

## Department Activities during the Academic Year 2016-17

### Association Activities / Student Activities / Student Achievements

Loyola Association of Plant Biologists and Biotechnologists (LAPB) was inaugurated by **Dr. M. Natchimuthu**, CEO/Director, SRG-Organic Food Pvt. Ltd., Chennai on 21<sup>st</sup> July, 2016. Dr G. Jeya Jothi and Dr Shirley George Panicker were appointed President and Vice President of the Association respectively for the Academic year 2016 – 2017.

The following were the student office bearers:

S. No.	Name	Designation
1.	S. Venkatesan (14-PB-053)	Secretary
2.	W. Amalan Richie Robinson (14-PB-013)	Cultural Secretary
3.	M.S.Navaneethakrishnan (14-PB-058)	Sports Secretary
4.	R. D. Gunasekar (15-PB-044)	Joint Secretary (2 <sup>nd</sup> B. Sc.,)
5.	A. David (16-UPB-020)	Joint Secretary (1 <sup>st</sup> B. Sc.,)
6.	Rahul Kumar (15-PBT-019)	Joint Secretary (2 <sup>nd</sup> M. Sc.,)
7.	Rosy Mary Marandi (16-PBT-004)	Joint Secretary (1 <sup>st</sup> M. Sc.,)

### ASSOCIATION ACTIVITIES

#### Book Release Function

**Siddha Medicines and its Practices** edited by Rev. Dr. S. Ignacimuthu, S.J, Dr. P. Pandikumar and Dr. S. Mutheeswaran was released by Prof. R. S. Ramaswamy, Director, Central Sidhha Medicine Research Institute, Chennai on 27<sup>th</sup> July 2016.

#### Extra-curricular

Students participated in many cultural fests held by the Chennai City Colleges. On 24<sup>th</sup> of February, 2017, Department hosted **Genotsav '16** - Annual Inter-Collegiate Department Festival. Rev. Dr. S. Maria Packiam S.J., Deputy Director, Entomolgy Research Institute, Loyola College, Chennai- 600 034 was the Chief Guest. More than 4 colleges participated in the 14 different events. Women's Christian College (UG) and Stella Maris College (PG) won the overall championship respectively.

## Sports Day

Students of the department actively participated in the March Past on Sports Day. The students also excelled in sports by winning the inter-departmental football match organized by the Physical Education Department, Loyola College. Mr. M. Lenin (15-PB-29) won the first place in 1000M, 1500M, 5000M (Division II) and second place in 800M, 5000M (Division I).

### ACHIEVEMENT OF STUDENTS:

1. **Mr. Muthukrishnan** (14-PB-029) passed TNPSC- GROUP IV examination
2. **Mr. Ashish Kumar** (15-PBT-15) cleared NET Exam 2016
3. **Dr. A. Vinoth** cleared Tamil Nadu State Eligibility Test for Lectureship in 2017
4. **Ms. Anto Suganya**, Research Scholar cleared Tamil Nadu State Eligibility Test for Lectureship in 2017
5. **Dr. A. Vinoth**, Senior Research Fellow won the Second Place Award for Student Poster Presentation Competition at 2016 World Congress on In Vitro Biology, organized by the Society for In Vitro Biology (SIVB) at San Diego, California, USA, June 11 - 15, 2016.
6. **Dr. A. Vinoth**, Senior Research Fellow received international travel support from the Department of Biotechnology, Govt. of India to present a poster titled 'Efficient Gene Delivery by Microinjection on Shoot Apical Meristems of Watermelon' at 2016 World Congress on In Vitro Biology, San Diego, California, USA. June 11 - 15, 2016.
7. **Dr. A. Vinoth**, Senior Research Fellow and **Mr. J. Sagaya John Paul**, Ph.D. Scholar participated in the regional finals and workshop of "FameLab India Science Communication Contest" organized by the British Council at University of Kerala, Tiruvananthapuram, Nov 27 - 29, 2016.

