

## Department Activities during the Academic Year 2017-18

### Association Activities / Student Activities / Student Achievements

Loyola Association of Plant Biologists and Biotechnologists (LAPB) was inaugurated by **Dr P. Chamundeeswari**, Principal and HOD, Department of Pharmacy, Ramachandra University, Porur, Chennai on August 01, 2017. Dr. I. Jacqueline China Rani was the President and Mrs. Jennifer Udhaya was the Vice-President of the Association for the academic year 2017 - 2018.

The following were the student office bearers:

| S. No. | Name                            | Designation              |
|--------|---------------------------------|--------------------------|
| 1.     | Vishnu Vardhan K R (15PB040)    | Secretary                |
| 2.     | Yokesh Kumar (15PB011)          | Dept. Cultural Secretary |
| 3.     | Lenin M (15PB029)               | Dept. Sports Secretary   |
| 4.     | Josephine Nivedtha (16 PBT 006) | Joint Secretary- II PG   |
| 5.     | Maria Catherine (17 PBT 014)    | Joint Secretary- I PG    |
| 6.     | Jerome Xavier J.S.(16UPB05)     | Joint Secretary- IIUG    |
| 7.     | Ruban Ajay P. (17PB044)         | Joint Secretary- I UG    |

### ASSOCIATION ACTIVITIES

Students participated and won overall championship in many cultural fests held by Chennai City Colleges Viz: *ASTERA* in Stella Maris College and *LANTANA* in Ethiraj College. On 14<sup>th</sup> December, 2017 the department hosted “**Genotsav ‘17**” – the annual Inter-Collegiate Department Festival. The Chief Guest for the day was Dr. S. Vincent, Dean of Research (Inauguration), and Dr. D. Robert Selvam, Vice Principal, Shift II, Loyola College, Chennai- 600 034 (Valedictory function). More than 6 colleges participated in the 14 different events. Madras Christian College (UG) and Women’s Christian College (PG) won the overall Winner’s trophy respectively. Students of the department actively participated in the Sports Day march past and other sports events.

### ACHIEVEMENT OF STUDENTS:

1. Mr. Camil Rex (16UPB03) and Mr. Harikrishnan (16UPB04) won II prize in Enviro Quiz conducted by Women's Christian College.
2. Mr. Camil Rex (16UPB 03) won II prize in poetry competition in Deep Woods organized by Madras Christian College.
3. Ms. Pooja Lunia (15PBT 03) Scored 1004<sup>th</sup> rank among 10,611 candidates appeared in GATE 2017.
4. Ms. S. Saranya (16PBT 01) won I prize in paper presentation in the National Conference on Microorganisms in Human Welfare held at Madras Christian College on February 27 & 28, 2018.

### ENDOWMENT LECTURES:

1. Department of Plant Biology and Biotechnology organized Endowment lecture on 07<sup>th</sup> March, 2018. Dr. D. Aravind delivered Rev. Fr. Alfred Rapinat S.J. on the topic "Botanical Remedies of Siddha and Ayurvedha"
2. Rev. Dr S. Ignacimuthu S.J., Director, Entomology Research Institute, Loyola College, delivered Prof. C. R. Babujee Endowment Lecture on 09<sup>th</sup> March 2018, on the topic "Marker Assisted Selection and Breeding in Finger Millet for Phosphorus Efficiency.
3. Dr. K. Kathiravan, Assistant Professor, Department of Biotechnology, University of Madras, Guindy campus, Chennai 25 delivered Prof. J. Edmund Manohar Raj Endowment Lecture, 09<sup>th</sup> March 2018 on the topic "Diagnosis of Plant Viruses using Nanotechnological Tools."

### Guest Lectures organized

1. A Guest Lecture by **Dr. Albert Premkumar**, Visiting Scientist, Stockholm University Sweden on the topic 'Arabidopsis Genome Research' was organized on 06<sup>th</sup> October 2017.

### VALEDICTORY FUNCTION

The LAPB valedictory function was held on 09<sup>th</sup> March, 2018 with **Dr. K. Kathiravan** as the chief guest of the function and bringing to a close all the departmental activities for the academic year 2017-18.

