusistha Gajanayake (Horizon Campus), Dr Narmada Fernando (IBMBB) and Prof Shiroma Handunnetti (IBMBB)

MSc student/IBMBB: Ms Varuni Ratnayake



Funding: MSc studies (IBMBB)

One MSc dissertation was submitted for examination in December 2017.

ii.) Preliminary study on *CTLA4* gene mutations in inflammatory bowel disease in Sri Lanka

Aimed to identify possible *CTLA4* polymorphisms in patients with inflammatory bowel disease in Sri Lanka

Investigators: Prof Suranjith Seneviratne (Royal Free Hospital, UK & UOC), Dr Sisira Pathirana (UOC) and Prof Shiroma Handunnetti (IBMBB)

MSc student/IBMBB: Ms Harshani Asarappulige

Funding: MSc studies (IBMBB) & Funds from Prof Suranjith Seneviratne.

One MSc dissertation was submitted for examination in December 2017.

iii.) Analysis of common genetic mutations in a cohort of salt wasting form of congenital adrenal hyperplasia

Investigators: Prof. Kamani Tennekoon (IBMBB), Dr. Sudeshini Hewage (IBMBB), Prof. Shamaya De Silva (UoC)

MSc student/IBMBB: S Praveenan

Funding: MSc studies (IBMBB)

One MSc dissertation was submitted for examination in December 2017.

E) Diabetes

One MSc project was completed in 2017.

i) Expression, purification and characterization of a recombinant anti-diabetic drug target, PPAR gamma (Peroxisome proliferator activated receptor gamma)

Investigators: Dr YS Wijayasighe (University of Kelaniya), Dr. Sumadee De Silva (IBMBB)

MSc Student : MCJ De Silva

Funding : MSc funds (IBMBB)

One MSc dissertation was submitted for examination in December 2017.

F) Molecular studies on allergen identification and characterization

One PhD study in progress in 2017.and one pilot study was initiated in 2017.

i) Immunochemical characterization of venom of *Apis dorsata*

Aimed at molecular and immunological characterization of immunogens in venom of *Apis dorsata* (Giant Asian honey bee) and immune cross reactivity with venom immunogens in *A. cerana* for establishment of a de-sensitization protocol.



Investigators: Dr Rajiva de Silva (MRI), Prof Sunil Premawansa (UOC), Prof Shiroma Handunnetti (IBMBB), Prof Sriyani Dias (University of Kelaniya) and Dr EWRA Witharana (Consultant Physician, Deniyaya Base Hospital)
PhD student: Mr Peshala Gunasekera

Funding: MSc studies (IBMBB) & Medical Research Institute to Dr Rajiva de Silva (Project ID:/46-2013); National Science Foundation Grant (NSF/RG/2014/HS/02) to Dr Rajiva de Silva (PI) & Prof Shiroma Handunnetti (collaborator)

One PhD study was in progress in 2017. One research paper was published on “Toxicon” journal and one oral presentation was made at the 9th Annual Scientific Sessions of the IBMBB during 2017.

ii) Study on allergenic pollen records from airborne samples during the peak time of South-West monsoon in the Western Province

Investigators: Prof Sunil Premawansa (UOC), Prof Shiroma Handunnetti (IBMBB), Dr Rajiva de Silva (MRI) & Prof TR Premathilake
MSc student: Ms. Maneesha Guruge

Funding: MSc studies (IBMBB)

One MSc Dissertation was submitted for examination in December 2017.

3) Research Programmes on Plant Molecular Biology and Plant metabolomics

A) Rice

One project was completed in 2017.

i) Assessment of Genetic diversity and tracing the origin of weedy rice

Aimed at assessing the level and distribution of genetic diversity of weedy rice population and tracing the possible genetic origin of weedy rice found in the paddy fields in Sri Lanka.

Investigators: PI: Prof. Shyama R. Weerakoon (Open University of Sri Lanka), Dr. Jagathpriya Weerasena (IBMBB)
MPhil/PhD student/IBMBB: Ms. Dulangi Karunarathne

Funding: National Science Foundation to Prof Shyama Weerakoon (NSF/RG/ 2011/BT/06)
One MPhil dissertation was submitted for examination in 2017.



B) Tea

Two PhD projects were being completed in 2017.

i) Genetic characterization of tea cultivars and marker for blister blight disease

Investigators: PI: Dr K M Mewan (TRI) and Dr, Jagathpriya Weerasena (IBMBB)
MPhil/PhD student/IBMBB: Mr KH Tissa Karunaratne

Funding: National Research Council to Dr. K M Mewan (NRC-09-066)

PhD Thesis writing in progress in 2017.

ii) DNA phylogeny, morphology pathogenecity of fungi causing agent of stem canker in Tea

Investigators: Ms NHL Pradeepa (PhD student/IBMBB, TRI scientist), Dr, Jagathpriya Weerasena (IBMBB), Prof RLC Wijesundera (Dept of Plant Sciences, UOC), Dr S Abeysinghe (TRI)

Funding: Tea Research Institute

PhD Thesis writing in progress in 2017.

C) Potato

One project was completed in 2017.

Development of rapid method for detection of causative organism of brown rot of potato (*Ralstonia solanacearum*)

Aimed at developing a rapid method for detection of the causative organism of brown rot of potato which is a serious quarantine pest in imported seed potato. Collaborative study with National Plant Quarantine Service (NPQS), Katunayake and IBMBB

Investigators: PI. Dr. P. Nilanthi. Dassanayake (USJP), Dr. Jagathpriya Weerasena (IBMBB),
MPhil/PhD student/IBMBB: Ms. A Ayesha U Perera

Funding: National Research Council to Dr P Nilanthi Dassanayake (NRC -11-099)

MPhil dissertation was submitted for examination in 2017.

D) Papaya

Development of Molecular markers associated with male and hermaphrodite papaya plants.

Investigators: Dr. Niroshani Eritawalage, Prof. Shamala Tirimanne (Faculty of Science – University of Colombo)

MSc Student : Ms. Amra Iuop



Funding : MSc funds. (IBMBB)

This MSc study was terminated in 2017 as the MSc student did not submit the MSc dissertation.

4) Research Programme on Biochemistry and Molecular Biology of Microbes

One PhD project was in progress in 2017.

i) Identifying *Bacillus thuringiensis* isolates with insecticidal activity

Aimed at isolating and characterizing of *Bacillus thuringiensis* strains with enhanced insecticidal activity that can be used to control rice and vegetable pests

Investigators: Dr. OVDSJ Weerasena (IBMBB), Dr. Radhika Samarasekera (Industrial Technology Institute)

MPhil/PhD student/IBMBB: Ms Rashini Baragama-Arachchi

Funding: National Science Foundation and National Research Council to Dr. Radhika Samarasekera (NSF/RG/2011/BT/05)

One PhD project was in progress in 2017. Two oral presentations were made in 2017; one in 3rd Biennial Research Symposium of Industrial Technology Institute and the other in Annual sessions of Sri Lanka Association for the Advancement of Science.

5) Research Programme on Medicinal plants

A) Research on medicinal plants with anti-inflammatory, immunomodulatory and anti-allergic effects

Two PhD projects were in progress and one MSc study was completed in 2017

The focus of these studies was on medicinal plants used in the treatment of diseases either associated with or caused by inflammatory responses or those used as immunomodulators.

i) Drug leads from medicinal plants in Sri Lanka: Investigations on immune-modulatory / anti-allergic activity

Aimed at evaluating possible immunomodulatory / anti-allergic activities of selected endemic and medicinal plants

Investigators: Prof Shiroma Handunnetti (IBMBB), Prof Dilip De Silva (UOC)

MPhil/PhD student/IBMBB: Ms BA Dilani Rukshala



Funding: Ministry of Higher Education: Capital Grant for Research on Drug Leads from Medicinal Plants

PhD study was in progress in 2017. Abstract was presented at the 9th IBMBB Annual Scientific in July 2017.

ii) Effect of *Munronia pinnata* on immune cells

Aimed at evaluating the effect of *Munronia pinnata* to reverse the inhibition of neutrophil chemotaxis

Investigators: Dr Swarna Hapuarachchi, Institute of Indigenous Medicine Ms Narmada Fernando (IBMBB), Prof Shiroma Handunnetti (IBMBB)
MSc Student : Ms Dasanthi Lakmali

Funding: MSc studies (IBMBB)

MSc dissertation was submitted for examination and completed in 2017.

iii) Activity studied isolation of anti-inflammatory compounds from *Alpinia carcarata* rhizome and leaf

Aimed at isolation of anti-inflammatory compounds and value added products for inflammatory disease/conditions.

Investigators: Dr Selvaluxmy Chelvendran (ITI), Prof Shiroma Handunnetti (IBMBB), Prof GAS Premakumara
PhD Student: Maduwanthi Chandrakanthan

Funding: National Research Council to Dr Selvaluxmy Chelvendran (NRC-12-081)
PhD thesis writing was in progress in 2017.

B) Anti-cancer effects of medicinal plants

Six projects were in progress in 2017

i) Aimed at scientifically proving purported anti-cancer effects of

- a) An Ayurvedic formulation containing three plants, namely *Nigella sativa* seeds, *Hemidesmus indicus* roots and *Smilax glabra* rhizomes
- b) Katupila – *Fluggea leucopyrus*

Investigators: Prof Ira Thabrew (NSF Fellow and Visiting Professor, IBMBB), Prof Kamani Tennekoon (IBMBB), Prof Dilip De Silva (UOC) and Dr. Sameera Samarakoon (IBMBB)
PhD student/IBMBB: Ms Anuka Mendis



Funding: Dept. of Ayurveda, IBMBB, National Science Foundation to Prof Ira Thabrew (NSF/ Fellow /2012/01)

PhD thesis writing was in progress in 2017.

ii) Anti-cancer effects of *Vernonia zeylanica* - an endemic plant

Investigators: Prof. Ira Thabrew (Visiting Professor, IBMBB), Prof Kamani H Tennekoon (IBMBB), Prof Dilip De Silva (UoC) and Dr S Sameera R Samarakoon (IBMBB)

PhD student/IBMBB: Ms Anuka Mendis

Funding: Ministry of Higher Education: Capital Grant for Research on Drug Leads from Medicinal Plants and National Science Foundation.

PhD thesis writing was in progress in 2017.

iii) Anti-cancer effects of *Mangifera zeylanica* - an endemic plant

Investigators: Prof Kamani H Tennekoon (IBMBB), Prof Ira Thabrew (Visiting Professor, IBMBB), Prof Dilip De Silva (UoC) and Dr S Sameera R Samarakoon (IBMBB)

PhD student/IBMBB: Mr Meran Keshawa

Funding: National Research Council to Prof Kamani Tennekoon (NRC -11-018)

PhD Thesis was awarded in 2017. Three papers were published.

iv) Anti-cancer effects of *Camponosperma zeylanica*- an endemic plant

Investigators: Prof Kamani H Tennekoon (IBMBB), Dr Meran Keshawa Ediriweera (Post-doctoral Scientist), Dr S Sameera R Samarakoon (IBMBB), Prof Ira Thabrew (Visiting Professor, IBMBB),

Funding: National Science Foundation Grant awarded to Prof Tennekoon

v) Screening of selected mangrove plants for anti-cancer activity

Investigators: Dr. Sameera R Samarakoon (IBMBB), Prof. Kamani H Tennekoon (IBMBB), Prof. Ira Thabrew (IBMBB), Prof. Dilip De Silva (UOC), Prof. Iqbal Chaoudhery (Karachi, Pakistan).

Funding: International Foundation for Science to Dr Sameera Samarakoon (Grant No: F 5377-1)

This study was completed in 2017.



vi) Anti cancer drug development

Investigators: Prof Kamani Tennekoon, Dr Sameera Samarakoon, Prof Ira Thabrew, Prof E Dilip De Silva, Prof Nedra Karunaratne (UoP), Dr. A Adhikari (Nepal), Prof Iqbal Chaudhry (Pakistan), Dr Poorna Piyathilake (Wayamba University), Dr. Gomika Udugamasooriya, USA

Research Scientists: Kanishka Senathilake, Dr Chamara Janaka Bandara

MPhil/ students: Ms. Nimesha Wickramasinghe, Mr J Thushyanthan, Mr Saman Kotigala
Mr Kelum Rathnayake

Volunteers and MSc students

Tolulope Peter Saliu (Commonwealth Scholar from Nigeria pursuing MSc in Molecular Life Sciences); A A D Nirmal Perera (Pursuing MSc in Molecular Life Sciences); Amal Hulangamuwa (Pursuing MSc in Molecular Life Sciences); Nuwanka Kasunthara (Pursuing MSc in Molecular Life Sciences); Shanil Nanayakkara BSc, MSc – volunteer

Funding: National Science Foundation Grant – RPHS/2016-C07, PI Prof Kamani Tennekoon and Dr Sameera Samarakoon (Co-I)

Four MPhil/PhDs were registered in 2017. Four MSc students were partially supported in 2017.

C) Anti-filaricidal activity of selected endemic and medicinal plants

One PhD study was being completed in 2017.

Aimed at evaluating possible anti-filaricidal activity of selected endemic and medicinal plants

Investigators: Prof Eric Karunanayake (IBMBB), Prof Kamani Tennekoon (IBMBB), Prof Dilip De Silva (UOC) and Dr Sameera Samarakoon (IBMBB)

MPhil/PhD student/IBMBB: Mr Kanishka Senathilake

Funding: Ministry of Higher Education: Capital Grant for Research on Drug Leads from Medicinal Plants

Writing of the PhD thesis was in progress in 2017. One paper was published.

6) Research Programme on Anti-cancer effects of Natural Compounds and Nano-assisted delivery

Two Msc projects were completed in 2017.

i) Effects of compound A isolated from *Vernonia zeylanica* on lung cancer cells

Investigators: Prof Ira Thabrew, Dr Sameera R Samarakoon

MSc student: NK Abeysinghe



Funding: MSc studies (IBMBB)

One MSc dissertation was submitted for examination in December 2017.

ii) Development of nano-assisted targeted drug delivery system for cancer stem cells grown in hypoxic conditions

Investigators: Dr Sameera R Samarakoon (IBMBB), Prof Nedra Karunaratne (University of Peradeniya), Dr Meran Ediriweera (IBMBB)

MSc student: HGAC Hulangamuwa

Funding: MSc studies (IBMBB)

One MSc dissertation was submitted for examination in December 2017.

7) Research Programmes on Industrial Applications

One PhD study and one MSc study were completed, a second study was being completed and a third study was in progress in 2017.

i) Validation and Value Addition of Bio-active Natural Ingredients for Industrial Applications

This study was aimed at identification of different bioactivities of different medicinal plants for development of industrial applications.

Investigators: Dr Radhika Samarasekara, Dr OVDSJ Weerasena (IBMBB) & Prof Shiroma Handunnetti (IBMBB)

MPhil/PhD students/IBMBB: Ms Sachindra Perera (ITI) & Dr. Saroopa Samaradivakara (ITI)

Funding: National Research Council to Dr Radhika Samarasekara (NRC-12-100)

One PhD was awarded in 2017. One PhD thesis writing was in progress in 2017.

ii) Immunomodulatory activity of a herbal formulation in Sri Lankan Market

This study was aimed at investigating the immunomodulatory activity and the immune mechanisms of Link *Samahan*, a herbal formulation comprising 14 medicinal plant parts

Investigators: Prof Shiroma Handunnetti (IBMBB), Dr. OVDSJ Weerasena (IBMBB), Prof A Abeysekera, Link Natural Products Pvt Ltd.

MSc Student: Ms. Loshini Ranaweera

Funding: Research collaborative study initiated following an MOU with Link Natural Products Pvt Ltd. and the IBMBB, University of Colombo for funding this MPhil/PhD study.

MPhil/ PhD research was in progress in 2017 and One oral presentation was made at the 9th IBMBB Annual Scientific in July 2017.

iii.) Development of Barcodes for medicinal plant “Babila” (*Sida* species) in Sri Lanka



Investigators: Dr. OVDSJ Weerasena (IBMBB), Mr TMSG Tennakoon (Link Natural Products Pvt (Ltd)

MSc student/IBMBB: R Rajphriyadharshini

Funding: MSc studies (IBMBB)

One MSc dissertation was submitted for examination in December 2017.

8) Research Program on Molecular Identification of Animal Species in Sri Lanka

Two studies were in progress in 2017.

These studies were aimed at identification of animal species found in Sri Lanka using molecular biological techniques.

i) Molecular identification new animal species

Investigators: Mr. Mendis Wickramasinghe (Sri Lanka Herpetological Society), Prof Kamani Tennekoon (IBMBB) & Dr Sameera R Samarakoon (IBMBB)

Research Student: Ms Nethu Wickramasinghe (Sri Lanka Herpetological Society)

Funding: Sri Lanka Herpetological Society

ii.) Genetic characterization and molecular phylogeny of *Aedes aegypti* (Diptera: Culicidae) in Sri Lanka based on COI gene

Investigators: Dr Gayani Galhena (UoC), Mr. Nandika Perera (Genetech, Colombo), Dr OVDSJ Weerasena (IBMBB)

Research Student: HAKM Dharmarathne

Funding: MSc studies (IBMBB)

One MSc dissertation was submitted for examination in December 2017.

Services:

Following services were offered through the Business Development Unit, IBMBB.

1. Mutation detection services for BRCA I and II, p53 and KRAS and BRAF genes
2. DNA sequencing service

Other services carried out by staff members of IBMBB.