### ENDOWMENT LECTURES:

1. Department of Plant Biology and Biotechnology organized Endowment lecture on 03<sup>rd</sup> March, 2017. **Dr. Rajash Pallai** delivered **Prof. C. R. Babujee Endowment Lecture** on the topic "Drug Discovery and Development"
2. **Rev. Dr. E. Sumathi**, Assistant Professor, National Centre for Nanoscience and Nanotechnology, University of Madras, Guindy campus, Chennai 25 delivered **Rev. Fr. Alfred Rapinat SJ** Endowment Lecture on 08<sup>th</sup> March 2017 on the topic "Nano Technology and its Applications in Plant Sciences".
3. **Dr. Albert Premkumar**, Senior Researcher, Department of Ecology, Environment and Plant Sciences (DEEP), Stockholms University, Stockholm, Sweden delivered **Prof. J. Edmund Manohar Raj** Endowment Lecture on 08<sup>th</sup> March 2017 on the topic "Self Transformation of Bioscience Students"

### **Guest Lectures Organized**

1. A Guest Lecture by Dr. D. MUBARAKALI, Research Associate, National Repository for Microalgae and Cyanobacteria-Freshwater, Bharathidasan University, Trichirappalli, India on the topic 'Microalgae and its Applications' was organized on 21<sup>st</sup> February 2017.

### **VALEDICTORY FUNCTION**

The LAPB valedictory function was held on 08<sup>th</sup> Mar, 2017 with **Dr Albert Premkumar** as the chief guest of the function and it heralded the close all the departmental activities for the academic year 2016-17.

### **AWARD OF DOCTORATE:**

<b>S.NO.</b>	<b>Name of the Student</b>	<b>Name of the Supervisor</b>	<b>Date of Exam</b>
1.	Dr V. Daphne Vivienne Gnanasalomi	Dr J. Joel Gnanadoss	07.04.2016
2.	Dr Latha R.	Dr P. Agastian	08.06.2016
3.	Dr S. Girija	Dr R. Ravindhran	08.07.2016
4.	Dr S. Diana Vinodhini	Dr P. Agastian	20.10.2016
5.	Dr A. Vinoth	Dr R. Ravindhran	21.10.2016

### **STAFF ACHIEVEMENTS**

#### **Patents Filed**

1. **Dr P. Agastian** - Development of novel process technology for the production of sugar-free and non-alcoholic pomegranate juice using immobilized *Saccharomyces cerevisiae* NCIM 3095 (DBT, India. Ref. No: BT/BPFC/04/168/2016-PID).

#### **Orientation Course/ Refresher Course Attended**

1. **Dr. G. Jeya Jothi** - Refresher course on Environmental Science (15/09/16-05/10/2016) Batch-XIII
2. **Dr. Joelri Michael Raj. L** - Training programme for personal mentoring on effective helping skills', organised by Loyola college, Chennai, Dated: 1<sup>st</sup> & 2<sup>nd</sup> December 2016

3. **Dr. Joelri Michael Raj. L** - Induction programme into Jesuit education' organized by Higher Education Commission, Jesuit Madurai Province, Loyola College, Chennai, Dated: 10<sup>th</sup>, 11<sup>th</sup> & 12<sup>th</sup> June 2016.

## **RESEARCH PROJECTS / RESEARCH GRANTS RECEIVED**

### **Major Research projects (Ongoing)**

#### **Dr. R. Ravindhran**

1. UGC Research Award - UGC, New Delhi - Rs. 3,00,000/- (2015-2017)
2. Biofortification of Vitamin E in Finger Millet - Loyola College - Times of India, Chennai - Rs. 28,53,950/- (2014-2017)

#### **Dr. P. Agastian**

1. Production of novel bioactive compounds from the endophytes of endangered medicinal plants through biotechnological approaches - Loyola College - Times of India, Chennai - Rs. 31,64,600/- (2014-2017)

#### **Dr. J. Joel Gnanadoss**

1. Characterization of novel actinomycetes from mangrove soil and sediments and development of low cost technology for production of proteases for industrial applications - Loyola College - Times of India, Chennai - Rs.21,26,100/- (2014-2017)

#### **Dr. G. Jeya Jothi**

1. Isolation and characterization of antimicrobial compounds from medicinal plants used by tribes - Indian Council of Medical Research, New Delhi - Rs. 17,00,000/- (2015-2018)

