



**First NABS - International Conference
on**

**Life Sciences : Contemporary approaches in Biological
Science for Food, Health, Nutrition Security and
Conservation of Biodiversity**

26th to 28th August 2021



Organised by

Faculty of Agriculture, Annamalai University
Annamalai nagar, Chidambaram, Tamil Nadu, India.
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National Academy of Biological Sciences (NABS)
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E-mail: secretarynabs@gmail.com / Mobile: +91-94436 73155
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A. About Annamalai University

In the early 1920s Rajah Sir S. R. M. Annamalai Chettiar founded Sri Minakshi College, Sri Minakshi Tamil College and Sri Minakshi Sanskrit College at Chidambaram. In 1928, Rajah Sir S. R. M. Annamalai Chettiar agreed with the local Government to hand over the above said institution for establishing a University. Thus, on 01.01.1929 Annamalai University was established as per Annamalai University Act 1928 (Tamil Nadu Act 1 of 1929). One of the most significant developments is the enactment of the Annamalai University Act, 2013 (Tamil Nadu Act 20 of 2013), which has come into force from September 25, 2013. Annamalai University is accredited with 'A' Grade by NAAC in 2014. "The NIRF-2019" by the Ministry of Human Resource Development (MHRD) has ranked the University in the band 101 - 150 in the overall category as well as the University Category. In the Pharmacy Category the ranking is 12th in India. In the Medical Category the ranking is 25th. "The Times Higher Education World University Ranking - 2019" has ranked Annamalai University in 1000+ for Overall category. In the Subject category Ranking, 2019, the University is ranked in the band of 501- 600 for Life Sciences and Pre-clinical, clinical & Health Subjects. 800+ in the Physical Sciences subject. "The QS World University Ranking - 2019" has ranked Annamalai University in the band of 291 - 300 in Asia Ranking, 174th in the BRICS Ranking and 43rd in India Ranking. "The CWTS Leiden Ranking 2018", on scientific impact of universities and on universities' involvement in scientific collaboration & scientific performance, has ranked the University at 20th based on the number of publications and 4th based on the proportion of publications compared with other publications in the same field and in the same year, belong to the top 10 per cent most frequently cited. "The MDRA - India Today Ranking" (2018) has ranked Annamalai University 13th among the best Government Universities in India. Among the top 197 ranked institutions for Higher Education in India, the "SCImago Institutional Ranking (2018)" has ranked Annamalai University as 7th in Tamil Nadu and 32nd in India. Annamalai University is one of the largest unitary, teaching, and residential Universities in Southern Asia comprising of 10 Faculties and 49 departments of study. This University has played a pivotal role in providing access to higher education to thousands of youth cutting across the social spectrum, especially from economically and socially disadvantaged classes. In this respect, the service of the University to the nation is tremendous.

B. About National Academy of Biological Sciences (NABS)

National Academy of Biological Sciences (NABS) was founded on 31st December, 2004 by (Late) Prof. Dr. S. Kannaiyan, the then Chairman, National Biodiversity Authority, Ministry of Environment and Forests, Government of India, Chennai, Tamil Nadu with a vision to provide a common platform for the biologists to interact with each other for mutual benefit and to further the knowledge on areas of biological sciences. The Academy was registered as "National Academy of Biological Sciences" under the Tamil Nadu Societies Registration Act 1975 (TN Act 27 of 1975) on 10th March, 2005 at Chennai South, Saidapet, Chennai – 600 015 with Certificate of Registration No. 110 / 2005.

Membership of Academy

Any scientist with Ph. D. in Biological Sciences (subjects as recognized by NABS) is eligible to become a member of NABS family by paying the prescribed fee online and become a NABS-ian.

Students of Biological Sciences pursuing Ph. D. are also eligible to enroll as a Provisional Life Member of NABS.

Opportunities available for NABS-ians!!!