1. Molecular identification of bacterial and fungal samples from Multichemi Pvt LTD
Supervising DNA sequencing for samples from Credence Geneomics
2. Neutrophil based assays for confirmation of CGD
3. Mutation detection immunodeficiency patients



Activities carried out under BDU in 2017

- a. The 5th Annual Open Day of the IBMBB was held on 04th October 2017. A total of 81 participants, mainly the undergraduate students of science stream both from Government Universities and private institutes, were able to visit IBMBB and experience the laboratories and research activities.
- b. Seminar jointly organized by the IBMBB and Department of Physics, University of Colombo, under the topic “DNA damage biology and single molecular techniques for probing DNA interactions” was held on 25th October 2017. The lecture on “DNA damage biology” was delivered by Prof. Penny Beuning (Dept. of Chemistry and Chemical Biology, Northeastern University, USA).
- c. Campaign on the breast cancer awareness month and the 25th anniversary of the ‘Pink Ribbon’ movement was held on 31st October 2017.
- d. Several preliminary discussions were carried out with the industrial partners for commercialization of products invented by drug discovery research team at the IBMBB.
- e. Following invited guest speeches were delivered by Dr. Sameera R. Samarakoon as BDU activities with the aim of popularizing Molecular Life Sciences among school students.
 - i. Guest Speech -විශ්මිත අණුක විද්‍යාලොව- Science day program, Ananda collage 28th April 2017.
 - ii. Guest Speech -නිරසාර දිවියක් සමෘද්ධිමත් හෙටක් උදෙසා: නැගිටිමු උගනිමු ජයගමු විද්‍යාලොව- Science day program, Tholangamuwa Central Collage, 24th October 2017
 - iii. Guest Speech for a seminar organized by provisional education department Higurakgoda - නිරසාර දිවියක් සමෘද්ධිමත් හෙටක් උදෙසා: නැගිටිමු උගනිමු ජයගමු විද්‍යාලොව- at Ananda Balika Collage, Higurakgoda on 16th November 2017
- f. Following activities were conducted with the aim of popularizing Molecular Life Sciences and increasing the awareness about the ongoing research work at the IBMBB among the general public
 - i. Newspaper article – “Many firsts in research flow forth from the IBMBB” by Kumudini Hettiarachchi, about the service of Prof. Eric Karunanayake –The Sunday Times (22/01/201)
 - ii. Newspaper report – “Who are we?” by Kumudini Hettiarachchi, about the research outcomes of Dr. Ruwandi Ranasinghe –The Sunday Times (05/03/201)



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- iii. Six articles in “Vidusara” weekly science magazine by Dr. Sameera R. Samarakoon
 - iv. Several television programs (documentary, discussion), including one “Doramadalawa” programme (ITN) and two “Yatharoopa” programmes (Sri Lanka Rupavahini) were attended by Dr. Sameera R. Samarakoon

Quality Assurance Cell-IBMBB

An Internal Quality Assurance Unit (IQAU) was established in the university (UOC) and a Management Committee was established which undertook the responsibility of the Institutional review. IBMBB participated in the management committee meeting and executing the decisions relevant to IBMBB. Accordingly after the Institutional review was completed (in 2016) and a Quality Assurance Cell was established at the IBMBB in December 2016. As per initiative of the UOC, work norms of the Academic staff was formulated and IBMBB work norms were submitted and incorporated into the University of Colombo work norms for Academic staff. All IBMBB staff were informed of this and to adhere to the UOC work norm as per decision of the 416th Senate meeting.

The 1st meeting of the QACell-IBMBB was held in February 2017. Director, Prof S Handunnetti functioned as the Chairperson of the QACell-IBMBB. The members of the QA cell were finalised including Chairpersons & Coordinators of all three study programmes, SAR, SAB, Safety Officer (appointed in 2017). The terms of reference and activities were defined. The score card for QACell was completed by 80% by October 2017. IBMBB website redesigning was initiated and initial phase of the web designing was completed by November 2017. As IBMBB is focused on post-graduate degree programmes, a Scientific Assistant with MSc was assigned for the QACell-IBMBB. Accordingly Ms Shashika Dayaratne (MSc-CMI graduate) was appointed in April 2017.

During the year 2017, the following activities were organized and completed by the QACell,

- i) **July 2017** - Workshop on “**Work-Life-Balance: Present Moment Awareness**” for IBMBB staff conducted by Prof Piyanjali Soyza on 19th July 2017
- ii) **Sep 2017**- Workshop on “**Present Moment Awareness**” for IBMBB MSc, MPhil & PhD students conducted by Prof Piyanjali Soyza on 6th September 2017
- ii) **Oct 2017** - **Live Mindfully – Introductory meditation programme** for IBMBB staff, MSc, MPhil & PhD students conducted by Mr Deepal Sooriyarachchi on 10th October 2017
- iii) **Aug 2017** - **Introductory workshop on Quality Assurance** for IBMBB staff conducted by Prof Wipula Yapa, Director IQAU on 29th August 2017



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- iv) **Sep 2017 - Introductory Lecture Laboratory Accreditation** by Mr L H D Bandusoma, Deputy Director, Sri Lanka Accreditation Board on 11th September 2017
 - v) **Nov 2017 - Introductory Lecture on Intellectual Property Rights** by Ms G R Ranawaka, Director General, National Intellectual Property Office in Sri Lanka.
 - vi) **Dec 2017 - Introduction to Programme and Institutional Reviews** by for IBMBB staff conducted by Prof Wipula Yapa, Director IQAU on 8th December 2017

In addition other matters such as Institutional and personal/staff safety aspects, peer/student evaluations of study programmes, requirements of MSc, MPhil and PhD students, obtaining access to Plagiarism software and laboratory accreditation were among the other activities undertaken by the QACell.

Visitors to the Institute:

The Institute had several visitors including visitors from overseas during the year.

Two workshops on “Work-Life Balance: Present Moment Awareness” were conducted by Prof. Piyajali de Zoysa, Faculty of Medicine, University of Colombo for the staff members on 19th July and for IBMBB students 6th September 2017. They were organized by the Quality Assurance Cell, IBMBB.

Prof. Dr. Andreas Nitsche, Head, center for Special Pathogens, Robert Koch Institute, Berlin, Germany visited to the institute with a German research group in 28th and 29th of August. He delivered a lecture on “Immunodiagnostics for viaral infections” on 28th August and involved in a few practical demonstrations with his research group. This programme was organized with the collaboration of Prof. WB Yapa and Prof. Sunil Premawansa.

With the coordination of Sri Lanka Accreditation Board, IBMBB has organized a Laboratory Accreditation Awareness programme titled “Good Laboratory Practice”. This was conducted by Mr. LHD Bandusoma, Deputy Director of Sri Lanka Accreditation Board.

Prof. Penny Beuning (Associated Professor, Department of Chemistry and Chemical Biology, Northeastern University, USA), visited the institute to deliver a lecture on “DNA Damage Biology”. The seminar, jointly organized by the Business Development Unit of the IBMBB and Department of Physics, University of Colombo, was held on Wednesday, October 25th 2017 at the IBMBB conference hall. Prof. Prof. Mark C. Williams (Professor, Department of Physics, Northeastern University, USA) participated in the event as an invitee.

A guest lecture was conducted by Mrs. GR Ranawaka, Director General of National Intellectual Property Office of Sri Lanka. This was regarding “Intellectual Property Rights” was held on 14th November 2017 in the Conference room of IBMBB.



Human Resources: Professor Eric H Karunanayake, Founder Director and Emeritus Professor continued to work at the IBMBB in an Honorary capacity, contributing significantly to the supervision of postgraduate students.

Prof. Ira Thabrew and Prof E Dilip de Silva continued to work at the IBMBB as Visiting Professors.

Constraints: Human Resources and Financial Resources were the major constraints for implementing the activities as per Corporate/ Strategic & Management Plan 2017-2021. A new appointment for Lecturer-Cell Biology was only approved by October 2017. Selection of a Professor of Biochemistry was pending UGC clarification. Academic and other cadre positions for IBMBB was only approved by August 2017 and hence the recruitment was initiated by end of the year 2017. Recruitment for non-academic cadre was delayed due to other prevailing situation in the country.



Staff as at 31st December 2017

Permanent Cadre

Prof. Shiroma M Handunnetti	Director, IBMBB & Professor in Immunology
Prof. Kamani H Tennekoon	Senior Professor of Molecular Life Sciences
Dr. OVDS Jagathpriya Weerasena	Senior Lecturer, Grade II (Molecular Biology)
Dr. W Sumadee De Silva	Lecturer, (DNA Diagnostics)
Dr. A Sudeshini Hewage	Lecturer, Probationary (Biochemistry & Molecular Biology)
Ms. Anoma Ratnayake	Senior Assistant Registrar (up to 14 th August 2017)
Mr. Janaka Gunasekara	Senior Assistant Registrar (From 15 th August 2017)
Mr. HM Krishantha Herath	Senior Assistant Bursar
Mr. Kanchana Senanayake	Asst Network Manager, Grade II (on study leave)
Dr. Sameera Samarakoon	Scientific Assistant (Cell Biology) (up to 10 th Oct)
	Lecturer (Cell Biology) (from 11 th Oct)
Dr. Ruwandi Ranasinghe	Scientific Assistant (DNA Identification)
Ms. BN Nishara T Batagoda	Scientific Assistant (Bioinformatics)
Dr. L. Nilupa R. Gunaratne	Scientific Assistant (Biochemistry/Molecular Biology)
Ms. P. Dakshika Gangani	Scientific Assistant (Immunology) (on Contract from 16 th Oct)
Ms. Anoma Jayasoma	Technical Officer, Grade II “Seg A”
Ms. Sekani D Premadasa	Trainee Technical Officer
Ms. AN Tharini Somaratne	Trainee Technical Officer
Mr. M.A.A.M. Behshad	Trainee Technical Officer (on contract) (up to 12 th 2017)
Ms. Thanuja Atapattu	Book Keeper, Grade II “Seg A”
Ms. NKC Sumali Champika	Computer Applications Assistant, Grade II
Ms. KW Chathurika Fernando	Computer Applications Assistant, Grade III
Mr. GG Sashika Niranjana	Computer Applications Assistant, Grade III
Ms. Nadeesha Jayawardhana	Computer Applications Assistant, Grade III
Ms. Priyanganie Dabare	Computer Application Assistant, Grade III
Ms. BH Minoli D. Perera	Telephone Operator cum Receptionist (on maternity leave from 2017.08.15 to 2017.12.31)
Ms. PVA Chameera Helani	Library Information Assistant
Mr. YBMNY Bandara	Laboratory Attendant (Lower Grade)
Mr. EHGD Niroshan Abewardena	Laboratory Attendant (Lower Grade)
Mr. Chandana Liyange	Driver Grade II (on contract from 2017.03.01)
Mr. KM Dhanushka Bandara	Labourer, Grade III

Temporary Assignments

Dr Narmada Fernando	- Lecturer - Immunology (On Contract)
Ms. G.K.Dilini Ishaka	- Temporary Teaching/Scientific Assistant from 2017.01.01
	Temporary Assistant Lecturer from 2017.11.01
Ms. B.M. Lakshika P Jayasekara	- Teaching/Research/Scientific Assistant till 2017.09.04
Ms Danaji Jayathilaka	- Teaching/Research/Scientific Assistant from 2017.09.05



Ms. Varuni priyadarshani	- Temporary Scientific Assistant from 2017.09.04
Ms. Shashika Dayarathna	- Temporary Scientific Assistant from 2017.04.17
Ms. MV Lakdini N Haridasan	- Trainee Computer Application Assistant
Ms. H.D. Thilani Dilhani	- Trainee Computer Application Assistant
Mr. M. Prasad D. Fernando	- Trainee Computer Application Assistant
Ms. I.A.P. Ilangakoon	- Trainee Computer Application Assistant (up to 2017.05.22)
Ms. M. G. H. K. Gamachchige	- Management Assistant (Shroff/ Accounts) (on assignment) from 2017.10.19
Ms. P. W. D. D. Irushika	- Management Assistant (on assignment) from 2017.11.13
Mr Pasindu Basnayake	- Voluntary Research Assistant (Sep - Dec 2017)
Ms Kyra Ramachandani	- Voluntary Research Assistant (Sep - Dec 2017)

C_{urrent} Researchers

Prof. Eric H Karunanayake	- Emeritus Professor & Founder Director/IBMBB
Prof. Kamani H Tennekoon	- Senior Professor of Molecular Life Sciences, IBMBB
Prof. Ira Thabrew	- Visiting Professor & NSF Research Fellow, IBMBB
Prof E Dilip de Silva	- Visiting Professor, IBMBB
Prof. Shiroma Handunnetti	- Director, IBMBB & Professor in Immunology
Dr. Jagathpriya Weerasena	- Senior Lecturer - Molecular Biology, IBMBB
Dr. Sumadee de Silva	- Lecturer - DNA Diagnostic, IBMBB
Dr. Sudeshini Hewage	- Lecturer, Probationary/Biochemistry & Molecular Biology
Dr. Sameera Samarakoon	- Scientific Assistant / Lecturer (from 10 th Oct) - Cell Biology
Dr. Ruwandi Ranasinghe	- Scientific Assistant - DNA Identification
Ms. Nilupa Gunaratne	- Scientific Assistant - Biochemistry & Molecular Biology
Ms. Dakshika Gangani	- Scientific Assistant - Immunology

R_{esearch} Collaborators

Prof. Marie Allen	- Professor, Genetics and Pathology, University of Uppsala, Sweden
Prof. Erik Rudloff-Bongcam	- Professor, Swedish Agricultural University, Uppsala
Prof Iqbal Chaudhury	- Director, HEJ Research Institute, University of Karachi, Pakistan
Prof. Preethika Angunawela	- Professor in Pathology, Faculty of Medicine, UoC
Prof. Ranil Dassanayake	- Prof. in Chemistry, Faculty of Science, UoC
Prof. Dilip De Silva	- Professor of Organic Chemistry, Faculty of Science, UoC
Prof. Deepika Fernando	- Professor in Parasitology, Faculty of Medicine, UoC
Prof. Janaka De Silva	- Professor of Medicine, Faculty of Medicine, UoK



Prof. Shamy De Silva	- Professor in Paediatrics, Department of Paediatrics, UoC
Prof. Tuly de Silva	- Emeritus Professor, Link Natural Products Pvt Ltd
Prof. Saroj Jayasinghe	- Professor of Clinical Medicine, Faculty of Medicine, UOC
Prof. Needra Karunaratne	- Professor in Biochemistry, University of Peradeniya
Prof. Veranja Karunaratne	- Professor of Chemistry, University of Peradeniya
Prof. Neelika Malavige	- Director, Dengue Research Center, University of Sri Jayewarenepura
Prof. Padmalal Manage	- Professor in Zoology, University of Sri Jayewarenepura
Prof. Sunil Premawansa	- Professor in Zoology, Faculty of Science, UoC
Prof. Senaka Rajapakse	- Professor in Clinical Medicine, Faculty of Medicine, UoC
Prof. W D Ratnasooriya	- Senior Professor, Faculty of Allied Health Sciences, Sir John Kotelawala Defence University, Werahera
Prof. Hemantha Senanayake	- Professor of Obstetrics and Gynecology, UoC
Prof. Suranjith Seneviratne	- Professor, Royal Free Hospital & University College London Centre for Immunodeficiency, UK
Prof. Alessandro Sette	- Professor, Center for Infectious Disease, La Jolla Institute for Allergy and Immunology, USA
Prof. Shyama Weerakoon	- Professor of Botany, Open University of Sri Lanka
Prof. Rajitha Wickremesinghe	- Professor in Community Medicine, Faculty of Medicine, UoK
Dr. Achyut Adhikari	- Associate Professor, HEJ Institute of Chemistry, Pakistan
Dr. Erik Rudloff-Bongcam	- Professor of Bioinformatics Swedish Agricultural University, Uppsala
Prof. K. Thangaraj	- Senior Principle Scientist, Center for Cellular & Molecular Biology, Hyderabad, India
Dr. Niraj Rai	- Research Associate, Center for Cellular & Molecular Biology, Hyderabad, India
Dr. Dhanushka Dassanayake	- Acting Consultant Immunologist, Medical Research Unit
Dr. Dharshan De Silva	- Director, Genetech Research Institute, Colombo
Dr. Kanishka De Silva	- Consultant Oncological Surgeon, National Cancer Institute
Dr. Rajiva De Silva	- Consultant Immunologist, Medical Research Institute
Dr. Kumudu Fernando	- Former Director, Agri Biotechnology Centre, UoP
Dr. Geethani Galagoda	- Consultant Virologist, Medical Research Institute
Dr. Dinara Gunasekera	- Senior Scientists, Sri Lanka Institute of Nanotechnology
Dr. Lilani Karunanayake	- Consultant Microbiologist, Medical Research Institute
Dr. Nisha Kottearachchi	- Senior Lecturer, Wayamba University
Dr. Sisira Pathirana	- Senior Research Officer, Faculty of Medicine, UoC
Dr. GA Sirimal Premakumara	- Director General, Industrial Technology Institute,
Dr. Gayani Premawansa	- Consultant Physician, North Colombo Teaching Hospital,
Dr. Risintha Premaratne	- Director, Anti-Malaria Campaign
Dr. Radhika Samarasekera	- Herbal Technology Division, Industrial Technology Institute
Dr. Asitha Siriwardena	- Scientist, Sri Lanka Institute of Nanotechnology
Dr. EWRA Witharana	- Consultant Physician, Deniyaya Base Hospital
Mr. D. Kottawa-Arachchi	- Research Officer, Tea Research Institute, Talawakele
Mr. Mendis Wickremasinghe	- Chairman, Sri Lanka Herpetological Society



