

# NABS *News Letter*

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Former Chairman, NBA, GOI, Chennai

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## From the Desk of President....



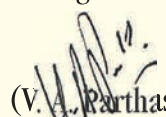
Dear NABSians,

*Greetings.*

I am happy to inform you all that the 11<sup>th</sup> NABS-National Conference on “Climate change driven challenges on Ecosystems-Innovative solutions towards sustainable development” is likely to be held from 11-13 October, 2018 at Pondicherry University, Puducherry. We have made a change from routine and the inaugural function is proposed on the After Noon 11<sup>th</sup> October so that the next two days left for the delegates to interact effectively. This will give more opportunities to young teachers, biologists and research scholars to present their paper more effectively.

Secondly, NABS has a tradition of recognizing great scientists by naming NABS Awards in their name. Recently the Executive Council Members decided to rename two awards- NABS-Leadership Award as “*Prof. M. S. Swaminathan NABS-Leadership Award*”; NABS-Best Woman Scientist Award as “*Dr. E. K. Janakiammal Memorial NABS-Best Woman Scientist Award*” and NABS-Young Scientist Award as “*Dr. Har Gobind Khorana Memorial NABS-Young Scientist Award*” which takes effect from the election year 2017

NABS also brings out a book tentatively titled as “*The Journey of NABS through 2004*” which will cover the memoirs of Prof. S. Kannaiyan, the founder President. NABS is taking a right course of path in its progress and tries to provide opportunities to meet the challenges faced by the biologists through such conferences organized in collaboration with educational institutions. I take this opportunity to congratulate all the elected Fellows and NABS-Awardees for the year 2017. I would urge all the Fellows of NABS to have greater participation and contribution to the science of biology through their scientific publications including NABS News Letter.

  
(V. A. Parthasarathy)  
President, NABS

## 2. Message from Vice-President...



My Greetings and wishes to all NABSians!

Climate change is a topic of current interest to everyone. What is climate change? Climate change is a shift in 'climate' related to a given reference time period. Intergovernmental Panel on Climate Change (IPCC) predicts climate change will lead to increase temperature, precipitation and green house gases such as carbon dioxide, methane, and nitrous oxide. Some of the main effects of climate change on agriculture would be increased occurrence of storms and floods, increased incidents and severity of drought, steady spreading out of potential growing season, increased frequency of pest attacks and vanishing habitats for plants, animals and microbes. Currently, the world is facing a challenge of producing sufficient food from dwindling natural resource base for constantly increasing population. It implies that more production is required from fewer natural resources under future climate scenarios. Climate change is a slow process with its impacts seen on a long term basis. Several forecasts for the coming decades project changes in precipitation resulting in more frequent drought and floods, extreme temperature, leaching of soil nutrients and reduction in fresh water in availability. Hence there is a need to take up studies on climate change impacts on physico-chemical aspects and biological systems in a holistic way i.e. ecosystem approach. This is crucial to develop strategies for the future to meet the food security demands and a comfortable living for mankind in the years to come.

(D.J. Bagyaraj)  
Vice-President

## 3. Message from Editor...



Greetings to all at NABS!

I am particularly glad to note that NABS has been making its mark at all levels and is forging ahead with great promise and enthusiasm as envisaged by the founder president by the present Executive. At this juncture, I sincerely thank all of you for the unstinting support and encouragement and we look forward to making significant headway by acting as a nurturing ground for young scientists who seek to make a mark in their research career.

The Academy is fast expanding and with more and more members moving into the fold, we expect close interactions among the teachers and the taught. Exciting times are ahead with the 11<sup>th</sup> National Conference on “Climate change driven challenges on Ecosystems- *Innovative solutions towards sustainable development*” around the corner. We expect this conference to not only enhance the learning quotient but also impart valuable knowledge that leads to holistic growth and development of the society. I am sure this conference will provide intelligent presentations, discussions, and permit exchange of technical ideas with colleagues from around the country. I strongly urge the members of the Academy to participate in this conference and make it fruitful and successful. I expect that the outcome of the conference as recommendations would help the policy makers to chalk out programme to address climate change issues.

