



ජෛවරසායන , අණුක ජෛවවේද හා  
ජෛවතාක්ෂණ ආයතනය  
කොළඹ විශ්වවිද්‍යාලය

உயிர் இரசாயனவியல், மூலக்கூற்று உயிரியல் மற்றும்  
உயிரியல் தொழில்நுட்ப நிறுவகம்  
கொழும்பு பல்கலைக்கழகம்

Institute of Biochemistry, Molecular Biology  
and Biotechnology  
University of Colombo



වර්ෂික වාර්තාව  
Annual Report  
ஆண்டறிக்கை  
**2014**



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

***Annual Report – 2014***





---

## *Contents*

	Page
Quick Reference	208
Director's Review	209
Performance in 2014 at a Glance	210
Vision	211
Mission	212
Board Members	213
International Recognition	214
National Awards received in 2014	215
Human Resource Development	216
Postgraduate programmes	216
Short Training Courses	217
International Conference on Frontiers in Molecular Life Sciences	218
Pre- & Post-Congress Workshops/ Training Courses	220
Staff development of Welfare	222
National Development through National/International Agencies	223
Research Activities	225
Parasitic and Infectious diseases	225
Molecular medicine	228
Plant Molecular Biology and plant metabolimics	231
Medicinal plants	233
Industrial applications	236
Molecular identification of new species in Sri Lanka	237
Services	237
Visitors to the IBMBB	238
Human Resources	239
Constraints	239
Staff	240
Current Researchers	241
Research Collaborators	241
Research (MPhil/PhD) students	242
Research Publications	243
Research papers published in International, Indexed, Refereed journals	243



---

Research communications	246
Table 1: MPhil/PhD Degrees in Progress and New Registrations - 2014	253
Table 2: Student registered in other Higher Educational Institutions and carrying a part of study in the IBMBB Laboratories in 2014	258
Table 3: Research Funding - 2014	259
Table 4: MPhil/PhD Dissertations - 2014	260
Table 5: MSc Dissertations 2014 - Molecular Life Sciences	261
Table 6: MSc Dissertations 2014 - Cellular and Molecular Immunology	262
Table 7: MSc Dissertations 2014 - Bioinformatics	263
Snapshots of Events in 2014	
Short Training Courses	264
International Conference on Frontiers in Molecular Life Sciences	265
Open Day	272
Science Day programme for School children	273
Staff welfare programmes	274
Annual Financial Report	275
Review on internal audit functions in the year - 2014	284
Failures and Justifications - 2014	285
Plan of work for 2015	286
Auditor General, Report - 2014	288
Summary of Annual Report and Accounts – 2014	
Details of Students & Resources, Academic Staff	293
Details of Non-academic Staff, Research, Innovations & Publications	294
Details of Programmes, Seminars, Workshops & Awards	294
Details of New Courses started & Expenditure (Capital, Recurrent, Project)	295
Details of Financial progress & Performance Analysis -2014	296
Cumulative Summary of Students by Year - MSc & MPhil/PhD Programmes	298



---

## Quick Reference

### Registered Office:

No: 90, Cumaratunga Munidasa Mawatha, Colombo 3, Sri Lanka  
[www.ibmbb.lk](http://www.ibmbb.lk)

### 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](mailto:director@ibmbb.cmb.ac.lk)

Inquiries: [info@ibmbb.cmb.ac.lk](mailto:info@ibmbb.cmb.ac.lk)





---

**D**irectors Review: 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.

Institute of Biochemistry, Molecular Biology and Biotechnology (IBMBB) was ceremonially declared open on 28<sup>th</sup> 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 3<sup>rd</sup> April, 2003. The 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 sequencers, microarray scanner, FPLC, HPLC, Fluorescence and Phase contrast microscopes, laminar floor hoods, cell culture facilities, insectary, cold rooms, local area net working, access to internet via dedicated optical fiber cable and is fully air-conditioned.

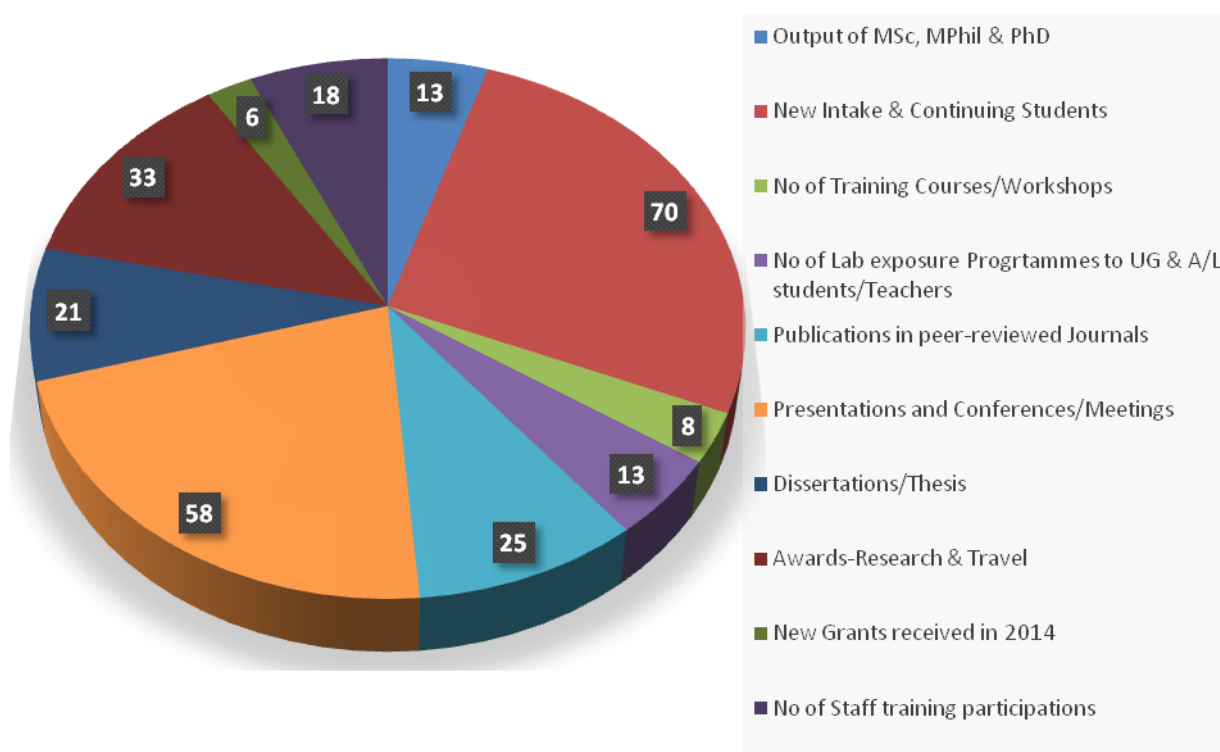
The main thrust areas of activities of IBMBB are postgraduate programmes including MSc, MPhil and PhD programmes. The IBMBB does not admit undergraduate students but do cooperate with undergraduate teaching programmes of the University. IBMBB conducts three full time MSc programmes. These are in Molecular Life Sciences, in Cellular and Molecular Immunology and in Bioinformatics. The main objective of these courses is to provide focused training in current areas of molecular life sciences relevant to the development of Sri Lanka and also to encourage young graduates to proceed for further advanced studies leading to PhD. Also novel methods of teaching such as assignments, workshops, seminars, formulation of research proposals are used.

Twenty four students registered at the IBMBB and 5 students registered at other Higher Educational Institutes carried out research work leading to MPhil/PhD at the IBMBB. Four PhDs were successfully completed. Eighteen new MSc students were admitted in March 2014, for MSc in Molecular Life Sciences. A total of eight training courses/ workshops were held in 2014. Six international travel awards were won by four research students. Fifteen original research papers were published in International Journals, five papers were in press and four papers were under review by International Journals during the year 2014. Sixty two research presentations including thirty eight at International conferences were made by IBMBB staff and students. The details are described elsewhere in this report.





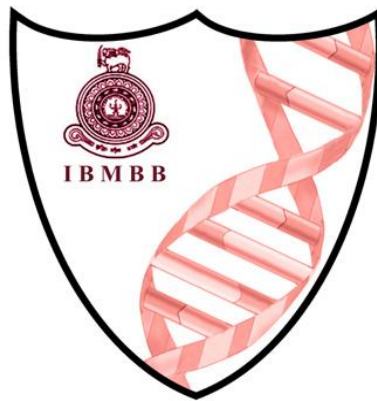
## Performance 2014 at a glance





---

## 2. VISION

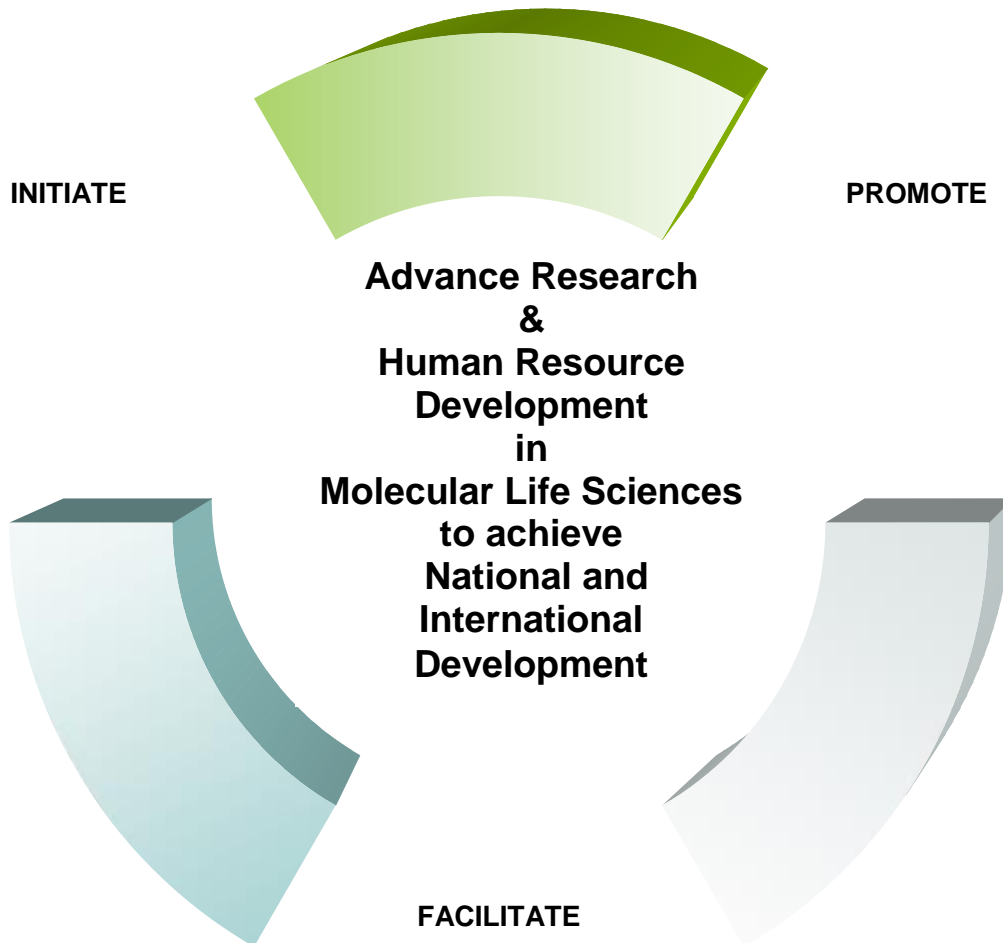


“To be  
an  
**International  
Centre of Excellence  
In  
Molecular Life Sciences”**



---

## 2. MISSION





---

### **Acting Directors**

Professor Rezvi Sheriff (up to 2014.09.30)

Dr Shiroma Handunnetti (from 2014.10.01)

### **Board of Management**

Professor Rezvi Sheriff / Dr Shiroma Handunnetti, Acting Director (Chairperson)

Ms BMS Bandara, Nominee of the Secretary/Ministry of Higher Education

Professor Eric H Karunanayake, UGC Nominee

Professor S Mohanadas, UGC Nominee

Professor Ira Thabrew, UGC Nominee

Mr HMN Warakulle, Council Nominee (up to 2014.06.30)

Mr C Maliyadde, Council Nominee (from 2014.07.01)

Mr Thilak Karunaratne, Council Nominee (from 2014.07.01)

Professor Ariyarani Gnanathan, Senate Nominee (from 2014.10.01)

Ms W Indira Nanayakkara, Senate Nominee

Professor Rohan Jayasekara, Dean/Medicine, University of Colombo, Ex-officio (up to 2014.06.19)

Professor Nadira Karunaweera/ Professor Hemantha Senanayake/ Professor Jeniffer Perera, Actg. Dean/Medicine (from 2014.06.20 to 2014-12-31)

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

Professor Gihan Wickramanayake, Director, University of Colombo School of Computing, Ex-officio

Professor CPDW Mathew, Head/Biochemistry & Molecular Biology, Faculty of Medicine, Ex-officio



---

**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**

**Ms Sudeshini Hewage**, a PhD student won the under 34 competition held by the International Society of Gynecological Endocrinology (based on abstracts submitted by authors under 34 years) to present her work at the 16<sup>th</sup> World Congress on Gynecological Endocrinology in March 2014, Florence, Italy. **Dr Sameera Samarakoon** received a scholarship from the Marine Biological Laboratory (MBL) to attend the training course in Frontiers in Stem Cells and Regenerative Medicine at Woods Hole, USA from 28<sup>th</sup> September to 4<sup>th</sup> October 2014 and a visiting scholarship award from University of Pittsburgh for training from 6<sup>th</sup> October to 6<sup>th</sup> December 2014.

**Ms Ruwandi Ranasinghe won Overseas Travel Award** to attend the Commonwealth Science Conference held at Bangalore, India from 25<sup>th</sup> to 28<sup>th</sup> November 2014, awarded by “The Royal Society”, London.

**Ms Ruwandi Ranasinghe and Mr NHKS Senathilaka won Overseas Travel Awards** to attend the Regional Conference of Young Scientists awarded by “The Third World Academy of Science (TWAS)” was held at Bangalore, India on March 2014.

Several staff members and students won awards for best oral presentations and for the best posters at the 2<sup>nd</sup> International Conference on Frontiers in Molecular Life Sciences: Pathway to Knowledge Hub, Colombo, Sri Lanka.

#### Best oral presentations:

Ms. Chrishani Rodrigo	- Molecular Medicine
Ms. TRG Narmada Fernando	- Immunology
Dr. Sameera Samarakoon	- Medicinal Plants

#### Best Posters:

Ms. Mahesha Bandara	- Molecular Medicine
Ms. Rashini Baragama-arachchi	- Medicinal Plants, Natural Products, Xenobiotics and Plant Molecular Biology



---

## **National Awards received in 2014:**

- **Presidential Research Award for Scientific Publications** in international peer-reviewed Journals was received by the following staff members for their publications in,
  - 2007, 2008, 2009 - Prof. Eric Karunanayake
  - 2007, 2010, 2012 - Prof Kamani Tennekoon
  - 2010, 2012 - Prof Ira Thabrew
  - 2007, 2008, 2009, 2010 - Dr Shiroma Handunnetti
  - 2012 - Dr. Sameera Samarakoon
  
- **NRC Merit Awards for Scientific Publications** in
  - 2011- Prof. Eric Karunanayake
  - 2011- Prof Kamani Tennekoon
  - 2011 - Dr OVDSJ Weerasena
  - 2012 - Dr Shiroma Handunnetti
  - 2012 - Dr. Sameera Samarakoon
  
- **GRC Award 2014** for Best Postgraduate (PhD) research in Sri Lanka in 2014 organized by Sri Lanka Association for Advancement of Science (Section E2) - Dr. Sameera Samarakoon.
  
- **GRC Award 2014** for Best Postgraduate (PhD) research in Sri Lanka in 2014 organized by Sri Lanka Association for Advancement of Science (Section A) - Dr. Wasana Rodrigo.
  
- Ms Jayamini Harasgama and Ms Mahesha Bandara won awards for the best oral presentations, 3<sup>rd</sup> place in Basic Immunology and 2<sup>nd</sup> place in clinical immunology at the 7<sup>th</sup> biennial sessions of the Allergy and Immunology Society of Sri Lanka 2-3<sup>rd</sup> September 2014.

IBMBB staff and students were able to publish their research findings in International Journals and presented their findings at several International conferences. Details are given in pages 40 – 50.



---

# **H**uman Resource Development **Postgraduate Programmes**

**MPhil/PhD Programmes:** Four new MPhil/PhD students registered during 2014. Twelve 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 all or part of the studies at the IBMBB.

(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 are based).

**MSc Programme:** Tenth batch of students was admitted for the MSc in Molecular Life Sciences in March 2014, with eighteen students registering for the course. One student of this batch completed only 1<sup>st</sup> semester.

Six students of MSc in Molecular Life Sciences continued their 3<sup>rd</sup> semester research work in 2014 and four students (three students of 2013 Intake and one student of 2012 intake) submitted their Dissertation for examination.

In 2014, Professor Eric H Karunanayake Gold Medal for the Best Student in MSc in Molecular Life Sciences was awarded to Ms.Vahinipriya Manoharan.

Seven MSc in Cellular and Molecular Immunology continued their 3<sup>rd</sup> semester research work in 2014 and six students (five students of 2013 intake and one student of 2011 intake) submitted their Dissertation for examination

Seven students of MSc in Bioinformatics continued their 3<sup>rd</sup> and 4<sup>th</sup> Semester studies and research projects in 2014 and six students submitted their Dissertation for examination. One student requested for extension to complete the project work. Two other students were eligible for Postgraduate Diploma and three other students discontinued after 1<sup>st</sup> semester.