NABS offers Fellowship, Associate Fellowship and various other Awards purely on merit basis- following the Score Card System.

i. Fellowship & Awards instituted by NABS

General Criteria

- ✦ A Life Member who has completed SIX months of cooling period from the date of enrolment as a life member as on 1st December of election year are eligible to apply for Fellowship /Awards.
- ✦ A Life Member can apply for only one award or Fellowship in a year.
- ✦ Provisional Life Members are eligible only to apply for NABS-Best Research Paper Award.
- ✦ No cooling period is fixed for the NABS-Best Research Paper Award.

Age limit and validity

No.	Name of Fellowship / Awards	Age limit*	Validity of application
1	Fellowship- Since 2005	Should have completed 30 years	N+2 years
2	Associate Fellowship- Since 2009	Should have completed 30 years and should not be above 40 years.	N+2 years
3	Dr. E.K. Janaki Ammal Memorial NABS-Best Woman Scientist Award- Since 2010	Should have completed 30 years	N+2 years
4	*NABS-Best Research Paper Awards-Since 2012	Not above 40 years	Valid only for the year of application
i.	Under Agricultural Sciences & Forestry	Prof. G. Rangaswami Memorial – NABS Best Research Paper Award	
ii.	Under Basic Sciences	Prof. T. S. Sadasivan Memorial - NABS Best Research Paper Award	
iii.	Under Veterinary and Fisheries	Dr. C. M. Singh Memorial – NABS Best Research Paper Award	
iv.	Under Food and Nutrition	Dr. V. Subra manyan Memorial – NABS Best Research Paper Award	
5	Dr. G. N. Ramachandran Memorial NABS-Young Scientist Award –Since 2013	Not above 35 years	N+2 years subject to age limit
6	Prof. M. S. Swaminathan NABS-Leadership Award-Since 2014	Should have completed 50 years	Valid only for the year of application
7	**NABS-Best Scientist Awards- Since 2014	Should have completed 30 years	N+2 years
i.	Under Agricultural Sciences & Forestry	Dr. B. P. Pal Memorial NABS -Best Scientist Award	
ii.	Under Basic Sciences	Dr. G. S. Venkataraman Memorial NABS-Best Scientist Award	
iii.	Under Veterinary and Fisheries	Dr. V. S. Alwar Memorial NABS -Best Scientist Award	
iv.	Under Food and Nutrition	Dr. Smt. Rajammal P. Devadas Memorial NABS -Best Scientist Award	

ii. M.Sc. or Ph. D. Student can participate in Student Award competition during NABS Conferences organized every year and receive the following awards including cash prizes. For more details visit www.nabsindia.org

Name of Award : Carl Linnaeus Award [For Ph.D. students] & Prof. M. S. Swaminathan Award [For M.Sc. students]

Mode of selection : Based on Best presentation made during NABS-Conferences

iii. NABS-National Conferences

Every year theme based NABS-National level Conference is organized in collaboration with educational institutions or research organizations. NABS-ians may contribute papers. The best oral / poster presentations are awarded.

iv. Prof. S. Kannaiyan Memorial NABS-Lecture Workshop- How as a NABS-ian can benefit?

To reach the unreached, "Prof. S. Kannaiyan Memorial NABS-Lecture workshop" is organized in colleges housed in remote places / or away from main cities. The proposal is being implemented from 2018 onwards. For more details, please visit the website www.nabsindia.org. NABS provides funding to organize the workshop.

How to apply for Fellowship or Award?

In general, applications are received from members of NABS from 1st to 31st December of the election year for Fellowship and Awards which will be scrutinized by a Technical Review Committee (TRC) constituted by the President. However, for "Prof. S. Kannaiyan Memorial Award" and "Dr. APJ Abdul Kalam Memorial NABS-Life Time Achievement Award" scientists are selected by nomination as per the rules laid out.