As editor of this newsletter, I also request you to provide your valuable research inputs and ideas to share among the members. The academy also wishes to celebrate scientific achievements and breakthroughs, by urging all of you to contribute to this newsletter. Lastly, let us seize the opportunities, with self-confidence and self-responsibility, and with a readiness to work with the society.

(M. Anandaraj)  
Editor, NABS NL

## 4. News and Events

### 4.1. Eleventh NABS-National Conference

The 11<sup>th</sup> NABS National Conference on “Climate change driven challenges on Ecosystems- *Innovative solutions towards sustainable development*” is scheduled to be held at Pondicherry University, Puducherry, UT., India from 11 to 13 October 2018 (tentative). Details will follow soon through Announcement. The unique feature is that the inaugural function is scheduled on the FN of 11<sup>th</sup> October 2018 so that two solid days are available for AGM and Technical Sessions.

### 4.2. Carl Linnaeus Award & Prof. M.S. Swaminathan Award

- The award was instituted in 2017. The awards are meant for Ph.D. / M.Sc. students respectively.
- Carl Linnaeus Award carries a certificate and cash prize of Rs. 5000/-
- Prof. M.S. Swaminathan Award carries a certificate and cash prize of Rs. 4000/-
- The award competition will be held only when a minimum of THREE selected applicants are available for presentation during NABS-National Conference / Seminar.
- If the above criteria are not fulfilled no completion will be held.
- The applicants shall look for the Announcement / Brochure of NABS-National Conference of the year which will normally be uploaded in the website / circulated to all members of NABS.
- The aspirants are requested to go through the rules and regulations for this award [vide [www.nabsindia.org](http://www.nabsindia.org)]

#### Name of Award

#### Mode of selection

Carl Linnaeus Award

[For Ph.D. Students]

: Based on best oral presentation made during NABS-National Conference

Prof. M. S. Swaminathan Award

[For M.Sc. students]

## 5. Awards, Recognitions, Honors received by members of NABS / Activities of the members

### 5.1. Awards, Recognitions and Honors

Congratulations to all the NABSians who received awards and recognition from various institution and organizations in the country and outside during 2017-18.

#### Name of Member

#### Name of Award / Recognition received

#### A. Awards and recognitions received from other organizations

- Aishwath, O.P.
- Fellow of GKV Society - FGKVS (Publishing a Journal 'Annals of Plant and Soil Research') Agra, U.P.
  - Fellow of Indian Society of Spices (FISS) Kozhikode, Kerala
  - Dr H.S. Mehta Memorial Award for Best Research Paper (Oral Presentation)
  - Best poster presentation award for the poster (for my PhD Student's work) Sharma, N., Aishwath, O.P., and Lal, G. 2018
  - Certificate of Honour by the "Bioinfo Publications", for the contribution as 'Associate Editor' of "International Journal of Agriculture Sciences"