Following staff members continued as Course Coordinators:

Dr OVDSJ Weerasena - MSc in Molecular Life Sciences

Dr Shiroma Handunnetti - MSc in Cellular and Molecular Immunology

Mr Kanchana Senanayake- MSc in Bioinformatics

Dr Sameera Samarakoon - MSc in Bioinformatics (from 10<sup>th</sup> May to 12<sup>th</sup> June 2014)

The following academics / visiting faculty gave lectures and/or conducted tutorials/ practical classes for the MSc in Molecular Life Sciences: Prof. Eric H. Karunanayake, Prof. Kamani H Tennekoon (IBMBB), Prof. Ira Thabrew (Emeritus Professor, Faculty of Medicine, University of Kelaniya), Prof. Vasanthi Arsaratnam (Faculty of Medicine, University of Jaffna), Prof. Rohini Fernandopulle (Kothalawala Defence University ), Prof. Rohini Hewamanne (Faculty of Science, University of Colombo), Prof. S. Kotagama (Faculty of Science, University of Colombo) Dr. Jagath Weerasena (IBMBB), Dr. Nilanthi Dassanayake



(University of Sri Jayawardenapura), Dr. Shiroma Handunnetti (IBMBB) Mrs. Kantha Lankathilake (Faculty of Medicine, University of Colombo), Prof. Shyamala Tirimanne (Faculty of Science, University of Colombo), Prof. Marie Allen (Rudbeck Laboratory, University of Uppsala), Dr Sumadee De Silva (IBMBB), Dr. Sumithra Tissera (Family Planning Association), Prof. Sumedha Wijeratne (Faculty of Medicine, University of Colombo), Dr. Nalinda Silva (University of Sri Jayawardenapura). Ms. Sudeshini Hewage, Dr Sumadee De Silva and Ms Jayamini Harasgama assisted with the practical course.

Prof. Eric H. Karunanayake, Prof. Kamani H Tennekoon, Dr. Jagath Weerasena, Dr. Sameera Samarakoon (IBMBB), Dr. M.D.T. Attygalle, Dr. C.H. Magalla, Dr. Rasika Jayathilake, Mr. H.A.S.G. Dharmaratne, Mrs. A. Karunaratne, Dr. Jose R. Valverde, Prof Marie Allen, Dr. Erik Bongcam-Rudloff, Professor Mahesan Niranjana, Ms. Rupika Wijesinghe, Dr. Ruvan Weerasinghe gave lectures for the MSc in Bioinformatics.

(See Table 4 for PhD Dissertations of those who graduated in 2014 and Table 5 – 7 for MSc Dissertations of those who will graduate in 2015 having completed Dissertations work in 2014.

**An Open Day** programme was conducted on 28<sup>th</sup> November 2014. This was a very successful event organized by the Business Development Unit of the IBMBB. About 119 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 and consultations/discussions with staff and senior students on courses conducted available at IBMBB.

**Short Courses :** Four Short (5 day) Courses were held in 2014,

- i) Training Course in Molecular Biological Techniques (in November)
- ii) Training course in Gene Cloning and Recombinant Protein Expression (in January)
- iii) Two Training Courses in Immunological Techniques (in January and December)

### **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 17<sup>th</sup> to 21<sup>st</sup> November 2014 and 22 participants were in this course. The workshop was highly rated by the participants. The participants included staff members from other Universities / Research Institutes/ Government Departments. Some of them were supported by their respective Institutes. This course was coordinated by Dr Sumadee de Silva and Ms A Sudeshini Hewage.

### **Training Course on Gene Cloning and Recombinant Protein Expression**

Training Course on Gene Cloning and Recombinant Protein Expression was conducted from 6<sup>th</sup> to 10<sup>th</sup> January 2014. Four external participants and four MSc students attended this course. The workshop was highly rated by the participants. This course was coordinated by Dr OVDSJ Weerasena.





---

## **Training Course in Immunological Techniques**

In order to provide an exposure to theory and practical knowledge with hands on experience in Immunological Techniques, two 5 day Training courses in basic immunological techniques with hands on practice was conducted from 20<sup>th</sup> to 24<sup>th</sup> January 2014 for the first time and the second course was conducted from 8<sup>th</sup> to 12<sup>th</sup> December 2014. Twenty One (9 External and 12 Internal) candidates participated in these two courses. This course was conducted with the support of four resource persons, one from IBMBB and three other visiting lectures (one from Faculty of Science, University of Colombo, one from Dr. Nevil Fernando Teaching Hospital and one from Medical Research Institute) and five Research Assistants and one Teaching Assistant at IBMBB. The course content and hands on experience provided by the course was highly appreciated by the participants. Participants include staff members/students from Faculty of Medicine and Science of University of Colombo, staff members/postgraduate & undergraduate students from other Universities and Research institutes. This course was coordinated by Dr Shiroma Handunnetti.

## **Second International Conference on Frontiers in Molecular Life Sciences (2<sup>nd</sup> ICFMLS): Pathway to Knowledge Hub – September 2014**

The 2<sup>nd</sup> ICFMLS conference was successfully held from 10<sup>th</sup> to 12<sup>th</sup> September with an informal welcome ceremony at the IBMBB for foreign delegates on the 10<sup>th</sup> September evening and the main conference at Taj Samudra Hotel on the 11<sup>th</sup> and 12<sup>th</sup> September 2014. Furthermore, 4 workshops / short courses were held. These are described below. Inauguration of the conference was attended by approximately 175 persons including foreign delegates and registered participants while the conference was attended by approximately 125 participants, resource persons and other invited delegates. There was one Key Note Address, one Plenary Lecture, five symposia, four sessions of oral presentations and poster presentations. During the symposia 13 symposia lectures, three oral presentations and one industry lecture were delivered. In addition, there were three lectures from the industry. There were 23 oral presentations accepted and of these one from a local author (OP 21- Ariyadasa et al) and one from a foreign author (OP 17- Bashir et al) were not presented. All other presentations were made. All 20 poster presentations were made.

The following resource persons gave Key Note, Plenary and Symposia Lectures at the main conference and the topics are given in the attached abstract book of 2<sup>nd</sup> ICFMLS.

### **Key Note Address:**

Prof. Ulf Pettersson, Senior Professor of Medical Genetics, University of Uppsala, Sweden.

### **Plenary Lecture:**

Prof. Iqbal Choudhry: Director, HEJ Research Institute of Chemistry, Pakistan



---

## Symposia Lectures

- Symposium on DNA Identification

Prof. Marie Allen: Department of Immunology, Genetics and Pathology, Science for life Laboratory, Biomedical Centre University of Uppsala

Dr. K. Thangaraj: Senior Principal Scientist, Centre for Cellular and Molecular Biology (CCMB), Hyderabad, India

Dr Nicholas Ng: General Manager, Promega Corporation, Singapore  
(and one oral presentation)

- Symposium on Immunology

Prof Sunil Premawansa: Department of Zoology, Faculty of Science, University

Dr Rajiva De Silva: Consultant Immunologist, Department of Immunology, Medical Research Institute, Colombo

Dr A D De Silva: Director and Senior Scientist, Genetech Research Institute, Colombo

Dr Shiroma Handunetti: Senior Lecturer, IBMBB

- Symposium on GMOs and Tea

Dr. Anders Falk: Scientific Officer in Plant Breeding and Gene Technology, Swedish Agricultural Board, Sweden

Dr Tissa Amarakoon: Senior Lecturer, Department of Chemistry, University of Kelaniya  
(and Two oral presentations)

- Symposium on Stem Cells

Prof. Gerald P. Schatten: Director, Pittsburgh Development Centre, University of Pittsburgh School of Medicine in Pennsylvania, USA

Prof. Amittha Wickrema: Associate Professor, Department of Medicine, University of Chicago, USA

Dr. Dharani Hapangama: Senior Lecturer and Consultant Obstetrician Gynaecologist, University of Liverpool and Liverpool Women's Hospital UK.

Dr Chui-Yee Fong: Research Associate Professor, Department of Obstetrics and Gynaecology, Yong Loo Lin School of Medicine, National University of Singapore

- Symposium on Reproduction and Development

Prof. Asgi Fazleabas: Professor and Associate Chair, Department of Obstetrics and Gynaecology and Reproductive Health, Michigan State University, USA

Prof. Kamani Tennekoon: Professor of Molecular Life Sciences, IBMBB



---

## **Pre- and Post-Congress Workshops / Training Courses**

Four workshops were held along with the 2<sup>nd</sup> ICFMLS and details are given below. For the workshops on Next Generation Sequence Analysis and NMR Spectroscopy, the numbers of participants were restricted in order to allow adequate interaction with PhD/MSc students and resource persons. Despite having extensive laboratory sessions, DNA identification workshop accommodated a larger number of participants as scientists from the IBMBB who assisted laboratory sessions.

### **1. Workshop on NMR spectra**

A complete course and hands on practice on solving NMR spectra was held from 6<sup>th</sup> to 9<sup>th</sup> September 2014. Dr A Adhikari from H.E.J. Research Institute of Chemistry, International Center of Chemical and Biological Sciences, Pakistan was the main resource person. There were 18 participants and this course was coordinated by Dr Sameera R Samarakoon.

### **2. Workshop on DNA identification**

A complete course and hands on sessions on DNA identification was held from 9<sup>th</sup> to 10<sup>th</sup> September 2014. The main resource persons were Prof. Marie Allen and Dr Magdalena Bus, Department of Immunology, Genetics and Pathology, Science for life Laboratory, Biomedical Centre University of Uppsala, Sweden. There were 30 participants (28 from IBMBB and 2 from other Institutes/ Faculties/ Universities) and this course was coordinated by Ms. Ruwandi Ranasinghe.

### **3. Training Course in Stem cells and Cell Biology**

Training Course in Stem cells and Cell Biology was held from 14<sup>th</sup> to 15<sup>th</sup> September 2014. There were 43 participants and this course was coordinated by Dr Sameera R Samarakoon. The resource persons were as follows,

Prof. Gerald P. Schatten: University of Pittsburgh School of Medicine, Pennsylvania, USA

Prof. Amittha Wickrema: University of Chicago, Chicago, USA

Prof. Asgi Fazleabas: Michigan State University, Michigan, USA

Dr Chui-Yee Fong: National University of Singapore, Singapore

Dr. Dharani Hapangama: University of Liverpool and Liverpool Women's Hospital, UK

Prof Primal De Lanerrole: University of Illinois, Illinois, USA

(Forty three participants, 37 from IBMBB and 6 from other Institutes/ Faculties/ Universities)

### **4. Workshop on Next Generation Sequence (NGS) data analysis**

Workshop on NGS was held from 13<sup>th</sup> to 15<sup>th</sup> September 2014. The resource persons were Mr. Martin Norling and Mr. Robert Soderlund, Swedish University of Agriculture & EMBnet Node, Uppsala, Sweden. There were 15 participants (10 from IBMBB, 5 from other Institutes/ Faculties/ Universities) and this course was coordinated by Mr. Kanchana Senanayake.



---

### **Exposure to Molecular Biology and Immunology offered to Undergraduate students**

Two batches of students (nine in each) from the Faculty of Agriculture and Plantation Management, Wayamba University had one-day visits to the IBMBB for exposure to Biotechnology Applications on 17<sup>th</sup> January and 24<sup>th</sup> October 2014.

Dr. Sumadee De Silva and Ms. Sudeshini Hewage conducted practical demonstrations in Molecular Biology for two batches of BSc (Hons) Biomedical Science students from BMS. In the first batch 22 students participated on 28<sup>th</sup> February 2014 and in the second batch 19 students participated on 24<sup>th</sup> and 25<sup>th</sup> June 2014 (a maximum of 10 students per day).

Dr Handunnetti and Immunology PhD students conducted one-day practical demonstration on immunological techniques to 59 students from the Open University of Sri Lanka as a component of the First semester studies of their Bachelor of Medical laboratory Sciences from 12<sup>th</sup> to 14<sup>th</sup> August 2014 (a maximum of 20 students per day).

IBMBB conducted BSc. Human Biology (Biochemistry Specialization) hands on practicals in Molecular Biology for one student from Dept. of Biochemistry, Faculty of Medical Sciences, University of Sri Jayawardenapura.

A special one-day programme on “Hands-on demonstration in DNA Finger Printing Techniques” for A/L Students and Teachers (from five schools in Colombo district) was held at IBMBB on 5<sup>th</sup> November 2014 for the Science Week programme sponsored by the National Science Foundation. There was a total of 83 participants and the programme was coordinated by Dr OVDSJ Weerasena.



## Staff Development and Welfare

Twelve staff members received training and attended training courses in various aspects as given below.

Name of staff member/student	Workshop/Training Course	Duration
Dr. Sameera Samarkoon (Sci. Asst) Dr. Sumadee De Silva (Lecturer) Ms. Sudeshini Hewage (Sci. Asst)	Sample Size Computation of a Statistical Study organized by the Institute of Applied Statistics Sri Lanka (IASL)	18 <sup>th</sup> February 2014
Dr. Sameera Samarkoon (Sci. Asst) Dr. Sumadee De Silva (Lecturer) Ms. Sudeshini Hewage (Sci. Asst)	How to have your research proposal approved by an ERC expeditiously organized by the Forum for Ethics Review Committees Sri Lanka (FERCSL), Sri Lanka Medical Association	6 <sup>th</sup> June 2014
Dr. Sumadee De Silva (Lecturer)	SCOPUS/SciVal research database, organized by Coordinating Secretariat for Science Technology and Innovation	7 <sup>th</sup> October, 2014
Dr. Sumadee De Silva (Lecturer)	Certificate Course in Teaching in Higher Education 2014 (CTHE) organized by Staff Development Centre, University of Colombo	March to November 2014
Mr. H.M. Krishantha Herath (SAB) Ms. E.P. Dabare (CAA) Ms. W.N. Jayawardena (CAA) Ms. T.D. Athapaththu (Book Keeper)	Microsoft Excel Advanced Certificate Course conducted by National Centre for Advanced studies.	03 <sup>rd</sup> , 4 <sup>th</sup> Nov 2014
Mr. H.M. Krishantha Herath (SAB)	Induction Training Program For New Recruitment of Administrative & Financeial officers- 1 <sup>st</sup> Session and 2 <sup>nd</sup> Session Offerd By UGCnd	19 <sup>th</sup> – 23 <sup>rd</sup> May & 24 <sup>th</sup> -28 <sup>th</sup> September 2014
Mr. H.M. Krishantha Herath (SAB)	Workshop on Public Sector Financial Management Offerd by Ministry of Higher Education	14 <sup>th</sup> , 15 <sup>th</sup> November 2014
Ms. Anoma Jayasoma (Tech. Officer) Mr. Nishantha C.A. Gunasekara (Tech. Officer)	Chemical & Biological Laboratory Waste Management conducted by the General Research Committee of the Sri Lanka Association for the Advancement of Science	15 <sup>th</sup> July 2014
Mr. Nishantha C.A. Gunasekara (Tech. Officer)	Training Progrmme on Safety in Chemical and Mocrobiological Laboratories	29 <sup>th</sup> , 30 <sup>th</sup> October 2014
Ms. N.K.C.S. Champika (CAA)	Secretarial Practices organized by Skill Development Fund Ltd.	31 <sup>st</sup> July 05 <sup>th</sup> , 12 <sup>th</sup> , 19 <sup>th</sup> August 2014
Ms. K.W. Chaturika S. Fernando (CAA)	Duties and Responsibilities of Management Assistants and Development Assistants organized by Skill Development Fund Ltd	2 <sup>nd</sup> September 2014
Ms. E. Priyangani Dabare (CAA)	Office Management and Financial Regulations conducted by Skills Development Fund Ltd.	20 <sup>th</sup> , 21 <sup>st</sup> October 2014
Dr. Shiroma Handunnetti (Acting Director) Ms. Anoma Ratnayake (SAR)	Workshop on Job Analysis, Job Discription & Specification and Duty List Preparation	27 <sup>th</sup> November 2014



---

In order to establish a Welfare Society for the IBMBB, a constitution was formulated and processed for necessary approval by the University from November to December 2014.

Ms. Anoma Jayasoma was a member of “Elle Team” of University of Colombo and they won 1<sup>st</sup> Place on “Rajya Seva Elle Tournament” in 2014.

All night pirth Ceremony was held on 25<sup>th</sup> April 2014 and Alms giving was held to 15 Buddhist monks on 26<sup>th</sup> April 2014. A Blood Donation Campaign for National Cancer Hospital, Maharagama on 28<sup>th</sup> April 2014. About fifty donors participated for this program. IBMBB staff conducted a health programme on 05<sup>th</sup> December 2014, for the “*Nirogi Lanka*” Health Week Programme of the Ministry of Health. Under this programme, 39 participants got their Fasting Blood Sugar, Weight, Height, Blood Pressure and BMI checked and consultations from a Doctor who is one of MSc students of the IBMBB. A “*Bana Programme*” was also conducted by IBMBB staff under this programme.

## **N**ational Development through National/International Agencies

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

Prof. Kamani Tennekoon functioned as a member of the Editorial Board of Ceylon Medical Journal and reviewer of the several International journals, a reviewer for NASTEC, NSF and Faculty of Medicine, Research Sessions. She also continued to be a member of National Committee on Reproductive Health Research. She was a reviewer for MPhil/PhD applications, reviewer of research papers submitted for promotions and cadre applications to Post of Professor from other faculties / other Universities and a PhD examiner for University of Ruhuna. She was also invited as an oral examiner in Physiology for the undergraduate medical course at SAITM.

Dr. Shiroma Handunnetti was a member of the NSF Working Committee on Biotechnology and Bioethics. Dr. Handunnetti was the Secretary of the Allergy and Immunology Society of Sri Lanka (AISSL) and she contributed in organizing the symposium on “The role of immune system in infectious diseases” Immunology Day in February 2014 including several local speakers and five Foreign speakers from Europe, a half day symposium on “Allergy, Asthma, Respiratory Diseases and Air Pollution” in April 2014 including several clinicians and academics and a guest lecture by a US scientist (Ms Kizzmekia S. Corbett) on “Characterization of human immune responses to Dengue virus in a Sri Lankan pediatric cohort” in May 2014.

Dr Handunnetti contributed in organizing the 7<sup>th</sup> Biennial scientific sessions of AISSL and its Inauguration ceremony 1-2<sup>nd</sup> September 2014. This was a very successful event with over



---

100 participants, 7 Guest lectures by clinical and basic immunologists (six foreign guest speakers) and 14 oral presentations. Prof Sriyal Malik Peiris participated as the Chief Guest and Prof Anura Weerasinghe gave the first Immunology Oration on the Inauguration day.

