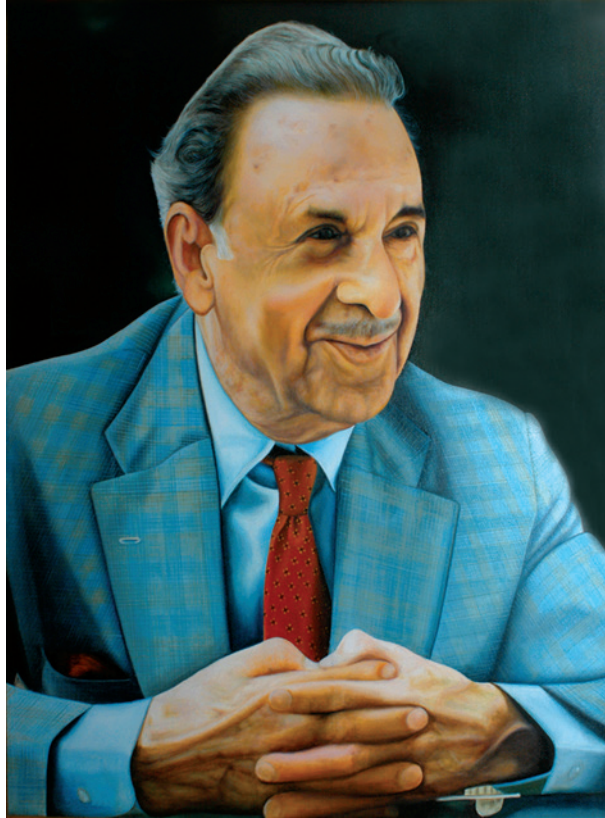


NATIONAL INSTITUTE OF ADVANCED STUDIES
Bangalore, India

ANNUAL REPORT
2014 - 2015



JRD Tata
Founding Chairman

The Vision and Mission of NIAS

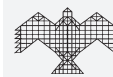
To integrate the findings of scholarship in the natural and social sciences with technology and the arts through multi-disciplinary research on the complex issues that face Indian and global society.

To assist in the creation of new leadership with broad horizons in all sectors of society by disseminating the conclusions of such research through appropriate publications and courses as well as dialogues with leaders and the public.

TABLE OF CONTENTS

TABLE OF CONTENTS

From the Director	5
Schools	7
Clusters and Programmes	9
<i>Cluster – Foundations</i>	10
Complex Systems	12
Consciousness Studies	15
<i>Cluster – Science, Technology and Culture</i>	22
Agro-ecology and Bio-security	23
Ecology, Behaviour and Conservation	26
Energy and Environment Policy	35
Heritage Science and Society	42
RBI Programme on Interdisciplinary Approaches to Economic Issues	52
<i>Cluster Strategy, Security and Conflicts</i>	56
Conflict Resolution	58
International Strategic and Security Studies Programme	60
<i>Cluster – Social Transformations</i>	71
Education	73
Mobility and Transnationalism	79
Invited Visiting Chair Professors	82
NIAS Training Programmes	83
NIAS Doctoral Programme	89
Intangible Histories: A Collaborative Research Programme in Archaeology and Drama between NIAS and Exeter University, UK	92
NIAS Annual Memorial Lectures	94
NIAS Public Programmes	95
NIAS Wednesday Discussion Meetings	98
NIAS Associates' Programme	101
NIAS Literary, Arts and Heritage Forum	102
NIAS Library	103
Publications	104
NIAS Administration	115
NIAS Financial Reports	117
NIAS Council of Management	122
NIAS Society	123
NIAS Staff	124
NIAS Adjunct Faculty	125



FROM THE DIRECTOR



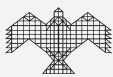
I write this message for the Annual Report 2015. Over the period of last nine months, I have been a part of NIAS to experience with delight, a sense of fulfillment and sustained efforts for creating excellence in all domains of our pursuits. This report documents the highlights and some details of the activities, achievements and outcomes of the research programmes, and other outreach events, I would brief only a few of them with a remark that each pursuit is carefully chosen for the outcomes rather than outputs.

The research activities during the last academic year were spread across programmatic research accomplishments, academic courses, leadership level training courses, public lectures and outreach events. All Programmes have endeavoured to focus on interdisciplinary issues with an effort to have impact on socio-cultural, scientific and philosophical foundations.

A few new initiatives were taken at NIAS, that would facilitate studies in niche research areas; establish national collaborative networks and explore dissemination in technology and research innovation to reach society. These initiatives include two new Research Programmes: One on “Skill Development, Employment and Mobility in India” and another on the NIAS–UNDP Research Programme with focus on “Domestic Dimensions of Inequality”. NIAS started an institutional collaboration with National Innovation Foundation - India (NIF) of the Department of Science and Technology to create a “Honey Bee Network” at NIAS, aiming at cooperation in ‘diffusion of grassroots innovations’, and joint efforts in ‘policy research and dissemination in technology innovation’. NIAS has been identified by the MHRD along with other IITs to be part of the Ishaan Vikas-Udhan Programme initiated by the Prime Minister to nurture talent among the children from the North Eastern States. NIAS signed MoUs with Indian Council of Agricultural Research (ICAR), New Delhi for strengthening collaborative multi-disciplinary R&D activities in agriculture sectors. An area of study Animal-Agriculture-Society Conflicts has been identified. MOUs have been signed with other significant institutions towards facilitating cross-disciplinary and cross-institutional exchanges.