Research (MPhil/PhD) students

Ms. NHL Pradeepa	Research Officer, Tea Research Institute
Mr. KH Tissa Karunaratne	Assistant Lecturer, Wayamba University
Ms. HA Chrishani I Rodrigo	IBMBB
Mr. NH Kanishka S Senathilake	IBMBB
Ms. BA Dilani Rukshala	IBMBB
Ms. Anuka S Mendis	IBMBB
Ms. HD Sachindra M Perera	Industrial Technology Institute, Malabe
Ms. EM Sachini I Ekanayaka	IBMBB
Ms. Maduwanthi Chandhrakanthan	IBMBB
Ms. Tharmini Sundralingam	IBMBB
Ms. Rashini Baragama-Arachchi	IBMBB
Ms. Maheshi Mapalagamage	IBMBB
Mr. Kanchana S Senanayake	IBMBB
Mr. Krishan Balaji	IBMBB
Ms. Kumudu Gunasekera	Parasitologist, Anti-Malaria Campaign, Ministry of Health
Ms. Uma Rajagopaln	IBMBB
Ms. Vahinipriya Manoharana	IBMBB
Mr. Peshala Gunasekera	IBMBB
Mr. Saman Bharatha Kotigala	Lecturer, American National College, Colombo 03
Ms. Joanne Tiphania Kotelawala	IBMBB
Ms. BV Loshini R Ranaweera	IBMBB
Mr. Poorna Wishwajith Balasooriya	Rubber Research Institute, Agalawatta
Ms. Suvanthini Terensan	IBMBB
Ms. MN Sulochini Wickramaratne	IBMBB
Mr. Jeyaraj Thusyanthan	IBMBB
Ms. BM Lakshika P Jayasekara	IBMBB
Mr. RMR Kalum Ratnayake	IBMBB
Ms. WP Nadeema S Chandrapadma	IBMBB

Registered for PG degrees in other HEIs

Ms. Vindya Fernando	Faculty of Science, University of Colombo
Dr. Padmasiri Dissanayake	Institute of Indigenous Medicine, University of Colombo
Ms. Sinthujah Santhirasegaram	Faculty of Science, University of Kelaniya
Ms. Buddhini Kiriwattuduwa	Faculty of Science, University of Colombo



Research Publications: In the Authors names, staff/students /research assistants of IBMBB are indicated in bold font. Students registered at other HEIs and carrying out work at the IBMBB are given in bold italic

Publications and Research Communications

List of Publications in Peer-reviewed Journals

1. E.M.S.I. Ekanayaka, S.R. Weerakoon, S. Somaratne, **O.V.D.S.J. Weerasena** (2017). Developing herbicide resistant Sri Lankan rice (*Oryza sativa* L.) varieties: An application of Self Organizing Map. **Information Processing in Agriculture**: 4(2); 140-149.
2. **Ediriweera MK, Tennekoon KH, Samarakoon SR**, Adhikari A, **Thabrew I, Dilip de Silva E.** (2017) Isolation of a new resorcinolic lipid from *Mangifera zeylanica* Hook.f. bark and its cytotoxic and apoptotic potential. **Biomed Pharmacother.** 89:194-200. doi: 10.1016/j.biopha.2017.01.176. [Epub ahead of print]
3. **Ediriweera MK, Tennekoon KH, Samarakoon SR, Thabrew I, de Silva ED.** (2017) Protective Effects of Six Selected Dietary Compounds against Leptin-Induced Proliferation of Oestrogen Receptor Positive (MCF-7) Breast Cancer Cells. **Medicines (Basel)**. 2017 Jul 26;4 (3). pii: E56. doi: 10.3390/medicines4030056.
4. Gowri Rajkumar, **Jagathpriya Weerasena**, Kumudu Fernando (2017) DNA Sequencing and Bioinformatics Analysis of Clone pOr78 from the Species Specific Suppression Subtractive Hybridization Library Constructed from Endemic Wild Rice Species *O. rhizomatis*. **International Journal of Applied Sciences and Biotechnology**:.5(2) 133-140
5. Jayathilaka DK, **Tennekoon KH**, de Silva KSH, **De Silva S.** (2017) A pilot study on CYP21 gene deletions among a cohort of Sri Lankan children with congenital adrenal hyperplasia, **Ceylon Medical Journal** Jun 30;62(2):112-113
6. **Kariyawasam. K. W. J. C.**, Pathirana. R. N., Ratnasooriya W. D., **S. Handunnetti** and Abeysekera W. P. K. M. Phytochemical profile and in vitro anti-inflammatory activity of aqueous leaf extract of Sri Lankan variety of *Psidium guajava* L. **Journal of Pharmacognosy and Phytochemistry**, 2017; 6(4). 22-26
7. **Narmada Fernando**, Rajiva de Silva, **Shiroma M Handunnetti**, Lilani Karunanayake, Nipun Lakshitha De Silva, H Janaka de Silva, Senaka Rajapakse, Sunil Premawansa. The effect of antimicrobial agents on inflammatory cytokines in acute leptospirosis. Under review **Antimicrobial Agents and Chemotherapy** (AAC02312-17 R1)



8. Nwokwu DUC, **Samarakoon SR**, Karunaratne DN, Katuvawila NP, **Ediriweera MK**, **Tennekoon KH** (2017) Chitosan Nano-encapsulation Enhances Gedunin Cytotoxicity Against Human Non-small-cell Lung Cancer (NCI-H292) Cell Line. **Drug Delivery Letters** 7: 219-226
9. **Peshala Gunasekara**, **Shiroma Handunnetti**, Sunil Premawansa, Elapatha Witharana, Dhanushka Dasanayake, Padmini Ratnayake, Suranjith Seneviratne, Sriyani Dias, Sirimal Premakumara, Rajiva de Silva. IgE cross-reactivity of phospholipase A2 and hyaluronidase of *Apis dorsata* (Giant Asian honeybee) and *Apis mellifera* (Western honeybee) venom: Possible use of *A. mellifera* venom for diagnosis and immunotherapy of patients allergic to *A. dorsata* venom. **TOXICON**, 2017; 137:27-35.
10. **Rodrigo C**, **Tennekoon KH**, **Karunanayake EH**, De Silva K, Amarasinghe I, Wijayasiri A. (2017). Circulating leptin, soluble leptin receptor, free leptin index, visfatin and selected leptin and leptin receptor gene polymorphisms in sporadic breast cancer. **Endocr J**. doi: 10.1507/endocrj.EJ16-0448. [Epub ahead of print]
11. **Samarakoon SR**, **Ediriweera MK**, Nwokwu CDU, Bandara CJ, **Tennekoon KH**, Piyathilaka P, Karunaratne D, Karunaratne V (2017). A Study on Cytotoxic and Apoptotic Potential of a Triterpenoid Saponin (3-O--L-Arabinosyl Oleanolic Acid) Isolated from *Schumacheria castaneifolia* Vahl in Human Non-Small-Cell Lung Cancer (NCI-H292) Cells. **BioMed Research International**, 2017 Article ID 9854083, <https://doi.org/10.1155/2017/9854083>
12. **Samarakoon SR**, Shanmuganathan C, **Ediriweera MK**, Piyathilaka P, **Tennekoon KH**, **Thabrew I**, **Galhena P**, **De Silva ED** (2017) Anti-hepatocarcinogenic and Anti-oxidant Effects of Mangrove Plant *Scyphiphora hydrophyllacea*. **Pharmacogn Mag**. 2017 Jan;13(Suppl 1):S76-S83. doi: 10.4103/0973-1296.203989. Epub 2017 Apr 7
13. **Saroopa P**, **Samaradivakaraa**, Radhika Samarasekera, L.M. Viranga Tillekeratne, **Shiroma M. Handunnetti**, **O.V.D.S. Jagathpriya Weerasena**, William R. Taylor, Qasim Alhadidi, Zahoor A. Shah (2017). Bioactivities of n-hexane fraction of *Vateria copallifera* and GC-MS analysis of its phytoconstituents. **Industrial Crops and Products**: 97,87-92
14. **Senathilake KS**, **Karunanayake EH**, **Samarakoon SR**, **Tennekoon KH**, **de Silva ED**, Adhikari A. (2017) Oleanolic acid from antifilarial triterpene saponins of *Dipterocarpus zeylanicus* induces oxidative stress and apoptosis in filarial parasite *Setaria digitata* in vitro. **Exp Parasitol**. 177:13-21. doi:10.1016/j.exppara.2017.03.007. [Epub ahead of print]
15. **Sundralingam T**, **Tennekoon KH**, **de Silva S**, **De Silva S**, **Hewage AS**. (2017) Pathogenic and likely pathogenic genetic alterations and polymorphisms in growth hormone gene (GH1) and growth hormone releasing hormone receptor gene (GHRHR) in a cohort of isolated growth hormone deficient (IGHD) children in Sri Lanka. **Growth Horm IGF Res**. 36:22-29



16. Tharmarajah L, **Samarakoon SR, Ediriweera MK**, Piyathilaka P, **Tennekoon KH, Senathilake KS**, Rajagopalan U, Galhena PB, **Thabrew I** In Vitro Anticancer Effect of Gedunin on Human Teratocarcinomal (NTERA-2) Cancer Stem-Like Cells. **Biomed Research International** 2017;2017:2413197. doi: 10.1155/2017/2413197. Epub 2017 Jun 7.
17. Wickramage I, **Tennekoon KH**, Ariyaratne MA, **Hewage AS, Sundralingam T.** (2017)CYP2D6 polymorphisms may predict occurrence of adverse effects to tamoxifen: a preliminary retrospective study. **Breast Cancer (Dove Med Press).** 9:111-120. doi: 10.2147/BCTT.S126557.
18. **Samarakoon SR, Ediriweera MK, Tennekoon KH.** A review on ethnopharmacological applications, pharmacological activities and bioactive compounds of *Mangifera indica* (Mango). **Evidence based complementary and alternative medicine.** 2017, Article ID 6949835, 24. doi.org/10.1155/2017/6949835.
19. Galhena BP, **Samarakoon SR, ThabrewMI**, Paul SFD, Perumal V, and Mani C. Protective effect of a polyherbal aqueous extract comprised of *Nigella sativa* (Seeds), *Hemidesmus indicus* (Roots), and *Smilax glabra* (Rhizome) on Bleomycin induced cytogenetic damage in human lymphocytes. **Biomed Research International.** 2017, Article ID 1856713, 7. doi.org/10.1155/2017/1856713.
20. **Nwokw CDU, Samarakoon SR**, Karunaratne DN, Katuvawila NP, Pamunuwa GK, **Ediriweera MK, Tennekoon KH.** Induction of apoptosis in response to improved gedunin by liposomal nano-encapsulation in human non-small-cell lung cancer (NCI-H292) cell line. **Tropical Journal of Pharmaceutical Research.** 2017,16 (9), 2079-2087.

R ESEARCH COMMUNICATIONS:

1. **Balasooriya PW**, Fernando THPS, **Weerasena OVDSJ.** Isolation of native antagonistic fungi against *Rigidoporus microporus*, the causative fungus of White Root Disease from different rubber growing soils. (OP16). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 27.
2. **Baragamaarachchi R.Y.**, Samarasekara R., **Weerasena O.V.D.S.J.** (2017) Evaluation of chitinase activity of Sri Lankan *Bacillus thuringiensis* strains. **Proceedings of the 73rd Annual session of Sri Lanka Association for the Advancement of Science**, p. 38



3. **Baragamaarachchi, R. Y., Samarasekara, R. and Weerasena, O. V. D. S. J. (2017).** Evaluation of chitinase activity of Sri Lankan *Bacillus thuringiensis* strains. **Annual sessions of Sri Lanka Association for the Advancement of Science**, 38.
4. **Baragamaarachchi, R. Y., Samarasekara, R., Sarathchandra, S. R. and Weerasena, O. V.D. S. J. (2017).** Entomocidal activity of native strains of *Bacillus thuringiensis* kurstaki against rice pest *Cnaphalocrocis medinalis*. **3 rd Biennial Research Symposium of Industrial Technology Institute**, 26-27.
5. **Dayarathna HMSP, Fernando N, Handunnetti SM, Weerasena OVDSJ.** The in vitro effect of pathogenic *Leptospira* on FOXP3 expression in lymphocytes. (OP06). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 17.
6. **Fernando AN, Fernando N, Handunnetti SM, Hapuaarachchi S.** The effect of *Munronia pinnata* on natural killer cells.(PP05). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 33.
7. **Fernando Narmada, Shiroma Handunnetti, Lilani Karunanayake, Sunil Premawansa, Senaka Rajapakse,** Do human serum factors protect endothelial cells against pathogenic *Leptospira*?, **10th International Leptospirosis Society Scientific Meeting 2017, Palmerstone, New Zealand**
8. **Fernando SJA, De Silva NR, De Silva AD, Handunnetti SM, Dassanayake D.** Preliminary Study on X-linked chronic granulomatous disease in Sri Lanka. (OP04). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 15.
9. **Gunasekara DLPE, Handunnetti S, Premawansa S, Witharana EWRA, Dassanayake WMDK Rathnayake IP, Senevirathne SL, Dias RKS, Premakumara GAS, de Silva R.** Identification of allergenic venom components of *Apis dorsata* Fabricius and comparison of those with *Apis mellifera* Linnaeus (OP09) **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 20.
10. **Gunasekera W.M.K.T. de A.W., R.G. Premaratne,2 O.V.D.S.J. Weerasena, S.M. Handunnetti, S. Premawansa and S.D. Fernando (2017)** Applicability of malaria rapid diagnostic tests in diagnosing non-falciparum malaria infections in Sri Lanka under zero indigenous malaria setting. **Proceedings of the 73rd Annual Sessions of Sri Lanka Association for the Advancement of Science, Part 1, P12**



11. **Gunasekera WM Kumudu TdeAW**, Risintha G Premaratne, **OVDS Jagathpriya Weerasena**, **Shiroma M Handunnetti**, Sunil Premawansa, S Deepika Fernando. Applicability of malaria Rapid Diagnostic Tests in diagnosing non-falciparum malaria infections in Sri Lanka under zero-indigenous malaria setting. **73rd Annual Scientific Sessions of SLAAS**. 2017.
12. **Gunasekera WMKTdeAW**, **Weerasena OVDSJ**, Premawansa S, Premaratne RG, **Handunnetti SM**, Fernando SD. Determining performance characteristics of an Immunochromatographic in vitro diagnostic test for diagnosis of *Plasmodium falciparum* malaria.(PP04). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo**. 07th July 2017, pp: 32.
13. **Handunnetti Shiroma**, **Narmada Fernando**, Sanjika Milhani, Daniya Edward, Lilani Karunanayake, Sunil Premawansa, Senaka Rajapakse, Altered Reactive Nitrogen Species production, NF- κ B expression in phagocytes and severity of severe leptospirosis infections, **10th International Leptospirosis Society Scientific Meeting 2017, Palmerstone, New Zealand**
14. **Ishaka GKD**, Premawansa S, Prematilake TR, De Silva R, **Handunnetti SM**, Fernando A, Premawansa G. Preliminary study on allergenic pollen records from airborne samples in selected locations of urban and semi-urban areas in Western Province of Sri Lanka. (OP07). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo**. 07th July 2017, pp: 18.
15. **Jayasundara GP**, **De Silva S**, De Silva, K. Detection of pathogenic mutations in hotspot regions in exon 11 of BRCA1 gene in a cohort of Sri Lankan young familial breast cancer patients. (PP01). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo**. 07th July 2017, pp: 29.
16. **Kariawasam KWJC**, Pathirana RN , RatnasooriyaW, **Handunnetti S**, Abeysekera WPKM . Phytochemical profile and *in vitro* anti-inflammatory activity of aqueous leaf extract of Sri Lankan variety of *Psidium guajava* L.(OP17). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo**. 07th July 2017, pp: 28.
17. Karunanayake Lilani, Rajapaksha RRN, Perera KCR, **Fernando N**, **Niloofa R**, **Handunnetti S**, Premawansa S, Rajapakse S, Antibiotic Susceptibility of Clinical Isolates of Human Leptospirosis in Sri Lanka, **10th International Leptospirosis Society Scientific Meeting 2017, Palmerstone, New Zealand**



18. Karunanayake Lilani, Vimal Raj R, Anwesh M, Muruganandam N, Perera R, Rajapaksha RRN, Perera KCR, **Niloofo R, Fernando N, Handunnetti S**, Premawansa S, Rajapakse S, Vijayachari P Multilocus Sequence Typing of *Leptospira* from clinical isolates in Sri Lanka, **10th International Leptospirosis Society Scientific Meeting 2017, Palmerstone, New Zealand**
19. **Mapalagamage M, Handunnetti SM**, Premawansa G, Thillainathan S, Fernando T, Kanapathippillai K, De Silva AD, Premawansa S. Low total serum nitrite and nitrate levels on admission in dengue patients as prognostic markers for developing dengue hemorrhagic fever. (OP11). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 22.
20. **Mifra FN**, de Silva AD, de Silva NR, **Handunnetti SM**, Dassanayake D. Preliminary study on identification of autosomal recessive p47phox mutations in patients with chronic granulomatous disease in Sri Lanka. (OP05). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 16.
21. **Niloofo R**, Premawansa S, Rajapakse S, **Handunnetti SM**. Diagnosing a disease of farmers – Leptospirosis. (OP08). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 19.
22. **Niloofo Roshan**, Lilani Karunanayake, H Janaka de Silva, Senaka Rajapakse, Sunil Premawansa. **Shiroma Handunnetti**. Real-time qPCR as a reference standard test for diagnosis of leptospirosis. **10th International Leptospirosis Society Scientific Meeting, Palmerstone, New Zealand**, 27th Nov-1stDec 2017, pp 120
23. **Perera AAU, Weerasena OVDSJ**, Dasanayake PN. Identification of *Ralstonia solanacearum* phylotypes causing bacterial wilt of potato in Badulla district of Sri Lanka. (OP14). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 25.
24. **Perera HDSM**, Samarasekera R, **Handunnetti S, Weerasena OVDSJ**, Jabeen A, Choudhary MI. Studies on *in vitro* anti-inflammatory activities of ethanol extract of bark of *Calophyllum inophyllum* L. (OP15). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 26.
25. Premawansa S, **Fernando N, Mapalagamage M** and **Handunnetti S** (2017). Reactive nitrogen species (RNS) and reactive oxygen species (ROS) and their associations with dengue and leptospirosis infections (Review). **Gloria Scientiam.** M.J.S. Wijeyratne and W.U. Chandrasekara eds. University of Kelaniya, Sri Lanka. Chapter 9: 113 – 112.