Dr. Handunnetti was a reviewer of MPhil and PhD proposals for IBMBB and other Faculties/Universities and also was a reviewer for NSF, NRC, NASTEC/YSF, Annual Scientific Sessions of the SLAAS and IOB-SL, and one local Journal, Sri Lanka Journal of Indigenous Medicine.

Dr. Jagathpriya Weerasena functioned as a Examiner for PhD in University of Kelaniya and as a Examiner for MSc in Molecular Medicine in Postgraduate Institute of Medicine, University of Colombo.

Emeritus Professor Eric Karunanayake served as a reviewer to International Science Foundation, Stockholm and Third World Academy of Sciences. He was also invited by the Royal Society and Commonwealth Association to participate in the Commonwealth Science Conference held at Bangalore, India from 25<sup>th</sup> to 28<sup>th</sup> November 2014.

Emeritus Professor Ira Thabrew served as a reviewer of International Journals, Resource person for the M.Sc. Course in Industrial Utilization of Medicinal and Aromatic Plants, Dept. of Chemistry, University of Sri Jayawardenapura.

Dr. Sameera Samarakoon served as a principle investigator for the research grant from National Research Council Sri Lanka "Cancer stem cells targeted drug leads from Sri Lankan endemic plants for breast cancer"-2014-2017. He was invited by Seminar on Sustainable Utilization of Sri Lanka's Biodiversity: the Role of the Chemist, Institute of Chemistry Ceylon as Invited Resource Person On 24<sup>th</sup> June 2014.

*අප අවටින් දකිමු විද්‍යා දිනය* - Science day program for school children conducted by committee of popularization of science in Sri Lanka Association for the Advancement of Science (SLAAS). 29<sup>th</sup> March 2014 at Tholangamuwa Central Collage, 21<sup>th</sup> June 2014 at Bingiriya Central Collage.

IBMBB provided Demonstration on DNA Fingerprinting on November 4<sup>th</sup> to 10<sup>th</sup> 2014 as a contribution to the National Science Week Programme for school children organized by the National Science Foundation. Eighty three school children and several school science teachers participated in this programme.

Ms Ruwandi Ranasinghe participated for Commonwealth Science Conference held at Hotel Lalit Ashok, Bangalore, India, 25<sup>th</sup> to 28<sup>th</sup> November 2014, DNA in Forensics 2014, 9<sup>th</sup> International Y-chromosome workshop and 6<sup>th</sup> International EMPOP meeting 14<sup>th</sup> to 16<sup>th</sup> May, 2014 Brussels, organized by the Belgian Institute for Forensic Science and Criminology (NICC/INCC) and Regional Conference of Young Scientists on "Recent Trends in Physical & Biological Sciences" March 7-8, 2014 at JNCASR, Bangalore, India Organized by TWAS-ROCASA.



**Research Activities:** A number of research programmes were in progress at the IBMBB in the fields of Tropical Diseases, Molecular Medicine (Cancer Genetics, Reproductive and Developmental Biology, human DNA variation) and Plant Molecular Biology. 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.

There were a total of 24 full papers in peer-reviewed, indexed, International Journals (15 published, 5 were in press and 4 papers were under review). There were 62 research communications presented at scientific meetings.

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.

### A) Filariasis

One project was in progress in 2014 and a new project commenced in 2014

#### i) Cloning and characterization of selected genes from *Setaria digitata*

Aimed at identifying drug targets for human lymphatic filariasis using the cattle filarial parasite as the model organism.

Investigators: PI: Prof Eric H Karunanayake (IBMBB), Prof. Kamani H Tennekoon (IBMBB), Dr Sameera Samarakoon (Scientific Assistant/IBMBB)  
Research student /IBMBB: Ms. N.Nirupa

Funding: IPICS Grant

#### ii) Studies on *Setaria digitata* genome using next generation sequencing (NGS) technologies for identification of potential drug targets

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

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





---

Funding: IPICS Grant.  
One MPhil/PhD project commenced in 2014.

## **B) Leptospirosis (rat fever)**

Two projects were in progress and two new projects commenced in 2014.

### 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: Dr. 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: Ms. M.J.R. Niloofa

Funding: National Science Foundation to Dr Shiroma Handunnetti (NSF/RG/2011/HS/19)

PhD project was in progress.

One paper was presented at the 7<sup>th</sup> AISSL scientific sessions and another at the ICFMLS 2014 organized by the IBMBB.

### 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: Dr. Shiroma Handunnetti (IBMBB), Prof. Senaka Rajapakse (UoC) and Prof. Sunil Premawansa (UoC); Collaborator: Dr. Lilani Karunanayake (Medical Research Institute). MPhil/PhD student/IBMBB: Ms. TRG Narmada Fernando.

MSc student/IBMBB: Mr R Threeswaran

Funding: National Research Council to Dr Shiroma Handunnetti, IBMBB (NRC -12-077)

One PhD project was in progress and one MSc dissertation was submitted for examination.

One paper was presented at the 7<sup>th</sup> AISSL scientific sessions. Another paper presented at the ICF-MLS 2014 organized by the IBMBB and won the award for best oral presentation in Immunology.

### iii) Studies on immune response to *Leptospira* antigens

Aimed to investigate immune response to *Leptospira* antigens using polyclonal and monoclonal antibodies.

Investigators: PI: Dr. Shiroma Handunnetti (IBMBB) and Prof. Sunil Premawansa (UoC)

MSc student/IBMBB: Ms Anupama Siriwardena

Funding: IBMBB MSc programme

One MSc dissertation was submitted for examination.



---

iv) 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 Fernando and Dr. 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)  
One MPhil programme commenced in 2014.

### **C) Dengue**

One project was ongoing in 2014.

#### 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), Dr. Shiroma Handunnetti (IBMBB), Dr. Dharshan De Silva (Genetech Research Institute), 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)  
One MPhil/PhD programme commenced in 2014.

One paper was presented at the 7<sup>th</sup> AISSL scientific sessions and another at the ICFMLS 2014 organized by the IBMBB.

### **D) Malaria**

One project commenced in 2014.

#### 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), Dr. Shiroma Handunnetti (IBMBB), Dr OVDSJ Weerasena (IBMBB), Dr Rsintha Premaratne (Anti-Malaria Campaign)



---

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

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

## 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, pregnancy and fetal growth, gynaecological diseases, pregnancy induced hypertension, human DNA variation, genetics of primary immunodeficiency and molecular studies on hymenopteran venom etc.

### A) Cancer

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.

#### 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)

MPhil/PhD student/IBMBB: Ms Chrishani Rodrigo

Funding: National Research Council to Prof. Kamani H Tennekoon (NRC -11-018)  
One paper was presented at the 16<sup>th</sup> World Congress on Gynecological Endocrinology in March in Italy, another at the ICFMLS 2014 organized by the IBMBB and won the award for best oral presentation in Molecular Medicine.

#### ii) Screening of a cohort of young onset Breast cancer patients for c.2175\_2176insA mutation in the *BRCA2* gene

Aimed at screening c.2175\_2176insA pathogenic mutation in *BRCA2* gene in a cohort of young onset Breast cancer patients in Sri Lanka

Investigators: Dr. Sumadee De Silva (IBMBB), Prof Kamani H Tennekoon (IBMBB) and Dr. Kanishka De Silva (National Cancer Institute, Maharagama)

MSc student/IBMBB: Ms. B.M. Lakshika Jayasekara

Funding: IBMBB (MSc studies)

One MSc dissertation was submitted for examination.



---

## **B) Reproductive and Developmental Biology**

### i) Maternal and newborn factors (genomic and proteomic) affecting Birth weight

Aimed at identifying the role of the

- a) Leptin system in relation to birth size
- b) IGF2 and H19 genotypes in relation to birth size

Investigators: PI: Prof Kamani H Tennekoon (IBMBB) and Dr. JM Kumarasiri, Dr. Ajita Wijesundera (Castle Street Hospital for Women)  
MPhil/PhD student/IBMBB: Ms Sudeshini Hewage

Funding: National Research Council to Prof Kamani H Tennekoon (NRC – 05-28)

One paper was published and three abstracts were presented,

- i) At the 16<sup>th</sup> World Congress on Gynecological Endocrinology in March in Italy.
- ii) At the 127<sup>th</sup> Anniversary international Medical congress in July.
- iii) At the ICFMLS in September.

The PhD student received an International Award to present her work in Italy.

### ii) Association between *IGF-II* 820 G>A polymorphism and endometriosis

Aimed to identify the association between *IGF-II* 820 G>A polymorphism and endometriosis in Sri Lankan women.

Investigators: Dr. Nalinda Silva (USJP), Dr. Sumadee De Silva (IBMBB), Prof. Hemantha Senanayake (Faculty of Medicine, UoC)  
MSc student/IBMBB: Mr Gihan Jayawardena

Funding: IBMBB (MSc studies)

One MSc project was in progress in 2014.

## **C) Human DNA variation**

One project was in progress in 2014.

### Mitochondrial D loop sequences and haplotypes in Sri Lanka

Aimed at establishing a data base of mitochondrial D loop sequences of Sri Lankans which will be useful in forensic DNA testing and in evolutionary studies.

Investigators: Prof Kamani H Tennekoon (IBMBB), Prof Eric Karunanayake (IBMBB) and Prof. Marie Allen (University of Uppsala)  
PhD student/IBMBB: Ms Ruwandi Ranasinghe

Funding: National Research Council to Prof Kamani H Tennekoon  
Data generated were submitted to International Genetic Databases.



#### **D) Molecular studies on short stature**

One project was in progress in 2014.

##### Growth hormone and GHRH-R mutations and short stature

Aimed at characterizing mutations in the growth hormone 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 Ms Sumadee De Silva (IBMBB)

MPhil/PhD student/IBMBB: Ms Tharmini Sundralingam

Funding: National Science Foundation to Prof Kamani H Tennekoon (NSF/RG/ 2011/BT/03)  
One MPhil programme commenced in 2014.

One abstract was presented at the ICFMLS 2014 in September 2014

#### **E) Genetics of common variable immunodeficiency (CVID)**

One study commenced in 2014.

##### Genetics of CVID: Role of transmembrane activator and calcium-modulator and cytophilin ligand interactor (TACI).

Aimed at the identification of genetic polymorphisms in genes coding for transmembrane activator and calcium-modulator and cytophilin ligand interactor (TACI)

Investigators: Dr Rajiva de Silva (Medical Research Institute), Dr Darshan de Silva (Genetech Research Institute) and Dr Shiroma Handunnetti (IBMBB)

MSc student/IBMBB: Mr Harindra Sathkumara

Funding: & MSc studies (IBMBB) & Medical Research Institute to Dr Rajiva de Silva (Project ID:/40-2013)

One MSc Dissertation was submitted for examination in 2014.

#### **F) Molecular studies on hymenopteran venom**

One study commenced in 2014.

##### 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), Dr Shiroma Handunnetti (IBMBB), Prof Sriyani Dias (University of Kelaniya) and Dr EWRA Witharana (Consultant Physician, Deniyaya Base Hospital)

MSc student/IBMBB: Mr Peshala Gunasekera



---

Funding: MSc studies (IBMBB) & Medical Research Institute to Dr Rajiva de Silva (Project ID:/46-2013)

One MSc Dissertation was submitted for examination in 2014.

### **3) Research programmes in Plant Molecular Biology and Plant metabolomics**

#### **A) Rice**

Three projects were in progress in 2014

##### i) Rice fragrance gene

Aimed at Identification of molecular basis of fragrance in traditional rice variety ‘Suwandel’

Investigators: Dr. Jagathpriya Weerasena (IBMBB), Dr. Nisha Kottearachchi (Wayamba University)

BSc student/University of Wayamba: Mr. Sachinthaka Dissanayake

Funding: NRC, IBMBB (MSc studies)

##### ii) 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 Karunaratne

Funding: National Science Foundation to Prof Shyama Weerakoon (NSF/RG/ 2011/BT/06)  
One MPhil/PhD project was in progress in 2014.

##### iii) Isolation Biochemical and Molecular identification of probiotics in fermented traditional rice varieties.

Investigators: Dr. Jagathpriya Weerasena (IBMBB), Dr. Rhadhika Samarasekera (ITI)

MSc Student: Ms Joanne Kotalawala

Funding: IBMBB (MSc studies)

One MSc dissertation was submitted for examination.

#### **B) Tea**

Three projects were in progress in 2014.

##### 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)  
MPhil/PhD project was in progress in 2014.

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  
One PhD project was in progress in 2014.

iii) Metabolimics of tea germplasm of Sri Lanka

In this project major metabolites of tea plant such as catechins, caffeine, theobromine, flavonol glycosides, L-thenanine, L-proline and other amino acids and carotenoids are profiled in relation to quality of tea, disease and drought resistance.

Investigators: Dr. PA. Nimal Punyasiri, (NRC Postdoctoral Fellow/IBMBB), B. Jeganathna, IBMBB, Mr. J.D. Kottawa-Arachchi (TRI), Mr. M.A.B. Ranatunga (TRI), Dr. I. Sarath B. Abeysinghe (TRI), Dr. M.T.K. Gunasekare (TRI), Professor. B.M.R Bandara, University of Peradeniya.

Collaborating Institutions: Tea Research Institute of Sri Lanka, Talawakelle, Sri Lanka  
Department of Chemistry, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka

Funding : National Research Council of Sri Lanka to Dr. Punyasiri (NRC -11-23)

**C) Potato**

One project was in progress in 2014.

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/PhD project was in progress in 2014.



#### **D) Identifying *Bacillus thuringiensis* isolates with insecticidal activity**

One project was in progress in 2014.

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 MPhil/PhD project was in progress in 2014.

#### **4) Research on medicinal plants**

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

Three projects were in progress in 2014.

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) Effects of Hot water extract of *C. sativum* and *C. fenestraum* on immunostimulatory, anxiolytic and neurobehavioral activities of rats

Investigators: Dr. Shiroma Handunnetti (IBMBB), Prof. WD Ratnasooriya (UoC), Dr. G A Sirimal Premakumara (ITI)

MSc student/IBMBB: Ms. Achini Ratnayake

Funding: IBMBB (MSc studies)

One MSc Dissertation was submitted for examination in 2014.

##### ii) Studies on anti-inflammatory mechanisms on *Pleurotus ostreatus*, *Aegle marmalos* and *Munronia pinnata*

Investigators: Dr Sugandi Suresh (USJP) and Dr. Shiroma Handunnetti

PhD students/USJP: Dr Swarna D Hapuarachchi (Institute of Indigenous Medicine, UOC), Ms Banuki Jayasuriya (USJP) and Ms Peshala Kumari (USJP).

Funding: University of Sri Jayawardenapura and University Grant Commission to Dr Suresh and Dr. Hapuarachchi

Three PhD studies were completed in 2014.





iii) 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: Dr 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

MPhil/PhD study was in progress in 2014

One paper was presented at the 7<sup>th</sup> AISSL scientific sessions and another at the ICFMLS 2014 organized by the IBMBB.

**B) Anti-cancer effects of medicinal plants**

Four studies were commenced in 2014

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 (Scientific Assistant /IBMBB)

MPhil/PhD student/IBMBB: Ms Anuka Mendis

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

One MPhil/PhD study was in progress in 2014

ii) 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)

MPhil/PhD student/IBMBB: Mr Meran Keshawa

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

One MPhil/PhD project was in progress in 2014.

Two papers were presented one at ICFMLS 2014 and the other at the International Society for the Study of Xenobiotics in USA. MPhil/PhD student carried out some of the work at the HEJ Institute of Chemistry, University of Karachi sponsored by the NRC Grant awarded to Prof. Kamani H Tennekoon.



iii) 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)  
MPhil/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.

MPhil/PhD study was in progress in 2014.

iv) Screening of selected endemic plants for anti-cancer activity

Investigators: Prof Kamani H Tennekoon (IBMBB), Prof Ira Thabrew (Visiting Professor, IBMBB), Prof Dilip De Silva (UoC), Prof Eric Karunanayake (IBMBB) and Dr Sameera Samarakoon (IBMBB)  
MPhil/PhD student/IBMBB: Ms Panchima Jayaratne

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

One MPhil/PhD study was in progress in 2014.

One paper was presented at ICFMLS2014 and another has been accepted for presentation at 5<sup>th</sup> International Symposium cum training course on Molecular Medicine and drug research in Pakistan in January 2015.

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 Chaudhery (Karachi, Pakistan).

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

Study was in progress in 2014.

One paper was presented at ICFMLS2014 and won the award for best oral presentation in Medicinal Plants.

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

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



---

One paper was presented at ICFMLS 2014 and another has been accepted for presentation at 5<sup>th</sup> International Symposium cum training course on Molecular Medicine and drug research on in Pakistan in January 2015.

#### **D) Anti-microbial activity of selected endemic and medicinal plants**

Aimed at evaluating possible antimicrobial activity of selected endemic and medicinal plants

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

MPhil/PhD student/UoC: Mr W Sadin De Silva

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

One MPhil/PhD study was in progress in 2014.

#### **5) Research Programmes on Industrial Applications**

One study was in progress and funding for another project was pending in 2014.

##### 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) & Dr Shiroma Handunnetti (IBMBB)

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

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

Two MPhil/PhD projects were in progress in 2014.

##### 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: Dr. Shiroma Handunnetti (IBMBB), Dr. OVDSJ Weerasena (IBMBB)

Funding: from Link Natural Products for a MPhil/PhD study was Pending.

One paper was presented the ICFMLS 2014 organized by the IBMBB.



## 6) Research programme on molecular identification of new animal species in Sri Lanka

This study was aimed at identification of new animal species found in Sri Lanka by modern molecular biological techniques.