### **Minor Research projects (sanctioned)**

1. **Dr. G. Jeya Jothi** - Bioautography to assess antioxidant and antibacterial activities of selected traditional medicinal plants against human Urinary Tract (UT) microbiota - UGC, Hyderabad - Rs. 2,00,000/- (2016 - 2018)
2. **Dr. S. Sheela** - Insilico aided herbal inhibitor development targeting food pathogens - UGC, Hyderabad - Rs. 1,05,000/- (2016 - 2018)

## **WORKSHOP/CONFERENCE/SEMINAR/ SYMPOSIUM/ TRAINING ATTENDED**

1. **Dr. Jacqueline Chinna Rani** - Workshop on "Innovations in Water Resources Management in Educational Institutions" organized by LIFE, Loyola College, on Nov 24 -25, 2016 - Member, Organizing committee.
2. **Dr. Jacqueline Chinna Rani** - Attended a workshop on "Computer Aided Drug-Designing (CADD)" organized by Bioinformatics centre and ARIS cell, Madras Veterinary College, Chennai from Feb 13-17, 2017.
3. **Dr. Shirly George Panicker** - Attended a workshop on "Research Methodology - An update", Center for Medical Genetics, Chennai, India from Aug 20-21, 2016.
4. **Mrs. P. Jenifer Udhaya** - Attended a workshop on "Research Methodology - An update", Center for Medical Genetics, Chennai, India from Aug 20-21, 2016.

5. **Mrs. P. Jenifer Udhaya** - Attended a national workshop on "Contemporary Research in Genetic Engineering", Sri Venkateswara College, Sriperumbudur

#### RESOURCE PERSON

1. **Dr. R. Ravindhran** - **Expert member** in the technical consultation on *Biofortification: "Staple crops biofortified with increased vitamins and minerals: considerations for a public health strategy"* convened by the World Health Organization (WHO) in collaboration with the Food and Agricultural Organization (FAO) at Sackler Institute for Nutrition Science in New York, USA. April 6-8, 2016
2. **Dr. Joelri Michael Raj. L** - **Resource person** in SCIENCE ACADEMIES' REFRESHER COURSE ON 'Experimental Biology: Orthodox to Modern', Sponsored by Indian academy of sciences (IASc), Bangalore; Indian National Science Academy (INSA), New Delhi; National Science Academy (NSA), Allahabad., organized by Department of Botany, St. Joseph's College, Tiruchirappalli. Dated: 14<sup>th</sup> November 2016.

#### RESEARCH PUBLICATIONS IN NATIONAL AND INTERNATIONAL JOURNALS

##### Dr. R. Ravindhran

1. Vinoth A, **Ravindhran R** (2017) Biofortification in millets: a sustainable approach for nutritional security. *Frontiers in Plant Science*. 8:29. doi: 10.3389/fpls.2017.00029. (IF: 4.495)
2. Garcia-Casal MN, Peña-Rosas JP, Giyose B, consultation working groups [**Ramalingam Ravindhran**] (2016) Staple crops biofortified with increased vitamins and minerals: Considerations for a public health strategy. *Annals of New York Academy of Sciences*. doi:10.1111/nyas.13293. (IF: 4.518)
3. Vinoth A, **Ravindhran R**, Ganesan G, Harikrishnan M, Ajay Parida (2016) Efficient Gene Delivery by Microinjection on Shoot Apical Meristems of Watermelon. *In Vitro Cellular and Developmental Biology - Animal*. 52 (Abstract-Spring 2016): S65 - S66. (IF: 0.971)
4. Appadurai Daniel Reagan, Munusamy Rajiv Gandhi, Sivaraman Govindan, Kalaimaran Francina Cecilia, **Ramalingam Ravindhran**, Kedike Balakrishna, Michael Gabriel Paulraj and Savarimuthu Ignacimuthu. 2016. Bioefficacy of Ecbolin A and Ecbolin B isolated from *Ecbolium viride* (Forssk.) Alston on dengue vector *Aedes aegypti* L. (Diptera: Culicidae). *Parasite Epidemiology and Control*. 1: 78 - 84.