In the recent past, specific NIAS Committees were constituted with objectives to create participatory involvement and inclusive transformation in the institute processes and mechanisms. These Committees include groups to study and respond to: the NIAS institutional review reports, personnel policies, research ethics and conflict resolution, gender sensitisation and sexual harassment policy, collaborative links with other institutions, and institutional networks.

We are endowed with a beautiful and peaceful environment and garden around NIAS. The outreach events, lecture programmes, discussion meetings and training courses create intellectual capital and socio-cultural engagements of unique and significant impact, thus completing an unparalleled ecosystem of creativity and



original contributions. One such meeting was the artists' workshop on murals, specifically contributing to arts, and heritage. NIAS in collaboration with Indira Gandhi Rashtriya Manav Sangrahalaya (IGRMS) and Bhopal (National Museum of Mankind) organised a successful week long workshop and exhibition of Kerala mural painting titled "Panchavarnam" from February 7 to 16, 2015. Several artists from the Institute of Mural Painting in Guruvayoor participated in the week long Workshop Artists created thematic art pieces using the style and tradition of Kerala mural art. Some of these are currently displayed in the NIAS campus.

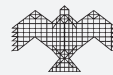
As we move towards the next academic year, NIAS focuses on those of the programmes which are central to not only institutional but also national growth and aspirations. The Gifted Education Programme of NIAS has developed and standardised tools for identifying and mentoring the gifted children in science and maths (3 to 18 years) to suit Indian conditions. Another outreach of education programme is the promotion of creativity and enhancing scholastic skills through play way method and providing material for the interventions throughout the academic year for tribal primary school children in HD Kote for about 150 children in three schools. The Consciousness Studies Programme approaches human wellbeing and medical humanities by bringing in issues across neuropsychiatry, philosophy and cognitive sciences. Approaches that are imbued by Indian culture and philosophy give an advantage to understand challenges such as consciousness from a non-reductionist human-centered manner.

Our Ph.D. Programme continues to improve guidelines for producing not only theses with high quality but also motivation to pursue research of significant interest in the context of society and culture. A total of sixty four students have been a part of NIAS doctoral programme since its inception and twenty three students have successfully completed their Ph.D. as of March 2015. Thirty one have registered for their Ph.D. and ten students are carrying out pre-registration process. As of March 2015, a total of forty-one students are enrolled in the programme — fourteen in the School of Humanities, fourteen in the School of Natural Sciences and thirteen in the School of Social Sciences.

I look forward to another academic year filled with academic and impactful achievements that will create definite positive change for national and institutional transformations.

I wish to mention that I am inspired by my Colleagues, our Associates and Adjunct Faculty, Ph.D. Scholars, Council of Management and above all the ever relevant vision of JRD Tata.

I wish for your support, constructive criticisms and guidance to take NIAS to the next level of competence, eminence and relevance.



SCHOOLS

Each faculty member belongs to one of the three Schools, School of Humanities, School of Natural and Engineering Sciences and School of Social Sciences, by virtue of his or her academic background.

The School of Humanities is engaged in research in the broad areas of philosophy, psychology, literature, fine arts, and culture. Various Programmes of the School currently focuses on philosophical foundations of sciences; cognitive sciences; scientific and philosophical studies of consciousness; Indian psychology and philosophy; history and philosophy of biology; archaeometallurgy and analysis of ancient metals; and translations of literary classics in Kannada into English.

The School of Natural and Engineering Sciences covers research in the field of engineering and mathematics, bio-security, agriculture, ecology, energy, environment and conservation biology. Current research interest of the faculty members include various aspects of signal and image processing; cryptography; number theory; mathematical modelling of complex chaotic systems; studies on agro-ecology and plant and animal bio-security; pesticide and environmental stewardship; conservation of wildlife; primate behaviour; and international and strategic studies; energy and environment policy.

The School of Social Sciences consolidates its efforts to research problems facing India's economy, polity and society, and to disseminate the results to the bureaucracy, industry and civil society. In keeping with the overall thrust of the institute towards programmes, the school played a leading role in four programmes: urban studies, education, interdisciplinary approaches to economic issues, and conflict resolution.