## AWARD OF DOCTORATE:

| S.NO. | Name of the Scholar            | Name of the Supervisor | Date of Exam |
|-------|--------------------------------|------------------------|--------------|
| 1.    | Mr. T. M. Chozhavel Rajanathan | Dr. P. Agastian        | 11.08.2017   |
| 2.    | Dr. S. Senthil Kumar           | Dr. P. Agastian        | 05.02.2018   |

## STAFF ACHIEVEMENTS

### WORKSHOP/CONFERENCE/SEMINAR/ SYMPOSIUM/ TRAINING ORGANIZED

#### Dr. R. Ravindhran

5 days workshop on Crop Genome Editing using CRISPR Cas9 during September 05-09, 2017. Sponsored by Department of Biotechnology, Govt. of India, New Delhi - Rs. 1, 50,000/-

#### Dr. J. Joel Gnanadoss

1. 21 days Training programme on Techniques in Microbial Biotechnology and Molecular Biology during March 14 - April 06, 2018. Sponsored by Department of Biotechnology, Govt of India, New Delhi - Rs. 4,40,000/-.

### RESEARCH PROJECTS / RESEARCH GRANTS RECEIVED

#### Major Research projects (Completed)

##### Dr. R. Ravindhran

1. Biofortification of Vitamin E in Finger Millet - Loyola College - Times of India, Chennai - Rs. 28,53,950/-
2. 5 days workshop on Crop Genome Editing using CRISPR Cas9 during September 05-09, 2017. Sponsored by Department of Biotechnology, Govt. of India, New Delhi- Rs. 1, 50,000/-

##### 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/-

##### Dr. J. Joel Gnanadoss

2. 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/-

3. 21 days Training programme on Techniques in Microbial Biotechnology and Molecular Biology during March 14 – April 07, 2018. Sponsored by Department of Biotechnology, Govt of India, New Delhi – Rs. 4,40,000/-

**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/-

**Minor Research projects (ongoing)**

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

**Loyola Research Park - UG/PG students minor research project (2017-18).**

1. Mr. Ranjith (15PB 41) & Mr. Jacob Isabel (15PB 38) – In vitro propagation and organoleptic studies on *Wedeliachinensis* – (Dr.R. Ravindhran ) Rs. 20,000/-
2. Mr. ArunAlexandar (15PB15) & Mr. Prasanth (15PB16) – Screening of endophytic fungi for important extracellular enzymes and bioactive compounds – (Dr. J. Joel Gnanadoss) Rs. 15,000/-
3. Mr. Revanth (15PB14) – Green Synthesis of Nano particles using *Clitoria ternate* L. extract for analysis antimicrobial and antioxidant activities.(Dr. G. JeyaJothi). Rs. 20,000/-
4. Ms. J. J. Jenisha (16PBT 22) – Biodegradation of toxic effluent by using immobilized beads of *Rhizobium*. (Dr. S. Sheela) Rs. 15,000/-
5. Ms. AuxzilliaPreethi K. (16PBT 05) Isolation and characterization of potassium solubilizing bacteria. (Mrs. Jenifer Udhaya)- Rs. 20,000/-
6. Mr. Richard Hembrom (16PBT 14) Assessment of heavy metal (Pb, Cr and Cd) in branded and non-branded candies marketed in choolaimeedu, Chennai. (Dr. Tanya Pereira) – Rs. 20,000/-
7. Ms. Jenifer Priyadharshni P. (16PBT 13) Agrobacterium mediated genetic transformation in *Tinosporacordifolia*- a medicinal shrub. (Dr. A. Prem Kumar)- Rs. 20,000/-
8. Ms. Josephine Nivetha A (16PBT 06) Hairy root culture of *Catharanthusroseus* for the production of secondary metabolites. (Dr. A. Prem Kumar)- Rs. 15,000/-

**ORIENTATION COURSE/REFRESHER COURSE ATTENDED**

Dr. S. Sheela, Mrs. Jenifer Udhaya, Dr. A. Prem Kumar, Dr. Tanya Pereira and Dr. Sophie Lorraine Figredoattended Faculty Development Programme in Life Sciences organized by Loyola College during .....

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

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

1. VI NGGIBCI conference on Crop Genomics: Present & Future held at International Crop Research Institute for Semi-Arid Tropics (ICRISAT), Hyderabad, India December 6-8, 2017.

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

1. "International Conference on Biotechnology and Healthcare" held at at PJTSAU, Hyderabad, India. 26-27 Oct 2017.
2. "National Conference on Fungal Biology: Recent trends and future prospects & 44<sup>th</sup> annual meeting of Mycological Society of India", held at University of Jammu, Jammu. 16-18 Nov 2017.

### **Dr. I. Jacqueline Chinna Rani**

1. Two-days hands-on Workshop on "Data Analysis using SPSS" organized by LIMCOS at Loyola College, Chennai on 12<sup>th</sup> and 13<sup>th</sup> October, 2017.
2. National Level Advanced Workshop on "Effective strategies in Research Project Proposal Writing and Linking Funding Agencies" organized by LIFE and CAAS Research Foundation, Chennai held on October 23 & 24, 2017.
3. National symposium on "Current Trends in Plant Sciences", organized by Dept of Plant Biology and Plant Biotechnology, Madras Christian College, Chennai on 22 & 23, February, 2018.