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

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

1. Mutation detection services for BRCA I and II, p53 and Kras genes
2. DNA sequencing service
3. Cell viability assay service (plant extracts & natural and synthetic compounds)
4. HPLC based quantification of active ingredients in tea

### Workshops, seminars and other events carried out under BDU,

- a. Promega workshop on “Harnessing the power of bioluminescence and new workflow solution for forensic applications” held at IBMBB on 21<sup>st</sup> January 2014
- b. Meeting with Prof. Thusitha Abeythunga on 10<sup>th</sup> July 2014 to discuss legal aspects of developing a separate BDU
- c. Initiation of research partnerships with private organization (eg: Sri Lanka Herpetological Society, Sri Lanka Institute of Nanotechnology)
- d. Initiation of research partnerships with government organizations (Wild Life Department)
- e. Open day held 28<sup>th</sup> October 2014
- f. Advertising increased via emails, brochures, face book, and news paper articles
- g. Contributed to the organization of the 2<sup>nd</sup> International conference, IBMBB held in September 2014 and the organization of four pre- and post-congress workshops held for the international conference.



---

**V**isitors to the Institute: The Institute had several overseas visitors during the year. The following foreign visitors participated in the second International Conference on Molecular Life Sciences held in September 2014.

- Prof Ulf Petersson, Senior Professor of Medical Genetics, Professor Marie Allen and Dr Magdalene Bus from Science for Life laboratory, University of Uppsala, Sweden.
- Prof Malin Akerblom (former Director), Prof Peter Sundin (Director), Dr. Rebecca Andersson, (officer) from International Programme in Chemical Sciences, University of Uppsala, Sweden
- Dr K Thangajaj, Centre for Cellular and Molecular Biology, Hyderabad, India.
- Prof. Iqbal Choudhry, Director, HEJ Research Institute of Chemistry and Dr A Adhikari, from H.E.J. Research Institute, Pakistan
- Prof. Gerald P. Schatten: Director, Pittsburgh Development Centre, University of Pittsburgh School of Medicine, Pennsylvania, USA
- Prof. Amittha Wickrema: Associate Professor, University of Chicago, USA
- Dr. Dharani Hapangama: Senior Lecturer and Consultant Obstetrician Gynaecologist, University of Liverpool and Liverpool Women's Hospital UK.
- Dr Chui-Yee Fong: Research Associate Professor, National University of Singapore, Singapore
- Prof. Asgi Fazleabas: Professor and Associate Chair, Michigan State University, USA
- Prof Primal De Lanerrole, University of Illinois, Illinois, USA
- Dr Nicholas Ng: General Manager, Promega Corporation, Singapore
- Dr. Anders Falk: Scientific Officer in Plant Breeding and Gene Technology, Swedish Agricultural Board, Sweden
- Mr. Martin Norling and Mr. Robert Soderlund, Swedish University of Agriculture & EMBnet Node, Uppsala, Sweden.

Professor Arjen Dondorp, Deputy Director of the Mahidol Oxford Tropical Medicine Research Unit (MORU) & Head, Malaria Unit, Bangkok, Thailand visited IBMBB on 7<sup>th</sup> October 2014

and discussions were held on the ongoing studies on Leptospirosis and for initiation of future collaborative studies.

Prof. R. Somanathan, University of Santiago, California gave a guest lecture on Anti Oxidant activity of Natural Products on 14<sup>th</sup> August 2014.



---

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

Professor Ira Thabrew continued to work at the IBMBB as a Visiting Professor.

**C**onstraints: Human Resources and Financial Resources have been the major constraint in implementing the activities as per Corporate Plan 2011-2015. After a long wait some academic cadre positions were received but the time taken for procedures involved has delayed appointment of recruited staff.



# **S**taff as at 31<sup>st</sup> December 2014

## Permanent Cadre

Prof. MH Rezvi Sheriff	Acting Director (up to 2014.09.30)
Prof. Kamani H Tennekoon	Senior Professor of Molecular Life Sciences
Dr. Shiroma M Handunnetti	Senior Lecturer, Grade I (Immunology) & Acting Director (from 2014.10.01)
Dr. OVDS Jagathpriya Weerasena	Senior Lecturer, Grade II (Molecular Biology)
Dr. W Sumadee De Silva	Lecturer, Probationary (DNA Diagnostics)
Ms. A Sudeshini Hewage	Scientific Assistant (Biochemistry & Molecular Biology)& Lecturer, Probationary (from 2014.12.22)
Ms. Anoma Ratnayake	Senior Assistant Registrar (on sabbatical leave until 2014.03.24)
Mr. HM Krishantha Herath	Senior Asst Bursar
Mr. Kanchana Senanayake	Asst Network Manager, Grade II
Dr. Sameera Samarakoon	Scientific Assistant (Cell Biology), Grade II
Ms. Ruwandi Ranasinghe	Scientific Assistant (DNA Identification-on contract) (from 2014.12.22)
Ms. BN Nishara T Batagoda	Scientific Assistant (Bioinformatics -on contract) (from 2014.12.22)
Mr. CSP Abeysinghe	Staff Technical Officer (resigned on 2014.04.28)
Ms. Anoma Jayasoma	Technical Officer, Grade II “Seg A”
Mr. Nishantha C A Gunasekera	Technical Officer, Grade II “Seg B”
Ms. Thanuja Atapattu	Book Keeper, Grade II “Seg B”
Ms. NK Sumali Champika	Computer Applications Assistant, Grade II
Ms. KW Chaturika 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. WS Rekha Jayalath	Telephone Operator cum Receptionist (up to 2014.02.26)
Ms. Sekani D Premadasa	Trainee Technical Officer
Mr. YBMNY Bandara	Laboratory Attendant (Lower Grade)
Mr. KM Dhanushka Bandara	Labourer, Grade III
Mr. EHGD Niroshan Abewardena	Laboratory Attendant (On contract) (from 2014.04.01)

## Temporary Assignments

Temporary Scientific Assistant – IT (from 2014.03.31)	- Mr. Nipuna Rathnayake
Temporary Scientific Assistant / Teaching Assistant	- Ms. Vahinipriya Manoharan
Temporary Teaching/ Research Assistant (from 2014.01.06)	- Ms. HDA Jayamini Harasgama
Trainee Technical Officer (from 2014.12.15)	- Ms. AN Tharini Somaratne
Trainee Library Assistant	- Ms. PVA Chameera Helani
Trainee Computer Application Assistant	- Ms. BH Minoli D. Perera
Trainee Computer Application Assistant (upto 2014.04.22)	- Ms. M Panchalya Fonseka
Trainee Computer Application Assistant (up to 2014.12.02),	- Ms. KB Chandi M Madurangani
Trainee Computer Application Assistant (from 2014.06.10)	- Ms. MV Lakdini N Haridasan



## **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  
Dr. Shiroma Handunnetti - Senior Lecturer/Immunology, IBMBB  
Dr. Jagathpriya Weerasena - Senior Lecturer/Molecular Biology, IBMBB  
Dr. Nimal Punyasiri - NRC Postdoctoral Fellow, IBMBB  
Dr. W Sumadee de Silva - Lecturer - Probationary /DNA Diagnostic, IBMBB  
Dr. Sameera Samarakoon - Scientific Assistant (Cell Biology)  
Ms. A Sudeshini Hewage - Lecturer - Probationary/Biochemistry & Molecular Biology

## **R**esearch Collaborators

- Prof. Marie Allen - Professor, Genetics and Pathology, University of Uppsala, weden  
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. Janaka De Silva - Professor of Medicine, Faculty of Medicine, UoK  
Prof. Shamy De Silva - Professor in Paediatrics, Department of Paediatrics, UoC  
Prof. Needra Karunaratne - Professor of Biochemistry, University of Peradeniya  
Prof. Aloka Pathirana - Consultant Surgeon, Colombo South Teaching Hospital  
Prof. Sunil Premawansa - Professor in Zoology, Faculty of Science, UoC  
Prof. W D Ratnasooriya - Professor of Zoology, Faculty of Science, UoC  
Prof. Senaka Rajapakse - Professor in Clinical Medicine, Faculty of Medicine, UoC  
Prof. Hemantha Senanayake - Professor in Obstetrics and Gynecology, UoC  
Prof. MHR Sheriff - Professor of Clinical Medicine, Faculty of Medicine, UoC  
Dr. Erik Rudloff-Bongcam - Associate Professor, Swedish Agricultural University, Uppsala  
Dr. Nandana Dikmadugoda - Consultant Physician, Base Hospital, Homagama  
Dr. Kumudu Fernando - Former Director, Agri Biotechnology Centre, UoP  
Dr. Lilani Karunanayake - Consultant Microbiologist, Medical Research Institute, Colombo  
Dr. Nisha Kottearachchi - Senior Lecturer, Wayamba University  
Dr. Neelika Malavige - Director, Dengue Research Center, University of Sri Jayawardenapura  
Dr. GA Sirimal Premakumara - Senior Deputy Director, Industrial Technology Institute, Colombo  
Dr. Gayani Premawansa - Consultant Physician, North Colombo Teaching Hospital, Ragama  
Dr. Radhika Samarasekera - Herbal Technology Division, Industrial Technology Institute  
Dr Asitha Siriwardena - Scientist, Sri Lanka Institute of Nanotechnology  
Dr. Sugandi Suresh - Senior Lecturer, University of Sri Jayawardenapura





- 
- Dr. Shyama Weerakoon - Senior Lecturer, Open University of Sri Lanka  
Dr. Hasitha Wickramasinghe - Consultant Physician, Base Hospital, Homagama  
Mr. D. Kottawa–Arachchi - Research Officer, Tea Research Institute, Talawakele  
Dr. Mendis Wickremasinghe - Chairman, Sri Lanka Herpatological Society  
Mr. Harsha Wijewardena - Consultant, University of Colombo School of Computing

## **R**esearch (MPhil/PhD) students

- Ms. Ruwandi Ranasinghe  
Ms. NHL Pradeepa  
Ms. A Sudeshini Hewage  
Research Officer, Tea Research Institute  
Scientific Assistant, IBMBB & Probationary Lecturer  
(from 2014.12.22)
- Ms. Ayesha U Perera  
Ms. K Dulangi K Karunaratna  
Mr. KH Tissa Karunaratne  
Mr. EP Meran Keshawa  
Ms. MJ Roshan Niloofa  
Ms. TRG Narmada Fernando  
Ms HACI Chrishani Rodrigo  
Mr. NH Kanishka S Senathilake  
Ms. BA Dilani Rukshala  
Ms. Anuka S Mendis  
Ms. D P Panchima Jayarathna  
Ms. HD Sachindra M Perera  
Ms. Saroopa P Samaradivakara  
Ms. EMSI Ekanayaka  
Ms. Maduwanthi Chandhrakanthan  
Ms. Tharmini Sundralingam  
Ms. Rashini Baragama-Arachchi  
Ms. Maheshi Mapalagamage  
Mr. Kanchana S Senanayake  
Mr. Krishan Balaji  
Ms. Kumudu Gunasekera Parasitologist, Anti Malaria Campaign, Ministry of Health

### Registered for PG degrees in other HEIs

- Dr. Swarna D Hapuarachchi Institute of Indigenous Medicine, University of Colombo  
Ms. WJA Banuki Jayasuriya Faculty of Medical Science, University of Sri Jayawardenapura  
Ms. KDK Peshala Kumari Faculty of Medical Science, University of Sri Jayawardenapura  
Ms. Surani S Ediriweera Faculty of Science, University of Colombo  
Ms. Poorna C Piyathilaka Faculty of Science, University of Sri Jayawardenapura  
Mr. Sadin De Silva Faculty of Science, University of Colombo  
Ms. Vindya Fernando Faculty of Science, University of Colombo



**R**esearch 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

### Research Papers published in Indexed / Refereed Journals

1. Carvalho E, **Punyasiri PAN**, Somasiri HPPS, Abeysinghe ISB, Martens S. Quantification of  $\gamma$ -aminobutyric acid in Sri Lankan tea by means of ultra performance tandem mass spectrometry. **Natural Products Communications**. 2014; 9(4),525-528
2. **De Silva S, Tennekoon KH, Karunanayake EH**, Amarasinghe I, Angunawela P, Analysis of BRCA1 and BRCA2 large genomic rearrangements in Sri Lankan familial breast cancer patients and at risk individuals. **BMC Research Notes**. 2014;7:344.
3. Dissanayake S, Kottarachchi NS, **Weerasena J**, Peiris M. Development of a CAPS marker for the badh2.7 allele in Sri Lankan fragrant rice (*Oryza sativa*) **Plant Breeding**: 2014: 133(5): 560-565
4. **De Silva NL, Niloofa MJR, Fernando TRGN**, Karunanayake L, Rodrigo C, de Silva HJ, Premawansa S, **Handunnetti SM**, Rajapaksa S. Changes in full blood count parameters leptospirosis: A prospective study. **International Archives of Medicine**, 2014, 7:31 doi:10.1186/1755-7682-7-31.
5. **Ediriweera SS**, Wijesundera RLC, Nanayakkara CM and **Weerasena OVDSJ**. A new record of *Fulvifomes fastuosus* from Sri Lanka. **The Journal National Science Foundation Sri Lanka**: 2014: 42 (4):369-371
6. **Ediriweera SS**, Wijesundera RLC, Nanayakkara CM , **Weerasena OVDSJ**. Macrofungi from the Sigiriya wilderness in Sri Lanka. **Journal of Mycopathological Research** : 2014: 52(1):47-51.
7. Galhena BP, **Samarakoon SR, Thabrew MI**, Paul SFD. Venkatachalan P., Chinnadorai M. Protection against bleomycin – induced cytogenetic damages in Peripheral blood lymphocytes (PBL's) by a polyherbal aqueous extract comprised of *Nigella sativa* (seeds), *Hemidesmus indicus* (roots), and *Smilax glabra* (rhizome). **Acta Pharmacologica Sinica**, (2014) Awaiting acceptance.
8. **Eugene EJ, Wickremesinghe SA, Kalugalage TL**, Rodrigo C, Wickremesinghe H, Dikmadugoda N, Somaratne P, De Silva HJ, Rajapakse S, **Handunnetti SM**. Evaluation of two immunodiagnostic tests for early rapid diagnosis of leptospirosis in Sri Lanka: a preliminary study. **BMC Infectious Diseases**. (2014) MS ID :1294300365159778. Awaiting acceptance.
9. **Hewage AS, Jayanthiny P, Tennekoon KH**, Kumarasiri JM, Wijesundere, **Karunanayake EH**. H19 rs217727 genotype and IGF-1/intron -2 dinucleotide CT repeat polymorphism are independently associated with birth weight. **Endocrine**.



---

(2014) DOI 10.1007/s12020-014-0402

10. Karlsson MF, Birgersson G, Witzgall P, Lekfeld JDS, **Punyasiri PAN**, Bengtsson M. Guatemalan potato moth *Tecia solanivora* distinguish odour profiles from qualitatively different potatoes *Solanum tuberosum*. **Phytochemistry** 85, 72-102
11. **Kothalawala SD, Edward D, Niloofa MJR**, Premakumara GAS, Ratnasooriya WD, **Handunnetti SM**. Abeytunga T, Suresh TS. Immunomodulatory activity of combined hot water extract of *Coriandrum sativum* L and *Coscinium fenestratum* L in rats. **Journal of Alternative and Complementary Medicine**. (2014) Awaiting acceptance.
12. Kottawa-Arachchi JD, Gunasekare MTK, Ranatunga MAB, **Punyasiri PAN**, Jayasinghe L, Karunagoda RP. Biochemical Characteristics of Tea (*Camellia sinensis* L.) Germplasm accessions in Sri Lanka: Correlation between black tea quality parameters and organoleptic evaluation. **International Journal of Tea Science** (in press)
13. Kumari KDKP, Weerakoon TCS, **Handunnetti SM**, Samarasinghe K, Suresh TS. Anti-inflammatory activity of dried flower extracts of *Aegle marmelos* in Wistar rats. **Journal of Ethnopharmacology**. 2014;151:1202-1208.
14. **Nagaratnam N, Karunanayake EH, Tennekoon KH, Samarakoon SR, Mayan K**. *In silico* characterization of a RNA binding protein of cattle filarial parasite *Setaria digitata*. **Bioinformatics**. 2014.10(8): 521-516.
15. Rajapakse S, Rodrigo C, **Handunnetti SM**, Fernando SD. Current immunological and molecular tools for leptospirosis: diagnostics, vaccine design, and biomarkers for predicting severity. **Annals of Clinical Microbiology and Antimicrobials** (MS ID 12941\_2014\_60) In Press
16. **Rodrigo WW**, Dassanayakea RS, **Karunanayake EH**, Silva YIN, **Weerasena OVDSJ**. Heterologous expression, chaperone mediated solubilization and purification of parasitic nematodespecific growth factor like protein of *Setaria digitata*. **Asian Pacific Journal of Tropical Medicine**. 2014: 7:85-92
17. **Rodrigo WWP**, Dassanayake RS, **Weerasena OVDSJ**, Gunawardene YINS. Novel parasitic nematode-specific protein of bovine filarial parasite *Setaria digitata* displays conserved gene structure and ubiquitous expression. **Journal of Tropical Biomedicine**: 2014 (in press)
18. **Samarakoon SR, Kotigala S, Liyanage IG, Thabrew I, Tennekoon KH**, Siriwardane A and Galhena PB. Cytotoxic and apoptotic effects of a decoction of aerial parts of *Flueggea leucopyrus* on human endometrial carcinoma (AN3CA) cells. **Tropical Journal of Pharmaceutical Research**, 2014, 13: 873-880.
19. Sanmugarajah V, **Thabrew I**, Sivapalan, SR Standardization of Vellarugu choornam, A Siddha herbal drug. **International Journal of Ayurveda and Pharma Research**, 2014; 2:44-53.