SCHOOL OF HUMANITIES

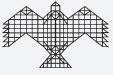
Members

Prof Sangeetha Menon, *Professor*
Prof Sharada Srinivasan, *Professor*
Prof S Ranganathan, *Homi Bhabha Visiting Professor*
Prof Sisir Roy, *TV Raman Pai Chair Visiting Professor*
Prof Malavika Kapur, *Visiting Professor*
Prof S Settar, *Honorary Visiting Professor*
Prof BV Sreekantan, *Honorary Visiting Professor*
Dr Rajesh Kasturirangan, *Associate Professor (till February 28, 2015)*
Dr MB Rajani, *Assistant Professor*
Dr Smriti Haricharan, *Post-doctoral Associate (till August 8, 2014)*
Dr Gagan Deep Kaur, *Post-doctoral Associate*

SCHOOL OF NATURAL AND ENGINEERING SCIENCES

Members

Prof Baldev Raj, *Director*
Prof Dilip R Ahuja, *ISRO Professor of S&T Policy*
Prof Sindhu Radhakrishna, *Professor*
Prof PK Shetty, *Professor*
Prof Anindya Sinha, *Professor and Dean, Academic Affairs*
Mr Pallava Bagla, *TV Raman Pai Chair Visiting Professor (from March 14, 2014 to May 13, 2014 and June 16, 2014 to August 12, 2014)*
Prof S Chandrashekar, *JRD Tata Visiting Professor*
Prof DP Sen Gupta, *Visiting Professor*
Prof Rajaram Nagappa, *Visiting Professor*

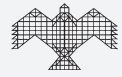


Prof N Ramani, *Visiting Professor*
Prof Lalitha Sundaresan, *Visiting Professor*
Dr Janaki Balakrishnan, *Associate Professor*
Dr TS Gopi Rethinaraj, *Associate Professor*
Dr VV Binoy, *Assistant Professor*
Dr Shoibal Chakravarty, *Assistant Professor*
Dr M Mayilvaganan, *Assistant Professor*
Dr Hippu Salk Kristle Nathan, *Assistant Professor*
Dr Arun Vishwanathan, *Assistant Professor*

SCHOOL OF SOCIAL SCIENCES

Members

Prof Anitha Kurup, *Professor*
Prof Narendar Pani, *Professor*
Prof Carol Upadhy, *Professor*
Prof Ashutosh Varshney, *Raja Ramanna Chair Visiting Professor (June 27, 2014 to August 26, 2014)*
Prof SS Meenakshisundaram, *Visiting Professor*
Dr Anshuman Behera, *Assistant Professor*
Dr Chidambaran G Iyer, *Assistant Professor*
Dr Shivali Tukdeo, *Assistant Professor*



CLUSTERS AND PROGRAMMES

Most of the research activities of NIAS are currently organized into Research Programmes, each coordinated and headed by one faculty member, the “Anchor” of the Programme. Although each faculty member belongs to one of the three Schools, School of Humanities, School of Natural and Engineering Sciences and School of Social Sciences, by virtue of his or her academic background, everyone can participate in the activities of more than one Programme, often anchored by faculty members belonging to other Schools. This structure has enabled the multidisciplinary character of the different Programmes. On the other hand, Research Programmes in NIAS are expected to be dynamic based both on the changing needs and priorities of the country and on the expertise available among the faculty.

The ongoing Programmes are included in one or another of these Clusters.

Foundations Cluster

Science, Technology and Culture Cluster

Strategy, Security and Conflicts Cluster, and

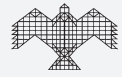
Social Transformations Cluster

We believe that the Cluster approach outlined above has the ability to bring diversity to the common cause of addressing specific problems while allowing the different Programmes within each Cluster to benefit from each other even as all of them can fall back on the Foundation Cluster to ensure that the new multidisciplinary insights are based on strong academic foundations.

CLUSTER - FOUNDATIONS

Programmes

- Complex Systems
- Consciousness Studies



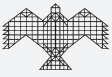
HIGHLIGHTS

Complex Systems Programme

Our work employing techniques of nonlinear dynamics in a model with q -deformed quantities has yielded practical ecological modelling conclusions. Our results indicate that it is possible to channel even a dwindling population of a species into an ecological pathway, such that a phenomenon akin to the “hydra effect” occurs – namely, an unexpected, explosive growth in population, even in the face of apparently overwhelming odds. Part of this work has been published as a book-chapter in “Nature’s Longest Threads: New Frontiers in the Mathematics and Physics of Information in Biology”, eds. J Balakrishnan and BV Sreekantan, World Scientific Publishing Co. (2014).

Consciousness Studies Programme

During this academic year collaborative studies were initiated with NIMHANS on autobiographic memory and self in school children, altered self-consciousness in schizophrenia, Planck scale and the time scale associated to 40Hz Gamma oscillations or consciousness in the brain etc. Ten NIAS-Mani Bhaumik short-term research fellowships were offered, through a selection process, to bright young students to support the new initiatives of the NIAS Consciousness Studies Programme. Twelve accomplished scholars and scientists representing institutions such as Institute for Communicative and Cognitive Neuroscience, NIMHANS, Centre for Ecological sciences (IISc), Centre for Counselling support (IISc), Manipal Institute for Neurological Disorders, Molecular Neuroscience Department of Krasnow Institute for Advanced Study were invited to be part of the Programme for exchange and collaborative work as Adjunct Faculty. Another highlight is that Dr V V Binoy has been invited to be an External Affiliate of the Krasnow Institute for Advanced Study (GMU, Fairfax, VA).