### **Dr. L. Joelri Michael Raj**

1. One day Training programme on "*Vermicomposting Technology*" held at TNAU (Tamilnadu Agricultural University) Information and training centre, Chennai -40, 13<sup>th</sup> December 2017.
2. Two days hands - on Workshop on "*Machine Learning with R and LATEX*", held at Loyola College, Chennai - 34, 15<sup>th</sup> and 16<sup>th</sup> July 2017.
3. Two days hands - on Workshop on "*Data analysis using SPSS*" organized by LIMCOS, Loyola College, Chennai - 34, Date's : 12<sup>th</sup> and 13<sup>th</sup> October 2017.

### **Dr. S. Sheela**

1. Four days workshop for Research Supervisors and Research Scholars on High Impact Research Skills held at Loyola College , Chennai -34 - 8<sup>th</sup> to 11<sup>th</sup> January 2018.

**Ms. Jenifer Udhaya**

1. Four days workshop for Research Supervisors and Research Scholars on High Impact Research Skills held at Loyola College , Chennai -34 - 8th to 11th January 2018.

**Dr. M. A. Tanya Pereira**

1. One day workshop on *3D Printing* held at IITM Research Park, Chennai, July 29, 2017.
2. One day workshop on Innovative Lead Optimatization and Candidate Selection held at Stella Maris College, Chennai October 13, 2017.
3. Four days workshop for Research Supervisors and Research Scholars on High Impact Research Skills held at Loyola College , Chennai -34 8th to 11th January 2018.

**RESOURCE PERSON****Dr. R. Ravindhran**

- Chairperson at the workshop on Curriculum Framework – Botany held at State Council of Educational Research and Training , Chennai on August 04, 2017.
- Chief Guest for the inaugural session of workshop on Phytochemical techniques held at Ethiraj College, Chennai on November 27, 2017.
- Reviewer for textbook XI- - Botany at the workshop on Curriculum Framework held at State Council of Educational Research and Training, Chennai on December 12, 2017.
- Chairperson in the National conference entitled “Biodiversity of Medicinal Plants” held at Queen Mary’s College, Chennai-04 on January 04, 2018.
- External Expert Member for Academic audit at Thiagarajar College, Madurai on February 09, 2018.
- Chairperson in the National conference entitled “Recent Trends in Applied Perspectives of Plant Sciences” held at Pachaiyappa’s College, Chennai 30 on February 27, 2018.
- External Expert Member for Academic audit and Selection of Star Departments at Bishop Heber College, Tiruchirappalli on February 09, 2018.

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

- Resource person “Environmental Awareness” to ECO-CLUB students of Holy Angels’ Anglo Indian Hr.Sec. School, T. Nagar, Chennai August 03, 2017.
- Chairperson in the National conference entitled “Biodiversity of Medicinal Plants” held at Queen Mary’s College, Chennai-04. January 05, 2018.
- Chief guest for Inauguration of the project day - St.Mary’s Anglo Indian Hr.Sec.School, Chennai-01. February 16, 2018.

### **Ms. Jenifer Udhaya**

- Resource person in Workshop on Crop Genome Editing using CRISPR Cas9 during September 05 – 09, 2017.

## **RESEARCH PUBLICATIONS IN NATIONAL AND INTERNATIONAL JOURNALS**

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

1. AtulBabu G, Vinoth A, **Ravindhran R.** 2017. Direct shoot regeneration in finger millet and assessment of genetic fidelity using ISSR. *Plant Cell Tissue Organ culture*.132: 157 – 164. doi:10.1007/s11240-017-1319-z. **(Impact factor – 2.02)**