- 
20. Sanmugarajah V, **Thabrew I**, Sivapalan, SR. Standardization of Amukkiraichooranam, a traditional herbal preparation in Siddha system of medicine. **European Journal of Medicinal Plants** (in press)
  21. **Sathkumara H**, De Silva AD, De Silva NR, **Handunnetti S**. Common variable immunodeficiency and role of transmembrane activator and calcium-modulator and cyclophilin ligand interactor. **International Journal of Immunogenetics**. 2014. Awaiting acceptance.
  22. **Tennekoon KH**, **Poopalapillai J**, Karunanayake AG, Jayasinghe HD, Kumarasiri JM, De S Wijesundera AP, **Karunanayake EH**, Association of cord blood leptin, soluble leptin receptor, insulin-like growth factor-I and insulin-like growth factor-binding protein-1 on birth indices in healthy full-term newborns. **Hormone Research Paediatrics**. 2014 (Epub ahead of print)
  23. Vinotha S, **Thabrew I**, Sri Ranjani S. *In vitro* antioxidant activity of two selected herbal medicines. **International Science Index**. 2014; 8:35-40.
  24. **Wickremasinghe R**, **Kumara R R**, De Silva D E, Ratnasooriya W D, **Handunnetti S M**. Inhibition of phagocytic and intracellular killing activity of human neutrophils by aqueous and methanolic leaf extracts of *Ixora coccinea*. **Journal of Ethnopharmacology**, 2014;153: 900–907.



---

# R

## esearch Communications:

### Abstracts published in Scientific Meetings (print or electronic)

1. **Bandara M, Handunnetti SM**, Premawansa G, De Silva AD, Premawansa S. Association between antibody-mediated platelet destruction and the severity of dengue infections in Sri Lanka (PP 05). Proceedings of the 2<sup>nd</sup> International Conference on Frontiers in Molecular Life Sciences (ICF-MLS), Institute of Biochemistry, Molecular Biology and Biotechnology (IBMBB), University of Colombo 11-12<sup>th</sup> September 2014, pp 50.
2. **Bandara MNS, Handunnetti SM**, Premawansa G, Loeb M, De Silva AD, Premawansa S. Platelet cytotoxicity and serum lactate dehydrogenase levels as prognostic markers for severe dengue infections in Sri Lanka (C1). Proceedings of the 7<sup>th</sup> Biennial Sessions of the Allergy and Immunology Society of Sri Lanka (AISSL), 2nd September 2014, pp 29.
3. **Baragama-Arachchi RY, Weerasena OVDSJ, Handunnetti SM**, Samarasekara R. *In vitro* genotoxicity evaluation of *Walidda antidysenterica* by comet assay (PP 14). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 54.
4. **De Silva S, Tennekoon KH, Karunanyake EH**. Prevalence of missense mutation c.865A>C in BRCA2 gene in a cohort of Sri Lankan breast cancer patients (OP 02). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 35.
5. **De Silva WS**, De Silva ED, **Tennekoon KH**. Investigation of antimicrobial properties of *Areca concinna* extracts. (PP 13). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 54.
6. **Ediriweera PMK, Tennekoon KH, Samarakoon SR, Thabrew I**, de Silva ED (2014). Hexane extract of *Mangifera zeylanica* bark exhibits cytotoxic activity through induction of apoptosis in triple negative breast cancer cells (MDA-MB-231) and ovarian cancer cells (SKOV3) (OP13). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, 42.
7. **Ediriweera PMK, Tennekoon KH, Samarakoon SR, Thabrew I**, de Silva ED. Cytotoxic and apoptotic properties of the hexane extract of *Mangifera zeylanica* bark and identification of phytochemical profile. 19<sup>th</sup> North American ISSX Meeting / 29<sup>th</sup> JSSX Meeting, California, USA October 19 – 23<sup>rd</sup>, 2014, pp 42
8. **Fernando N, Wickramasinghe S**, Karunanayake L, De Silva HJ, Premawansa S, Rajapakse S, **Handunnetti SM**, Biomarkers of oxidative stress in severe leptospirosis (C6). Proceedings of the 7<sup>th</sup> Biennial Sessions of the AISSL, 2nd September 2014, pp 34.



9. **Fernando N, Niloofa MJR, Maduranga S, Karunanayake L, De Silva HJ, Rajapakse S, Premawansa S, Handunnetti S**, High serum lipid peroxide and low anti-oxidant capacity in leptospirosis, One Health International Conference, University of Peradeniya, 6<sup>th</sup> September 2014, pp 20.
10. **Fernando N, Niloofa MJR, Maduranga S, Rodrigo C, Karunanayake L, De Silva HJ, Rajapakse S, Premawansa S, Handunnetti SM**, Oxidative damage of lipids and proteins in Leptospirosis (OP 07). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 38.
11. **Harasgama HDAJC, Handunnetti SM, Weearasena OVDSJ, Premakumara S**. Enhancement of antigen-specific IgG production, CD40 and CD40L expression and inhibition of iNOS expression by combined hot water extract of *Coriandrum sativum* and *Coscinium fenestratum* (B3). Proceedings of the 7<sup>th</sup> Biennial Sessions of the AISSL, 2<sup>nd</sup> September 2014, pp 24.
12. **Harasgama HDAJC, Handunnetti SM, Weearasena OVDSJ, Premakumara S**. Inhibition of iNOS expression and enhancement of CD4 and CD40L expression by combined hot water extract of *Coriandrum sativum* L. and *Coscinium fenestratum* G (PP 18). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 56.
13. **Harasgama HDAJC, Handunnetti SM, Weearasena OVDSJ, Premakumara S**. Lymphocyte activation and inhibition of iNOS expression by combined hot water extract of *Coriandrum sativum* L. and *Coscinium fenestratum* G. 2<sup>nd</sup> International Conference on Ayurveda, Siddha & Traditional Medicine, Institute of Indigenous Medicine, University of Colombo, 16-18<sup>th</sup> September 2014, pp 117.
14. **Hewage AS, Jayanthiny P, Tennekoon KH, Karunanayake EH, Kumarasiri JM, Wijesundere APDeS**. Association of common polymorphisms in H19 gene with birth weight in a Sri Lankan cohort of mother-baby pairs. Proceeding of the 16<sup>th</sup> World Congress of Gynecological Endocrinology, March, 2014. Italy.
15. **Hewage AS, Jayanthiny P, Tennekoon KH, Karunanayake EH, Kumarasiri JM, Wijesundere APDeS**. H19 rs217727 polymorphism is positively associated with birth size. Proceedings of the 127<sup>th</sup> Anniversary International Medical Congress, July, 2014 Colombo, Sri Lanka.
16. **Hewage AS, Jayanthiny P, Tennekoon KH, Karunanayake EH, Kumarasiri JM, Wijesundera APDeS**. Association of H19 rs217727, IGF-I dinucleotide and IGF-II-Apa 1 polymorphisms with birth weight (OP 03). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 36.
17. **Jayarathna DDP, Samarakoon, SR, Tennekoon KH, Thabrew I, Karunanayake EH and de Silva ED**. Phenotype specific cytotoxic effects of five endemic plants on breast cancer. Proceedings of the 127<sup>th</sup> Anniversary International Medical Congress of the Sri Lanka Medical Association. July, 2014.



18. **Jayarathna DDP, Samarakoon, SR, Tennekoon KH,** Shanmuganathan C, **Thabrew I,** de Silva ED and **Karunanayake EH.** Screening of fifteen medicinal plants for their cytotoxic effects on breast cancer (Op16). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 43.
19. **Jayasuriya WJABN, Handunnetti SM,** Wanigatunga A, Fernando GH, Abetunga TU and Suresh TS. Effect of acetone extracts of culinary mushroom *Pleurotus ostreatus* on carrageenan induced phagocytic cell infiltration and nitric oxide production by rat peritoneal cells. Proceedings of the 5<sup>th</sup> International Conference on Natural Products for Health and Beauty, Phuket-Thailand, May 2014; pp 136.
20. **Kajalaxan R, Karunanayake EH, Punyasiri N.** Plasma free amino acid concentration in a group of apparently healthy adults. (PP 04). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 49.
21. **Karunaratna KHT,** Mewan KM, **Punyasiri PAN, Weerasena OVDSJ,** Edirisinghe ENU, Brasathe J, Abeysinghe ISB. Development of markers to identify blister blight resistance and susceptibility in tea (*Camellia sinensis* L.) cultivars (PP 20). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 57.
22. **Kumari KDKP,** Samarasinghe, **Handunnetti SM,** and Suresh TS. Preliminary results of activity guided fractionation of the ethanolic extract of dried flowers of *Aegle marmelos* (Beli mal). Proceedings of the 1<sup>st</sup> Ruhuna International Science and Technology Conference, University of Ruhuna Matara Sri Lanka, January 2014; pp 140.
23. **Kumari KDKP,** Samarasinghe, **Handunnetti SM** and Suresh TS. Evaluation of toxicity and effect on the glycogen content of liver after long term administration of water extract of dried flowers of *A. marmelos* in rats. Proceedings of the International Conference on Multidisciplinary Approaches, Faculty of Graduate Studies, University of Sri Jayawardenepura Nugegoda, Sri Lanka, 2014; pp 37.
24. **Manoharaj V, Tennekoon KH,** Angunawela P, **De Silva S.** Optimization of DNA extraction from paraffin embedded tissues and preliminary analysis of somatic mutation of TP53 in breast cancer. Proceedings of 127<sup>th</sup> Anniversary International Medical Congress of the Sri Lanka Medical Association. July 2014.
25. **Manoharan V, Tennekoon KH,** Angunawela P, **De Silva S.** Establishment of DNA extraction from paraffin embedded tissues and preliminary analysis of somatic mutation of TP53 in breast cancer (PP 01). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp OP 48
26. **Mapalagamage MS, Handunnetti SM,** Premawansa G, Loeb M, De Silva AD, Premawansa S. A study of the involvement of reactive nitrogen species (RNS) and reactive oxygen species (ROS) in dengue infection and their correlations with clinical parameters (C4). Proceedings of the 7<sup>th</sup> Biennial Sessions of the AISSL, 2<sup>nd</sup> September 2014, pp 32.
27. **Mendis AS, Thabrew MI, Samarakoon RS, Tennekoon KH.** Effect of *Flueggea leucopyrus* Willd. Decoction on the proliferation and heat shock protein expression in



- three human breast cancer cell phenotypes: An *in vitro* evaluation. Proceedings of the 5<sup>th</sup> Asia Pacific ISSX Meeting, 9 -12<sup>th</sup> May 2014, Tianjin, China.
28. **Mendis AS, Thabrew MI, Samarakoon RS, Tennekoon KH.** Effects of *Flueggea leucopyrus* Willd. Decoction on HSP 70 expression and apoptosis in triple negative breast cancer phenotype MDA-MB 231 (Op14). Proceedings of the 2<sup>nd</sup> ICF- MLS, IBMBB, University of Colombo, 12-14<sup>th</sup> September, 2014, pp 42
  29. **Nadhikala M,** Pathirana PPSL, **Handunnetti SM,** Peiris, S, Galagoda GCS. Low prevalence of IgG antibodies against measles, mumps and rubella in infants between 6-12 months of age in Colombo district, Sri Lanka (C7). Proceedings of the 7<sup>th</sup> Biennial Sessions of the AISSL, 2<sup>nd</sup> September 2014, pp 35.
  30. **Nadhikala M,** Pathirana PPSL, **Handunnetti SM,** Peiris S, Galagoda GCS. Study on passive transfer of maternal IgG antibodies against measles, mumps and rubella from mothers to infants (Abstract no 2-14). Proceedings of the 34<sup>th</sup> Annual Session of the Institute of Biology Sri Lanka, 26<sup>th</sup> September 2014, pp 54.
  31. **Nadhikala M,** Pathirana PPSL, Peiris S, **Handunnetti SM,** Galagoda GCS. Maternal transfer of anti-measles antibodies to newborns of vaccinated and naturally immune mothers. Proceedings of the Annual Scientific sessions, Sri Lankan Society for Microbiology. 24<sup>th</sup> October, 2014, pp 2.
  32. **Nagaratnam N, Karunanayake EH, Tennekoon KH, Samarakoon SR, Mayan K.** *In silico* characterization of RNA binding protein motif of filarial parasite *Setaria digitata* (OP 05). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp. 37.
  33. **Nagaratnam N, Karunanayake EH, Tanasinghe R.** Extraction of DNA from old bones: optimization of methods and assessment of suitability for individual identification. (PP 03). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp. 49.
  34. **Nanthaprakash T,** Silva N, **De Silva S,** Senanayake H. Association of Endometriosis and p53 gene codon 72 polymorphism in a group of Sri Lankan women (PP 02). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp. 48.
  35. **Niloofoa MJR, Fernando TRGN, De Silva NL,** Karunanayake L, De Silva HJ, Premawansa S, Rajapakse S, **Handunnetti SM** . Evaluation of Leptospirosis diagnostic tests: microscopic agglutination test, IgM based ELISA and immunochromatography test. Proceedings of the Immunology Day Symposium 2014, AISSL, 26<sup>th</sup> February, 2014, pp 07.
  36. **Niloofoa MJR,** Karunanayake L, Wikramasinghe AR, De Silva HJ, Premawansa S, Rajapakse S, **Handunnetti SM.** Establishment and validation of an in-house IgM ELISA for diagnosis of acute leptospirosis (B6). Proceedings of the 7<sup>th</sup> Biannual Scientific Session of the AISSL, 2<sup>nd</sup> September 2014, pp 27.
  37. **Niloofoa MJR, Fernando TRGN, De Silva NL,** Karunanayake L, Wickremesinghe H, Dikmadugoda N, Premawansa G, Wikramasinghe AR, De Silva HJ, Premawansa





- S, Rajapakse S, **Handunnetti SM**. Evaluation of two rapid immunodiagnostic tests, an IgM ELISA and an immunochromatography test compared to microscopic agglutination test (OP 06). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 38.
38. **Niloofa MJR**, Karunanayake L, Wikramasinghe AR, De Silva HJ, Premawansa S, Rajapakse S, **Handunnetti SM**. Evaluation of IgM ELISA for diagnosis of acute leptospirosis using pathogenic *Leptospira* antigens (Abstract no 18). Proceedings of the 34<sup>th</sup> Annual Session of the Institute of Biology Sri Lanka, 26<sup>th</sup> September 2014, pp 58.
39. **Nagaratnam N**, **Karunanayake EH**, **Ranasinghe R**. Extraction of DNA from old bones: optimization of methods and assessment of suitability for individual identification (PP 03). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 49.
40. **Perera HDSM**, Samarasekera R, **Handunnetti SM**, **Weerasena OVDSJ**. Antioxidant activity and total polyphenolic content of weedy herb *Commelina diffusa* (PP 15). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 55.
41. **Piyathilaka MAPC**, Pathmalal MM, **Tennekoon KH**, **Samarakoon SR**, **Chanthirika S**, De Silva BGDNK. Comparative study of the cytotoxic effects of microcistin-LR and crude cyanotoxin extract from Beira Lake cyanobacteria on human embryonic kidney (HEK 293) cell line (PP 19). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 57.
42. **Piyathilaka MAPC**, Pathmalal MM, **Tennekoon KH**, De Silva BGDNK, **Samarakoon SSR**, and **Chanthirika S**. Cytotoxicity and apoptotic effects of Microcystin-LR on human embryonic kidney (HEK 293) and human kidney adenocarcinoma (ACHN) cell lines. Proceedings of the 19<sup>th</sup> North American ISSX Meeting/29<sup>th</sup> JSSX Meeting, California, USA October 19-23<sup>rd</sup>, 2014.
43. **Pradeepa NHL**, **Weerasena OVDSJ**, Liyanarachchi CJ, Wijesundera RLC, Abeysinghe ISB. The tea shot hole borer beetle (*Euwallacea fornicates*) is a vector of the canker causing *Fusarium spp* of tea [*Camellia sinensis* (L) O kuntze] in Sri Lanka (OP 22). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 47.
44. **Ranasinghe RACR**, **Tennekoon KH**, **Karunanayake EH**, Allen M. Ethnicities of Sri Lanka. Proceedings of the Regional Conference of Young Scientists on Recent Trends in Physical & Biological Sciences March 7-8<sup>th</sup>, 2014 at JNCASR, Bangalore, India Organized by TWAS-ROCASA.
45. **Ranasinghe RACR**, **Tennekoon KH**, **Karunanayake EH**, M Lembring, Allen M. Mitochondrial DNA diversities and phylogenetic relationship of four major ethnic groups and Vedda population in Sri Lanka. DNA in Forensics 2014, 9<sup>th</sup> International Y-Chromosome Workshop and 6<sup>th</sup> International EMPOP meeting Brussels, organized by the Belgian Institute for Forensic Science and Criminology (NICC/INCC). 14-16<sup>th</sup> May, 2014.