- Dhananjay Pandey ■ DST-INSPIRE Fellowship (2011-2016)  
 ■ Joined as Guest Faculty at Bastar University, Jagdalpur (C.G.).
- Dinesh, R. ■ Conferred with Fellow of National Academy of Agricultural Sciences (2018)
- Gifty Immanuel ■ Fellow, Royal Society of Biology, UK.  
 ■ Fellow, Royal Academy of Medicine, Ireland.  
 ■ Fellow, Royal College of Physicians & Surgeons, Glasgow.
- Gomathi, R. ■ Received 'Bharat Ratna Mother Thersa Gold Medal Award' by Global Economic Progress & Research Association (GEPRA) at Chennai.
- Gopal Lal ■ ISS Fellowship 2018 by Indian Society of Spices, Calicut, Kerala(2018).  
 ■ CHAI-JISL Fellowship-2018 by Confederation of Horticulture Associations of India (2018).  
 ■ CHAI Fellowship -2017 by Confederation of Horticulture Associations of India (2017).
- Gurudutta Gangenahalli ■ Scientist of the year Award - 2017 of DRDO by Honourable Defence Minister Smt. Nirmala Sitharaman [Highest award under DRDO) & Ministry of Defence given to individual Scientist]
- Jitendra Kumar ■ Selected as Director, Institute of Pesticide Formulation Technology, Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India [Joined on 09 March, 2017- for six years tenure]
- Joseph Selvin Kalaivani, T. ■ Conferred with Fellow of National Academy of Agricultural Sciences (2018)  
 ■ Fellow of Linnean Society  
 ■ Best Women Assistant Professor Award in Bio Sciences and Technology by PEARL Foundation, Madurai.  
 ■ Best Researcher, Marquis Who's Who in Science and Engineering
- Kolla Sreedevi ■ Awarded Fellowship from DFG, a German Research Foundation in 2017.  
 ■ Awarded 'Edita David Memorial Award' in 2018 by Applied Zoologists Research Association, Bhubaneswar.  
 ■ Nominated as CEM member, International Union for Conservation of Nature and Natural Resources (IUCN) in 2017 for three years (2017 - 2020).
- Kumar, K. ■ Tamil Nadu Scientist Award (TNSA) by Tamil Nadu State Council for Science and Technology (TNSCST), Chennai (2017)  
 ■ Life Time Achievement Award by Pearl Foundation, Madurai (2017)
- Lohithaswa, H.C. ■ Received NagammaDattatreya Rao Desai Award for Best Adaptive Agricultural Research in Karnataka for the year(2016-17)
- Muthamilarasan, M. ■ Indo-Australian Career Boosting Gold Fellowship ( 2018) by Department of Biotechnology, Govt. of India.  
 ■ INSA Medal for Young Scientists (2018) by Indian National Science Academy, New Delhi  
 ■ Early Career Research Award (2018) by DST-SERB, Ministry of Science & Technology, Govt. of India.
- Muthukumar, M. ■ Best Educationist Award for Talented Person by International Business Council (IBC), Delhi.  
 ■ Environmental Biologist of the Year Award 2017 by Scientific and Environmental Research Institute, Kolkata and National Institute of Cleanliness Education and Research, New Delhi.  
 ■ National Teaching Excellence Award 2017 by International Benevolent Research Foundation, Kolkata and Confederation of Indian Universities, New Delhi.
- Naveena, B.M. ■ Fellow -Indian Poultry Science Association (IPSA)-2017  
 ■ Member, National Academy of Sciences India (NASI)-2016  
 ■ Visiting Scientist-Oklahoma State University, USA (2018)