26. Premawansa S, **Mapalagamage M**, Premawansa G, Thillainathan S, Karunayokin K, Fernando T, De Silva D, **Handunnetti S** (2017). High levels of serum lipid peroxides and protein carbonyls in mild dengue fever verses severe dengue. **Proceedings of International Conference on Clinical Sciences and Drug Discovery, Washington, D.C., USA.** Pp 27-28.
27. **Priyadarshani CPVV, Thabrew I, Samarakoon SR**, Rajagopalan U. Evaluating the anticancer effects of a polyherbal mixture on lung cancer cells (NCI-H292). (OP13). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017,pp: 24.
28. **Ranaweera BVL R, Edward D, Abeysekara AM, Weerasena OVDSJ, Handunnetti SM.** Optimization of the day of sampling for expression of T cell dependent B cell activation. (OP10). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 21.
29. **Samaradivakara SP, R Samarasekera, SM Handunnetti, OVDSJ Weerasena.** In vitro Butyrylcholinesterase and protease inhibitory activities of selected medicinal plant extracts. (PP06). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 34.
30. **Senadheera SPBM, Weerasinghe AR, Wijesinghe CR.** Usage of Hard, Hierarchical and Fuzzy clustering methods for high dimensional gene expression data analysis. (OP03). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 14.
31. **Sundralingam T, Tennekoon KH, De Silva KSH, De Silva S, Hewage AS** GHRHR gene variants observed in combination in a cohort of IGHD children in Sri Lanka. (OP02). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo.** 07th July 2017, pp: 13.
32. **Sundralingam T, Tennekoon KH, de Silva KSH, De Silva S, Hewage AS,** Novel variants of GHRHR gene observed in a cohort of isolated growth hormone deficient children in Sri Lanka. 130th Anniversary International Medical Congress- Organized by Sri Lanka Medical Association – July 2017; Electronic poster – PP063, Colombo, Sri Lanka. Submitted abstract was published in **The Ceylon Medical Journal** 62 (2017) Page No.: 163
33. **Sundralingam T, Tennekoon KH, de Silva KSH, De Silva S, Hewage AS.** Pathogenic and possible pathogenic alterations of the GH1 and GHRHR genes detected in a cohort of IGHD children in Sri Lanka. **Proceedings of the European Human Genetic Conference, May 2017, Copenhagen, Denmark**



34. **Vahinipriya M, Karunanayake E, Tennekoon K, De Silva S, De Silva K, Angunawela P, Lunec J.** Somatic mutations in the TP53 tumor suppressor gene in Sri Lankan patients with Head and Neck cancer. **Proceedings of the 3rd European Association for Cancer Research Conference on Cancer Genomics 2017. Cambridge, UK**
35. **Vahinipriya M, Karunanayake EH, Tennekoon KH, De Silva S, Angunawela P, De Silva K, Mahdi A, Zanjirband M, Lunec J.** Relationship between p53 immunohistochemistry staining pattern and TP53 gene mutation type in Sri Lankan patients with head and neck cancer. **North East Postgraduate Conference 2017, Newcastle, UK.**
36. **Weerasinghe HS, Fernando N, Rajapakse S, Premawansa S, Handunnetti SM.** Establishment of methods for retrieving *Leptospira* organisms/ antigens in urine and blood.(PP03). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo. 07th July 2017, pp: 31.**
37. **Weerasooriya PR, Ranasinghe RACR, Tennekoon KH.** Preliminary study on common human Alu polymorphisms in Sinhalese individuals. (OP01). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo. 07th July 2017, pp: 12.**
38. **Wickramasinghe Arachchi SM, Edward D, Fernando N, Hadunnetti SM, Rajapakse S.** Assessment of RNS and ROS production by healthy phagocytic cells stimulated with leptospirae *in vitro*.(PP02). **Proceeding of the 9th Annual Scientific Sessions of Institute of Biochemistry, Molecular Biology & Biotechnology (IBMBB), University of Colombo. 07th July 2017, pp: 30.**
39. **Withana W.V.E., Kottearachchi N.S., Weerasena J., Dissanayaka S. (2017)** *In silico* Analysis of badh2 Gene in South Asian Rice Varieties. **Proceedings of 16th Agricultural Research Symposium Wayamba University of Sri Lanka pp.1-5**



Table 1: MPhil/PhD Degrees in Progress and New Registrations – Year 2017
Information of MPhil / PhD students registered at IBMBB, UOC

	Index Number	Name of the student	Date of registration	Source(s) of funds	Tentative Title	Supervisors
01	IBMBB/M Phil/08/005 IBMBB/Ph D/11/002	Ms. NHL Pradeepa	01.09.2008 Upgrading to PhD on 27.11.2013	Funds available at TRI for initial studies	A DNA Phylogeny, morphology and pathogenecity of <i>Macrophoma theicola</i> patch the casual agent of stem canker in Tea	Dr. OVSDJ Weerasena Dr. A Balasriya
02	IBMBB/M Phil/12/002	Mr. KHT Karunarathna	01.05.2012	National Research Council	Use of SSR markers for genetic characterization and finer-printing of recommended tea (camellia sinensis L) cultivars and tagging of blister blight disease resistance in tea	Dr. KM Mewan Dr. OVDSJ Weerasena
03	IBMBB/Ph D/ 12/005	Ms. HACIK Rodrigo	15.11.2012	National Research Council	Predictive biomarkers for sporadic breast cancer: Evaluation of circulating levels of leptin, soluble leptin receptor, insulin-like growth factor, insulin-like growth factor binding protein 3 and visfatin, and selected leptin and leptin receptor genotypes	Prof. Kamani Tennekoon Prof. Eric Karunanayake
04	IBMBB/M Phil/ 13/001	Ms. BAD Rukshala	01.05.2013	Ministry of Higher Education	Drugs leads from medicinal plants in Sri Lanka- Investigation on immunomodulatory / anti –allergic activity	Prof Shiroma Handunnetti Prof. E Dilip de Silva
05	IBMBB/M Phil/ 13/002	Mr. NHKS Senathilake	01.05.2013	Ministry of Higher Education	Antifilarial compounds from Curcuma zedoaria and Dipterocarpus zeylanicus: Chemical characterization, elucidation of biochemical and molecular mechanisms of action	Prof. Eric Karunanayake Prof. Kamani Tennekoon Prof. ED De Silva



	Index Number	Name of the Student	Date of registration	Source(s) of funds	Tentative Title	Supervisors
06	IBMBB/ MPhil/ 13/003	Ms. AS Mendis	01.06.2013 Upgrading to PhD on 01.09.2014	Ministry of Higher Education	To evaluate potential use of <i>Flueggea leucopyrus</i> & <i>Vernonia zeylanica</i> in the treatment of breast cancer	Prof. Ira Thabrew Prof. Kamani H Tennekoon
07	IBMBB/ MPhil/ 13/005	Ms. HDSM Perera	01.09.2013	National Research Council	Studies on Antioxidant, Immunomodulatory and β -lactamase inhibitory bioactives of medicinal plants	Dr. Radhika Samarasekara Prof Shiroma Handunnetti Dr. OVDSJ Weerasena
08	IBMBB/ MPhil/ 13/007	Ms. EMSI Ekanayaka	01.10.2013	National Research Council	Developing herbicide resistant (HR) Sri Lankan rice (<i>Oryza sativa</i> L) varieties by means of seed/anther mutagenesis and developing molecular markers to identify HR rice	Dr. Shyama R Weerakoon Dr. OVDSJ Weerasena Prof. Tara D Silva Dr. S Somaratne
09	IBMBB/ MPhil/ 13/008	Ms. M Chandhra- kathan	25.10.2013	NRC Grant	Activity guided separation of anti-inflammatory compounds from <i>Alpinia calcarata</i> rhizome and leaf	Dr. Selvaluxmy Chelvendran Prof. Shiroma Handunnetti Dr. GA Sirimal Premakumara
10	IBMBB /MPhil/ 14/001	Ms. RY Baragama- arachchi	01.08.2014	National Science Foundation	Molecular and biochemical characterization of Bt isolates with insecticidal activity in Sri Lanka	Dr. Radhika Samarasekara Dr. OVDSJ Weerasena



	Index Number	Name of the Student	Date of registration	Source(s) of funds	Tentative Title	Supervisors
11	IBMBB/ /PhD/ 14/003	Ms. T Sundralingam	01.09.2014	National Science Foundation	Genetics of Growth hormone deficiency in Sri Lankan children: Analysis of GH1 and (GHRHR) gene variants and copy number variations in GH1, GHRHR, HESX1, LHX3, LHX4, POU1F1 and PROP1" genes.	Prof. KH Tennekoon Prof. Shamy De Silva
12	IBMBB/ MPhil/ 14/004	Ms. MS Mapalagamage	01.12.2014	National Science Foundation	Studies on prognostic markers of oxidative stress and its host genetic polymorphisms and endothelial dysfunction in severe dengue infection	Prof. Sunil Premawansa Prof. Shiroma Handunnetti Dr. Dharshan De Silva Dr. Gayani Premawansa
13	IBMBB/ MPhil/ 15/001	Mr. KS Senanayake	01.02.2015	Swedish Research Links International collaborative research grant – The Swedish Research Council	Analysis of <i>Setaria digitata</i> Genome using NGS Technologies: Identification of potential drug targets in <i>Setaria digitata</i>	Dr. Erik Bongcam Rudloff Prof. EH Karunanayake Prof. KH Tennekoon
14	IBMBB/ MPhil/ 15/002	Ms. WMKT de AW Gunasekara	01.02.2015	National Science Foundation	Comparison of Parasitological and Molecular Diagnostic Methods used for Malaria Diagnosis in the phase of prevention of reintroduction of Malaria in Sri Lanka	Prof. Deepika Fernando Prof. Sunil Premawansa Prof. Shiroma Handunnetti Dr. Jagathpriya Weerasena Dr. Risintha Premaratne



	Index Number	Name of the Student	Date of registration	Source(s) of funds	Tentative Title	Supervisors
15	IBMBB /MPhil/ 15/003	Ms. V Manoharan	01.02.2015	University Grants Commission	Analysis of somatic mutations of TP53 in selected cancers in a cohort of Sri Lankan patients	Prof. EH Karunanayake Dr. Sumadee de Silva Prof. Kamani Tennekoon
16	IBMBB/ MPhil/ 15/004	Mr. KR Balaji	02.02.2015	University of Colombo Research Grant	Sero –epidemiology of human leptospirosis in the District of Colombo, Sri Lanka	Prof. Senaka Rajapakse Prof. Shiroma Handunnetti Prof. Deepika Fernando
17	IBMBB/ MPhil/ 15/005	Ms. Umapriya-tharshini Rajagopalan	01.03.2015	National Research Council	Screening of Sri Lankan endemic plants for anti-cancer stem cell activity and evaluation of anti-cancer stem cell properties of isolated compounds from active plants for breast cancer	Dr. Sameera R Samarakoon Prof. Kamani H Tennekoon Prof. E Dilip de Silva
18	IBMBB/ MPhil/ 15/006	Mr. D L Peshala Eranga Gunasekara	01.08.2015	Institute & NSF	Characterization of allergenic components of venom of Apis dorsata and vespa affinis (Order-hymenoptera) and their cross reactivity with venom of the respective Western species	Dr. Rajiva de Silva Prof. Shiroma Handunnetti Prof. Sunil Premawansa Prof. Sriyani Dias Dr. Sirimal Premakumara
19	IBMBB/ MPhil/ 16/001	Mr. Saman Bharatha Kotigala	2016.06.01	NSF /Self funding	Screening of Sri Lankan endemic plants for anticancer activity in Lung cancer cells, isolation structure elucidation of active anti-cancer compounds and evaluation of their molecular mechanisms of action	Prof. Ira Thabrew Dr. Sameera R Samarakoon



	Index Number	Name of the Student	Date of registration	Source(s) of funds	Tentative Title	Supervisors
20	IBMBB/ MPhil/ 16/002	Ms. Joanne Tiphania Kotelawala	2016.06.01	NSF Research Scholarship	Characterisation of Mitochondrial DNA mutations in the D-loop and mtDNA haplogroups in Sporadic Breast Cancer.	Prof. Kamani H Tennekoon Dr. Kanishka De Silva
21	IBMBB/ MPhil/ 16/003	Ms. Boyagoda Vidanage Loshini Ravima Ranaweera	2016.08.01	Link Natural Products (Pvt) Ltd – Sri Lanka	Study on immunostimulatory activity and underlying immune mechanisms of a herbal formulation in the Sri Lankan market	Prof. Shiroma Handunnetti Dr. OVDSJ Weerasena Prof Ajith Abeysekera
22	IBMBB /MPhil/16/ 004	Mr. Poorna Wishwajith Balasooriya	01 st November 2016	National Science Foundation	Application of indigenous soil micro flora as biological control measures for white root disease of rubber growing lands in Sri Lanka	Dr THPS Fernando Dr. OVDSJ Weerasena
23	IBMBB/ MPhil/17/ 001	Ms. S Terensan	1 st June 2017	Self funded	Genomic diversity of rice blast pathogen magnaporthe oryzae in Sri Lanka and mapping of host resistance in rice germplasm	Dr. OVDSJ Weerasena. Prof. Nisha S Kottearachchi
24	IBMBB/ MPhil/17/ 002	Ms. MNS Wickramaratne	1 st June 2017	National Science Foundation	Isolation structural and functional characterization of active antibreast cancer metabolites from endophytic fungi of plants and selected endemic / medicinal plants of Sri Lanka	Prof. Kamani H Tennekoon Dr. Samera R Samarakoon Prof. Nedra Karunaratne



	Index Number	Name of the Student	Date of registration	Source(s) of funds	Tentative Title	Supervisors
25	IBMBB/ MPhil/17/ 003	Mr. Jeyaraj Thusyanthan	1 st June 2017	National Science foundation	Screening of selected endophytic fungi and endemic plants for anticancer activity using hepatocellular carcinoma (HepG2) cell line and isolation of active compounds	Prof. Kamani H Tennekoon Dr. Sameera R Samarakoon Prof. Ira Thabrew
26	IBMBB /17/004	Ms. BMLP Jayasekara	1 st September 2017	National Research Council	Mutations and polymorphisms of mitochondrial genes as risk factors for sporadic breast cancer in Sri Lankan patients of Sinhalese ethnicity	Prof. Kamani H Tennekoon Dr Ruwandi Ranasinghe Dr Kanishka De Silva
27	IBMBB/ MPhil/17/ 005	Mr. RMR Kalum Rathnayake	1 st October 2017	National Science foundation	Screening of compound libraries on a cancer cell panel and development of a synthetic anti-cancer compound libraryll line and isolation of active compounds	Prof. KH Tennekoon Dr. Sameera R Samarakoon Dr Dinara Gunasekara
28	IBMBB/ MPhil/17/ 006	Ms . Nadeema S Chandra- pathma	1 st November 2017	National Research Council	Detection of genotypes and serotypes of <i>Leptospira</i> isolated from leptospirosis patients of different severities	Prof Shiroma Handunnetti Dr OVDSJ Weerasena Prof. Senaka Rajapakse Prof. Sunil Premawansa



Table 2 : Student Registered in other Higher Educational Institutions & carrying a part of study in the IBMBB Laboratories - 2017

No.	Name of student	Degree registered	Affiliation	Source of funds	Tentative title of theis	Names of Supervisors
1	Ms. HKA Vindya AK Fernando	PhD	Faculty of Science, Uni. of Colombo	HETC-Faculty of Science	Ecotoxicological effects of chromium on selected fauna in Sri Lanka	Prof. Sunil Premavansa Dr Mayuri Wijesinghe *Prof Shiroma Handunnetti *Dr Jagathpriya Weerasena
2	Dr. D Padmasiri A Dissanayake	PhD	Indigenous Medicine, Uni. of Colombo	HETC-Institute of Indeginous Medicine	Anti-inflammatory potential of decoctions of <i>Cyathulla prostrata</i> , <i>Acyranthus aspera</i> and <i>Asparagus racemosus</i>	Prof HMA Thisera *Prof Shiroma Handunnetti Dr S Sivaganesh
3	Ms. Sinthujah Santhirasegaram	MPhil	University of Kelaniya	NRC15-008	Isolation and identification of endolichenic fungi and their Secondary metabolites from mangrove in Puttalam Lagoon	Prof. Prriyani Paranagama *Dr. Sameera Samarakoon
4	Ms. Buddhini Kiriwattuduwa	MPhil	Faculty of Science, Uni. of Colombo	Sugarcane Research Institute, Uda-Walawa	Identification of Saccharum (Sugarcane) for breeding and Diversity analysis of Saccharum Officinarum Using Molecular markers	Dr Aruna Wijesuriya Prof Tara D Silva Dr. Sudheera M W Ranwala *Dr Jagathpriya Weerasena

* Supervisors for research component conducted at IBMBB, University of Colombo.



Table 3 : Research Funding -2017.