COMPLEX SYSTEMS PROGRAMME

Introduction

We investigate the mechanisms governing the behaviour of complex phenomena of diverse kinds in nature and in everyday life around us. We study different kinds of nonlinearities which produce differing kinds of complex dynamics – nearly all systems in the universe are nonlinear.

We aim to understand how collective behaviour arises in a system – i.e., a system being constituted by different elements which interact with each other through mutual couplings. We use techniques and tools of dynamical systems theory to model various phenomena observed, enabling us to make predictions about their dynamical behaviour in different parameter regimes. We seek to understand the ways in which one can control a system's behaviour and steer its operating point towards a desirable parameter regime. The work done in our programme can contribute to subjects as varied as neuroscience, fluid dynamics, ecology, econodynamics, cellular processes in living systems, climate dynamics, geodynamics, pattern formation, etc.

The theoretical modelling work which we do on several problems concerning physical and biological systems have potential for immediate applicability over a wide spectrum in the above-mentioned areas, ranging from heavy industry, hydrodynamics and possible defence applications, to medical diagnostics, neurodynamics and biophysical processes in living systems, to socio-economic applications in population dynamics and ecological modelling.

Research Activities

Modelling Population Cycles in Ecological Systems (J Balakrishnan and Sudharsana V Iyengar): Population dynamics of the larch bud moth insect, a pest which periodically defoliates vast areas of conifers at high altitudes, is studied using q -deformed numbers. We had shown in an earlier work that our q -deformed tritrophic model reproduces the actually-observed 9-year periodicities for both bud moth population density as well as larch needle length. More recently, we have improved our model to incorporate environmental effects such as precipitation and found the dynamical bifurcation mechanism producing these cycles. We show that q -deformations offer the possibility of avoiding a species' extinction by exploiting a phenomenon analogous to the hydra effect.

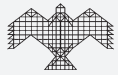
Dynamics of Charged Bubbles and Acoustic Cavitation (J Balakrishnan, B Ashok and T Hongray): We had recently obtained, for the first time ever, the charge and upper transient pressure thresholds for micron-sized bubbles in fluids under ultrasound. This could aid in limiting damage to living tissues in medical ultrasound diagnostics and wear of materials in vibrating machinery in industry. Further work investigating effects of other crucial parameters on the system is underway.

Studies on Bursting Oscillations (J Balakrishnan, T Hongray and SK Dana): We have also investigated bow-tie shaped bursting oscillations in coupled resistive-capacitive shunted junction (RCSJ) Josephson junctions. We have performed an exhaustive study of the parameter space of the system, identifying the bifurcation mechanisms producing such bursts.

We have succeeded in reproducing similar bursts in a different, simpler system with feedback, and applied our work to understand similar bursts produced by certain hippocampal neurons in the brain.

Modelling Sensory Systems: Our work on different aspects of sound detection by the ear (J Balakrishnan and B Ashok) and on the signaling activity of coupled neurons of different types (J Balakrishnan and V Resmi), continues.

Study of Fish Catch Data (J Balakrishnan and Sudharsana V Iyengar): We have initiated a study of sea fish catch data in Indian territorial waters using recurrence plot techniques, aiming to understand why fish populations do not get depleted despite continuous harvesting.



Outreach

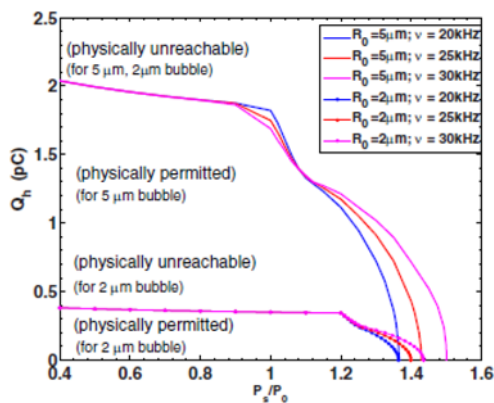
We provide mentorship for students and researchers from various parts of the country for doing short-term projects and for getting training in basic methods of nonlinear dynamics. During the past year, Dr Janaki Balakrishnan acted as a mentor for the following people:

Post-doctoral level research guidance for Dr V Resmi, MVJ College of Engineering, Bangalore (November 2014 onwards).