C. About Faculty of Agriculture, Annamalai University

Circumfusion of rural scenario and agriculture background around the university premises have been taken advantage of, in starting a Department of Agriculture under Faculty of Science to impart agriculture subject at Intermediate and undergraduate level as early as 1951. Dr. S. Krishnamurthy, the first Head of the Department of Agriculture, a renowned Horticulturist was instrumental in introducing M. Sc. (Ag.) in Horticulture in 1955, for the first time in South India. In pursuit of modernizing agriculture and providing professional services to the farming community, a four year professional course, B.Sc. (Ag.) was introduced during 1958-59 under the Department of Agriculture, Faculty of Science. The Department of Agriculture was elevated as a Faculty of Agriculture in 1963. Prof. Dr. G. Rangaswami, a renowned international microbiologist trained by the Nobel Laureate Dr. Selman Waksman was the first Dean of Faculty of Agriculture, the second seat of agricultural education in Tamil Nadu. The M.Sc. (Ag.) in Microbiology and Ph.D. was started by him in 1959 for the first time in India.

The Silver Jubilee of the Faculty of Agriculture was celebrated during 1985. Hon. Shri Yogendra Makwana, Minister of State for Agriculture, Government of India was the Chief Guest. The Golden Jubilee of the Faculty of Agriculture was celebrated during 2008. Dr. Mangala Rai, Secretary, Department of Agricultural Research and Education (DARE) and Director General, Indian Council of Agricultural Research (ICAR) was the Chief Guest. Presently there are nine departments and one division. The grants obtained by the Faculty from UGC, DST, DBT, ICAR, NMPB, Ministry of Coal, Environment & Forests and Water Resources etc., and budgetary provision from the University have added to an excellent infrastructural setup that facilitate cutting edge research in Agriculture and Horticulture. The Faculty of Agriculture is one of the accredited institutions from ICAR, New Delhi.



D. Preamble of the Conference

The components of biological sciences including Agriculture, Flora, Fauna, Environment, Health, Food, Nutrition and Climate change are the main stay of research and developments aiming at community development. Conglomerating the new ideas in biological sciences will offer better understanding of the biological system which will lead to enrichment of new ideas and concepts, identification of problem solving tools that lead to new vistas of development. The concepts of food security and food sustainability are two main paradigms in the current global scenario of exploding population. To ascertain sustainable component in food and nutrition, it becomes imperative to solve problems linked with environment, climate change, agriculture, energy and health. The latest technologies, advanced methods, and untapped research areas involved in diverse fields of biological sciences such as bioinformatics, proteomics, medical chemistry and marine science are need to be brought in limelight to help the young researchers to emulate new pathways. These facts to have a common platform for providing discussions on diverse research topics and methods in the biological sciences. With this idea, the 12th NABS - Conference is envisaged as First NABS - International Conference on "Life Sciences: Contemporary approaches in Biological Science for Food, Health, Nutrition Security and Conservation of Biodiversity".

E. Conference Themes

- Agriculture (including Animal Husbandry, Fisheries etc.)
- Basic Sciences
- Energy
- Environment
- Bio-diversity
- Health
- Food and Nutrition
- Climate change

F. Workshop (For Indian participants only, to attend OFFLINE)

Planet earth, on which we live, is increasingly tampered because of various human activities leading to climate change. It has tremendous impact on agriculture affecting crop yield, biodiversity, water and soil health, resulting in frequent and intense occurrence of droughts, floods, temperature rise and rise in sea level. Present day science and technology can offer much to adapt (cope up) agriculture with climate change which includes, Geographic Information System (GIS), Hyper Spectral Remote Sensing (HSRS), simulation modelling, biotechnology and genetic engineering. Among these, genetic engineering offers immense scope and hope to develop climate resilient crop varieties through molecular markers as a tool.

With these background, the **Workshop on Molecular Interventions for Climate Resilient Agriculture** is planned with a view to provide a vital platform, for all those concerned with climate change, to share, exchange and disseminate the ways and means to tackle the problem of climate change.