*Funds received by the Principal Investigators Institution and made available for research component conducted at IBMBB,UOC

Grantee	Name of the Project	Funding Agency	Grant No	Funds available (Rs)
Prof Kamani Tennekoon (PI) Dr. Ruwandi Ranasinghe (Co-I) Dr. Kanishka De Silva (Co-I)	Mutations and polymorphisms of mitochondrial genes as risk factors for sporadic breast cancer in Sri Lankan patients of Sinhalese ethnicity	National Research Council	NRC 17-020	(Funds are handled by NRC)
Prof Kamani Tennekoon PI Dr Sameera Samarakoon (Chief Co-Investigator)	Development of anticancer compound libraries	National Science Foundation	RPHS/2016/C-07	862,443.00
Prof Kamani Tennekoon (PI)	Possible anti-carcinogenic mechanisms of novel cytotoxic compounds isolated from <i>Camptosperma zeylanica</i> on breast cancer cells: Evaluation of molecular mechanisms and validation of anti-breast cancer pathway/s	National Science Foundation	RG/2016/BT/02	491,574.00
Ms Joanne Kotelawala (PhD student) Prof Kamani Tennekoon – Principal Supervisor Dr Ruwandi Ranasinghe Dr Kanishaka De Silva – Co-supervisors	Characterization of mitochondrial DNA mutations in the D-loop and mtDNA haplogroups in sporadic Breast cancer	National Science Foundation	NSF/SCH/2016/04	499,387.00
Prof Shiroma Handunnetti (PI) Dr. OVDSJ Weerasena (Co-I) Prof Senaka Rajapakse (Co-I) Dr. Lilani Karunanayake (Co-I) Prof. Sunil Premawansa (Co-I)	Detection of genotypes and serotypes of <i>Leptospira</i> isolated from leptospirosis patients of different severities	National Research Council	NRC-17-098	(Funds are handle by NRC)
Prof Shiroma Handunnetti (PI) Dr OVDSJ Weerasena (Co-PI)	Study on immunostimulatory activity and underlying immune mechanisms of a herbal formulation in the Sri Lanka market	University-Industry collaborative study: IBMBB, UOC and Link Natural Products Pvt Ltd		2,835,694.00 (remaining funds of grant)
Dr OVDSJ Weerasena (Co-I) Dr. Rhadika Samarasekara (PI)	Molecular and Biochemical Characterization of Sri Lankan <i>Bacillus thuringiensis</i> (Bt) isolates	National Science Foundation	NSF/SCH/2017/07	Funds are handle by PI's Institution
Prof. Deepika Fernando (PI) Dr. OVDSJ Weerasena (Co-I) Prof. Sunil Premawansa (Co-I) Prof S Handunnetti (Collaborator)	Monitoring the management response following the detection of malaria cases during the phase of malaria elimination in Sri Lanka	National Science Foundation	RG/2014/HS/03	Funds are handled by PI's Institution



Dr Sameera R Samarakon (PI) Prof KH Tennekoon (Co-I) Prof. E. D De Silva (Co-I)	Cancer stem cells targeted drug leads from Sri Lankan endemic plants for breast cancer	National Research Council	NRC-14-067	900,000 (Approx) (Funds are handled by NRC)
Dr Ruwandi Ranasinghe (PI) Prof Raj Somadeva (Co-I) Prof KH Tennekoon (Co-I) Prof EH Karunanayake (Co-I)	Insight for molecular anthropology of early people in Sri Lanka: Ancient human mtDNA and Molecular sex analysis of archeological skeletal remains at Udupiyangalge and Alugalge caves	National Research Council	NRC-17-042	Funds are handled by NRC)
Dr Ruwandi Ranasinghe (PI) Dr Niraj Rai (Co-I) Prof Eric Karunanayake (Co-I) Prof Kamani Tennekoon (Co-I)	Peopling of Sri Lanka: A high resolution MtDNA study based on NGS	IBMBB-CCMB, India Collaborative project. Mainly funded by The Royal Society as Travel grant		574,020.00
Prof EH Karunanayake (PI) Prof KH Tennekoon (Co-I)	Using next generation sequencing technologies (NGS) to find a cure for human and cattle filariasis.	Swedish Research links programme 2014	2013-6757	1,885,516.00
Dr MAPC Piyathilaka (PI) Prof KH Tennekoon (Co-I) Dr Sameera R Samarakoon (Co-I) Dr Ruwandi Ranasinghe (Co-I)	Molecular phylogeny of marine macro algae (sea weeds) present in Sri Lankan coasts and isolation of anti-cancer compounds to target oral cancers from marine macro algae	National Research Council (NRC)	NRC Grant No 17-074	Funds are handle by PI's Institution
Prof Senaka Rajapakse (PI) Prof Shiroma Handunnetti (Co-I) Prof Deepika Fernando (Co-I)	Sero-epidemiology of human leptospirosis in the District of Colombo, Sri Lanka	University of Colombo	AP/ 3/2/2014/ RG/14	Funds are handle by PI's Institution
Prof Sunil Premawansa (PI) Prof Shiroma Handunnetti (Co-I) Dr Dharshan De Silva (Co-I) Dr Gayani Premawansa (Co-I)	Studies on prognostic markers and pathogenesis of severe dengue associated with oxidative stress, host genetic polymorphisms and endothelial dysfunction	National Science Foundation	RG/2014/HS/04	Funds are handle by PI's Institution
Dr. Sumadee De Silva (PI) Prof. Kamani Tennekoon (Co-I)	Analysis of somatic mutations of <i>TP53</i> gene in cancer from paraffin embedded or fresh cancer tissue of cancer patients in Sri Lanka	University Grants Commission	UGC/VC/DRIC /SRSP/2014/C MB-01	356,489.22 (balance from 1 st year)
Dr. Sumadee De Silva (PI) Prof. Kamani Tennekoon (Co-I) Prof. Eric Karunanayake (Co-I)	TP53 mutation in selected cancers: Analysis of mutation at RNA and protein and in cell free DNA	National Research Council	NRC 15-033 2,599,623.50 (remaining from main grant) (Funds are handled by NRC)	
Dr Rajiva De Silva (PI) Prof Sriyani Dias (Co-I) Prof Shiroma Handunnetti (Collaborator)	Immunochemical characterization of hymenopteran insect venom of <i>Apis cerana</i> , <i>A. dorsata</i> and <i>Vespa affinis</i> .	National Science Foundation	RG/2015/HS/02	Funds are handle by PI's Institution



Dr. Neelika Malavige (PI) Dr Sameera Samarakon (Co-I) Prof. K H Tennekoon (Co-I)	Determining the role of dengue NS1 in the pathogenesis of dengue infections- from National Research Council Sri Lanka	National Research Council	NRC-15-014	Funds are handle by PI's Institution
Total funds received and available from Research Grants in year 2017				7,505,123.22

Table 4: PhD/MPhil Thesis submitted for Examination in year 2017

Name of the Student	Gender	Year of entry	Thesis submitted for examination	Degree Programme	Title of the Dissertation/Thesis
EP Meran Keshawa	M	2012	2016	PhD/ IBMBB	Anti-cancer compounds of <i>Mangifera zeylanica</i> Hook.f: Isolation, structure elucidation and evaluation of their molecular mechanisms of action
TRG Narmada Fernando	F	2012	2016	PhD/ IBMBB	Studies on factors contributing to pathogenesis of severe leptospirosis in Sri Lanka
MJR Niloofa	F	2012	2016	PhD/ IBMBB	Studies on comparing rapid immunodiagnostic methods and immune status of leptospirosis patients in Western Province, Sri Lanka
Saroopa P Samaradivakara	F	2013	2017	PhD/ IBMBB	Isolation, characterization and <i>in vitro</i> bioactivity studies on the constituents of <i>Dipterocarpus zeylanicus</i> and <i>Vateria copallifera</i>
Ayesha AU Perera	F	2011	2017	MPhil / IBMBB	Characterization of <i>Ralstonia solanacearum</i> (E.F. Smith) in Sri Lanka and development of a DNA-based detection method for quarantine purposes
K Dulangi K Karunarathna	F	2012	2017	MPhil/ IBMBB	Genetic Diversity and Origin of Weedy rice (<i>Oryza sativa f. spontanea</i>) Populations Found in Rice Fields in Sri Lanka
A Sudeshini Hewage	F	2010	2017	PhD/ IBMBB (Part Time)	Selected polymorphisms of the <i>H19</i> and <i>IGF2</i> genes in a Sri Lankan birth cohort: effect of maternal and newborn genotype on birth size



Table 5: MSc Dissertations - Molecular Life Sciences/2016 Intake

Index No:	Name	Project title	Supervisors
MLS/16/001	TP Saliu	In-silico and in-vitro screening of a small compound library on breast cancer stem cells	Dr Sameera R Samarakoon Dr A Adhikari (HEJ Research Institute, Pakistan)
MLS/16/002	NK Abeyasinghe	Evaluation of <i>in vitro</i> anti-cancer effects of compound “A” isolated from <i>Vernonia Zeylanica</i> on embryonal cancer stem cell (NTERA – 2 cl.D1) line	Prof Ira Thabrew Dr Sameera R Samarakoon
MLS/16/003	MCJ De Silva	Expression, purification and characterization of a recombinant anti diabetic drug target, PPAR gamma (Peroxisome proliferator activated receptor gamma)	Dr YS Wijayasinghe (Department of Biochemistry and Clinical Chemistry, Faculty of Medicine / University of Kelaniya) Dr Sumadee De Silva
MLS/16/004	HAKM Dharmarathne	Genetic characterization and molecular phylogeny of <i>Aedes aegypti</i> (Diptera: Culicidae) in Sri Lanka based on COI gene.	Dr Gayani Galhena (Dept of Zoology and Environment Sciences, Faculty of Science, University of Colombo) Mr. Nandika Perera (Genetech, Colombo) Dr OVDSJ Weerasena
MLS/16/005	AS Fernando	Extensive analysis of human mitochondrial and Y-chromosome haplogroups among Sinhalese individuals with different Alu polymorphisms	Dr Ruwandi Ranasinghe, Dr Niraj Rai (Birbal Sahni Institute of Palaeosciences, Lucknow, India) Prof Kamani Tennekoon
MLS/16/006	HGAC Hulangamuwa	Development of nano-assisted targeted drug delivery system for cancer stem cells grown in hypoxic conditions	Dr Sameera R Samarakoon, Prof Nedra Karunarathne (University of Peradeniya) Dr Meran Ediriweera
MLS/16/007	AADN Perera	Development of <i>in vitro</i> transgenic model for anti-cancer drug discovery	Prof Kamani Tennekoon Dr Sameera R Samarakoon Mr Kanishka Senathilake
MLS/16/008	S Praveenan	Analysis of common genetic mutations in a cohort of salt wasting form of congenital adrenal hyperplasia	Prof Kamani Tennekoon Ms Sudeshini Hewage Prof Shamya De Silva (Faculty of Medicine, Colombo)
MLS/16/010	R Rajphriyadharshini	Development of Barcodes for medicinal plant “Babila” (<i>Sida</i> species) in Sri Lanka.	Dr OVDSJ Weerasena Mr TMSG Tennakoon (Link Natural Products Pvt (Ltd)



Table 6: MSc Dissertations – Cellular & Molecular Immunology/2016 Intake

Index no.	Name of Student	Research Topic	Supervisors
CMI-16-001	Dr Dinuka Ariyaratne	The Establishment of a Colourimetric Reverse Transcription Loop-mediated Isothermal Amplification for the rapid detection of dengue virus	Prof Andrew Nguyen (The City University of New York) Dr Dharshan De Silva (Genetech, Colombo) Dr Jagathpriya Weerasena
CMI-16-002	Ms Sam Gayathri	<i>In vitro</i> study on the effect of antimicrobial agents on inflammatory cytokine response in leptospirosis	Prof Shiroma Handunnetti Prof Senaka Rajapakse (Faculty of Medicine, Colombo) Dr Narmada Fernando
CMI-16-003	Ms Manisha Guruge	Preliminary study on pollen records during South-West Monsoon in selected locations and direct effect of pollen on basophil degranulation	Dr Rajiva de Silva (Medical Research Institute, Colombo 08) Prof Sunil Premawansa (Faculty of Science, Colombo) Dr T R Premathilake (PG Institute of Archeology, Kelaniya)
CMI-16-004	Ms Harshani Asarappulige	Preliminary study on <i>CTLA4</i> gene mutations in inflammatory bowel disease in Sri Lanka	Prof Suranjith Seneviratne (Imperial College of London, UK) Dr Sisirra Pathirana (Faculty of Medicine, Colombo) Prof Shiroma Handunnetti
CMI-16-007	Ms Dasanthi Lakmali	An <i>in vitro</i> study to assess the potential of aqueous extract of <i>Munronia pinnata</i> and <i>Ixora coccinea</i> to reverse the inhibition of neutrophil chemotaxis induced by intracellular nitric oxide and advanced glycation end products	Dr Narmada Fernando Prof Sunil Premawansa (Faculty of Science) Prof Shiroma Handunnetti
CMI-16-010	Ms Varuni Ratnayake	A preliminary study on VP1 gene based genotyping of BK virus isolated from kidney transplant patients	Dr Jude Jayamaha (Medical Research Institute, Colombo 08) Dr Thusistha Gajanayake (Horizen Campus, Malabe) Dr Narmada Fernando



**INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY & BIOTECHNOLOGY
UNIVERSITY OF COLOMBO**

STATEMENT OF FINANCIAL POSITION AS AT 31ST DECEMBER 2017

(Figures adjusted to the Nearest Rupee)

	Note	2017 Rs.	2016 Rs.
<u>ASSETS</u>			
<u>CURRENT ASSETS</u>			
Bank Balances	Note - 02	15,264,008	27,277,579
Investments in call deposits		9,636,534	14,415,000
Other Receivables	Note - 03	3,001,863	2,425,916
Advance A/C	Note - 04	785,121	307,700
Staff Loans	Note - 05	3,983,747	2,334,348
Investments	Note - 06	54,279,977	30,117,873
Chemicals & Glassware		6,554,392	11,571,381
		93,505,643	88,449,797
<u>NON CURRENT ASSETS</u>			
Motor Vehicles	Note - 07	4,639,503	5,155,003
Library Books and Periodicals	Note - 07	2,456,619	993,371
Lab and Teaching Equipments	Note - 07	41,081,199	11,672,258
Computers	Note - 07	8,041,003	6,984,725
Office Furniture & Equipments	Note - 07	13,024,701	6,682,841
		69,243,025	31,488,198
TOTAL ASSETS		162,748,667	119,937,996



INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY & BIOTECHNOLOGY
UNIVERSITY OF COLOMBO
STATEMENT OF FINANCIAL POSITION AS AT 31ST DECEMBER 2017 (Contd..)

	Note	2017 Rs.	2016 Rs.
<u>LIABILITIES</u>			
<u>CURRENT LIABILITIES</u>			
Refundable deposit		103,603	98,603
Refundable Laboratory Deposits		2,957,173	2,862,173
Accrued Expenditure And Other Payable		6,953,257	4,029,731
		10,014,033	6,990,507
<u>NON CURRENT LIABILITIES</u>			
Provision for Gratuity	Note -08	6,575,567	5,789,374
Provision for Audit Fee		576,850	576,850
Research Grants	Note - 09	5,984,224	3,539,185
		13,136,641	9,905,409
TOTAL LIABILITIES		23,150,673	16,895,916
NET ASSETS		139,597,994	103,042,079
<u>EQUITY / NET ASSETS</u>			
<u>CAPITAL</u>			
Capital Grant Spent	Note - 18	20,885,268	22,196,013
Capital Grant Unspent		10,530,399	5,852,183
Gifts & Donations		6,714,627	6,714,627
		38,130,295	34,762,822
<u>ACCUMULATED FUND</u>			
Retained Earning A/C		40,802,282	46,204,651
Revaluation Surplus/(Deficit)		38,590,810	
<u>RESTRICTED FUNDS</u>			
Institute Development Fund		5,929,055	5,929,055
Endowment Fund		3,221,903	3,221,903
Staff welfare Fund		-	-
Asset Replacement Fund		12,923,649	12,923,649
		22,074,607	22,074,607
TOTAL EQUITY / NET ASSETS		139,597,994	103,042,079

Prepared & Certified by
28.02.2018

.....
Senior Asst. Bursar

.....
Senior Asst. Registrar

The Accounting policies on pages 6 to 10 and other Notes on pages 11 to 15 form an integral part of these Financial Statements. The Board of Directors is responsible for the preparation and presentation of these Financial Statements.

.....
Board Member

.....
Director /Board Member



**INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY & BIOTECHNOLOGY
UNIVERSITY OF COLOMBO**

**STATEMENT OF FINANCIAL PERFORMANCES
FOR THE YEAR ENDED 31ST DECEMBER 2017**

(Figures adjusted to the Nearest Rupee)

		2017 Rs.	2016 Rs.
INCOME			
Govt. Grant for Recurrent Expenditure		58,533,000	58,358,000
Govt. Grant for Rehabilitation of Capital Assets		2,700,000	7,950,000
Amortization of Fixed Assets		13,032,528	12,310,680
Research Grants	Note - 10	10,212,028	2,848,674
Generated Income	Note - 11	9,766,847	11,606,249
Interest Income		4,591,309	2,801,189
Other Income	Note - 12	485,738	332,650
		99,321,451	96,207,442
Less : EXPENDITURE			
Personnel Emoluments	Note - 13	39,502,527	33,316,651
Travelling		915,507	322,089
Supplies	Note - 14	20,653,567	7,816,149
Maintenance Expenditure	Note - 15	6,556,147	5,166,461
Contractual Services	Note - 16	17,127,899	15,492,018
Other Recurrent Expenses	Note - 17	7,009,904	5,087,402
Depreciation		13,158,138	13,875,986
		104,923,687	81,076,756
Excess of Income over Expenditure		(5,602,236)	15,130,687



INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY & BIOTECHNOLOGY
UNIVERSITY OF COLOMBO
CASH FLOW STATEMENT
FOR THE YEAR ENDED 31ST DECEMBER 2017

	Rs.	Rs.
<i>Excess for the year</i>		(5,602,236)
Add : Adjustments for items not involving movement of Funds		
Provision for Gratuity	786,195	
Provision for Audit Fees	-	
Govt. Grant Received for Capital	(2,700,000)	
Amortization of Fixed Assets	(13,032,528)	
Depreciation	13,158,138	
Prior Year Adjustments		
Operating excess before working capital changes	(1,788,196)	
Decrease in Receivables	(2,314,222)	
Increase in Payables	3,023,525	(1,078,892)
NET CASH FLOW FROM OPERATING ACTIVITIES		(6,681,128)
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisition of Fixed Assets	(12,444,281)	
Increase in Investments	(24,162,104)	(36,606,384)
CASH FLOWS FROM FINANCING ACTIVITIES		
Research Grants	7,395,475	
Net changes in restricted funds	0	
Government Grant for Capital Expenditure	19,100,000	26,495,475
Net Increase in Cash Equivalents		(16,792,038)
Cash & cash equivalents at the beginning of the period		41,692,580
Cash & cash equivalents at the end of the period		24,900,542



INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY & BIOTECHNOLOGY
STATEMENT OF CHANGES IN EQUITY/NET ASSETS FOR THE YEAR ENDED 31/12/17

	Accumulated Fund Rs.	Asset Replacement Reserve Rs.	Reserves & Restricted Fund Rs.	Capital Grant Spent Rs.	Capital Grant Unspent Rs.	Gift & Donations Rs.	Total Rs.
Balance as at 31st December 2017	46,204,651	12,923,649	9,150,958	22,196,013	5,852,183	6,714,627	103,042,080
Adjustments in respect of previous Year	199,868						
	46,404,518	12,923,649	9,150,958	22,196,013	5,852,183	6,714,627	103,241,948
Surplus / Deficit for the period	(5,602,236)						
Capital Grant Received					19,100,000		19,100,000
Purchase During the Year				11,721,784	(11,721,784)		-
Transfer to Rehabilitation					(2,700,000)		(2,700,000)
Amortization of Donations				(13,032,528)			(13,032,528)
Balance as at 31st December 2017	40,802,282	12,923,649	9,150,958	20,885,268	10,530,399	6,714,627	106,609,419



Notes to the Financial Statement

1. Significant Accounting Policies

1.1 Reporting Entity

IBMBB has been incorporated under the Ordinance No.1282/25 and gazetted on 23rd April 2003. The main administration is at No 90, Cumaratunga Munidasa Mawatha, Colombo 03. The Financial Statement of the IBMBB are prepared for the year ending 31/12/2017.