- 
46. **Ranasinghe RACR, Tennekoon KH, Karunanayake EH, Lembring M, Allen M** Mitochondrial lineage of Sri Lankans. Symposium on (Human DNA Identification). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014.
  47. **Ranasinghe RACR, Tennekoon KH, Karunanayake EH, Allen M.** Mitochondrial DNA studies of Sri Lankans. Poster presentation at the Commonwealth Science Conference held at Hotel Lalit Ashok, Bangalore, India, 25<sup>th</sup> to 28<sup>th</sup> November 2014.
  48. **Rajkumar G, Weerasena OVDSJ, Fernando K.** Construction of species-specific suppression subtractive hybridization library from the endemic wild rice species *Oryza rhizomatis* and characterization of DNA clones (OP 19). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp45
  49. **Ranaweera BVLR, Handunnetti SM, Weerasena OVDSJ.** Immunomodulatory activity of Link Samahan: A herbal formulation in Sri Lankan market. (OP 09). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 39.
  50. **Rodrigo HACIK, Tennekoon KH, Karunanayake EH, Amarasingha IY, De Silva KS.** Circulating leptin levels in a cohort of sporadic breast cancer patients in Sri Lanka. Proceedings of the 16<sup>th</sup> World Congress of Gynecological Endocrinology. March, 2014. Italy.
  51. **Rodrigo HACIK, Tennekoon KH, Karunanayake EH, Amarasingha IY, De Silva KS** Circulating levels of leptin and soluble leptin receptor (SLR) in a cohort of sporadic breast cancer patients in Sri Lanka (OP 01). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 35.
  52. **Rukshala BAD, Handunnetti SM, de Silva ED.** *In vitro* Inhibition of rat mast cell degranulation by Sri Lankan medicinal plant extracts (B7). Proceedings of the 7<sup>th</sup> Biennial Sessions of the AISSL, 2<sup>nd</sup> September 2014, pp 28.
  53. **Rukshala BAD, Handunnetti SM, De Silve ED,** Inhibition of Nitric oxide production in Carrageenan induced rat peritoneal cells *in vitro* by Sri Lankan medicinal plant extracts (OP 10). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 40.
  54. **Samaradivakara SP, Samarasekera R, Handunnetti SM, Weerasena OVDSJ.** Acetylcholinesterase inhibitory and antioxidant activities of leaves of *Toona ciliata* (PP 16). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 55.
  55. **Samarakoon SR, Chanthirika S, Tennekoon KH, Thabrew MI, Ediriweera PMK, de Silva ED.** *In vitro* anti-hepatocarcinogenic properties of a mangrove plant *Scyphiphora hydrophyllacea* (OP 12). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 41



- 
56. Sanmugarajah V, **Thabrew I**, and Sivapalan S. R. (2014). *In vitro* Antioxidant Activities of Amukirai choornam, a Siddha Herbal Preparation. Proceedings of HETC Symposium, Colombo, Sri Lanka, July 2014, pp 64.
57. Sanmugarajah V, **Thabrew I**, Sivapalan SR. Comparative phytochemical screening and antiarthritic potential in different extracts of *Enicostemma littorale* and *Withania somnifera*. Proceedings of the International Conference on Multi-disciplinary Approaches- 2014 (Harnessing knowledge and Harmonizing diversities), Faculty of Graduate Studies, University of Sri Jayawardenapura, Sri Lanka. August, 2014.
58. **Senathilake KS, Samarakoon SR, Karunanayake EH, Tennekoon KH.** Antifilarial activity of *Curcuma zedoaria* against adult bovine *Setaria digitata* (OP15). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 43.
59. **Sundralingam T, De Silva S, Hewage AS, de silva KSH, Tennekoon KH.** GH1 gene sequence variants in a cohort of Sri Lankan children with short stature (OP 04). Proceedings of the 2<sup>nd</sup> ICF-MLS, IBMBB, University of Colombo, 11-12<sup>th</sup> September 2014, pp 36
60. Vinotha S, **Thabrew I**, Sri Ranjani S. Comparing the *in vitro* anti-oxidant activities of selected Siddha herbal preparations Amukkirai and Vellarugu Choornam. Proceedings of the 1<sup>st</sup> International Congress of the Society for Ethnopharmacology, Faculty of Pharmacy, Sri Ramachandra University, Chennai, India. 7-9<sup>th</sup> March, 2014.
61. Vinotha S., **Thabrew I**, and Sri Ranjani S. *In vitro* anti-oxidant activity of Siddha Herbal preparation, Vellargu choornam. Proceedings of Jaffna Science Association, 21<sup>st</sup> Annual Sessions, University of Jaffna, 21(1): 2-4<sup>th</sup> April 2014, pp A05.
62. Vinotha S, **Thabrew I**, and Sri Ranjani S. Comparative standardization of Siddha medicated oil: Thalangai ennai, a poly herbal formulation. Proceedings of 2<sup>nd</sup> International Research Symposium, Rajarata University (IRSYRU 2014), Rajarata, Sri Lanka, 29-30<sup>th</sup> October 2014, pp.428-4.



**Table 1: MPhil/PhD Degrees in Progress and New Registrations – Year 2014**

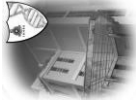
	<b>Index Number</b>	<b>Name of the student</b>	<b>Degree registered</b>	<b>Source(s) of funds</b>	<b>Tentative Title</b>	<b>Supervisors</b>
01	IBMBB/MPhil /08/002	Ms. Ruwandi ACR Ranasinghe	PhD	National Research Council- NRC-09-20	A study of genetic polymorphisms in mitochondrial DNA hypervariable regions I and II of the Sri Lankan population	Prof. Eric H Karunanayake Prof. Kamani H Tennekoon Prof. Marie Allen, Sweden
02	IBMBB/MPhil /08/005	Ms. NHL Pradeepa	PhD	Funds available at from Tea Research Institute	DNA Phylogeny, morphology and pathogenicity of <i>Macrophoma theicola</i> patch the casual agent of stem canker in Tea	Dr. OVSDJ Weerasena Dr. A Balasriya
03	IBMBB/MPhil /10/001	Ms. A Sudeshini Hewage	PhD	NRC/IPICS NRC-05-28	Selected polymorphisms of the H19 and IGF-II genes in a Sri Lankan birth cohort: effect of maternal and newborn genotype on birth size	Prof. Eric H Karunanayake Prof. Kamani H Tennekoon
04	IBMBB/MPhil /11/001	Ms. Aysha U Perera	MPhil/PhD	National Research Council- NRC-11-099	Molecular identification of <i>Ralstonia solanacearum</i> (E.F.Smith)in seed potato	Dr. P Nilanthy Dassanayake Dr. OVSDJ Weerasena
05	IBMBB/MPhil /12/001	Ms. K Dulangi K Karunarathna	MPhil/PhD	National Science Foundation- NSF/RG/2011/BT/06	Assessment of Genetic diversity and tracing the origin of weedy rice population found in rice fields in Sri Lanka	Dr. Shyma R Weerakoon Dr. OVSDJ Weerasena Dr. S Somaratne



	<b>Index Number</b>	<b>Name of the student</b>	<b>Degree registered</b>	<b>Source(s) of funds</b>	<b>Tentative Title</b>	<b>Supervisors</b>
06	IBMBB/MPhil /12/002	Mr. KH Tissa Karunaratna	MPhil/PhD	National Research Council-NRC-09-066	Use of SSR markers for genetic characterization and finer-printing of recommended tea ( <i>Camellia sinensis</i> L) cultivars and tagging of blister blight disease resistance in tea	Dr. KM Mewan Dr. OVDSJ Weerasena
07	IBMBB/MPhil /12/004	Mr. EP Meran Keshawa	PhD	National Research Council- NRC-11-018	Possible anti-carcinogenic effects of <i>Mangifera zeylanica</i> : Identification of active compounds and evaluation of molecular mechanisms	Prof. Kamani H Tennekoon Prof. Ira Thabrew Prof. E Dilip De Silva
08	IBMBB/MPhil /12/005	Ms. HACIK Rodrigo	MPhil/PhD	National Research Council- NRC-11-018	Determination of circulating levels of Leptin, soluble leptin receptor and nicotinamide phosphoribasy transferase and selected leptin and leptin receptor genotypes in a cohort of sporadic breast cancer patients in Sri Lanka	Prof. Kamani H Tennekoon Prof. Eric H Karunanayake
09	IBMBB/MPhil /12/006	Ms. MJ Roshan Niloofa	PhD	National Science Foundation- NRC/RG/2011/HS/19	Studies on comparing rapid immunodiagnostic methods and immune status of leptospirosis in Western province in Sri Lanka	Dr. Shiroma M Handunnetti Prof. Senaka Rajapakse Prof. W Sunil Premawansa
10	IBMBB/MPhil /12/007	Ms. TRG Narmada Fernando	PhD	National Research Council- NRC-11-077	Studies on factors contributing to pathogenesis of severe leptospirosis in Sri Lanka	Dr. Shiroma M Handunnetti Prof. W Sunil Premawansa Prof. Senaka Rajapakse



	<b>Index Number</b>	<b>Name of the student</b>	<b>Degree registered</b>	<b>Source(s) of funds</b>	<b>Tentative Title</b>	<b>Supervisors</b>
11	IBMBB/MPhil /13/001	Ms. BA Dilani Rukshala	MPhil/PhD	Ministry of Higher Education – Drugs leads	Drugs Leads from medicinal plants in Sri Lanka: Investigation on immunomodulatory / anti –allergic activity	Dr. Shiroma M Handunnetti Prof. E Dilip de Silva
12	IBMBB/MPhil /13/002	Mr. NH Kanishka S Senathilake	MPhil/PhD	Ministry of Higher Education – Drugs leads	Search for antifilarial drugs from Sri Lankan medicinal plants	Prof. Eric H Karunanayake Prof. Kamani H Tennekoon
13	IBMBB/MPhil /13/003	Ms. Anuka S Mendis	PhD	Ministry of Higher Education – Drugs leads	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
14	IBMBB/MPhil /13/004	Ms. DDP Panchima Jayarathna	MPhil/PhD	Ministry of Higher Education – Drugs leads	Screening of selected endemic plants for possible cytotoxic compounds & isolation & structure elucidation of potential anticancer compound(s) identified	Prof. Kamani H Tennekoon Prof. Ira Thabrew Prof. Dilip de Silva Prof. Eric H Karunanayake
15	IBMBB/MPhil /13/005	Ms. HD Sachindra M Perera	MPhil/PhD	National Research Council- NRC-12-100	Studies on antioxidant, immunomodulatory and $\beta$ -lactamase inhibitory bioactives of medicinal plants	Dr. Radhika Samarasekera Dr. Shiroma Handunnetti Dr. OVDSJ Weerasena
16	IBMBB/MPhil /13/006	Ms. Saroopa P Samaradivakara	MPhil/PhD	National Research Council- NRC-12-100	Studies on antioxidant cholinesterase & Protease Inhibitory bio actives of medicinal plants	Dr. Radhika Samarasekera Dr. OVDSJ Weerasena Dr. Shiroma Handunnetti



	Index Number	Name of the student	Degree registered	Source(s) of funds	Tentative Title	Supervisors
17	IBMBB/MPhil /13/007	Ms. EM Sachini I Ekanayaka	MPhil/PhD	National Research Council- NRC-12-037	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
18	IBMBB/MPhil /13/008	Ms. Maduwanthi Chandhrakanthan	MPhil/PhD	National Research Council- NRC-12-100	Activity studied isolation of anti inflammatory compounds from <i>Alpinia carcarata</i> rhizome and leaf	Dr. Selvaluxmy Chelvendran Dr. Shiroma Handunnetti Dr. GA Sirimal Premakumara
19	IBMBB/MPhil /14/001	Ms. Rashini Y Baragama-Arachchi	MPhil/PhD	National Science Foundation- NSF/RG/2011/BT/05	Molecular and biochemical characterization of Bt isolates with insecticidal activity in Sri Lanka	Dr. Radhika Samarasekara Dr. OVDSJ Weerasena
20	IBMBB/MPhil /14/002	Mr. Kanchana S Senanayake	MPhil/PhD	Swedish Research Links International collaborative research grant- The Swedish Research Council (IPICS)	Analysis of <i>Seteria digitata</i> genome using NGS technologies: identification of potential drug targets in <i>Seteria digitata</i>	Dr. Erik Bongcam Rudloff Prof. EH Karunanayake Prof. Kamani H Tennekoon
21	IBMBB/MPhil /14/003	Ms. Tharmini Sundralingam	MPhil/PhD	National Science Foundation- NSF/RG/2011/BT/03	Characterization of mutations and sequence variants of growth hormone (GH) and growth hormone releasing hormone receptor (GHRH-R) in a cohort of Sri Lankan children with GH deficiency	Prof. KH Tennekoon Prof. Shamyra De Silva



	<b>Index Number</b>	<b>Name of the student</b>	<b>Degree registered</b>	<b>Source(s) of funds</b>	<b>Tentative Title</b>	<b>Supervisors</b>
22	IBMBB/MPhil /14/004	Mr. Krishan R Balaji	MPhil/PhD	University of Colombo Research Grant- AP/3/2/2014/RG/14	Sero-epidemiology of human leptospirosis in the District of Colombo, Sri Lanka	Prof. Senaka Rajapakse Dr. Shiroma Handunnetti Prof. Deepika Fernando
23	IBMBB/MPhil /14/005	Ms. Maheshi S Mapalagamage	MPhil/PhD	National Science Foundation- NSF/RG/2014/HS/04	Studies on prognostic markers and pathogenesis of severe dengue associated with oxidative stress, host genetic polymorphisms and endothelial dysfunction	Prof. Sunil Premawansa Dr. Shiroma Handunnetti Dr. Dharshan De Silva Dr. Gayani Premawansa
24	IBMBB/MPhil /14/006	Ms. WM Kumudu T de AW Gunasekera	MPhil	National Science Foundation- NSF/RG/2014/HS/04	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 Dr. Shiroma Handunnetti Dr. Jagath Weerasena Dr. Risintha Premaratne





**Table 2 : Student Registered in other Higher Educational Institutions & carrying a part of study in the IBMBB Laboratories – 2014**

No.	Name of student	Degree registered	Affiliation	Source of funds	Tentative title of Thesis	Names of Supervisors
1	Ms. Poorna C Piyathilake	PhD	Uni. of Sri Jayawardenapura	NRC-11-034	Molecular detection of toxigenic cyanobacteria, quantification of microcystin and exploiting microbial diversity to remove microcystin for water treatment solution	*Prof. Kamani H Tennekoon Prof. MM Pathmalal Prof. Nissanka de Silva
2	Mr. Sadin De Silva	MPhil/PhD	Faculty of Science, Uni. of Colombo	Treasury Grant- Drug Leads from Medicinal Plants	Antimicrobial agent from Sri Lankan medicinal plant	Prof. Dilip De Silva *Prof. Kamani H Tennekoon
3	Ms. Surani Ediriweera	MPhil/PhD	Faculty of Science, Uni. of Colombo	NRC-11-040	Study of diversity of macrofungi in selected dry zone forest reserves of Sri Lanka	Prof. Ravi Wijesundara Dr. C Nanayakkara *Dr. Jagath Weerasena
4	Ms. HKA Vindya AK Fernando	MPhil/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 *Dr. SM Handunnetti *Dr. Jagath Weerasena
5	Dr. D Padmasiri A Dissanayake	MPhil/PhD	Indigenous Medicine, Uni. of Colombo	HETC- Institute of Indigenous Medicine	Anti-inflammatory potential of decoctions of <i>Cyathulla prostrata</i> , <i>Acyranthus aspera</i> and <i>Asparagus racemosus</i>	Prof HMA Thisera *Dr. SM Handunnetti Dr S Sivaganesh

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



**Table 3 : Research Funding -2014**

<b>Grantee</b>	<b>Name of the Project</b>	<b>Funding Agency</b>	<b>Grant No</b>	<b>Funds available (Rs)</b>
Prof Kamani Tennekoon	A study on the genetic polymorphisms of Mitochondrial hypervariable regions I and II regions in Sri Lankans	National Research Council	NRC-09-020	223,708.00
Prof Kamani Tennekoon	Characterisation of mutations and sequence variants in growth hormone and growth hormone releasing hormone receptor in a cohort of children with growth hormone deficiency	National Science Foundation	RG/2011/BT/03	674,529.00
Prof Kamani Tennekoon	Identification of potential molecular and genetic markers of sporadic breast cancer and evaluation of selected traditional medicines as potential anti cancer drugs for breast and ovarian cancers using an <i>in vitro</i> model	National Research Council	NRC-11-018	2,614,116.00
Dr Shiroma Handunnetti	Studies on factors contributing to pathogenesis of severe leptospirosis in Sri Lanka	National Research Council	NRC-12-077	1,757,655 .80
Dr Shiroma Handunnetti	Studies on comparing immunodiagnostic methods and immune status of leptospirosis patients in Colombo and Gampaha districts	National Science Foundation	RG/2011/HS/19	978,109.00
Prf Ira Thabrew	An <i>in-vitro</i> evaluation of the effects of a decoction prepared from <i>Flueggea leucopyrus</i> wild on the expression of heat shock proteins in breast cancer cells	National Science Foundation	NSF/Fellow/2012 /01	171,820.00
Dr OVDSJ Weerasena Dr S Handunnetti	Studies on antioxidant, immunomodulatory and β-lactamase inhibitory bioactives of medicinal plants. (Co-Investigators)	National Research Council	NRC-12-100	*2,444,478.00
Dr OVDSJ Weerasena	Assessment of Genetic diversity and tracing the origin of weedy rice population found in rice fields in Sri Lanka.(Co-Investigator)	National Science Foundation	RG/2011/BT/06	*668,676.64
Dr Sumadee De Silva	Analysis of mutations and polymorphisms in exon 11 of <i>BRCA2</i> gene in Sri Lankan young breast cancer patient	National Science Foundation	RG/2014/BT/04	399,264.00
Dr Sameera R Samarakon	Screening of selected mangrove plants for anti-cancer activity	International Foundation of Science	F/5377-1	171,820.00
Prof EH Karunanayake Prof KH Tennekoon Mr KS Senanayake	Using next generation sequencing technologies (NGS) to find a cure for human and cattle filariasis.	Swedish Research links programme 2014	IPICS	1,665,057.00
Dr Sameera R Samarakon	Cancer stem cells targeted drug leads from Sri Lankan endemic plants for breast cancer	National Research Council	NRC-14-067	140,000.00
Dr SM Handunnetti	Sero-epidemiology of human leptospirosis in the District of Colombo, Sri Lanka (Co-Investigator)	University of Colombo	AP/ 3/2/2014/ RG/14	*367,572.00



Dr SM Handunnetti	Studies on prognostic markers and pathogenesis of severe dengue associated with oxidative stress, host genetic polymorphisms and endothelial dysfunction (Co-Investigator)	National Science Foundation	RG/2014/HS/04	*768,089.00
<b>Total funds available from Research Grants in year 2014</b>				<b>11,237,238.64</b>

\*Funds received by the Principal Investigator's, Institution and made available for research component conducted at IBMBB,UOC

**Table 4 : PhD Dissertations – 2014**

Name of the Student	Gender	Year of entry	Dissertation submitted for examination	Degree Programme	Title of the Dissertation/Thesis
S Sameera R Samarakoon	M	2009	2013	PhD/IBMBB	Anti-hepatocarcinogenic effect of a traditional Sri Lankan herbal remedy: Modulation of expression of selected genes associated with carcinogenesis and identification of active compounds
W Wasana P Rodrigo	F	2006	2013	PhD/ Faculty of Science/UoC	Structural and functional characterization of novel, parasitic nematode-specific protein from <i>Setaria digitata</i>
Peshala Kumari	F	2009	2013	PhD/USJP	Hypoglycaemic, anti-inflammatory and ATPase effect of the dried flower extracts of <i>Aegle marmelos</i> (bael fruit)
Swarna D Hapuarachchi	F	2009	2014	PhD/USJP	Comparison of hypoglycemic, hepatoprotective and anti inflammatory activities of natural plants and callus cultures of <i>Munronia pinnata</i>