G. About Chidambaram & Annamalai Nagar

Chidambaram is located at Cuddalore district of the South Indian state, Tamil Nadu, at a distance 215 km from Chennai and close to the shores of Bay of Bengal. Annamalai Nagar is 2 km east of Chidambaram (adjoining to eastern side of Chidambaram Railway Station).

Places of interest

Lord Nataraja and Thillai Govindaraja Temple :

Chidambaram is one of the temple towns where the cosmic dancing Shiva, Sri Thillai Natarajar is blessing with Aananthathandava posture. It is the only place where we can see Lord Nataraja and Thillai Govindaraja from the same location. It is very famous for "The Secret of Chidambaram", a Hindu belief that there is a secret message conveyed through the embossed figure near the shrine of Shiva in the Chidambaram Temple.



Pichavaram Mangrove Forest : A unique natural phenomenon in the form of mangrove forest named Pichavaram wetlands is situated 11 km east of Chidambaram, which sprawl over 11,000 hectares of backwaters, is the main tourist attraction here. It is second largest Mangrove Forest in the World. To a botanist, rare species like *Avicennia* and *Rhizophora* will present special attractions.

Pondicherry : Pondicherry is situated on the way from Chennai to Chidambaram. The Sri Aurobindo Ashram, a spiritual community or ashram is located in Pondicherry. Auroville is a universal city in the making in South-India dedicated to the ideal of human unity based on the vision of Sri Aurobindo and The Mother.



To Reach Annamalai University by Air

The Tiruchirappalli International Airport (located on National Highway 336, about 5 km south of the city centre) and Chennai International Airport (located in Meenambakkam and Tirusulam, 21 km from the city centre) are very close to Chidambaram. The airport at Tiruchirappalli is 195 km away from Chidambaram and Chennai is at 245 km away from Chidambaram.

To Reach Annamalai University by Rail

Chidambaram is situated on the Madras-Tiruchirappalli main line of the Southern Railway. The Southern Railway is well connected with the major cities Tiruchirappalli, Madras, Madurai, Bangalore (340 km) and Tirupati (290 km).

H. Registration

The participants are requested to send the filled in registration form to the "Organizing Secretary" along with the registration fee on or before 30.07.2021. The registration fee includes conference kit, session refreshments and boarding. The application form must accompany with the endorsement of the Head of the Institution/Head of the Department/Research Supervisor for research scholars/students. The conference registration fee should be paid online.

Name of Account : The Registrar, Annamalai University
Account Number : 621201159623
IFSC Code : ICIC0006212
Name of Bank : ICICI Bank, Annamalai nagar Branch
and address Annamalai University Campus, Chidambaram

*The registered participants alone will be permitted to attend the Workshop on after noon of 27th Aug. 2021

**Further it is proposed to publish full papers (as an edited book / Proceedings with ISBN number) received from participants whose papers were accepted by Editorial Committee.

Registration Fee particulars

Category	Participants from India (Rs)	Participants from other countries (USD- \$)
Fellows and Awardees of NABS	1500	25
Corporate Fellows of NABS	Nil	Nil
Corporate Life Members	1500	25
Life and Provisional Life Members	2000	25
Research Scholars with Fellowship	1000	10
Research Scholars without Fellowship/ PG Students	750	10
Faculties and Academicians from Universities/Colleges/Research Institutes	3000	25
Accompanying persons	1500	-
Participants from Industries/Private companies	10,000	50
Registration Fees for Workshop* (For Indian Participants alone) (Optional)	Rs. 500	-
Full paper publication charges** (Optional)	Rs. 500	USD-\$ 50

I. Financial Support for Program

Limited number of delegates will be extended partial financial support to attend the conference. For further information, contact Organising Secretary by mail.