2. Significant Accounting Policies

2.1. Basis of Preparation

The Financial Statements are prepared on the historical basis of accounting, in conformity with Sri Lanka Public Accounting Standards. All accounting policies adopted are applied consistently with those of previous year, where necessary comparative figures have been adjusted to confirm the changes, in presentation of current year figures.

The financial statements are prepared in Sri Lanka Rupees, which is the functional and presentation Currency.

2.2 Conversion of Foreign Currencies

All foreign currency transactions are accounted for at the exchange rates prevailing at the date of the transactions; gains and losses resulting from the settlement of such translation and from the translation of monetary assets and liabilities denominated in foreign currencies are recognized in the income statement. Monetary assets and liabilities denominated in foreign currencies are translated at exchange rates prevailing on the balance sheet date.

2.3 Assets and the bases of their valuation

2.3.1 Property Plant and Equipment (PPE)

Property plant and Equipments has not included value of the land and a building since legal ownership of land has not being transferred to IBMBB by University of Colombo.

Property, Lab and Teaching Equipments include the items purchased out of government grant, research grants internally generated funds and donations. Property and Equipment are recorded at cost of purchase together with any incidental expenses thereon. The assets are shown at cost less accumulated depreciation. Assets received as grants have been valued at their fair value.



2.3.2 Impairment

An asset's carrying amount is written down immediately to its recoverable amount, such reduction is recognized as an expense immediately.

2.3.3 Amortization

Amortization is recognized in income statement on a straight line basis over the estimate useful life of the assets.

2.3.4 Gain or loss on disposal

Gains and losses on disposals are determined by comparing proceeds with carrying amount. These are included in the income statement

2.3.5. Subsequent cost

Subsequent costs are included in the asset's carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the items will flow to the institute and the cost of items can be measured reliably. All other repairs and maintenance are charged to income statement during the financial period in which they are incurred.

2.3.6. Depreciation

Assets, for which dates of purchase are known, depreciation is provided in proportion to the number of months completed or such assets were used from the date of purchase. Assets of which exact date of purchase is not known depreciation is provided for the whole year in which they were purchased. Depreciation will be provided on the year of the sale/ disposal in proportion to the number of months the assets over the estimated useful life of assets.

Depreciation has been charged to income statement on all property and equipment on the straight line basis at the following rates per annum in order to write off the cost of such assets over their estimated useful lives.

Rates of Depreciation

• Vehicles	-	10%per annum
• Fixtures & Fittings	-	10% per annum
• Office Furniture & Equipment	-	10% per annum
• Computers	-	20% per annum
• Laboratory & Teaching Equipment	-	20% per annum
• Lab Tools	-	20% per annum
• Library Books and Periodicals	-	20% per annum

2.3.6. Inventories

Inventories are valued at the lower of cost or estimated net realizable value. Net realizable value is the price at which inventories can be sold in the ordinary course of business after allowing for cost of realization and/or cost of invention from their existing state to saleable.



2.4 Income and Expenditure

2.4.1. Government Grant

Grants received from the General Treasury of the Government of Sri Lanka and Tuition Fees received are recognized as income in the period in which the related costs are recognized.

Government grants utilized to acquire assets less liabilities are recognized as deferred income.

2.4.2 Revenue Recognition

(a) Government Grants (Recurrent)

The Government Recurrent grants are recognized in the period in which they are received.

(b) Government Grant (Capital)

Grant relating to purchase of property and equipment are included in non-current liabilities as deferred income and are credited to the income statement on a straight line basis over the expected life of the related assets.

(c) Student Registration

Student Registration fees are recognized as revenue only on the receipt of fees.

(d) Course Fees

Course fees are recognized over the period of instruction. Where adequate information is not available to make such allocation to different financial periods, fees are recognized as income on a cash basis.

(e) Investment Income

Interest income received out of Investment is accounted on accrued basis.

2.4.3 Receivables

Receivables are stated at the amounts that they are estimated to realize.

2.4.4 Cash & cash equivalents

Cash & cash equivalents comprise cash & bank balances and short term investments.

2.4.5 Current Assts

Current Assets classified in the balance sheet are those which will be recovered within one year after the Balance Sheet date.

2.4.6 Current Liabilities

Liabilities classified as current Liabilities in the balance sheet are those that fall due for payment within one year from the Balance sheet date. All known liabilities have been accounted for in preparing the final statements.



2.4.7 Cash flow statement

The cash flow statements have been prepared using the “Indirect Method” for the purpose of the statement of cash flow. Cash & cash equivalents are comprised cash & bank balances, short term deposits.

2.4.8 Employee Benefits

(a) Defined benefit plans

Provision is made in the accounts for retirement gratuities at rates applicable under the payment of Gratuity Act No.12 of 1983. Although employees should complete a minimum period five years of continued employment to qualify for gratuity payments under the Act, provision is made after complete one year of employment on the assumption that all employees intend to continue in employment to at least five years.

(b) Defined Contribution Plans- UPF & ETF

Employees are members of the University Provident Fund and Employees Trust Fund. Contribution to defined contribution plans, UPF, EPF & ETF are recognized as an expense in the income statement as incurred.

2.4.9 Disclosure

The IBMBB has occupied in a land where the ownership of the land belongs to the University of Colombo.



Institute of Biochemistry, Molecular Biology & Biotechnology -University of Colombo
Notes to the Financial Statements - 2017 (Contd..)

Note - 02

Bank Balances

		2017	2016
		Rs.	Rs.
Peoples Bank Thimbirigasyaya			
Account No.	86100121189723	9,895,557	22,003,716
	86100151192314	632,665	2,389,523
	86100151189712	-	-
	86100211189723	4,340,500	2,647,876
	86100301189723	20,882	220
	86100491189723	374,404	236,245
		15,264,008	27,277,579

Note - 03

Other Receivables

		2017	2016
		Rs.	Rs.
Pre Payment		1,154,469	633,438
Refundable Deposit for Fuel		50,000	85,000
Refundable Deposit for Dongle		1,000	1,000
Refundable Deposit for CO2		83,500	24,000
Interest Receivable		1,661,172	1,511,423
Salary Overpaid		51,697	81,697
Other		25	89,359
		3,001,863	2,425,916

Note - 04

		2017	2016
		Rs.	Rs.
Advance		785,121	307,700

Note - 05

Staff Loans

		2017	2016
		Rs.	Rs.
Distress Loans		3,627,441	2,127,087
Computer Loans		252,500	144,425
Vehicle Loan		69,976	36,656
Staff Loans		33,830	26,180
		3,983,747	2,334,348

Note -06

		2017	2016
		Rs.	Rs.
Investments - Specific Funds			
Generated Funds - Fixed Deposits *		54,279,977	30,117,873
		54,279,977	30,117,873

*Course fees of postgraduate programmes were collected in advance and invested in Fixed Deposits. These Deposits will be utilized for various forms of student expenditure.



Institute of Biochemistry, Molecular Biology & Biotechnology - University of Colombo
Notes to the Financial Statements - 2017(Contd..)

Note – 07

Non current Assets

Description	Vehicle	Furniture & office Equipment	Computers	Lab and Teaching Equipment	Library books and Periodicals	Total
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Non Current Assets						
Values as per the re-valuation on 01.01.2017	5,155,003	14,116,750	6,518,900	42,033,150	2,294,500	70,118,303
Additions/ Improvements		347,342	2,990,891	8,397,155	708,894	12,444,281
Disposals	-	(10,000)	(75,900)	(96,400)		(182,300)
Total	5,155,003	14,454,092	9,433,891	50,333,905	3,003,394	82,380,284
Provision for Depreciation						
Rate of Depreciation	10%	10%	20%	20%	20%	
Balance as at 01/01/2017	-	-	-	-	-	-
Depreciation for the year	515,500	1,429,672	1,406,767	9,259,424	546,775	13,158,138
Acc dep for Disposals	-	(281)	(13,880)	(6,719)	-	(20,880)
Balance as at 31/12/2017	515,500	1,429,390	1,392,888	9,252,705	546,775	13,137,259
Net book Value- 31/12/2017	4,639,503	13,024,701	8,041,003	41,081,199	2,456,619	69,243,025

Note -07.1

Net book Value- 01/01/2017	5,155,003	6,682,841	7,024,019	11,672,258	993,371	31,527,492
Values as per the re-valuation on 01.01.2017	5,155,003	14,116,750	6,518,900	42,033,150	2,294,500	70,118,303
Revaluation surplus /(Deficit)	0	7,433,909	(505,119)	30,360,892	1,301,129	38,590,811



	2017 Rs.	2016 Rs.
Note - 08		
Provision for Gratuity		
Opening Balance 01.01.2017	5,789,373	4,566,241
Provision During the year	786,195	1,223,132
Closing Balance 31.12.2017	6,575,567	5,789,373
Note - 09	2017	2016
Research Grants - 2017	Rs.	Rs.
RPC - 2018	49,828	49,828
IPICS - 2018	539,710	668,339
NSF Grant iii-2018	48,458	48,458
Dept.of Ayurvedic Grant-2018	2,543	2,543
Swedush Research Grant .2018	1,885,516	348,462
NSF Grant -v -2018	20,587	20,587
Individual Reasurch Fund-2018	291,311	167,664
Start-up Research Grant (UGC)2018	356,489	699,489
NSF GRANT (Prof.KHT)-2018	491,574	672,438
Royal Society Grant 2018	574,020	574,020
C/R Grant- Ms.D.V.D. Hemalika-2018	150,000	75,000
Research Colloboration Grant- Dr Andru-2018	212,358	212,358
NSF/SCH/2016/04 2018	499,387	
NSF/RPHS/2016/C 07-2018	862,443	
	5,984,224	3,539,185
Note -10	2017	2016
Research Grants	Rs.	Rs.
NSF Grant - I 2017		37,500
IPICS 2017	208,507	388,700
Swedush Research Grant .2017	256,487	347,852
NSF Grant -v -2017		288,000
Start-up Research Grant (UGC)2017	343,000	844,660
NSF GRANT (Prof.KHT)-2017	1,093,364	937,562
Royal Society Grant 2017		4,400
NSF/SCH/2016/04 2017	1,173,113	
NSF/RPHS/2016/C 07-2017	7,137,557	
	10,212,028	2,848,674
Note - 11	2017	2016
Generated Income	Rs.	Rs.
Annual Session Sponsorships	150,000	174,541
Examination fees	82,166	73,471
MSc Course Fee	7,536,000	8,864,388
Certificate Course	1,070,000	1,110,000
MSc Registration Fee	67,500	271,000
Application Fee	151,175	48,750



Sample collection Charges	502,975	589,200
Library Fee	55,000	11,000
Other	152,030	463,900

9,766,847	11,606,249
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Note - 12

Other Income

	2017	2016
	Rs.	Rs.
Computer loan interest	8,308	9,185
Staff Loan interest	1,044	1,462
Transcript fee	26,000	35,000
Distress Loan Interest	126,902	104,232
Vehicle Loan Interest	2,135	2,936
Other Sundry Income	321,349	179,836
	485,738	332,650

Note - 13

Personnel Emoluments

	2017	2016
	Rs.	Rs.
Salaries & Wages	12,582,262	8,929,313
U.P.F	1,955,571	1,474,949
Pension	1,277,800	840,399
E.T.F.	716,480	537,031
E.P.F	300,412	296,596
Academic Allowance	4,574,196	4,148,889
Cost of Living Allowances	2,613,855	2,479,001
Over Time Payment	210,443	157,473
Other Allowances	8,452,731	3,311,783
Gratuity	786,194	1,223,134
Acting Pay	101,396	-
Research Allowances	1,472,770	1,210,626
Allowances	3,913,418	7,777,776
Visiting Lecturer Fee	495,750	878,579
Property Loan Interest	49,251	51,101
	39,502,527	33,316,651

Note - 14

Supplies

	2017	2016
	Rs.	Rs.
Mechanical and Electrical Goods	89,204	52,272
Stationery & Office Requisites	527,300	485,734
Fuel and Lubricant	279,851	237,754
Uniforms	19,299	28,652
Chemicals & Glassware	19,633,366	7,001,488
Other	104,547	10,249
	20,653,567	7,816,149

Note-14.1



Note -14.1

Chemicals & Glassware

Opening Balance	11,571,381	11,571,381
Purchase During the Year	14,616,377	7,001,488
	26,187,758	18,572,869
Closing Balance	(6,554,392)	(11,571,381)
	19,633,366	7,001,488

Note - 15

Maintenance Expenditure

	2017	2016
	Rs.	Rs.
Rehabilitation & Maint. Of Capital Assets	3,583,975	2,385,728
Plant, Machinery Equipment	929,848	887,187
Buildings & Structures	1,656,854	1,344,516
Office Equip. Maintenance	130,652	396,542
Other	254,818	152,488
	6,556,147	5,166,461

Note - 16

Contractual Services

	2017	2016
	Rs.	Rs.
Transport	52,673	19,910
Telecommunication	2,164,234	2,307,941
Postage	96,712	73,405
Security Service	1,479,767	1,213,005
Electricity	8,477,253	8,362,616
Water	292,981	351,817
Cleaning Service	2,650,146	2,423,782
Rent & Hiring Charges		
Rates, Taxes & Local Authorities	199,584	182,952
Printing, Advertising etc.	1,682,999	553,841
Other	31,550	2,750
	17,127,899	15,492,018

Note - 17

Other Recurrent Expenditure

	2017	2016
	Rs.	Rs.
Knowledge Enhancements (Research Project)		88,000
Special Services - Board Meeting & Committees	967,080	838,650
Consultation Fee	400,000	1,502,438
Workshops, Seminars	189,425	478,917
Academic Research	168,710	447,475
Staff Development	552,833	43,550
Entertainment Expenses	159,302	160,538
Contribution & Membership Fee	377,570	254,330
Bank Charges	80,354	23,247
Holiday Warrents & Season Tickets	92,740	76,300



Convocation	133,911	4,900
Examination Expens	643,457	285,296
Student welfare	33,732	6,200
Audit Fee		200,000
Certificate Course Expenses	850,800	390,846
Disposal Loss	150,340	
Annual Scientific Session	195,980	92,264
Postgraduate Research & Scholorsh	69,590	
Travel Grants to University Teach.	1,424,219	
Patent Application Vote	415,469	
Payment Gateway	42,000	
Other	62,392	194,451
	7,009,904	5,087,402

Note - 18

Capital Grant Spent

	2017	2016
	Rs.	Rs.
Treasury Funds	22,766,707	24,077,451
Generated Funds	110,394	110,394
SAREC Grant	(1,912,598)	(1,912,598)
NSF Grant	(79,235)	(79,235)
	20,885,268	22,196,013

Note * {

* Note: We have taken corrective measures to set off these negative balances from the accounts in the year 2018.



Review on Internal Audit Functions in the year - 2017

Four Audit Committee meetings of the Institute of Biochemistry, Molecular Biology and Biotechnology were held in 2017 where attention was paid mainly to matters referred to in the audit inquiries made by the Government Audit Branch.

The Audit Committee has recommended procedures to be followed to rectify the shortcomings highlighted in those audit reports.

The internal audit reports submitted by the Internal Audit Branch of the University of Colombo too were discussed at the Audit Committee and recommendations have been made for the improvement of the internal administration of the Institute and the control of expenditure.

Audit Committee reports have been submitted at the meetings of the Board of Management and approved.

Chairman
Audit Committee



Failures and Justifications - 2017

During the year 2017, the available laboratory spaces were not sufficient to any further increase in student intake, in addition the other constraints such as lack of adequate human and financial resources to implement some of the activities in the strategic plan 2017 – 2021.

Approval for expanding the building space had been requested from University of Colombo as IBMBB is situated in the premises of University of Colombo. University has requested for collaborative programmes and an appropriate justification for the extension building to the IBMBB. However, the extension building to the IBMBB is now incorporated in to the Master Plan for the development of the University of Colombo.

Fulltime MSc courses conducted by the IBMBB have a full time research component during the third Semester that requires 1:1 supervision of student research projects. MPhil and PhD programmes are also based on fulltime research. Without having adequate academic cadre, IBMBB finds it difficult to expand its high quality human resource training programmes. New cadre posts requested had been reviewed but not yet received.