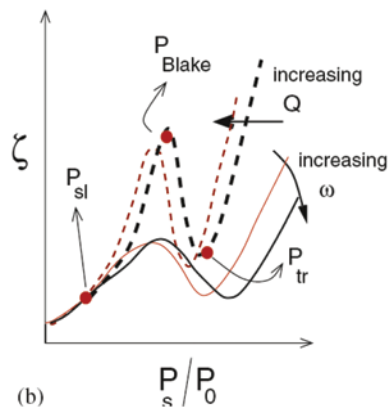
Mentor for a summer project of DST Inspire Scholar Leya Lopez, 3rd year student, Integrated Masters Programme, Indian Institute of Science Education Research (IISER), Kolkata on "Study of Population Data Using Recurrence Plot Techniques" (20 May to 20 July, 2014).

Mentor for a summer project of DST Inspire Scholar Anudeep Surendran, 3rd year student, Integrated Masters Programme, Indian Institute of Science Education Research (IISER) Kolkata on "Study of Nonlinear Phenomena Using Recurrence Plot Techniques" (20 May to 20 July, 2014).

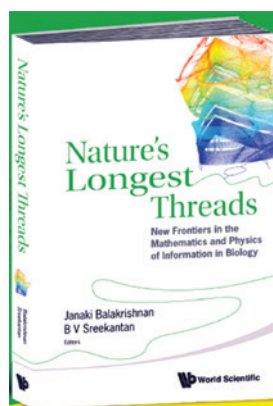
Mentor for a summer project of Meghana Pochiraju, 4th Semester Computer Science and Engineering Student, PES Institute of Technology, Bangalore (3 June to 3 August, 2014).

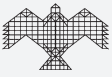


Maximal charge Q_h a bubble can carry as a function of driving pressure amplitude P_s , for bubbles of ambient radius $R_0 = 2$ and $5\mu\text{m}$.



Locations of the Blake threshold pressure and the upper transient threshold pressure on the ζ - P_s curve.





Members of the Complex Systems Programme



Janaki Balakrishnan, *Anchor*
Doctoral Student: Ranjith V

Janaki Balakrishnan
Associate Professor
School of Natural and
Engineering Sciences

Room No. S 20
Tel: 080-2218 5122
Fax: 080-2218 5028
Email: janaki05@
gmail.com

Joined NIAS on: July 10, 2012

Major Research Contribution for the Academic Year

Major research contributions for the year include a novel use of q -deformed numbers and nonlinear dynamics for ecological modelling yielding results in perfect agreement with observed data, significant new theoretical insights into the dynamics of cavitation phenomenon especially with respect to electrical charge and pressure thresholds, which are expected to have practical applications in medical diagnostics & industry, and the ongoing progress of research in understanding bursting oscillations.

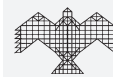
Academic Courses

1. Introduction to Dynamical Systems Theory, (Introductory graduate level 3-credit course, (August to December, 2014). The course was attended by a NIAS student and many students from various departments of the Indian Institute of Science, Bangalore.

The course introduced basic mathematical techniques to understand qualitatively the long-term behaviour of systems evolving in time. Most of the phenomena occurring in nature, and around us, are nonlinear in nature and often these exhibit interesting behaviour which could be unpredictable and counterintuitive. Tools and techniques of dynamical systems theory help in understanding the behaviour of systems and in gaining control over their behaviour, to a certain extent. Dynamical systems theory has wide applications in the study of complex systems, including physical and biological systems, engineering, aerodynamics, economics, etc.

In the course, both flows (continuous time systems) and discrete time systems (simple maps) were discussed. Assignments included numerical simulations.

2. Lectures on "Neuron Dynamics" as part of the NIAS Consciousness Programme's course: "An Introductory Course on Behaviour, Cognition and Consciousness" (with 3 credits), September to October, 2014.
3. Applied Mathematics across Disciplines, in the Foundations Course, September, 2014.
4. Mathematical Methods, in Course 201: the Research Methodology Course, April, 2014.



CONSCIOUSNESS STUDIES PROGRAMME

Introduction

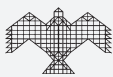
The NIAS Consciousness Studies Programme is founded on both interdisciplinary and transdisciplinary frameworks engaging with philosophy, psychology, mathematics, life and physical sciences. The Programme's mandate is to understand the fundamental nature and working of mind, consciousness, self and cognition from a broad multidisciplinary and interdisciplinary spectrum. The canvas for our study includes cognitive abilities, self-identity, mental health and wellbeing, autobiographical memory, decision-making and cultural variations, quantum nature, mathematical foundation and neuronal models of consciousness, animal consciousness and cognition.

Research Activities

During this academic year the Programme initiated interdisciplinary and multidisciplinary studies that bring in focus on medical, cognitive, psychological and philosophical concepts concerning the understanding of self in autistic people, and people who have undergone mild stroke and head injuries. Several studies were initiated in collaboration with new Adjunct Faculty of the Programme, and the newly initiated NIAS-Mani Bhaumik Short-Term Research Fellowships.