J. Call for paper

The abstract not exceeding 300 words in Microsoft (MS) word (Times New Roman, font size 12, line spacing 1.5), highlighting the results of original research work should be in the following format: Title (Capital and bold with font size 14), Authors name (bold with font size 12) and Affiliation (Address of the institution with e-mail ID of corresponding author). Presenting author should be indicated with an asterisk (*) symbol. Title, author's name and affiliation should be centre aligned. Keywords (Times New Roman, font size 10) should be limited to 5 words. The abstract should be submitted by **E-mail to nabsauconference2020@gmail.com on or before 08.07.2021**

After acceptance of abstract, the full-length paper not exceeding 10-15 pages (including tables and figures) prepared as per the format of Plant Physiology Reports, a Springer Publication (Formerly known as Indian Journal of Plant Physiology) may be sent by email. Authors of selected research papers will be informed to pay additional fees and may be asked to carry out corrections if any within the stipulated date.

K. Oral/E-Poster Presentations

The corresponding authors are requested to indicate their choice for Oral/ E-poster presentations. The scientific committee will decide on the suitability of paper for oral or e-poster presentation. The author should include the title, abstract ID, author(s) name, affiliation(s) and address(s). The poster content should be given in one page Landscape orientation in PPT/PDF format. The corresponding authors of e-poster should be present in their allotted time. Each oral presentation by the participants is restricted to 10 minutes including discussion.



Best Oral/Poster Presentation Awards

Awards will be presented for the meritorious oral and poster presentations for each theme areas for Faculty and Research Scholars.

L. Accommodation

Accommodation may be arranged in the University guest house for limited number of delegates (on a first come first served basis) on prior request and payment. For Research scholars/students, accommodation will be arranged in Hostels on payment basis (Rs. 150 / per head per day). The hotels are in the city which is 2-5 kms away from the University but close to Lord Nataraja Temple, Railway Junction and City Bus Stand.

S.No.	Accommodation	Rate per Day (Rs.)
1	University Guest House	1200/- (AC). 800/- (Non AC)
2	Hotels- A Grade	3000 (Double occupancy)
3	Hotels- B Grade	2400 (Double occupancy)
4	Ordinary Hotels	1500 (Double occupancy)

M. Travel Arrangements

Transport arrangements will be made to receive delegates from Chidambaram Bus stand and Railway Junction.

N. Students Award

Carl Linnaeus and Prof. M. S. Swaminathan Award competitions [Exclusively for Students]

Processing Fee to be paid to Secretary, NABS: Carl Linnaeus Award [For Ph.D. Students] : Rs. 1000/-

Prof. M. S. Swaminathan Award [For M.Sc Students] : Rs. 700/-

Communication pertaining to Students Award competition papers should be sent to :

Prof. T. Marimuthu, Secretary, NABS

E-mail: secretarynabs@gmail.com Mobile: 94436 73155

Details for online transfer of Processing Fees for Carl Linnaeus & Prof. M. S. Swaminathan Awards

Name of Account : National Academy of Biological Sciences, Account Number : 10496978637 , IFSC Code : SBIN0011721

Name of Bank and address : State Bank of India, Valmikinagar branch, Thiruvanimiyur, Chennai- 600 041

For more details please visit the website of NABS: www.nabsindia.org

O. Important dates to be remembered:

Last date to receive the Abstract : **08-07-2021**
Acceptance of Abstract : **15-07-2021**
Last date for Registration : **30-07-2021**
Last date to send full paper for publication in edited book / proceedings (with additional payment) : **30-07-2021**
Acceptance of Full Paper : **10-08-2021**
Last date to register for Workshop (with additional payment) : **30-07-2021**

Address for Communication

Dr. M. Prakash

Professor & Organizing Secretary

First NABS-International Conference on Life Sciences

Faculty of Agriculture, Annamalai University

Annamalai nagar-608 002, Tamil Nadu, India

Mobile: 9443405026 / 9443515406 / 9786050403

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Note: 1. Foreign delegates will be permitted to attend only through ONLINE mode and Indian delegates through Offline/hybrid mode, following Standard Operating Procedures (SOP), issued by the Government.
2. The best full papers selected by the Editorial committee will be published in the Special Issue of Indian Journal of Experimental Biology (IJEb), a CSIR publication.

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