IBMBB academic cadre consists of two Professor posts and five Senior Lecturer posts. Five Scientific Assistant posts and one Assistant Network Manager post are available as Academic Support grades. Some of these posts were vacant in year 2016. Approval for the Post of Professor of Biochemistry was received from UGC and advertised. For the post of Senior Lecturer-Cell Biology, the USAB and Council decisions were completed by end of 2017 to appoint a Lecturer-Cell Biology. As the current Director was the only full time academic staff member at IBMBB for conducting the teaching and coordinating the MSc-CMI course and the requested cadre posts for lecturer and scientific assistant had not been received by the end of 2016, a lecturer on contract had appointed following council approval.

New cadre positions were received in the 3rd quarter of 2017 and the process for recruiting academic staff were initiated in the 4th quarter of 2017.

IBMBB has four technical officer posts and during 2017 one Technical officer resigned. There is one competent, Technical officer with appropriate qualifications and the other two are trainee Technical officers who do not have the appropriate qualifications required for the teaching programmes conducted at IBMBB and hence undergoing on the job training.



Plan of work for 2018

Teaching:

- Increase student intake to existing MSc programmes
- Complete the curriculum evaluation and revision –MSc (MLS & CMI)
- Continue/strengthen existing MSc and PhD programmes
- Complete the curriculum revisions to MSc-Bioinformatics course for intake in 2018
- Establishment and maintenance of a comprehensive resource pool of Faculty
- Establish new teaching programmes through Blended learning
- Strengthening modern teaching / learning methods
- Improving English Language, Scientific Writing, Presentation, Communication and IT skills of students

Research:

- Initiate new PhD research programmes
- New admissions to MPhil/PhD programmes, Training of professionals / technocrats in the applications of Molecular Life Sciences
- Generating new knowledge through research programmes
- Identify priority areas requiring solutions based on tools of Molecular Life Sciences Immunology, Bioinformatics and Allied fields
- Implementation of research programmes directed towards identification of novel drug targets from medicinal plants & marine resources
- Establish new research programmes for R&D work aimed at personalized medicine and human DNA variation
- Continue existing programmes in biomedical sciences and plant molecular biology and develop new research programmes based on findings when warranted
- Encourage and assist in obtaining National/ International competitive research grants by faculty members/ collaborators
- Enact memoranda of understanding with Research Institutes/Private sector Institutes
- Strengthen collaborative research programmes with health sector
- Strengthen cooperation with other Faculties /Universities and private sector Educational Institutes
- Dissemination of Knowledge/ Research Findings

Service:

- Develop collaboration with Industry/Private sector



-
- Maintain and update mirrors of Biological databases
 - Provide on-line tools for Bioinformatics based/ learning /research
 - Establish a repository of Archives giving the land mark developments in the field of Molecular Life Sciences
 - Establish archives of historical developments resulting in the establishment of IBMBB
 - Generating funds through Business Development plan.
 - Diagnostic services for cancer, other diseases and for plantation sector
 - Consultancies
 - Fee-levying Postgraduate and other training programmes
 - Training of professionals and technocrats in the application of Molecular Life Sciences, Immunology, Bioinformatics and Allied fields

Maintaining International Standards:

- Enhance existing /develop new collaborations with Universities and Research Institutes overseas
- Provide training in Molecular Life Sciences, Immunology, Bioinformatics and allied fields, nationally and regionally
- Develop content for E- learning for students/teachers in Bioinformatics, Molecular Life Sciences, Immunology and allied fields
- Establish links with international centres of excellence for E- teachers and E- resources in Bioinformatics
- Establishment of an external review system
- Ethical practices in scientific and biomedical research
- Ethical, societal and legal implications of genetic research and genetic information
- Provide opportunities for short-term overseas training of faculty members
- Encourage and assist in participation at International conferences by faculty members/collaborators/ students to present research carried out at the IBMBB

Governance:

- Performance Based Evaluation System for all categories of staff
- Development of a Training Policy and Guidelines
- Code of Ethics for staff and students
- Compliance with accepted norms of Accounting standards



Auditor General Report & Responses

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මගේ අංකය My No. } Director	HED/B/EMB/6/17501	ඔබේ අංකය Your No. } 11 September 2018
Institute of Biochemistry, Molecular Biology and Biotechnology		
Report of the Auditor General on the Financial Statements of the Institute of Biochemistry, Molecular Biology and Biotechnology affiliated to the University of Colombo for the year ended 31 December 2017 in terms of Section 17 of the Institute of Biochemistry, Molecular Biology and Biotechnology Ordinance No. 01 of 2003 and in terms of Section 108(1) of the Universities Act No. 16 of 1978. The audit of financial statements of the Institute of Biochemistry, Molecular Biology and Biotechnology affiliated to the University of Colombo for the year ended 31 December 2017 comprising the statement of financial position as at 31 December 2017 and the statement of financial performance, statement of changes in equity and cash flow statement for the year then ended and a summary of significant accounting policies and other explanatory information was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka read in conjunction with Section 17 of the Institute of Biochemistry, Molecular Biology and Biotechnology Ordinance No. 01 of 2003 and Sub-section 108(1) of the Universities Act enacted under Sub-section 107(5) and Section 18 of the Universities Act, No. 16 of 1978. My comments and observations which I consider should be published with the Annual Report of the Institute in terms of Section 108(1) of the Universities Act appear in this report.		
1.2 Management's Responsibility for the Financial Statements The management is responsible for the preparation and fair presentation of these financial statements in accordance with Sri Lanka Public Sector Accounting Standards and for such internal control as the management determines is necessary to enable the preparation of financial statements that are free from material misstatements whether due to fraud or error.		
☎ +94 11 2 89 70 25 - 34 ☎ +94 11 2 88 72 23 ✉ ag@auditorgeneral.gov.lk 🌐 www.auditorgeneral.gov.lk		



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NATIONAL AUDIT OFFICE

1.3 Auditor's Responsibility

My responsibility is to express an opinion on these financial statements based on my audit. I conducted my audit in accordance with Sri Lanka Auditing Standards consistent with International Auditing Standards of Supreme Audit Institutions (ISSAI 1000-1810). Those Standards require that I comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatements of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Institute's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Institute's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of financial statements. Section 111 of the Universities Act, No. 16 of 1978 gives discretionary powers to the Auditor General to determine the scope and extent of the audit.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

1.4 Basis for Qualified Opinion

My opinion is qualified based on the matters described in paragraph 2.2 of this report.



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National Audit Office

2. Financial Statements

2.1 Qualified Opinion

In my opinion, except for the effects of the matters described in paragraph 2.2 of this report, the financial statements give a true and fair view of the financial position of the Institute of Biochemistry, Molecular Biology and Biotechnology affiliated to the University of Colombo as at 31 December 2017 and its financial performance and cash flows for the year then ended in accordance with the Sri Lanka Public Sector Accounting Standards.

2.2 Comments on Financial Statements.

2.2.1 Accounting deficiencies

The following observations are made.

- (a) Due to the interest amounting to Rs.363,466 received for the demand deposits in the year under review had been credited to the demand deposit account instead of crediting to the income, the balance of the demand deposit investment account at the end of the year and the interest income had been understated by that amount.
- (b) A sum of Rs. 599,295 interest income receivable relating to 08 Fixed Deposits valued at Rs. 18,000,000 and 02 Term Deposits valued at Rs.10,000,000 for the year under review had not been accounted.
- (c) In preparing the cash flow statement, amounting to Rs.4,591,309 fixed deposit interest income received in cash relating to the year under review, had not been shown as a cash inflow under the investment activities by deducting from the profit.



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National Audit Office

2.3 Non-compliance with Laws, Rules, Regulations and Management Decisions

The following non-compliances were observed.

Reference to Laws, Rules, Regulations etc.	Non-compliance
(a) Sub-section 15(V) of Part 11 of the Universities Act, No. 16 of 1978	Even though the approval of the University Grants Commission should be obtained in respect of the courses conducted by the Institutions of Higher Education, but the approval had not been so obtained for the degree of Master of Science in Molecular Life Sciences and the degree of Master of Science in Cellular and Molecular Immunology which is currently conducted by the institute.
(b) Financial Regulation 371(2) of the Democratic Socialist Republic of Sri Lanka and Public Finance Circular No.03/2015 of 14 July 2015.	Even though advances should be settled immediately after completing the advanced activity, 32 days to 300 days had been spent in settling advances totalling Rs.1,126,815 given in 32 occasions for supplies and services rendered in the year under review.
(c) Sections 3.1 and 3.2 of Chapter XX of the Establishments Code of the University.	Salaries and allowances totalling Rs.15,086,947 been paid without verifying the attendance of 06 employees in the academic staff of the Institute in the year under review.



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NAOSL

3. Financial Review

3.1 Financial Results

According to the financial statements presented, the financial result for the year ended 31 December 2017 had been a deficit of Rs.5,602,236, as compared with the corresponding surplus of Rs.15,130,687 for the preceding year, thus indicating a decrease of the financial result by a sum of Rs.20,732,923 for the year under review as compared with the preceding year. The increase in the employee remuneration expenditure by amounting to Rs.6,185,876, and the increase in the expenditure for supplies by amounting to of Rs.12,837,418, had been mainly attributed to the above deterioration.

In analyzing the financial results of the year under review and 04 preceding years, there had been a surplus from year 2013 up to year 2016 and a deficit in year 2017. However, once the employee remuneration and depreciation on non-current assets and government tax paid had been adjusted to the financial result, though the contribution amounting to Rs.36,348,650 for the year 2013 had been continuously improved and amounted to Rs.58,912,625 in the year 2016, it had been decreased by 20 per cent as Rs.48,258,013 in the year 2017 with compared to year 2016.

4. Operating Review

4.1 Performance

4.1.1. Operation and Review

The following observations are made.

- (a) Even though, the target was to admit 45 students for 3 courses in the year under review, only 11 students for 02 courses had been admitted. The Director had informed to the audit that failure to conduct the degree of Master of Science in Molecular Life Sciences and increasing of course fee of the degree of Master of Science in Cellular and Molecular Immunology from Rs.500,000 to Rs.600,000 had been reasoned for decreasing the number of students.



- (b) Even though it had been planned to start new three postgraduate degree course in the Action Plan prepared for the year under review, any new degree had not been started in year 2017.

4.2 Management Activities

The following observations are made.

- a) As per the decision of the 39 Board of Management meeting dated 11 October 2007, Institute Development Fund had been established for the use of development activities of the institute and it had been stated that 10 per cent of the income from all courses should be transferred to this fund. However, any amount had not been transferred to this fund in the year 2017 and attention had not been paid even preparing the course budget relating to the year under review. The balance of that account as at the end of the year under review amounted to Rs.5,929,055.
- b) Even though proposed legal drafts for the courses had been submitted to the Study Board on 03 January 2018 by conducting a review in 2015 on subject content of the degree course in Bioinformatics for which no students had been admitted after 2012, re-startable time period of the course had not been decided. Therefore the students, who expect to follow this course which had not been held for more than 05 years, had missed the opportunity for that.

4.3 Fund Utilization

There had been a balance of Rs.22,074,607 of three funds: Institute Development Fund, Endowment Fund and Assets Replace Fund as at 31 December and these funds had not been utilized for the achievement of expected objectives in the year under review.



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5. Sustainable Development

5.1 Achieving Sustainable Development Goals and Targets

Even though it is required to take actions regarding the Sustainable Development by all public institutions as per the Letter No.NP/SP/SDG/17 dated 24 August 2017 issued by the Secretary to the Minister of the Ministry of National Policies and Economic Affairs and United Nations 2030 "Agenda", Institute of Biochemistry, Molecular Biology and Biotechnology had not been aware on how should be implemented regarding the activities which comes under own scope relating to the year under review.

6. Accountability and Good Governance

6.1 Procurement

The following observations are made regarding the procurement for purchasing Elisa Plate Reader, cost of Rs.4,000,000.

- (a) As per the section 6.2.2 of the Procurement Guideline even though minimum bid calling period in National Competitive Bidding is 21 days, it was observed that reasonable and maximum opportunity had not been given to the eligible interested parties to participate for the procurement due to bid calling period had been limited to 10 days for the procurement of purchasing Elisa Plate Reader valued at Rs.4,000,000.
- (b) As per the Guideline 8.9.1 and 5.4.8 of the Procurement Guideline, it had not been entered into an agreement and the Performance Bond had not been submitted at the time of issuing the purchase order No.2017/118/15 dated 29 August 2017. After the notice made by the institute, performance bond had been submitted on 27 November 2017 that is 3 ½ months delay.



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NATIONAL AUDIT OFFICE

- (c) Even though the supplier had agreed to supply this machine within the period of 06 weeks to 08 weeks after giving the order, the machine had been handed over to the institute on 09 April 2018 with a delay of 23 weeks. As per the order, even though it is required to charge a demurrage charge of amounting to Rs.400,00 from the supplier for this, it had not been so charged.

6.2 Internal Audit

Internal audit of the institute had been done by the Internal Audit Unit of the University of Colombo. As per the audit plan submitted relating to the year 2017, even though it had been planned to audit 13 subjects of the institute in the year 2017 only one audit query had been issued on one subject of vehicle usage. Accordingly it was observed that adequate internal audit had not been occurred.

6.3 Budgetary Control

When comparing the actual figures with the budgeted figures, expenditure on goods supplied by 112 per cent and expenditure on maintenance activities by 106 per cent had been varied.

6.4 Unsolved Audit paragraphs

04 ledger accounts had been maintained for capital grants spent and debit balances of amounting to Rs.1,912,598 and Rs.79,234 were shown in two ledger accounts thereof.

7. Systems and Controls

Deficiencies in systems and controls observed during the course of audit were brought to the notice of the Director of the Institute from time to time. Special attention is needed in respect of the following areas of control.



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National Audit Office

Areas of Systems and Controls

Observation

(a) Budgetary control	Budget had not been used as an effective management controller.
(b) Fund Management	Funds had not been used for achieving the expected objectives.
(c) Procurement	Attention had not been paid for the Procurement Guideline 2006 and Procurements had not been completed in the precise dates.
(d) Conducting courses	Decrease in Recruitment of students and decrease in income from courses

Sgd./ H.M. GAMINI WIJESINGHE
Auditor General

H.M.Gamini Wijesinghe
Auditor General



2018.10.16

Deputy Auditor General,
Auditor General's Department
306/72, Polduwa Road,
Battamulla.

Audit Query No HED/B/IBMBB/6/17/01

Replies to the Report of the Auditor General on the Financial Statement of the Institute of Biochemistry, Molecular Biology and Biotechnology, affiliated to the University of Colombo for the year ended 31st December 2017 under the provisions of Section 17 (1) of the Institute of Biochemistry, Molecular Biology and Biotechnology Act No. 01 of 2003 and 108 (1) of the Universities Act No. 16 of 1978

2.2. Comment on financial statements

2.2.1. Accounting Deficiencies

(A) Interest earned with regard to 07 fixed deposits withdrawn during the year 2017 were actively adjusted to match the accounts. Since corrections could not be adjusted in 2017 they were adjusted to as at 01.012018.

(Journal note number **T01 / 13**)

(B) Actions were taken to account accurately the interest to be received Rs. 599,295 for year 2017 in connection to 08 fixed deposits and 02 call deposits.

(Journal note number **T01 / 12**)

(C) After all above adjustments were made, the entire interest for the year was Rs.5, 554,070.33 and Rs. 3,293,603.32 out of the said received amount in year 2017 was adjusted to the cash flow statement.

2.3 Non-compliance with rules, regulations and management decisions

(A) Necessary actions are being taken to obtain the approval of the University Grants Commission for the Master courses, MSc in Molecular Life Sciences, MSc in Cellular and Molecular Immunology and Master of Biotechnology. Accordingly By-Laws, regulations and revised curricular of these Master programmes had been recommended by the Board of Management for the approval of the Senate/Council of University of Colombo. By-Laws and Regulations have already been submitted to the legislation committee for approval. All the syllabi have been complied in accordance to the new edition of the Sri Lanka Qualification Framework (SLQF) issued by the University Grants Commission. These syllabi were recommended by both the Academic Committee and the Board of Management of the Institute



and approved by the senate, University of Colombo. Soon after the By-Laws and Regulations are approved by the Council necessary actions will be taken to submit for the approval of the University Grants Commission following the prescribed methodology.

(B) Settlement of advances given for the suppliers as mentioned in the annexure 02 got delayed due to the delay of submission the relevant invoices to IBMBB by these supplies. Hereafter actions will be taken to obtain invoices at the same day where the supply is done.

- Due to delays of repair / repairs (Voucher No. 26, 25, 101, 171, 188, 266, 283, 305, 306, 379, 396) advance settlements were delayed. These advances have been granted after completing the task.
- Agree (127, 263)
- Due to the price change (increase) of the product, process of purchasing was delayed. (Voucher No. 144, 171. Therefore, it took more time to settle the advance.
- It takes several days for certain tasks to be completed. (Voucher No.324 Work of Bathroom)
- The supply of goods was delayed due to a shortage of goods at the supplier. Therefore, advance could not be settled within 14 days (Voucher No 410, 416)
- This purchase has been suspended (523)

(C) Since Institute of Biochemistry, Molecular Biology and Biotechnology is an affiliated Institute to the University of Colombo, the same work norms for academic staff approved for University of Colombo is followed by the academic staff of IBMBB. Teachers submit students attendance sheets including the date time and number of hours of the lecture. Each attendance sheet should be signed by the teachers. Each teacher has been given an official time table according to the work norms under the supervision of the Director. The scope of the duty of academic staff are beyond the duties from 8 a.m - 5.p.m Teachers sometimes engaged their academic and research functions after hours and on weekends based on the requirement. This matter was discussed in length at the Audit Committee and the Board of Management of IBMBB.

Section 3

Financial Review

3.1 Financial Result

The reason for the shortage of 5,602,236 of financial result for the year ended on 31 December 2017 is due to the effect of increase of supply by 12,837,418 in year 2017 with respect to the year 2016. Special attention was drawn to this matter in year 2018 and thereafter necessary actions were taken to strictly adhere to the procurement plan when purchasing goods and services



Section 4

Operational review

4.1 Performance

4.1.1. Performance and Review

A)

Enrollment for the Master programmes is based on the results of a selection test and the subsequent interview. Therefore, it has observed, there is a decrease the no. of qualified students.