Ten NIAS-Mani Bhaumik Short-Term Research Fellowships were offered, through a selection process, to bright young students to support the new initiatives. The details of the research topics are as given below:

NIAS Mani Bhaumik Research Fellow	Mentor	Topic of Study
Geetha Anand	Sangeetha Menon	Body, Self and Consciousness in Tamil Siddha Philosophy (first draft of the paper completed)
Sathya Narayana Sharma	Sangeetha Menon Prathibha Karanth (COM-DEALL)	Desire, Emotions and Self: A Philosophical Study of the Psychology of Autism (first draft of the paper completed)
Venkata Rayudu Posina	BV Sreekantan Sisir Roy	Category Theory as Language of Consciousness Completed paper manuscripts: a. Venkata R Posina, Sisir Roy and Dhanjoo N Ghista (2015): Functorial Calculus of Cognition b. Venkata R Posina and Sisir Roy (2015): Qualia Space: I Composite Qualities
Venkata Rayudu Posina	BV Sreekantan Sisir Roy	Thinking: Essence and Form
Abhinav Kadambi	VV Binoy	Brain Lateralization, Sociability and Memory of Conspecifics – A Correlational Study in Climbing Perch, <i>Anabas Testudineus</i> (first draft of the report completed)
Akshata Bhat	VV Binoy	Personality differences in Decision-Speed and Accuracy among Climbing Perch (first draft of the report completed)
Mukta Watve	VV Binoy	Metamorphosing Memories: Investigations on the 'fate of larval memories' after metamorphosis in the common Asian toad (first draft of the report completed)
Roshan.K.S Sathyavrathan	VV Binoy Sangeetha Menon	Autobiographical Remembrance in School Children: A Window to the Structure of Memory and Self



NIAS Mani Bhaumik Research Fellow	Mentor	Topic of Study
Pravesh Parekh	Sangeetha Menon John P John (NIMHANS)	Study of Altered Self -Consciousness in Schizophrenia Using a Connectionist Approach (first draft of paper manuscript and report completed)
Adwait Deshpande	Anindya Sinha	Referentiality and Intentionality in the Coo-calls of Bonnet Macaques (<i>Macaca Radiata</i>) in contexts of food provisioning by humans
Pankaj Taylor	VV Binoy Sangeetha Menon Sandhya M (Ramaiah Institute for Neurosciences)	The Impact of Mild and Moderate Stroke and Head Injury on the Autobiographical Memory and the Self

Some of our recent collaborative works with NIMHANS and Ramaiah Institute for Neurosciences have brought in the importance of the role and place of self and personal identity in neurological studies. Our works also contribute to an emerging field called “Medical Humanities”.

These aside the study of self-conscious emotions with a comparative account of the same in Sanskrit classics (by Shankar Rajaraman), understanding the problem of qualia using category theory (Sisir Roy, BV Sreekantan and Venkata Rayudu), are other ongoing works.

The fine tuning of various fundamental constants in physics and their relation to Dirac Large Number raise lot of interest among the scientific community regarding the existence of present universe as well as the existence of intelligent life. Recently we found the same Large Number considering the ratio of the smallest time scale of the physical universe called Planck scale and the time scale associated to 40Hz Gamma oscillations or consciousness in the brain. This opens up new vistas in understanding consciousness from physical perspective. This has been accepted for publication in an international journal. In another attempt it is shown that the language of thought process as well as the cognitive activities can be described in a comprehensive manner using Category theory. The paper based on the results of this investigation has been submitted to an international journal for publication.

Meera Kumar doing Honours at Christ University was a Research Intern with Prof Sangeetha Menon. As a culmination of the internship a study on “Desire and Self –Representation: A psychosocial study of the Malayalam novelette ‘Agnisakshi’” was undertaken and the paper manuscript completed.

Jillian Katz from Brain and Cognitive Sciences Programme, MIT, was a Research Intern with Sangeetha Menon and VV Binoy working on “Inner speech and introspection as ways to access thought”. A preliminary report was completed.

Another study started by the Programme is exploring the cognitive dimensions of Kashmiri rug- designing. Gagan Deep Kaur who is a post-doctoral associate with the Programme has initiated this study with mentorship from Sangeetha Menon and VV Binoy. A distinct feature of Kashmiri rug-designing is that it is mediated by a notational system called talim which encodes the entire design in symbols which are then passed over to the weaver to weave the rug according to the instructions given in the talim. The weaver has two sorts of access to this talim: he either reads these symbols himself in which case he has hermeneutic access to the talim, or he listens to the talim recited by an ustad, in which case, he has aural access to the talim. Since, the two cases present different sort of access to the notation, the two raise different sorts of cognitive concerns: how might the temporally-frozen access to the notation as manifested in the former case differ from temporally-extended access manifested in the later? This study through cognitive ethnographic methods, explores the questions such as: Could talim possess specific cognitive properties which may trigger this difference?