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

2. Khusro A, Aarti C, Dusthacker A, **Agastian P** (2018). Anti-tubercular and probiotic properties of coagulase-negative staphylococci isolated from *Koozh*, a traditional fermented food of South India. *Microbial Pathogenesis*; 114, 239-250 **(Impact Factor – 2.09)**
3. Khusro A, Aarti C, Dusthacker A, **Agastian P** (2018). Anti-pathogenic and technological traits of coagulase-negative staphylococci isolated from *Koozh*, a fermented food product of South India. *Food Biotechnology*; **(Impact Factor – 0.57)** (In Press)
4. Aarti C, Khusro A, Varghese R, Arasu MV, \***Agastian P**, Al-Dhabi NA, Ilavenil S, Choi KC (2018). *In vitro* investigation on probiotic, anti-*Candida*, and antibiofilm properties of *Lactobacillus pentosus* strain LAP1. *Archives of Oral Biology*; **(Impact Factor – 1.8)** (In Press)
5. Aarti C, Khusro A, Varghese R, Arasu MV, \***Agastian P**, Al-Dhabi NA, Ilavenil S, Choi KC (2017). *In vitro* studies on probiotic and antioxidant properties of *Lactobacillus brevis* strain LAP2 isolated from *Hentak*, a fermented fish product of North-east India. *LWT Food Science and Technology*; 86, 438-446 **(Impact Factor- 2.32)**
6. Aarti C, Khusro A, **Agastian P** (2017). Goat dung as a feedstock for hyper-production of amylase from *Glutamicibacterarilaitensis* strain ALA4. *Bioresource and Bioprocessing*; 4:43. doi. 10.1186/s40643-017-0174-4

7. Khusro A, Barathikannan K, Aarti C, **Agastian P** (2017). Optimization of thermo-alkali stable amylase production and biomass yield from *Bacillus* sp. under submerged cultivation. *Fermentation*; 3, 7; doi:10.3390/fermentation3010007
8. Venkatadri B, Khusro A, Aarti C, Rameshkumar MR, **Agastian P** (2017). *In vitro* assessment on medicinal properties and chemical composition of *Michelianilagirica* bark. *Asian Pacific Journal of Tropical Biomedicine*; 7(9): 782-790(**Impact factor - 0.5**)
9. Praveen Kumar P, SagayaJansi R, Saravana Kumar P, NimalChristhudas IVS, Preetam Raj JP, Vijayakumar A, **Agastian P**, Ignacimuthu S (2017). Optimization of biosynthesis parameters, partial purification and characterization of extracellular lipase from soil derived *Streptomyces* sp. Loyola Lipase-1. *Biocatalysis and Agricultural Biotechnology*; 12, 241-247
10. Antonisamy P, **Agastian P**, Kang CW, Kim NS, Kim JH (2017). Anti-inflammatory activity of rhein isolated from the flowers of *Cassia fistula* L. and possible underlying mechanisms. *Saudi Journal of Biological Sciences*; doi.org/10.1016/j.sjbs.2017.04.011 (**Impact factor - 2.5**)
11. Antonisamy P, Dhanasekaran M, Kim HR, Jo SG, **Agastian P**, Kwon KB (2017). Anti-inflammatory and analgesic activity of ononitol monohydrate isolated from *Cassia tora* L. in animal models. *Saudi Journal of Biological Sciences*; 24, 1933-1938 (**Impact factor - 2.5**)
12. Selvaraj T, **Agastian P** (2017). *In vitro* anticancer activity of ethyl acetate extract and green nanoparticle synthesized from *CurculigoorchioidesGaertn*-an endangered medicinal plant. *International Journal of Pharmaceutical Sciences and Research*; 8, 3030-3038
13. JebalsyLalitha L, Prince Clarence P, Jerin Sales T, Mary Archana A, **Agastian P** (2017). Biological activities of *Garciniamangostana*. *Asian Journal of Pharmaceutical and Clinical Research*; 10, 272-278

**Dr. J. Joel Gnanadoss**

14. Brindha, S., Vincent, S., Velmurugan, D., Ananthakrishnan, D., Chandrabose, S.J and **Gnanadoss, J.J.** 2017. Bioinformatics approach to prioritize drugs towards repurposing for tuberculosis. *Medical Hypothesis***103**: 39-45
15. Brindha, S., Chandrabose, S.J, Vincent, S., Velmurugan, D., and **Gnanadoss, J.J.** 2017. In silico and in vitro screening of FDA approved drugs for potential repurposing against tuberculosis. *BioRxiv* Dec3 2017. <http://dx.doi.org/10.1101/228171>



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

16. Anto Suganya Regis, **JeyaJothi Gabriel**, 2017. Antifungal activity of *Cyanotisaxillaris* (L.) d. don ex sweet against opportunistic fungal strains. *International Journal of Pharmacy and Pharmaceutical Sciences* Vol 9, Issue 7.
17. A. Hannah Hepsibah, **G. Jeya Jothi**, 2017. A comparative study on the effect of solvents on the phytochemical profile and biological potential of *Ormocarpumcochinchinense* auct. Non(Lour.) Merrill. Vol 9, Issue 1.
18. M Mala, A Hannah Hepsibah, **G Jeya Jothi**, 2017. Silver Nanoparticles Synthesis Using *Cocciniagrands* (L.) Voigt and *Momordicacharantia* L., Its Characterization and Biological Screening. *Journal of Bionanoscience* 11:6.504-513.