**Table 5 : MSc Dissertations – 2014: Molecular Life Sciences**

<b>Name of the Student</b>	<b>Gender</b>	<b>Year of entry</b>	<b>Dissertation submitted for examination</b>	<b>Degree Programme</b>	<b>Title of the Dissertation/Thesis</b>
O Koshala C De Silva	F	2013	2014	MSc /MLS	Possible potentiation of anti proliferative effect of Tamoxifen in MCF-7 breast cancer cells by a bioactive extract of mangrove plant <i>Scyphiphora hydrophyllacea</i> : A pilot study
Lakshika Jayasekara	F	2013	2014	MSc /MLS	Screening of a cohort of Sri Lanka young onset breast cancer patients for c.2175_2176insA mutation
Joanne Kotelawala	F	2013	2014	MSc /MLS	Isolation, biochemical and molecular characterization of probiotics in traditional rice varieties
Tharsagini Nanthaprakash	F	2012	2014	MSc/MLS	Association of Endometriosis and p53 gene codon 72 polymorphism in a group of Sri Lankan women
Adeesha Herath	F	2012	2014	MSc/MLS	Y chromosome haplotype analysis of Sri Lankans: A Preliminary study



**Table 6 : MSc Dissertations – 2014: Cellular and Molecular Immunology**

<b>Name of the Student</b>	<b>Gender</b>	<b>Year of entry</b>	<b>Dissertation submitted for examination</b>	<b>Degree Programme</b>	<b>Title of the Dissertation / Thesis</b>
DL Peshala E Gunasekara	M	2013	2014	MSc/CMI	Immunochemical characterization of hymenopterans venom
Achini R Rathnayake	F	2013	2014	MSc/CMI	Effect of hot water extracts of <i>C. sativum</i> and <i>C. fenestratum</i> on immunostimulatory and anxiolytic activities of rats
Harindra D Sathkumara	M	2013	2014	MSc/CMI	Geneticsof common variable immunodeficiency: Role of TACI
Anupama R Siriwardhana	F	2013	2014	MSc/CMI	Studies on <i>Leptospira</i> specific antigens using rat polyclonal antibodies
Rasa Threeswaran	M	2013	2014	MSc/CMI	Studies on coagulation disorders in leptospirosis patients
T Sathika M Fernando	M	2011	2014	MSc/CMI	Assessment of anti-leptospiral IgM and IgG antibodies by ELISA established using <i>Leptospira biflexa</i> antigens



**Table 7 : MSc Dissertations – 2014: Bioinformatics**

<b>Name of the Student</b>	<b>Gender</b>	<b>Year of entry</b>	<b>Dissertation submitted for examination</b>	<b>Degree Programme</b>	<b>Title of the Dissertation/Thesis</b>
Ketheswarasarna Hamsini	F	2012	2014	MSc/BI	Analysis of protein interaction network (PIN) causing breast cancer
Karthika B. Mayan	F	2012	2014	MSc/BI	Molecular docking study of natural compounds for cancer stem cells targeted anti-cancer activity
Roshan Priyarangana Perera	M	2012	2014	MSc/BI	Analysis of the occurrence of cis-regulatory elements in the first introns of human genes
Sumudu Rangika Samarasinghe	F	2012	2014	MSc/BI	<i>In silico</i> analysis of missense mutations in human growth hormone: The impact on protein structure, dynamics, and stability
Bhagya Senadheera	F	2012	2014	MSc/BI	Biological signatures across seven dominant human cancers in Sri Lanka
Asha Prashanthi Tillekeratne	F	2012	2014	MSc/BI	Prediction of mitochondrial haplogroup using HV I and HV II



## Snapshots of Events in 2014

### Short Training Courses – 2014

#### Training course in Molecular Biological Techniques- November 2014



Participants and Resource persons



Laboratory sessions

#### Training course in Immunological Techniques- January 2014



Participants and Resource persons



Laboratory sessions

#### Training course in Gene cloning and recombinant protein expression- January 2014



Participants and Resource persons



Laboratory sessions



---

## International Conference on Frontiers of Molecular Life Sciences 10<sup>th</sup> to 12<sup>th</sup> September 2014

### Welcome Reception



Invited speakers at the welcome reception



Invited speakers including Prof. Ulf Pettersson and Prof. Malin Akerblom from Sweden who were involved with the establishment of IBMBB, visit the laboratories.

### Conference



Registration desk

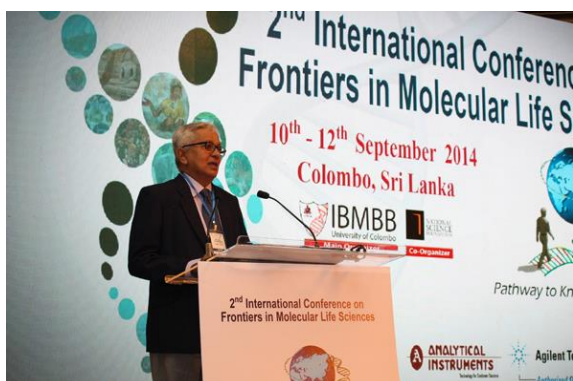


Inauguration ceremony





## International Conference on Frontiers of Molecular Life Sciences- September 2014



Emeritus Prof Eric H Karunanayake, Emeritus Professor and Founder Director of IBMBB addressing the audience



Key note address by Prof Ulf Pettersson, Senior Professor of Medical Genetics, University of Uppsala, Sweden



Audience listening to a lecture



Lecture by Prof Marie Allen, Department of Immunology, Genetics and Pathology, Science for life Laboratory, Biomedical Centre University of Uppsala



## International Conference on Frontiers of Molecular Life Sciences- September 2014



Lecture by Prof Iqbal Choudhry, Director, HEJ Research Institute of Chemistry, Pakistan



Lecture by Dr K Thangaraj Senior Principal Scientist, Centre for Cellular and Molecular Biology (CCMB), Hyderabad, India



Lecture by Prof Gerald P Schatten Director, Pittsburgh Development Centre, University of Pittsburgh School of Medicine in Pennsylvania, USA



## International Conference on Frontiers of Molecular Life Sciences- September 2014



Oral presentations by some of the PhD Students



Acting Director, Prof Rezvi Sheriff giving certificates to some of the best presenters



Prof Kamani Tennekoon, Chairperson of the organizing committee delivering the vote of thanks



## International Conference on Frontiers of Molecular Life Sciences- September 2014



### Pre-Congress Workshop on NMR spectra- 6<sup>th</sup>- 9<sup>th</sup> September 2014



Lecture by Dr A Adhikari from H.E.J. Research Institute of Chemistry, International Center of Chemical and Biological Sciences, Pakistan



Participants and Resource persons



## International Conference on Frontiers of Molecular Life Sciences- September 2014

### Pre-Congress Workshop on DNA identification- 9<sup>th</sup>- 10<sup>th</sup> September 2014



Lecture by Prof Marie Allen Department of Immunology, Genetics and Pathology, Science for life Laboratory, Biomedical Centre University of Uppsala



Laboratory sessions

### Post-Congress Workshop on Next Generation Sequence (NGS) data analysis 13<sup>th</sup> -15<sup>th</sup> September 2014



Participants and Resource persons



Laboratory sessions



---

## International Conference on Frontiers of Molecular Life Sciences- September 2014

### Post-Congress Training Course in Stem cells and Cell Biology- 14<sup>th</sup>- 15<sup>th</sup> September 2014



Lecture by Prof Amittha Wickrema, Associate Professor, Department of Medicine, University of Chicago, USA



Participants and Resource persons



## Open Day – 28<sup>th</sup> October 2014



Registration Table



Laboratory visits



## Science Day Programme for School Children – 5<sup>th</sup> November 2014



Video demonstration of DNA fingerprinting techniques



Students participating in a discussion with the IBMBB staff



Dr Jagath Weerasens, Senior Lecturer of IBMBB explaining the DNA fingerprinting techniques to the students







## Staff Welfare Programmes

### Blood Donation- 28<sup>th</sup> April 2014



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

### Pirith Ceremony 25<sup>th</sup> April 2014



Priests are entering the “*Pirith mandapaya*”



Alms giving in the morning- 26<sup>th</sup> April 2014



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

**STATEMENT OF FINANCIAL POSITION AS AT 31ST DECEMBER 2014**

(Figures adjusted to the Nearest Rupee)

	Note	2014 Rs.	2013 Rs.
<b><u>ASSETS</u></b>			
<b><u>CURRENT ASSETS</u></b>			
Bank Balances	Note - 02	7,225,960	9,767,733
Investments in call deposits		13,065,000	5,000,000
Other Receivables	Note - 03	3,129,268	5,187,719
Advance A/C	Note - 04	1,281,134	792,925
Staff Loans	Note - 05	2,585,515	2,422,180
Investments	Note - 06	23,218,402	14,082,239
Chemicals & Glassware		7,890,072	9,762,001
		<b>58,395,349</b>	<b>47,014,796</b>
<b><u>NON CURRENT ASSETS</u></b>			
Investments - Endowment Fund		2,999,379	2,595,988
Library Books and Periodicals	Note - 07	584,507	328,179
Lab Tools	Note - 07	111,339	160,887
Fixtures and Fittings	Note - 07	94,230	105,085
Lab and Teaching Equipments	Note - 07	23,568,315	28,390,773
Computers	Note - 07	4,600,778	3,990,997
Office Furniture & Equipments	Note - 07	4,890,005	3,551,767
		<b>36,848,554</b>	<b>39,123,676</b>
<b>TOTAL ASSETS</b>		<b>95,243,904</b>	<b>86,138,472</b>



**INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY & BIOTECHNOLOGY**  
**UNIVERSITY OF COLOMBO**  
**STATEMENT OF FINANCIAL POSITION AS AT 31ST DECEMBER 2014**

	<b>2014</b>	<b>2013</b>
	<b>Rs.</b>	<b>Rs.</b>
<b><u>LIABILITIES</u></b>		
<b><u>CURRENT LIABILITIES</u></b>		
Refundable Deposits	87,230	82,230
Refundable Laboratory Deposits	2,055,500	1,635,500
Accrued Expenditure And Other Payable	1,773,283	1,992,941
	<b>3,916,013</b>	<b>3,710,671</b>
<b><u>NON CURRENT LIABILITIES</u></b>		
Provision for Gratuity	Note -08	4,008,243
Provision for Audit Fee	360,000	240,000
Research Grants	Note - 09	3,609,151
	<b>8,724,591</b>	<b>7,857,394</b>
<b>TOTAL LIABILITIES</b>	<b>12,640,603</b>	<b>11,568,065</b>
<b>NET ASSETS</b>	<b>82,603,300</b>	<b>74,570,407</b>
<b><u>EQUITY / NET ASSETS</u></b>		
<b><u>CAPITAL</u></b>		
Capital Grant Spent	28,036,887	30,271,645
Capital Grant Unspent	3,132,241	3,009,361
Gifts & Donations	1,559,624	1,559,624
	<b>32,728,752</b>	<b>34,840,629</b>
<b><u>ACCUMILATED FUND</u></b>		
Income and Expenditure A/C	30,914,588	34,201,093
Asset Replacement Reserve	11,260,620	-
	<b>42,175,208</b>	<b>34,201,093</b>
<b><u>RESTRICTED FUNDS</u></b>		
Institute Development Fund	4,994,767	3,080,670
Endowment Fund	2,704,573	2,448,015
Asset Replacement Fund	11,260,620	-
	<b>18,959,960</b>	<b>5,528,685</b>
<b>TOTAL EQUITY / NET ASSETS</b>	<b>82,603,300</b>	<b>64,607,502</b>

Prepared & Certified by

.....  
Senior Asst. Bursar

.....  
Senior Asst. Registrar

"The Accounting policies on pages 6 to 10 and other Notes on pages 11 to 17 form an integral part of these Financial Statements. The Board of Directors is responsible for the preparation and presentation of these Financial Statements. These Financial Statements were approved by the Board of Directors and signed on their behalf,"

.....  
Director



**INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY & BIOTECHNOLOGY**  
**UNIVERSITY OF COLOMBO**  
**STATEMENT OF FINANCIAL PERFORMANCE**  
**FOR THE YEAR ENDED 31ST DECEMBER 2014**

		<b>2014</b>	<b>2013</b>
		<b>Rs.</b>	<b>Rs.</b>
<b>INCOME</b>			
Govt. Grant for Recurrent Expenditure		53,356,000	43,500,000
Govt. Grant for Rehabilitation of Capital Assets		4,200,000	4,318,000
Amortization of Fixed Assets		9,911,877	8,817,166
Research Grants	Note - 10	2,652,876	3,585,566
Generated Income	Note - 11	14,127,697	12,177,250
Interest Income		1,807,182	2,271,520
Other Income	Note - 12	905,700	762,498
		<b>86,961,332</b>	<b>75,432,000</b>
<b>Less : EXPENDITURE</b>			
Personal Emoluments	Note -13	20,274,249	18,352,204
Travelling		446,101	338,926
Supplies	Note - 14	10,578,896	10,973,237
Maintenance Expenditure	Note -15	5,551,414	8,491,719
Contractual Services	Note - 16	15,283,006	14,437,500
Other Recurrent Expenses	Note - 17	14,032,300	5,047,304
Depreciation		11,108,135	9,967,686
		<b>77,274,101</b>	<b>67,608,577</b>
<b>Excess of Income over Expenditure</b>		<b>9,687,231</b>	<b>7,823,423</b>



**INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY & BIOTECHNOLOGY**  
**UNIVERSITY OF COLOMBO**  
**CASH FLOW STATEMENT**  
**FOR THE YEAR ENDED 31ST DECEMBER 2014**

	Rs.	Rs.
<b>Excess for the year</b>		<b>9,687,231</b>
Add : Adjustments for items not involving movement of Funds		
Provision for Gratuity	351,595	
Provision for Audit Fees	120,000	
Interest from Investment	(1,807,182)	
Depreciation/Amortization	1,196,258	
Operating excess before working capital changes	<b>(139,329)</b>	
Decrease in Receivables	(3,132,140)	
Increase in Payables	12,399,321	
	<u>15,392,132</u>	
Audit Fees Paid	-	
Gratuity Paid	(478,980)	
	<u>(478,980)</u>	
<b>Net cash flow from operating activities</b>		<b>14,913,152</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
Acquisition of Fixed Assets	(8,429,622)	
Increase in Investments	(9,539,554)	
Interest Received from Investments	833,458	
	<u>(17,135,718)</u>	
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
Government Grant for Capital Expenditure	7,800,000	
	<u>7,800,000</u>	
<b>NET INCREASE IN CASH EQUIVALENTS</b>		<b>5,577,434</b>
Cash & cash equivalents at the beginning of the period		<u>14,713,525</u>
<b>Cash &amp; cash equivalents at the end of the period</b>		<u><u>20,290,959</u></u>



**INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY & BIOTECHNOLOGY**  
**STATEMENT OF CHANGE IN EQUITY/NET ASSETS FOR THE YEAR ENDED 31/12/14**

	Accumulated Fund	Reserves & Restricted Fund	Capital Grant Spent	Capital Grant Unspent	Gift & Donations	Total
<b>Balance as at 31st December 2013</b>	24,238,188	5,528,685	30,271,645	3,009,361	1,559,624	64,607,501
Adjustments in respect of previous Year	9,962,906	-	-	-	-	9,962,906
Restated Balance As at 1st Jan 2014	34,201,093	5,528,685	30,271,645	3,009,361	1,559,624	74,570,407
Capital Grant Received				22,500,000		22,500,000
Surplus / Deficit for the period	9,687,231					9,687,231
Transfer to Restricted Funds	(12,973,736)	1,713,116				-
Interest for Restricted Funds		457,539				457,539
Capital Grant Spent /Unspent During the Year			7,677,119	(7,677,119)		-
Transfer to Rehabilitation				(4,200,000)		(4,200,000)
Transfer to Income				(10,500,000)		(10,500,000)
Amortization of Donations			(9,911,877)			(9,911,877)
<b>Balance as at 31st December 2014</b>	<b>30,914,588</b>	<b>11,260,619.70</b>	<b>28,036,887</b>	<b>3,132,241</b>	<b>1,559,624</b>	<b>82,603,300</b>



---

## Notes to the Financial Statement

### 1. Significant Accounting Policies

#### 1.1 Reporting Entity

IBMBB has been incorporated under the Ordinance No.1285/25 and gazetted on 23<sup>rd</sup> 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 31/12/2014

### 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

• 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

### 2.3.7. 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.



---

## **Review on Internal audit functions in the year 2014**

Four Audit Committee meetings of the Institute of Biochemistry, Molecular Biology and Biotechnology were held in 2014 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 - 2014**

During the year 2014, 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 2014 – 2018.

Approval for expanding the building space was requested from University of Colombo as IBMBB is situated in the premises of University of Colombo. University has requested for collaborative programmes with the Faculty of Science and institute had discussed this with their representatives.

Fulltime Msc courses conducted by the IBMBB have a full time research component during the third Semester that require 1:1 supervision of student research projects. MPhil and PhD programmes are based on fulltime research. Without having adequate academic cadre, IBMBB finds it difficult to expand its high quality human resource training programmes.

IBMBB academic cadre consist of two Professor posts and five Senior Lecturer posts. Four Scientific Assistant posts and one Assistant Network Manager post are available as Academic Support grades. Several of these posts were vacant in year 2014. Although necessary actions have been taken to recruit for all vacant cadre positions, approval for one lecturer posts and two Scientific Assistant posts were received only by end of December 2014. Approval for recruitment of one (Associate) Professor post and one Senior Lecturer post had not been received from University of Colombo. Recruitment of a post-doctoral fellow was also not approved by the Board of Management due to limited generated funds.