During this academic year one doctoral thesis on the study of self and wellbeing in the context of psychological features such as grief, conflict and desire, using the character analysis of the Mahabharata (by Lakshmi Kuchibotla) was completed and submitted to Mysore University. Another doctoral thesis on the study of

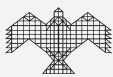
subjectivity and selfhood in people with physical and sensory disabilities (by Namitha Kumar) has reached the final stage.

Outreach

The book published in 2014 “Brain, Self and Consciousness: Explaining the conspiracy of experience” (Springer) authored by Sangeetha Menon was reviewed in the international “Journal of Transpersonal Psychology”.

The Consciousness Studies Programme organised a two-day brainstorming meeting on the topic Consciousness, Cognition and Culture: Implications for the 21st Century from 11 to 12 December 2014 which included Resource people from major institutes working on neurological, psychiatric and autistic challenges. The discussions and deliberations could place on table focused yet wide-ranging problems in understanding mind and consciousness. A workshop was organized in March 2014 on Martial Arts: Body-Mind Harmony, which was widely attended. Three public lectures were organised on Quantum Theory of Mind; Decision-making; and Autism. The Programme also has a website and social media pages and groups dedicated for public outreach and discussions. Two meetings of the Evening Philosophy Chat Group were organised on topics that are in the interface of philosophy and psychology.





Members of the Consciousness Studies Programme



Sangeetha Menon, *Anchor*

BV Sreekantan

Sisir Roy

Anindya Sinha

Janaki Balakrishnan

VV Binoy

Gagan Deep Kaur

Doctoral Students: Lakshmi Kuchibotla, Namitha Kumar, Shankar Rajaraman

Sangeetha Menon
Professor
School of Humanities

Room No. F 06
Tel: 080-2218 5090
Fax: 080-2218 5028
Email: prajnanata@
gmail.com

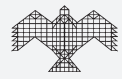
Joined NIAS on: January 8, 1996

Major Research Contribution for the Academic Year

During this academic year through the NIAS Consciousness Studies Programme interdisciplinary and multidisciplinary studies were initiated that bring in focus on medical, cognitive, psychological and philosophical concepts concerning the understanding of self which has significant implications for cognitive sciences and consciousness studies. Also supervised two phd thesis one towards completion, and another for final submission.

Lectures

1. Body and Self: Distinguishing the two senses, invited lecture at the Department of Philosophy, University of Delhi, March 26, 2015.
2. The Outer Self and the Inner Body: Exteriorisation of the Self in Cognitive Sciences, invited lecture for A Publication Oriented One-Day Workshop, Reasoning with Value(s): Explorations in the Contemporary Milieu, Indian Institute of Management, Calcutta, March 12, 2015.
3. Brain and Self: The Philosophy of Psychology, Keynote Address at the 3rd international conference on Recent Advances in Cognition and Health, organised by Department of Psychology, Banaras Hindu University, Banaras, December 19 to 21, 2014.
4. Self, Emotions and the Complex States of Mind, lecture at the Credit Course titled Behaviour, Cognition, Consciousness, Consciousness Studies Programme, NIAS, November 21, 2014.
5. Brain and the Interconnected Self: Science and Signs of Consciousness, invited lecture at the international meeting on Cosmology and Consciousness III – Harmony and Happiness, Upper Tibetan Children's Village, Dharamsala, November 3 to 5, 2014.
6. Wellbeing, Existence and Consciousness, panel lecture at the international meeting on Cosmology and Consciousness III – Harmony and Happiness, Upper Tibetan Children's Village, Dharamsala, November 3 to 5, 2014.
7. Beyond Mind: Introduction to Self and Consciousness, lecture at the Credit Course titled Behaviour, Cognition, Consciousness, Consciousness Studies Programme, NIAS, September 12, 2014.
8. Philosophy, Philosophical Thinking and the Humanities, lecture for the NIAS Doctoral Students Foundation Course, September 18, 2014.
9. Values, Mentoring and Pedagogic Guidelines for Teacher-Student Relation, Chief Guest's lecture at the Annual Teachers' Day Celebration Programme of the University of Agricultural Sciences, Bangalore, September 5, 2014.



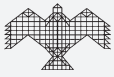
10. Purpose, Imagination and Common Good, lecture for the Evening Philosophy Chat Group Meeting, The Banyan Tree, University of Agricultural Sciences, Bangalore, August 12, 2014.
11. Self, Desire and Mind, lecture for the Evening Philosophy Chat Group Meeting, NIAS, July 18, 2014.

Academic Course

A three credit course was conceptualised and offered by the Consciousness Studies Programme on Introduction to Behaviour, Cognition and Consciousness, which was widely attended. The Course was intended to give an introduction to the basic concepts in the areas of consciousness studies and cognitive sciences covering life-, physical, health- sciences, philosophy and psychology. The Course contributors included Dr Janaki Balakrishnan, Prof BV Sreekantan, Dr VV Binoy, Prof Anindya Sinha, Prof Sangeetha Menon and others. The Course was coordinated by Prof Sangeetha Menon.