- Projected no. of students were 45 and that was calculated based on the assumption that 15 no. of students each would be enrolled for 03 Master courses. However MSc in Bioinformatics programme was not conducted in year 2017. Subsequent to the approval of By-Laws and Curricular with regard to the MSc in Bioinformatics by the Senate and the Council, enrollment will be made for this master programme as well.
- The course fee of MSc Cellular & Molecular Immunology had been increased from Rs. 500,000 to 600,000 which might cause to decline of no. of students. As alternatives to enhance the process of marketing, amendment of course structures, amendments of By-Laws as syllabi are being carried out. Five candidates already been registered for MPhil/ PhD programmes and other 03 are processing to be registered. Most probably enrollment for MPhil/ PhD are done on the grants received for researches at that institute. Accordingly new students were registered for the year. Further I would like to mention that researchers in this Institute are not received research grants provided by the UGC as received by other researchers in the University system. Therefore, researches in this institute are compelled to obtain research grants from the limited no. of local and foreign funding agencies through a great competition.

B) In addition to the existing 02 year Master Programme, MSc in Molecular Life Sciences, MSc in Cellular and Molecular Immunology and MSc in Bioinformatics it is expected to commence another 03 01 year Master Programmes in year 2019. Accordingly it is expected to conduct 06 master courses in year 2019. They are,

- Master in Molecular Life Sciences (SLQF 09)
- Master in Cellular and Molecular Immunology (SLQF 09)
- Master in Bioinformatics (SLQF 09)
- Master of Science (MSc) in Molecular Life Sciences (SLQF 10)
- Master of Science (MSc) in Cellular and Molecular Immunology (SLQF 10)
- Master of Sciences (MSc) in Bioinformatics (SLQF 10)

There is an option to exit at the post graduate Diploma level (SLQF 08), those who are not eligible for Master degree (SLQF 09).



Further, actions will be taken to initiate a new course, MSc in Medicinal Chemistry and Biotechnology.

4.2 Management Activities

- A) By the journal entries M01/08 and I01/01 on 01.01.2018 10% of earned income was transferred to the Institute Development Fund and rectified. Since the above adjustment was not permitted for year 2017, the adjustment was made as at 01.01.2018.
- B) It is necessary to obtain the approval of the University Grants Commission for MSc in Bioinformatics programme having committed the amendments and getting By Laws, regulations and curriculum approved by the Board of Study, Academic Committee, Board of Management and Senate/Council. Plans are being prepared to commence the Master Programmes for year 2019 after obtaining necessary approval.

Curriculum has been received the approval of 59th meeting of the Academic Committee, Board of Management and the senate. It is expected to obtain rest of the approvals within next few months. Student enrollment could be initiated soon after University Grants Commission approval is received.

4.3 Utilization of Funds

It is compulsory to reserve specified amount at the Assets Replacement Fund for purchasing urgently required assets. As an example it is included in the objectives of the assets replacement fund that specified amount should be reserved for the maintenance of the generator.

Actions are being taken to award Prof. E.H. Karunanayake memorial scholarship from year 2019 by donation fund.

These funds were not utilized as there was no necessity to do purchasing using these funds. Since the funds received for capital expenditure was not adequate for purchasing assets in the year 2018, actions were taken to make purchasing using these funds.

5. Sustainable Development

5.1. Achieving sustainable development Objectives and Goals

A Circular with regard to achievement of sustainable development goals had been issued 14.08.2017. Out of these only the objective no. of 03 and no. of 04 is relevant to the IBMBB (under the objectives of the agenda 2030) and following actions are being taken for the relevant objectives of IBMBB.



Objective 03: Promoting welfare of all in all age by ensuring healthy life

Research are being carried out by IBMBB on various types of diseases such as Cancer, Dengue, and leptospirosis to ensure the healthy life of people. Various tests to identify breast cancers are also carried out by this institute. Objective of these activities is to build healthy society free from above diseases.

Objective 04: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Currently IBMBB conducts two Master Programmes, MSc in Molecular Life Science, MSc in Cellular & Molecular Immunology, it is expected to commence MSc in Bioinformatics in due course. In addition to this institute also conduct MPhil and PhD programs and the selections are made based on the qualification of the applicants. Therefore none other factor such as gender or any other is considered.

Equal opportunities are guaranteed for everyone without any discrimination. Premises was designed in the way such even the students with disabilities could access the premises for studies. As an example such students could use the ramp to enter to the premises and could use the lift to access to the laboratories, library and other locations available at the upstairs.

6. Accountability and Good Governance

6.1 Procurement

- A) Request was made to purchase of this machine on 07.03.2017. Former Directors has endorsed at the procurement plan to obtain this machine at earliest possible. Though quotation were called on 27th March 2017 according to the process of National Shopping and submitted for DPC (major) . DPC (major) decided on 27.06.2017 to call quotation under the National Competitive Bidding (NCB). That was the first time of IBMBB experiencing this method. Since the purchase of this machine was an urgent and essential, it was compelled to restrict the bidding period for 10 days. However, here after purchasing will be made in accordance to the section 6.2.2 of the procurement guidelines.
- B) When we are issuing a purchase order to the supplier it acts as a legal binding contract between both the supplier and the institute. It is the obligation of both parties to act according to the provision of purchase order, so that no formal agreement was signed. However, here after purchasing order will be issued, only after signing an agreement. Further submission of performance bond will be requested as compulsory prior to issue of purchase order and will be signed the agreement to avoid any delays in supply. Supplier failed to submit a performance bond after receiving the purchasing order within 14 days,so that there is a lapse in the side of the



supplier. However supplier submitted the performance bond on 14.12.2017 after being informed in written on 25.11.2016.

- C) Supplier has agreed to deliver this machine within 6-8 weeks after getting purchasing order. Though the supplier should have delivered this machine before 15.10.2017 to the institute, it was informed by the supplier in written by the letter dated 05.01.2018, that the delivery would be delayed another period of 01 month due to the delay of manufacturing. However this machine was delivered to the Institute on 09.04.2018, after sending the letter of the cancellation order by letter dated 04.04.2018. Though there was no formal agreement, liquidated damages for 23 weeks was charged. Therefore up to 10% of liquidated damage (Rs. 400,000) will be charged from the supplier as mentioned in the bidding document.

Supplier has not yet installed the machine and the said amount of liquidated damage will be recovered when making the payment.

6.2 Internal Audit

Time to time auditing is carried out in our institute by state auditing institute such as the internal audit division of University of Colombo, Department of Auditor General, Internal Audit Division of the University Grant Commission and Audit Division of the Ministry. Institute does not interfere to the duty of Auditors. Institute only facilitate for such auditing institute. Therefore the scope of the auditing and the content of audit plans of such institute are beyond our control.

6.3 Budget Control

The actual cost for purchasing goods and services and maintenance in 2017 was significantly higher than the year 2016 due to the higher no. of maintenance activities. However when preparing budgetary estimate it will be considered strategic and Management plan of the institute which would avoid unrealistic budgetary estimate hereafter.

6.4 Unresolved Audit sections

An amount of Rs. 1,912,598 of capital ledger accounts and Rs. 79,234 of debit balance were corrected and submitted to the Finance Committee which was held in August 2018 for amendments. Actions will be taken to rectify the accounts after submission to the Audit Committee in August 2018 for further supervision.

7. System and Controls

- D) Enrollment master degree programme are done by publishing newspaper advertisement in all 03 official languages and publishing it through the institute web. Applicant will be selected on the



result of the aptitude test and the results of subsequent interview. Therefore no of eligible applicants could decrease hence the course income was observed less in previous year.

Prof. Shiroma Hadunnetti



Summary of Annual Report and Accounts – 2017

1. Details of Resources & Students:

Faculty	Course	Total Students	Total Academic Staff	Total Non Academic Staff
IBMBB, UOC	MSc in Molecular Life Sciences	19	5	20*
	MSc in Cellular and Molecular Immunology	15		
	Msc in Bioinformatics	-		
	MPhil	28		
	PhD			
	Registered for MPhil/PhD in other Institutions and carried out a comportsment research work	04		
	Training courses in Molecular Biology & Immunology	14+10		
	Exposure on Molecular Biology & Immunology to undergraduate students from other HEIs -No of batches(No of students)	58		
Total		148	5	20

* Include 05 Academic Support Staff

01 - Assistant Network Manager

04 - Scientific Assistants

(01 – Scientific Assistant who was appointed as Lecturer (Un confirmed) w.e.f. 11.10.2017 has been excluded)

2. Details of Academic Staff

Faculty	Subject	Medium	Senior Prof	Professor	Senior Lecturer	Lecturer	Asst. Lecturer	Instructors
	Molecular Life Sciences	English	1	-	-	-	-	-
	Cellular & Molecular Immunology	English	-	1*	-	1#	-	-
	Molecular Techniques	English	-	-	1	-	-	-
	Biochemistry and Molecular Biology	English				1		
	DNA Diagnostics	English				1		
	Cell Biology	English				1		
Total			1	1	1	4	-	-

* Professor in Immunology is appointed as the Director, #-hence a Lecturer in Immunology is recruited on contract.



3. Details of Administrative & Non-Academic Staff

Faculty/ Branch	Most Senior	Senior Staff	Junior Staff	Minor Employees
IBMBB	1-Senior Assistant Registrar 1-Senior Assistant Bursar		1- Technical Officer, Gr.II 3- Trainee Technical Officer	2- Laboratory Attendant
			5- Computer Applications Assistant	1- Labourer
			1- Book Keeper	1-Driver (on contract)
			1-Library Information Assistant	
			1-Telephone Operator cum Receptionist	
Total	2		12	4

4. Details of Research, Innovation and Publications:

Subject	Published	Commercialized	Presented
a. No of Researches			
MSc Dissertations	15		
PhD Thesis	5		
MPhil	2		
b. No of Innovations			
c. No of Journals			
d. No of Books	1		
e. No of News paper articles	8		
e. No of Articles –Full Papers in Journals	18		
f. Other (Research , Communications)			39
Total	49		39

5. Details of Programme, Seminars & Workshops:

Subject	Offered	Completed	Offered	Completed
	2016		2017	
a. No of Postgraduate Degree Programme	2	2	2	2
b. No of Postgraduate Diploma Programme				
c. No of Degree Programme				
d. No of Diploma Programme				
f. Training Short Courses/workshops	2	2	2	2
g. Annual sessions	1	1	1	1
h. International Conference (with 4 Symposia)				
Demonstration on Molecular Biology and Immunology practical demonstrations				
• Demonstration on DNA isolation and analytical separation (BMS students)	2	2	1	1
• Lab demonstration for Advanced Molecular Biology techniques (Biotechnology specialized students, Wayamba University)	1	1	1	1
Lab demonstrations (Level IV BUMS students of the Institute of Indigenous Medicine)	1	1	-	-
Total	9	9	7	7



6. Details of Awards Received:

Subject	No of Awards	No of Academics	No of Students	No of Awards	No of Academics	No of Students
	2016			2017		
a. Local awards	4		2	5	1	4
b. National Awards	12	3	11	8	6	2
4c. International Awards	2	2		2	1	1
d. Travel Awards	2		2	2		2
Total	20	5	15	17	8	9

*12 Presidential Research Awards and 6 NRC Merit Awards for Scientific publications.

7. Details of New Course Started – 2015 Registration

Faculty	Course	Medium	Short Training courses	Diploma	Postgraduate Diploma	Master	MPhil	PhD
IBMBB		English	1.Cell Culture					
Total			1					

8. Details of Recurrent Expenditure: 2017

	Subject	2016 (Rs.)	2017 (Rs.)
a.	Personal emoluments	3,3316,651	39,502,527
b.	Travelling	322,089	915,507
c.	Supplies	7,816,149	20,653,567
d.	Maintenance	5,166,461	6,556,147
e.	Contractual Services	15,492,018	17,127,899
f.	Other (including depreciation)	5,087,402	7,009,904
	Total	67,200,770	91,765,549

9. Details of Capital Expenditure:

	Subject	2016 (Rs.)	2017 (Rs.)
a.	Acquisition of furniture & Office Equipments	1,584,243	347,342
b.	Acquisition of Machineries(Computers & Lab Equip.)	4,140,520	11,388,046
c.	Acquisition of Building & Structures	0	0
d.	Other (Library Books)	395,494	708,894
e.	Vehicle	0	0
	Total	6,120,257	12,444,281



10. Details of Project Expenditure (Local/ Foreign Funded):

Name	Exp in 2016 (Rs.)	Exp in 2017 (Rs.)	Cumulative Exp as at 31.12.2017	% of Physical Progress
NSF Grants	1,261,262	9,404,034	10,665,296	work planned for 2017 completed
IFS	0	0	0	
IPIC	388,700	208,507	597,207	
Swedish Research Grant	347,852	256,487	604,339	
Start-up Research Grant (UGC)	844,000	343,000	1,187,000	
Total	2,841,814	10,212,028	13,053,842	

11. Details of Financial Progress (Expenditure):

	Subject	Provision in 2017 Rs.	Exp in 2017 Rs.	Savings/Excess Rs.
a.	Recurrent (Except Project)		81,553,521	
b.	Capital (Except Project)		12,444,281	
c.	Project-Local funded –NSF Grant		10,212,028	
	Total		104,209,830	

*Depreciation not Considered * Included Expenditures from Generated Income

**Funds in the Capital Grant Unspent Account has been used.

12. Details of Financial Progress (Generated Income) :

	Source of Revenue	Provision in 2017 (Rs.)	Collection in 2017 (Rs.)	Deficit/ Surplus (Rs.)
a.	Undergraduate Studies	not relevant	not relevant	
b.	Postgraduate Studies		7,536,000	-
c.	Consultancies		0	
d.	Other		2,230,847	
	Total		9,766,847	



13. Financial Performance Analysis-2017:

Rs'000

	Actual 2013	Budgeted 2014	Estimate 2015	Estimate 2016	Estimate 2017
No. of Students	MSc Course MLS 16 CMI 07 BI 11 MPhil/PhD 25	MSc Course MLS 23 CMI 07 BI 11 MPhil/PhD 21	MSc Course MLS 30 CMI 15 BI 15 MPhil/PhD 25	MSc Course MLS 30 CMI 15 BI 15 MPhil/PhD 33	MSc Course MLS 19 CMI 14 MPhil/PhD 29
Recurrent Cost per Student	MSc Course Rs. 463,720/=	MSc Course Rs. 306,490/=	MSc Course Rs. 361,553 /=	MSc Course Rs. 458,716 /=	MSc Course Rs. 488,266/=
	MPhil/PhD Rs.1,319,107/=	MPhil/PhD Rs.897,580/=	MPhil/PhD Rs.1,301,592/=	MPhil/PhD Rs.1,063,388/=	MPhil/PhD Rs.1,287,607/=
Capital Cost per Student	MSc Course Rs. 117,266/=	MSc Course Rs. 117,073/=	MSc Course Rs. 91,000/=	MSc Course Rs.108,831/=	MSc Course Rs.159,493/=
	MPhil/PhD Rs.239,224/=	MPhil/PhD Rs.342,857	MPhil/PhD Rs.327,600/=	MPhil/PhD Rs.252,291/=	MPhil/PhD Rs.272,237/=

*Included only Academic, Academic Support, Technical Officers, Lab Attendants salaries

**Not included Security, Electricity, Water

***Amount of Research Grants can be calculated at the end of the year.

****MPhil/ PhD per student cost will be Varied based on Research Grant.



Cumulative Summary of Students by Year - MSc & MPhil/PhD Programmes

		2004 June to Dec	2005*	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
MSc	Total	-	8	18	25	24	24	33	34	34	34	42	33	34	34	
*(commenced in 2005)	New intake	-	8	10	11	13	12	19	10	22	11	18	12	21	11	178
	Continuing	-	-	8	14	11	12	14	24	12	23	24	21	13	23	
	Output	-	-	-	3	11	10	8	8	17	11	8	18	17	12	123
MPhil/PhD	Total	3	0	8	8	13	13	12	13	18	17	24	27	28	28	
	New intake	3	0	5	1	5	1	1	1	11	7	6	3	4	6	54
	continuing	-	-	3	7	8	12	11	12	6	10	18	24	23	22	
	Output	-	-	-	1	0	0	1	1	1	3	1	0	1	6	15
MSc (indirect)	Total	2	6	3	1	-	-	-	1	-	-	-	-	-	-	
	New intake	2	4	1	-	-	-	-	1	-	-	-	-	-	-	8
	Continuing	-	2	2	1	-	-	-	-	-	-	-	-	-	-	
	Output	1	-	4	-	1	-	-	-	1	-	-	-	-	-	7
MPhil/PhD (indirect)	Total	7*	6	4	6	5	8	6	3	1	6	4	5	4	4	
	New intake	-	1	0	3	-	4	0	1	0	0	1	-	-	1	11
	Continuing	7	5	4	3	5	4	6	2	1	6	3	5	-	3	
	Output	-	1	2	-	1	-	-	3	1	-	3	1	1	-	13
Postgraduate students	Total	12	23	33	40	42	45	51	51	52	57	70	65	63	66	
	New intake	5	13	16	15	18	17	20	13	33	18	25	15	25	18	251
	Continuing	7	10	17	25	24	28	31	38	19	39	45	50	-	48	
	Output	1	1	6	4	13	10	9	12	20	14	12	19	19	18	158
Staff: Student ratio		1:12	1:08	1:08	1:10	1:14	1:15	1:17	1:17	1:17	1:14	1:14	1:13	1:13	1:11	

Includes * students registered at other Faculties / Universities under the SAREC Grant before relocation to IBMBB

Summary 2004-2017	MSc	MPhil/PhD	Total	
Direct Output	123	15	138	158
Indirect Output	7	13	20	
Direct Intake	178	54	232	251
Indirect Intake	8	11	19	