---

## Plan of work for 2015

### Teaching:

- Increase student intake to existing MSc programmes
- Continue/strengthen existing MSc and PhD programmes
- Establishment and maintenance of a comprehensive resource pool of Faculty
- 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 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 and 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
- 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
- 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

### **Maintaining International Standards:**

- Enhance existing /develop new collaborations with Universities and Research Institutes overseas
- Provide training in Molecular Life Sciences, Bioinformatics and allied fields, nationally and regionally
- Develop content for E- learning for students/teachers in Bioinformatics, Molecular Life Sciences 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



**විගණකාධිපති දෙපාර්තමේන්තුව**  
**கணக்காய்வாளர் தலைமை அறிப்பித் திணைக்களம்**  
**AUDITOR GENERAL'S DEPARTMENT**



මගේ අංකය  
எனது இல.  
My No. }

EC/C/IBMBB/14/FA

ඔබේ අංකය  
உமது இல.  
Your No. }

දිනය  
திகதி  
Date }

21 August 2015

The Director,  
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 2014 in terms of Section 17 of the Institute of Biochemistry, Molecular Biology and Biotechnology Ordinance No.01 of 2003 and the 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 2014 comprising the statement of financial position as at 31 December 2014 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. 1 of 2003 enacted under Sub-section 107(5) and Section 18 of the Universities Act, No. 16 of 1978 and section 108(1) of the Universities Act. 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. A detailed report in terms of Sub-section 108(2) of the Universities Act, was furnished to the Director of the Institute on 09 June 2015.

1.2 Management's Responsibility for 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 misstatements whether due to fraud or error.



### 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 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 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, and Sub-sections (3) and (4) of Section 13 of the Finance Act, No. 38 of 1971 give 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.

## 2. Financial Statements

-----

### 2:1 Opinion

-----

In my opinion, the financial statements give a true and fair view of the financial position of the Institute of Biochemistry, Molecular Biology and Biotechnology as at 31 December 2014 and its financial performance and cash flows for the year then ended in accordance with the Sri Lanka Public Sector Accounting Standards.





## 2.2 Non-compliance with Laws, Rules, Regulations and Management Decisions

---

The following non-compliances were observed.

- | <u>Reference to Laws, Rules, Regulations etc</u>   | <u>Non-compliance</u>  |
|--|--|
| (a) Financial Regulations 751,755 of the Democratic Socialist Republic of Sri Lanka and Chapter 4 of the University Grants Commission Circular No.48 of 13 November 1979 . | Inventories books had not been maintained so as to handing over the goods which are entrusted with the custody of an officer to his successor before transferred to another post and delegation of the custody of the goods had not been made to the officers of the relevant Division.                          |
| (b) Financial Regulations of the Democratic Republic of Sri Lanka<br>Financial Regulation No.371   | Even though advances obtained by an officer should settle immediately after the completion of the purpose ,advances aggregating to Rs.3,236,673 had been settled after delaying over a period of two weeks in 08 instances. Further, advances totaling of Rs.53,435 had been obtained exceeding the requirement. |
| (c) Sections 3.1 and 3.2 of Chapter XX of the Establishments Code of the University  | Even though all the academic and non-academic officers of the Institute should record times of the arrival and the departure , salaries and allowances aggregating to Rs.10,432,909 had been paid for 04 officers without being recorded the arrival and departure times.  |
| (d) Treasury CircularNo.842 of 19 December 1978.   | The Institute had not maintained a Register of Fixed Assets according to the Circular instructions.  |



- |  |   |
|--|---|
| (e) Paragraphs 3.1 and 3.3 of the Public Finance Circular No.PE/423 of 22 December 2006. | The Assets Replacement Fund had been established without obtaining the Treasury approval .                                  |
| (f) Public Enterprises Circular No.PED/12 of 02 June 2003.                               | A copy of the Draft Annual Report had not been furnished to the Auditor General along with the annual financial statements. |

### 3. Financial Review

#### 3.1 Financial Results

According to the financial statements presented, the financial results of the Institute for the year ended 31 December 2014 amounted to a surplus of Rs.9,687,231 and the corresponding surplus for the preceding year had been Rs.7,823,423. The improvement of Rs.1,863,808 in the year under review as compared with the preceding year had been mainly due to the increase of the Government grant by a sum of Rs.9,738,000 and the earned income by a sum of Rs.1,950,447 .

#### 4. Operating Review

##### 4.1 Staff Administration

Five vacancies in the academic and non-academic staff were existed as at 31 December of the year under review.

#### 5. Accountability and Good Governance

##### 5.1 Corporate Plan and the Action plan

Even though in terms of the Public Enterprises Circular No.PED/12 of 02 June 2003, an Institute should furnish its Corporate Plan and the Annual Budget 15 days before the beginning of the relevant year , the said reports had been furnished on 10 May 2014. Further, the establishment and maintenance of mitochondrial DNA database Project that included in the Corporate Plan of 2014-2018 and in the Action Plan of the year under review, presented by the Institute had not been implemented.



5.2 Procurement Plan

Even though in terms of the Section 4.2.1 of the Procurement Guidelines of the year 2006, the Master Procurement Plan should be updated at least once in six months, due to action not so done, procurements amounting to Rs.2,359,590 made in 7 instances in the year under review had not been included to the plan.

6 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.

- (a) Fixed Assets
- (b) Procurement Procedure
- (c) Stock Control
- (d) Advances

W.P.C Wickramaratne,  
Acting Auditor General

Mr. W.P.C. Wickremaratne  
Auditor General (Acting)  
Auditor General's Department  
306/72, Polduwa Road  
Battaramulla

**Reply 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 31<sup>st</sup> December, 2014 in terms of Regulation No. 17 of the Institute of Biochemistry, Molecular Biology and Biotechnology and Section 108 (1) of the Universities Act No. 16 of 1978**

**2. Financial Statements**

**2.2 Noncompliance to Laws, Rules, Regulations and Administrative Decisions**

**(a) Maintenance of Inventory Registers**

The officers of this Institute are as follows:

<b>Designation</b>	<b>No. of Officers</b>
Director	01
Senior Assistant Registrar	01
Senior Assistant Bursar	01

As this Institute has not been divided into various Sections, the general administration, establishment and examination matters and other activities for which there are no Heads of Sections are carried out by the Senior Assistant Registrar and the financial management functions are carried out by the Senior Assistant Bursar as instructed by the Director. In 2014 the services of two Laboratory Technicians only had to be obtained.

In 2013 and 2014 functions were carried out under the Acting Director. In future it is intended to widen the activities of the Institute and accordingly it is agreed to function as indicated by you.

- (b) A sum of Rs. 31,23,773.00 out of advance payments settled after a delay of more than two week represents the direct payments made to the suppliers selected on the relevant terms of supply according to the due procedure for the procurement of goods and services. The conditions for payments and the time spent by each supplier for the supply of goods and services have been submitted at the time of making the quotations.

Out of the above payments, a sum of Rs. 23,12,086.50 has been directly transmitted to the foreign suppliers through the bank on two occasions.

The balance amount of Rs. 8,11,687.00 has been paid to local suppliers by cheque on five occasions.

All the goods and services relating to the above advances have been duly received by the Institute.

On one occasion a sum of Rs. 1,12,900.00 has been made available to an officer as required by the Institute and approved by the Acting Director. That amount has been made available to meet the estimated expenses of the Second International Conference held by the Institute.

- (c) As a tradition, the academic staff of the University system does not sign the arrival/departure.
- (d) On account of the shortage of staff at the Institute there have been difficulties in recording details such as accumulated depreciation, disposed assets, financial costs during the year etc. as per General Form 287 in terms of Treasury Circular No. 842 of December 19, 1978. Action has been initiated to use a computer software for a permanent register for fixed assets to carry out these activities accurately and in future action will be taken accordingly.

- (e) The asset procurement reserve established in 2014 is not a statutory fund and it is merely a reserve created for the re-establishment of the existing assets. Treasury approval has been obtained separately for all fixed deposits identified for the above reserve before the commencement of the relevant deposits.

Furthermore, action will be taken to describe it as a separate reserve in the statement of the changes in rights in the Financial Statements.

(f) **Submission of Annual Reports**

Since the approval of the Board of Management for the drafty Annual Report 2014 was received at the Board meeting held on June 11, 2015, the submission was delayed.

3. **Financial Review**

3.1 **Financial Result**

Agreed.

4. **Operational Review**

4.1 **Staff Administration**

The recruitment process in respect of four vacancies is under way. Since one complaint is being examined regarding one vacancy before the University Services Appeal Board, it has been decided to suspend it temporarily as instructed by the Council of the University.

5. **Accountability and good governance**

5.1 **Corporate Plan and Action Plan**

The Corporate Plan for 2014-2018 had been finalized by 23.01.2014. It is kindly informed that in future the relevant Plans will be submitted as per the Circulars.

The activities on the Establishment and Maintenance of mitochondrial DNA indicated under 2.2.4.4. had been already in operation by 31.12.2014. (Ref: Audit Inquiry Replies – April 29, 2015)

5.2 **Procurement Plan**

Agreed.

Action will be taken to update the Procurement Plan at least once in six months as per Item 4.2.1 of the Procurement Guidelines, commencing from 2015.

6. **Systems and Controls**

It is expected to take the necessary steps for the establishment of systems and controls highlighted in the audit during the coming financial year.

Professor Shiroma Handunnetti  
Director

Copy to:            Secretary            - University Grants Commission  
                         Secretary            - Ministry of University Education and Highways  
                         Secretary            - Ministry of Finance  
                         Vice Chancellor- University of Colombo



## Summary of Annual Report and Accounts – 2014

### 1. Details of Resources & Students:

Faculty	Course	Total Students	Total Academic Staff	Total Non Academic Staff
IBMBB, UoC	MSc in Molecular Life Sciences	25	5	4*+14=18
	MSc in Cellular and Molecular Immunology	7		
	Msc in Bioinformatics	10		
	MPhil	24		
	PhD			
	Registered for MPhil/PhD in other Institutions and carried out a compartment research work	4		
	Training courses in Molecular Biology & Immunology	148		
	Exposure on Molecular Biology & Immunology to undergraduate students from other HEIs	119		
Hands-on exposure in DNA Finger Printing Techniques to A/L Students & Teachers	83			
<b>Total</b>		<b>420</b>	<b>5</b>	<b>18</b>

\* Include 04 Academic Support Staff

01 - Assistant Network Manager

03 - Scientific Assistants

### 2. Details of Academic Staff

Faculty	Subject	Medium	Senior Prof	Professor	Senior Lecturer	Lecturer	Asst. Lecturer	Instructors
	Molecular Life Sciences	English	1	-	-	1	-	-
	Cellular & Molecular Immunology	English	-	-	1	-	-	-
	Molecular Techniques	English	-	-	1	-	-	-
	Biochemistry and Molecular Biology	English				1		
	DNA Diagnostics					1		
<b>Total</b>			<b>1</b>		<b>2</b>	<b>3</b>	-	-



### 3. Details of Non-Academic Staff

Faculty/ Branch	Most Senior	Senior Staff	Junior Staff	Minor Employees
IBMBB	1-Senior Assistant Registrar 1-Senior Assistant Bursar	1-Staff Technical Officer	2- Technical Officer, Gr.II 1-Trainee Technical Officer	2- Laboratory Attendant
			5- Computer Applications Assistant	1- Labourer
			1- Book Keeper	
			1-Library Assistant	
			1-Telephone Operator cum Receptionist	
<b>Total</b>	<b>2</b>	<b>1</b>	<b>11</b>	<b>3</b>

### 4. Details of Research, Innovation and Publications:

Subject	Published	Commercialized	Presented
a. No of Researches MSc Dissertations PhD Thesiis	16 2		
b. No of Innovations			
c. No of Journals			
d. No of Books			
e. No of News paper articles	06		
e. No of Articles –Full Papers in Journals	21		
f. Other (Research , Communications)			62
<b>Total</b>	<b>45</b>		<b>62</b>

### 5. Details of Programme, Seminars & Workshops:

Subject	Attended	Completed	Presented	2013		2014	
				Attended	Completed	Presented	
a. No of Postgraduate Degree Programme	3	2	2	3	3	2	
b. No of Postgraduate Diploma Programme							
c. No of Degree Programme							
d. No of Diploma Programme							
e. No of Certificate/Training Programme	2	2	2	1	1	1	
f. Training Short Courses							
Molecular Biological Techniques	1	1					
g. Annual sessions	1	1	1				
h. International Conference (with 4 Symposia)				1	1	1	



i. 1. Workshop on NMR spectra 2. Workshop on DNA identification 3. Training course in stem cells & Cell Biology 4. Workshop on Next Generation Sequence (NGS) data analysis				1	1	1
Demonstration on DNA Isolation and analytical separation				1	1	1
<b>Total</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>10</b>	<b>10</b>	<b>9</b>

## 6. Details of Awards Received:

Subject	No of Awards	No of Academics	No of Students	No of Awards	No of Academics	No of Students
	2013			2014		
a. Local awards				4		2
b. National Awards				18*	6	
c. International Awards	1		1	5		5
d. Travel Awards				6		4
<b>Total</b>	<b>1</b>		<b>1</b>	<b>33</b>	<b>6</b>	<b>11</b>

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

## 7. Details of New Course Started – 2014 Registration

Faculty	Course	Medium	Short Training courses	Diploma	Postgraduate Diploma	Master	MPhil	PhD
IBMBB		English	1. Gene cloning & Protein expression 2. Immunological Techniques					
<b>Total</b>			<b>2</b>					

## 8. Details of Recurrent Expenditure: 2014

	Subject	2013 (Rs.)	2014 (Rs.)
a.	Personal emoluments	18,352,204	20,274,249
b.	Travelling	338,926	446,101
c.	Supplies	10,973,237	10,578,896
d.	Maintenance	8,491,719	5,551,414
e.	Contractual Services	14,437,500	15,283,006
f.	Other (including depreciation)	15,014,990	25,140,435
	<b>Total</b>	<b>67,608,576</b>	<b>77,274,101</b>





## 9. Details of Capital Expenditure:

	Subject	2013 (Rs.)	2014 (Rs.)
a.	Acquisition of furniture & Office Equipments	760,890	2,110,025
b.	Acquisition of Machineries(Computers & Lab Equip.)	9,669,240	5,913,091
c.	Acquisition of Building & Structures	-	-
d.	Other (Library Books)	-	406,506
	<b>Total</b>	<b>10,430,130</b>	<b>8,429,622</b>

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

Name	Exp in 2013 (Rs.)	Exp in 2014 (Rs.)	Cumulative Exp as at 31.12.2014	% of Physical Progress
NSF Grant	3,238,651	1,828,978	6,640,102	work planned for 2014 completed
IFS	-	171,820	171,820	
IPIC	-	300,874	300,874	
Swedish Research Grant	-	170,636	170,636	
<b>Total</b>	<b>3,238,651</b>	<b>2,472,308</b>	<b>7,283,432</b>	

## 11. Details of Financial Progress (Expenditure):

	Subject	Provision in 2014 Rs.	Exp in 2014 Rs.	Savings/Excess Rs.
a.	Recurrent (Except Project)	62,700,000	*66,165,966	(3,465,966)
b.	Capital (Except Project)	7,800,000	**8,429,622	(629,622)
c.	Project-Local funded –NSF Grant	-	1,828,978	-
	<b>Total</b>	<b>70,500,000</b>	<b>76,424,566</b>	

\*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 2014 (Rs.)	Collection in 2014 (Rs.)	Deficit/ Surplus (Rs.)
a.	Undergraduate Studies	not relevant	not relevant	
b.	Postgraduate Studies	4,175,000	7,080,000	2,905,000
c.	Consultancies	-	-	-
d.	Other	825,000	7,804,120	6,979,120
	<b>Total</b>	<b>5,000,000</b>	<b>14,884,120</b>	<b>9,884,120</b>



### 13. Financial Performance Analysis-2014:

	<b>Subject</b>	<b>Formula</b>	<b>Course</b>	<b>Exp. Per Student Rs.</b>	
a.	Recurrent Expenditure per Student (RE)	RE*/ No of Student strength	MPhil & PhD	1,112,200	24,468,404 /22
			MSc	397,860	16,312,269/41
	Capital Expenditure per Student (CE)	CE/ No of Student strength	MPhil & PhD	302,949	6,664,881 /22
			MSc	108,372	4,443,254/4
			<b>Total</b>		

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

\* Not included Security, Electricity, Water

\*\* Included cost of additions of capital assets

\*\* Includes funds from NRC Grants which are not operated by IBMBB



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

	2004 June to Dec	2005*	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
<b>MSc</b>												
Total		8	18	25	24	24	33	34	34	34	42	
New intake		8	10	11	13	12	19	10	22	11	18	133
Continuing			8	14	11	12	14	24	12	23	24	
Output				3	11	10	8	8	17	11	8	76
<b>MPhil/PhD</b>												
Total	3	3	8	8	13	13	12	13	14	17	24	
New intake	3	0	5	1	5	1	1	1	11	7	6	41
continuing		3	3	7	8	12	11	12	6	10	18	
Output		1	0	1	0	1	1	1	3	4	1	12
<b>MSc (indirect)</b>												
Total	2	6	3	1								
New intake	2	4	1					1				8
Continuing		2	2	1								
Output	1	4	4		1				1			7
<b>MPhil/PhD (indirect)</b>												
Total	7*	6	4	6	5	8	6	3	1	6	4	
New intake	1	1	0	3	4	4	0	1	0	0	1	11
Continuing	7	5	4	3	5	4	6	2	1	6	3	
Output	1	2	2		1			3	1		3	12
<b>Postgraduate students</b>												
Total	12	23	33	40	42	45	51	51	52	57	70	
New intake	5	13	16	15	18	17	20	13	33	18	25	193
Continuing	7	10	17	25	24	28	31	38	19	39	45	
Output	1	1	6	4	13	11	9	12	22	15	12	107
<b>Staff:Student ratio</b>	1:12	1:8	1:8	1:10	1:14	1:15	1:17	1:17	1:17	1:14	1:14	

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

Summary 2004-2014	MSc	MPhil/PhD	Total
<b>Direct Output</b>	<b>76</b>	<b>12</b>	<b>88</b>
Indirect Output	7	12	19
<b>Direct Intake</b>	<b>133</b>	<b>41</b>	<b>174</b>
Indirect Intake	8	11	19