- Prakashkumar, R. ■ Joined as Director, Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Palode, Kerala
- Raghavendra Rao, M. V. ■ Awarded FIBMS, (UK) Fellowship
- Rajasekaran, C. ■ Fellow of Royal Society of Biology  
 ■ Fellow of Linnean Society  
 ■ Fellow of Indian Society for Plant Physiology  
 ■ Best Associate Professor Award in Bio Sciences and Technology by PEARL Foundation, Madurai  
 ■ Best Biodiversity Conservation Practices Award PEARL Foundation, Madurai.
- Rajib Deb ■ TWAS Fellowship for Advanced Research and Training, Italy (2017)  
 ■ Fellow of Academy of Sciences for Animal Welfare, India (2018)
- Ramakrishnan, P. ■ 2018 - Awarded first prize for the best paper presentation, Department of Botany, School of Life Sciences, Periyar University, Salem, Tamil Nadu
- Ramesh Kumar, S. ■ Best Faculty Award, Indian Academic Researchers Association, Trichy.  
 ■ Member, Editorial Board- Current Agriculture Research Journal published by Enviro Research Publishers, Madhya Pradesh.
- Reshma Ayswaria ■ Prime Ministers Fellowship for Doctoral Research students (DST, SERB, CII) September -2016  
 ■ Best Second paper presentation-International Conference(DST-PURSE,SERB)-2017 December at Bharathiar University  
 ■ Best Second poster award -International conference (ICAR-DST)-2018 January at SASTRA University
- Rethinam, P. ■ Conferred with CHAI-Life Time Achievement Award-2018 by Confederation of Horticulture Association of India, New Delhi
- Sangeeta Srivastava ■ Life Time Achievement Award (2018) ENR Foundation at ICAAAS-2018 held at JNU Convention Centre, New Delhi
- Savariar Vincent ■ The Royal Society of Biology, London has elected Fellow of Royal society of Biology by its resolution on 1st July 2016 for outstanding contribution to biological sciences  
 ■ Tamil Nadu Scientist Award by Tamil Nadu State Council for Science & Technology, 2018  
 ■ Academic Excellence award by International Human Rights Peace Commission, USA, 2018  
 ■ The Best Teacher Award- 2017 by Chennai Lions club.  
 ■ Doctor of Letters (D. Litt) (2016) by The International Economics University.
- Sayed Abdul Azeez ■ US Patent Published- Al-ali, A.K., Alexander, F.B.J., Naserullah, Z., Azeez, S.A. and Al-jarrash, S., University of Dammam, 2016. Sequence of primer pool for multiplexd PCR and method of detecting microbial infections in Thalassemia patients- U.S. Patent 20,160,083,806.
- Shaashikant S Udikeri ■ Fellow, Royal Entomological Society. London, UK (2018)  
 ■ Best Research Scientist-2016-17 of the University. Award (2018)
- Shashikant S. Udikeri ■ Best Research Scientist Award 2016-17 of University of Agricultural Sciences, Dharwad.
- Sreenivasa, M. N. ■ Visiting professor, Dept Microbiology Osmania University Hyderabad (2017)
- Varughese George ■ Elected as Secretary General, National Society of Ethnopharmacology, India (2017)  
 ■ Appointed as Member, Governing Body, Mar Discorus College of Pharmacy, Thiruvananthapuram (2017).
- Viswanatha, K. P. ■ Conferred with CHAI-Honorary Fellow (2018) by Confederation of Horticulture Association of India, New Delhi

## 5.2. Activities of Members

### 5.2.1. Dr. T. Marimuthu

Delivered a lecture on “*Perspectives of Biological control of Plant Pathogens*” on 29 June 2018 under UGC-Sponsored Refresher Course in Life Sciences (Interdisciplinary) at Department of Microbiology, Bharathidasan University, Tiruchirappalli, Tamil Nadu.

### 5.2.2. Dr. K. Balaraman

Dr. K. Balaraman, former EC member of NABS and Dr. T. Marimuthu had discussion with Dr. Joseph Selvin, Department of Microbiology, Pondicherry University, Puducherry on 20 June 2018 in connection with organizing 11<sup>th</sup> NABS-National Conference to be held at Pondicherry University.

### 5.2.3. Dr. O.P. Aishwath

Acted as Convener for poster evaluation committee during *National Seminar on "Developments in Soil Science - 2017"* and “82<sup>nd</sup> Annual Convention of the Indian Society of Soil Science” held on December 11-14, 2017 at Amity University, Kolkata, W.B.

Acted as Rapporteur in Technical Session- Crop management during a Seminar on Sustainable Agriculture Practices for Seed Spices, held on February 24-25, 2018, at ICAR-NRCSS, Ajmer, Rajasthan

Acted as a Convener for technical session on Abiotic and Biotic Stress Management to Mitigate the Effects of Climate Change during. 26<sup>th</sup> *National Conference on Natural Resource Management for Climate Smart Sustainable Agriculture*, September 11-13, 2017, SCSU-CPGS, CAU (I), Barapani, Meghalaya.