### **Dr. I JacquelineChinna Rani**

19. Vijayaraj, R. and Jaquiline Chinna Rani, I. (2018) "An Ethnobotanical Survey of Medicinal, Ornamental, Agricultural and Wild Plants in Maruthuvambadi Village, Tiruvannamalai District, Tamilnadu, India" *International Journal of Trend in Scientific Research and Development*. ISSN 2456-6470, 2 (2).

### **Conference Proceedings**

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

1. **Ravindhran R.** 2018. Plants as Cellular Factories for Secondary Metabolites. In the abstracts of workshop manual on Phytochemical Techniques held at Ethiraj College, Chennai. 27<sup>th</sup> November 2017.
2. **Ravindhran R.** 2018. Plant Cell Culture - An ex situ approach for medicinal plants conservation. In the abstracts of "National conference entitled "Biodiversity of Medicinal Plants" held at Queen Mary's College, Chennai. 4<sup>th</sup> January 2018.

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

3. Jenila, V.A., and **Gnanadoss, J.J.** 2017. Formulation of a suitable medium for maximizing L-Asparaginase production by Endophytic Fungi *Fusarium* sp. and *Colletotrichum* sp. In the Abstracts of "National Conference on Fungal Biology: Recent trends and future prospects & 44<sup>th</sup> annual meeting of Mycological Society of India", held at University of Jammu, Jammu. 16-18 Nov 2017.
4. Parthasarathy, M., Dhavala, S., and **Gnanadoss, J.J.** 2017. Formulation of a suitable culture medium for maximizing the production of protease by *Streptomyces* sp. in submerged fermentation. In the Abstracts of "58<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI - 2017)" held at Babasaheb Bhimrao Ambedkar University, Lucknow, India. 16-19 Nov 2017.

5. Jenila, V.A., and **Gnanadoss, J.J.** 2017. Screening of extracellular enzymes producing endophytic fungi isolated from medicinal plants. In the Abstracts of "International Conference on Biotechnology and Healthcare" held at at PJTSAU, Hyderabad, India. 26-27 Oct 2017.
6. Dhavala, S., Parthasarathy, M., and **Gnanadoss, J.J.** 2017. Characterization and phylogenetic analysis of Mangrove actinomycetes producing industrially important extracellular enzymes. In the Abstracts of "International Conference on Biotechnology and Healthcare" held at at PJTSAU, Hyderabad, India. 26-27 Oct 2017.
7. Dhavala, S., Parthasarathy, M., and **Gnanadoss, J.J.** 2018. Medium formulation and optimization of alkaline protease production by *Nocardia* sp. LCJ15A using response surface methodology. In 'National Symposium on Current Trends in Plant Sciences (NSCTPS18)' at MCC. 22<sup>nd</sup> and 23<sup>rd</sup> of February, 2018.
8. Jenila, V.A., and **Gnanadoss, J.J.** 2018. Maximizing production of L-Asparaginase by endophytic fungi *Fusarium* sp. and *Colletotricum* sp. In 'National Symposium on Current Trends in Plant Sciences (NSCTPS18)' at MCC. 22<sup>nd</sup> and 23<sup>rd</sup> of February, 2018

#### **BOOK PUBLICATION**

1. AmeerKhusro, J. P. Preetam Raj, Paul Agastian. "**Practical Bacteriology**". Narosa Publishing House, ISBN Number: 978-81-8487-580-5. Ed. 2016

#### **BOOK CHAPTERS IN EDITED BOOKS**

1. Ameer Khusro, Chirom Aarti, Paul Agastian (2018). "Bacteria and Bioactive Peptides: A Robust Foundation to Combat Cancer" for book "Understanding Cancer Therapies" ISBN: 978-11-3819-815-9; CRC Press, Taylor & Francis Group, pp, 67-88.
2. Prince Clarence, Paul Agastian (2018). "Phytopharmaceuticals in Cancer treatment" for book "Understanding Cancer Therapies" ISBN: 978-11-3819-815-9; CRC Press, Taylor & Francis Group, pp, 25-47.
3. Ameer Khusro, Chirom Aarti, AzgerDusthacker, Paul Agastian (2017). "Anti-tubercular Potentiality of Medicinal plants: An Initiative to Combat the Era of Drug Resistant Bacteria" for book "Phytochemistry and Pharmacology of Medicinal Herbs" ISBN: 978-93-85995-46-0; Lenin Media, pp, 375-388.

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