##### Dr. P. Agastian

1. Ameer Khusro, Barathi Kannan Kaliyan, Naif Abdullah Al-Dhabi, Mariadhas Valan Arasu, **Paul Agastian**. Statistical optimization of thermo-alkali stable xylanase production from *Bacillus tequilensis* strain ARMATI. *Electronic Journal of Biotechnology*, 2016. (IF:1.403).

2. Kaliyan Barathikannan and **Paul Agastian**. 2016. Xylitol: Production, Optimization and Industrial Application. *Int.J.Curr.Microbiol.App.Sci.* 5(9): 324-339.
3. Kaliyan Barathikannan, Babu Venkatadri, Ameer Kushro, **Paul Agastian**, Mariadhas Valan Arasu, Han Sung Choi, Young Ock Kim. Chemical analysis of *Punica granatum* fruit peel and its *in vitro* and *in vivo* biological properties. *BMC Complementary and Alternative Medicine*, 2016; 16: 264 (IF: 2.02).
4. Kaliyan Barathikannan, Ameer Khusro, **Paul Agastian**. Isolation and molecular characterization of xylitol producing wild yeast strains from different fermented fruit juices. *South Indian journal of Biological Science*, 2016; ISSN: 2454-4787.
5. Aarti, Chirom, Ameer Khusro, Mariadhas Valan Arasu, **Paul Agastian**, and Naïf Abdullah Al-Dhabi. Biological potency and characterization of antibacterial substances produced by *Lactobacillus pentosus* isolated from Hentak, a fermented fish product of North-East India. *Springer Plus* 5, no. 1 (2016): 1743. (IF: 0.98).
6. Khusro, Ameer, Chirom Aarti, and **Paul Agastian**. Anti-tubercular peptides: A quest of future therapeutic weapon to combat tuberculosis. *Asian Pacific Journal of Tropical Medicine* (2016). (IF: 0.84).
7. Das, Trayee Sarkar, R. Latha, and **P. Agastian**. Evaluation of *Aristolochia bracteolata* linn. for antimicrobial activity,  $\alpha$ -glucosidase inhibition, and its phytochemical constituents. *Asian Journal of Pharmaceutical and Clinical Research* 9.1 (2016): 137-142.
8. Ilavenil, Soundharrajan, Naif Abdullah Al-Dhabi, Srisesharam Srigopalram, Young Ock Kim, **Paul Agastian**, Rajasekhar Baaru, Ki Choon Choi, Mariadhas Valan Arasu, Chun Geon Park, and Kyung Hun Park. Removal of SDS from biological protein digests for proteomic analysis by mass spectrometry. *Proteome Science* 14, no. 1 (2016): 11. (IF: 4.173).
9. Ilavenil, Soundharrajan, Naif Abdullah Al-Dhabi, Srisesharam Srigopalram, Young Ock Kim, **Paul Agastian**, Rajasekhar Baru, Ki Choon Choi, and Mariadhas Valan Arasu. Acetaminophen Induced Hepatotoxicity in Wistar Rats—A Proteomic Approach. *Molecules* 21, no. 2 (2016): 161. (IF: 2.46).
10. Abdullah Al-Dhabi, Naif, Srisesharam Srigopalram, Soundharrajan Ilavenil, Young Ock Kim, **Paul Agastian**, Rajasekhar Baaru, Kannan Balamurugan, Ki Choon Choi, and Mariadhas Valan Arasu. Proteomic Analysis of Stage-II Breast Cancer from Formalin-Fixed Paraffin-Embedded Tissues. *BioMed research international* 2016 (2016). (IF: 1.579).
11. Kaliyan Barathikannan, Ameer Khusro and **Agastian Paul**. 2016. Optimization of parameters to increase the xylose reductase production from *Candida tropicalis* strain LY15 using corn cob as hemicellulose waste substrates. *African Journal of Microbiology Research*. 10(45): 1908-1915. doi: 10.5897/AJMR2016.8330 (IF: 0.9).
12. Kaliyan Barathikannan, Ameer Khusro, **Agastian Paul**. 2016. Simultaneous production of xylitol and ethanol from different hemicellulose waste substrates by *Candida tropicalis* strain Ly15. *J Bioprocess Biotech* 6: 289. doi:10.4172/2155-9821.1000289 (IF: 1.8).