## 6. Research notes and short communications from members

### 6.1. Combination therapy against multi-drug resistant pathogenic microorganisms

Combination therapy is often profitable for patients with serious infections caused by multi-drug resistant pathogens. The increased drug resistance among pathogenic microbes due to the profuse use of commercially available antibiotics has drawn the attention of the researchers globally to look for the alternative mode of healing infections. One such strategy employed to overcome these resistant mechanisms is the use of combination of drugs. The search for such compounds which can be combined with antibiotics in the treatment of drug resistant infections may be an alternative to overcome the problem of antibiotic resistance. Synergism is a positive interaction created when two agents combined and exert an inhibitory effect that is greater than the sum of their individual effects. Thus, in current scenario the efforts to overview the use of bioactive plant products in combination with standard antibiotics and its implications in antimicrobial chemotherapy would be highly rewarding. Though, the ayurvedic therapy based on plants or plant product has described several medicines but the determination of their pharmacological activity through bio-efficacy testing and characterization of the bioactive antimicrobial compound by several analytical instruments *viz.*, HPLC, UV-Visible spectrophotometer, FT-IR, NMR (<sup>1</sup>H & <sup>13</sup>C) and ESI-MS is the need of the hour.

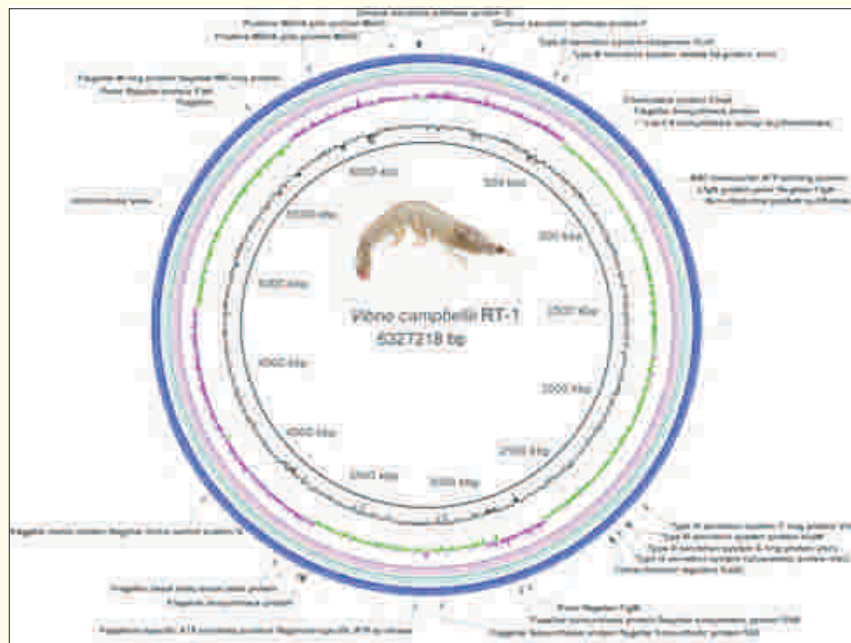
In current prospect, looking into the tremendous use of antibiotics as therapeutics had led to the emergence of multi-drug resistant pathogens so, there is an urgent need of extensive research to find new facets in antimicrobial therapy for the amelioration of these dreadful diseases. The medicinal plants have emerged as one of the key alternatives today for the extraction of bioactive principles and their synergy with commercially available antibiotics can add on to their benefits several folds. Currently, medicinal plants as therapeutics are of great demand in many countries for the development of herbal drugs. These drugs are natural and are free from side effects. However, the synergistic activity of herbal extract with commercially available antibiotics can lead to enhance the antibiotic spectrum with greater efficacy. Thus, the focus of present research in the search of novel therapeutics for the treatment of several infectious diseases deserves attention.

The current focus of our research lies in the assessment of antimicrobial activity of some medicinal plants from Bastar region of Chhattisgarh. The process involves the extraction of phytochemicals from different parts of plants followed by its bioefficacy testing and finally the purification and characterization of the bioactive principles responsible to confer antimicrobial activity. The bioactive compounds are further assessed for their synergistic / antagonistic activity against multi-drug resistant (MDR) pathogenic microorganisms. Finally, the bioactive compounds are tested for its efficacy *in-vitro* and *in-vivo* for the elucidation of molecular mechanism and mode of action of these herbal drugs. Thus, aim of the present study is to look forward for the search of novel bioactive compounds for healing several dreadful ailments in future for the well being of human kinds.