13. Khusro A, Kaliyan Barathi Kannan, Chirom Aarti, **Agastian P.** 2017. Optimization of thermo-alkali stable amylase production and biomass yield from *Bacillus* sp. under submerged cultivation. *Fermentation*. 2017, 3, 7; doi:10.3390/fermentation3010007 (IF:1.6).

**Dr. J. Joel Gnanadoss**

1. Brindha, S., Chandrabose, S.J., Velmurugan, D., Vincent, S., and **Gnanadoss, J.J.** 2016. Docking-based virtual screening of known drugs against *murE* of *Mycobacterium tuberculosis* towards repurposing for TB. *Bioinformation*. **12(8)**: 367-372.
2. Chandrabose, S.J., Hanna, L.E., Sriram, S., Brindha, S., **Gnanadoss, J.J.**, Vincent, S., Singh, H., and Sowmya, S. 2016. TBDRUGS - Database of drugs for tuberculosis. *Tuberculosis*. **100**: 9-7.
3. Gnanasalami, V.D.V., Priya, S.E and **Gnanadoss, J.J.** 2016. Biosorption of remazol brilliant blue r and indigo carmine using immobilized biomass of *Psathyrella candolleana* LCJ178. *Pollution Research*. **35 (2)**: 337-342.

**Dr. G. JeyaJothi**

1. Preethi PN, **Jeya Jothi G**, Rajasekaran A, Arivukkarasu A. 2016. HPTLC Fingerprinting of Phenolic Acids and Assessment of Antioxidant Potential of *Pouzolzia bennettiana* Wight a Medicinal Plant from Nilgiri Hills. *British Journal of Pharmaceutical Research*. 13(3): 1-9.
2. Hannah Hepsibah A, **Jeya Jothi G**. 2016. A comparative study on the effect of solvents on the phytochemical profile and biological potential of *Ormocarpum cochinchinense* Auct. Non (Lour.) Merrill. *International Journal of Pharmacy and Pharmaceutical Sciences*. 9: 67-72.
3. Priya S, **Jeya Jothi G**. 2016. Orthopedic application of spikenard herbal rhizome decorated microstructured polymer biocomposites and their in vitro cytotoxicity. *Journal of Orthopaedics*. 13: 181-189.

**PAPERS PRESENTED IN INTERNATIONAL / NATIONAL CONFERENCES**

**Dr. R. Ravindhran**

1. Atul Babu G, Vinoth A, **Ravindhran R.** 2016. Direct shoot regeneration in finger millet and assessment of genetic fidelity using ISSR. Poster presented at International Conference on Current Trends in Biotechnology ICCB-2016 organized by VIT University, Vellore. Dec 8 - 10, 2016. pp. 252.
2. Shiny P, Vinoth A, **Ravindhran R.** 2016. Efficient plant regeneration from shoot tip explants of *Couroupita guianensis* - a valuable medicinal tree. Poster presented at International Conference on Current Trends in Biotechnology ICCB-2016 organized by VIT University, Vellore. Dec 8 - 10, 2016. pp. 259.
3. Vinoth A, **Ravindhran R**, Ganesan G, Harikrishnan M, Ajay Parida. 2016. Efficient Gene Delivery by Microinjection on Shoot Apical Meristems of

Watermelon. Accepted for presentation in 2016 World Congress on In Vitro Biology. San Diego, California, USA. June 11 – 15, 2016.