*Dhananjay Pandey and A.K. Gupta*  
*Microbiology Research Laboratory, School of Studies in Life Science,*  
*Pt. Ravishankar Shukla University, Raipur-492010, Chhattisgarh, India*

## 6.2. Whole Genome of *Vibrio campbellii* RT-1

Our group recently sequenced the whole genome of *Vibrio campbellii* RT-1 strain isolated from an infected shrimp, *Litopenaeus vannamei*. The Illumina Hiseq 2500 platform based whole genome sequence was assembled *de novo* using SPAdes and Velvet optimiser. The gene prediction and annotation were performed by a rapid prokaryotic genome tool-Prokka. The genome has one circular chromosome with 6327218 bp long and contains 5787 predicted genes with an average of 45% GC content. A total of 86 known genes associated with pathogenicity were identified and 28 genes were found to be responsible for virulence factors. Furthermore, 1112 unigenes were subjected to Gene Ontology terms, and 4895 predicted proteins were annotated with Clusters of orthologous functional groups. The phylogenetic position of was established through this sequencing and provides a strong platform to further study on genomic alterations and phenotype of *V.campbellii* associated with shrimp diseases. NCBI Accession No: SRX2697536 (<https://www.ncbi.nlm.nih.gov/sra/?term=SRX2697536>). We acknowledge the young scientist funding support by DST-SERB (SERB/LS-999/2013)



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*Sathyabama Institute of Science and Technology, Chennai 600 119, India*  
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## 7. An appeal to contribute for Corpus Fund

Corpus Fund for Prof. S. Kannaiyan Memorial Award is being mobilized. NABS thankfully acknowledge the contributions made by members to Prof. S. Kannaiyan Memorial Corpus Fund [vide list below- continuation]

Sl. No.	Name of contributor	Amount (Rs.)
1	Gaur, Y.D	5,000/-

- We earnestly appeal to all the rest of the Life members, NABS Fellows / Associate Fellows, Corporate Life Members, Corporate Fellows and well wishers to contribute to this noble cause. The amount may be paid as Cash or through a Demand Draft / Multicity Cheque drawn in favour of National Academy of Biological Sciences payable at Chennai.
- The fund may also be electronically transferred to the Savings Bank account of the Academy held at State Bank of India; Branch: Valmiki Nagar, Chennai-600 041 / Branch code: 11721 / IFS code: SBIN0011721.
- SB Account No. of the Academy: 10496978637

## 8. Enroll yourself as a member and be a part of NABS

### Types of Membership available (one time payment)

A. Life Member	:	₹2,500/-	or	US\$ 100/-
b. Corporate Life Member	:	₹10,000/-	or	US\$ 400/-
c. Corporate Fellow	:	₹1,00,000/-	or	US\$ 4000/-

- Duly filled membership form shall be sent as pdf format by E-mail to : [secretarynabs@gmail.com](mailto:secretarynabs@gmail.com)
- The prescribed membership fee shall be transferred on line

Name of the account holder : National Academy of Biological Sciences

Account number : **10496978637**

Type of account : Savings Account

Name of Bank : State Bank of India, Valmikinagar Branch, Thiruvanmiyur, Chennai - 600 041

Branch code / IFSC code : Branch code: 11721

IFSC code: SBIN0011721

Download your application from [www.nabsindia.org](http://www.nabsindia.org)

### Address for all correspondences

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### Disclaimer

The authors are responsible for the information related to Research notes and short communications of this issue

### Published by

Prof. T. Marimuthu, Ph.D., FNABS., FISNS.

Secretary, NABS

12, Rajiv Gandhi Road, Perungudi, Chennai - 600 096  
on behalf of National Academy of Biological Sciences

### An appeal to members of NABS

Kindly inform change of address including phone numbers and E-mail to the Secretary, NABS by E-mail ([secretarynabs@gmail.com](mailto:secretarynabs@gmail.com))

Printed and circulated to members as E-copy on 25 July 2018