#### **Dr. P. Agastian**

1. Paper presented in 'Identification of xylitol producing *Candida tropicalis* strain LY15 from *Persea americana* (Butter fruit) and its Statistical optimization' **Agastian Paul** and Barathikannan Kaliyan. International Conference, ICEEB, 2016. 23-25 May 2016, at Jeju National University, Republic of Korea.
2. Poster Presentation in 'Phytoremediation for reduction of toxic substances in drinking water – A Review'. Venkatadri, B., Rameshkumar, M.R and **Agastian, P.** 13<sup>th</sup> International Phytotechnologies Conference (PHYTOTECH 2016), 26-29, Sep 2016 at Hangzhou, China.
3. Poster presented in 'Screening and preliminary Antimicrobial activity of *Loranthus falcatus*. Jebalsy Lalitha. L, Prince Clarence. P, Jerin Sales. T, **Agastian P\***. International conference on frontiers in life science, 7th &8th January 2016, at Department of botany St Joseph's college, Tiruchirappalli-620002.

#### **Dr. J. Joel Gnanadoss**

1. Jenila, V.A., and **Gnanadoss, J.J.** 2016. Characterization of l-asparaginase producing endophytic fungi isolated from certain medicinal plants. In the *Abstracts of "National Conference on Fungal Biotechnology"*, Birla Institute for Scientific Research, Jaipur. 16-18 Nov 2016. p 48
2. **Gnanadoss, J.J.** and Parthasarathy, M., 2016. Molecular characterization and phylogenetic analysis of protease producing *Streptomyces* sp. isolated from mangrove sediments. In the *Abstracts of " World Congress on Biotechnology"*, organised by Cenetri Publishing Group USA at Hyderabad. 15-16 Dec 2016. p 81
3. Parthasarathy, M., Devapriyan, G,R., and **Gnanadoss, J.J.** Characterization of mangrove actinomycetes with potential to produce important extracellular enzymes. In the *Abstracts of " World Congress on Biotechnology"*, organised by Cenetri Publishing Group USA at Hyderabad. 15-16 Dec 2016. p 125

#### **Dr. G. JeyaJothi**

1. Gini T.G, **G. Jeya Jothi**, Ruby Varghese, Johnvin Baby, Anoop N.L, Amrutha K.U , Yogesh B. Dalvi- In Vitro Anti-proliferative Activity and Gene Expression Analysis of an Aquatic Pteridophyte *Salvinia molesta* Mitchell-Presented in Bioradiance 2016 conference on July 8th 2016 conducted by Pushpagiri Medical College, Tiruvalla,Kerala.
2. Gini T.G, **G. Jeya Jothi**- Phytoremediation of Heavy metals from Municipal waste water by *Salvinia molesta* Mitchell through Rhizofiltration as Green



Technology Treatment in Kerala, India -Presented in 13th International phytotechnologies conference(PHYTOTECH 2016) held on 26-29th Sep.2016 conducted by Institute of Soil Science, Chinese academy of sciences at Hongzhou, China.

**Dr. Shirly George Panicker**

1. **Shirly George Panicker. 2016.** Pioneering Demonstration of Anticancer and Antioxidant Properties of C.Tara synthesized Aunps - Conjugated Leaf Secondary Metabolites against Human Cancer Cell Line Col320 and its therapeutic Potentia- International Conference on Nutraceuticals & Chronic Diseases , Sep 9th - 11th, 2016.

**BOOKS PUBLISHED**

**Dr. P. Agastian**

1. Ameer Khusro, J.P. Preetham Raj, **P. Agastian S Theoder.** (2016). Practical Bacteriology, Narosa Publishing Group. ISBN: 978-81-8487-580-5. (260 Pages, Paper Book).
2. Ameer Khusro, Chirom Aarti and **Paul Agastian.** Laccase from White-Rot Fungi : Production, Chemistry and Applications. Biochemistry and Therapeutic Uses of Medicinal Plants. ISBN: 978-93- 5056-866-8 (Edition: 2017). Discovery Publishing House Pvt. Ltd., New Delhi (India).
3. Prince Clarence, **Paul Agastian** and Ameer Khusro. Properties and Chemistry of Biologically Active Compounds from Endophytic Fungi. Biochemistry and Therapeutic Uses of Medicinal Plants. ISBN: 978-93-5056-866-8 (Edition: 2017). Discovery Publishing House Pvt. Ltd., New Delhi (India).

**SEQUENCES SUBMITTED**

1. **Dr. J. Joel Gnanadoss** - 25 DNA sequences of novel microorganisms have been deposited at GenBank, NCBI, USA

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