Memberships

In 2015 Prof Sangeetha Menon was invited to be a Member of the Academic Advisory Committee of Institute for Communicative and Cognitive Neurosciences, Shoranur; and also to be a Member of the Programme Committee of the 2nd Annual Conference on Cognitive Science (ACCS), July 5 to 8, 2015, IIT Kanpur. These apart she continues to be a member of the Cognitive Science Research Initiative Task Force set up by DST; Council Member – Indian Council of Philosophical Research; Board Member of International Association for Transpersonal Psychology; Nominated Member of the International Society for Science and Religion, Cambridge; Member of the Committee for Memberships, International Society for Science and Religion, Cambridge; and Member of the Institutional Human Ethics Committee of Indian Institute of Science.



BV Sreekantan
Honorary Visiting
Professor
School of Humanities

Room No. F 11
Tel: 080-2218 5082
Fax: 080-2218 5028
Email: bvsreekantan@
gmail.com

Joined NIAS on: August 6, 1992

Lectures

1. Science, Reality and Consciousness, National Symposium on Matter, Mind and Consciousness – Recent Trends in Philosophy and Science, Kaivalyadhama Yoga Institute, Lonavala, November 28 and 29, 2014.
2. Symbiotic Developments in Physics and Astronomy in the 20th Century: Where are they leading us in our search for “Reality”?, Founder’s Day Lecture, Indian Institute of Astrophysics, Bangalore, August 14, 2014.
3. Science and Reality (as of 2014), Indian National Science Academy, New Delhi, August 1, 2014.



Gagan Deep Kaur
Post-doctoral
Associate
School of Humanities

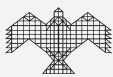
Room No. A 04
Tel: 080-2218 5054
Fax: 080-2218 5028
Email: gaganrism@
gmail.com

Joined NIAS on: February 24, 2015

CLUSTER - SCIENCE, TECHNOLOGY AND CULTURE

Programmes

- Agro-ecology and Bio-security
- Ecology, Behaviour and Conservation
- Energy and Environment Policy
- Heritage Science and Society
- RBI Programme on Interdisciplinary Approaches to Economic Issues



HIGHLIGHTS

Agro-ecology and Bio-security Programme

Published a unique book entitled 'Organic Farming and Sustainability'. This book was edited by PK Shetty, Claude Alvares and Ashok Kumar Yadav. The book contains lead papers from distinguished experts, policy makers, farmers and dedicated researchers. Efforts have been made to compile the latest information on the present status of organic agriculture in India and other major practicing countries. It also narrates different forms of organic farming along with the experiences of enthusiastic farmers and discusses various issues such as certification, marketing, pest control, nutritional quality, adoptability, organoleptic quality, resistant capacity towards pests and diseases etc. and also needed institutional support for economic sustainability. Efforts were also made to record initiations in organic agriculture by the various governments, farmers, non-government organizations and other stakeholder's different parts of the world. In addition, on March 9, 2015, the NIAS has signed MoUs with Indian Council of Agricultural Research (ICAR) at New Delhi, for strengthening potential collaborative multi-disciplinary R&D activities in agriculture sectors.

Ecology, Behaviour and Conservation Programme

Prof Sindhu Radhakrishna has been committed, over the years, to the cause of establishing the disciplinary importance of animal studies in the field of wildlife management and conservation and accordingly, delivered several invited lectures as part of this endeavour last year in various research and educational institutions across the country.

Mr Nishant M Srinivasaiah, a doctoral student, and Prof Anindya Sinha established the Frontier Elephant Programme, which aims to examine behavioural decision-making by wild Asian elephants in human-dominated landscapes over the long-term and explore its implications for the management of human-elephant conflict in India.

Profs Sindhu Radhakrishna and Anindya Sinha continued to work towards establishing a Centre for Primate Studies at NIAS, as our Programme is, currently, the only research group studying the ecology, behaviour, cognition, genetics, management and conservation of different Indian primate taxa across the country.

Energy and Environment Policy Programme

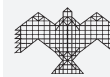
The EEPP group coordinated the Twelfth Annual NIAS-DST Training Programme on Multidisciplinary Perspectives on Science, Technology and Society with the core theme of 'Energy Security and Management' during November 10-21, 2014. On March 5, 2015, the report titled "Wind and Solar Energy for Meeting Karnataka's Future Electricity Demand" was released by Ms Varsha Joshi of Ministry for New and Renewable Sources of Energy, New Delhi at a meeting in NIAS jointly organized with POSOCO.

Heritage Science and Society Programme

The novel 'Digital Hampi Workshop and Exhibition' in Delhi in 2014, successfully showcased multi-media representations of the art and architecture of the heritage site of Hampi. The prestigious International ASM landmark recognition was awarded to the Delhi Iron Pillar. The lively NIAS-Jain University 'Material Culture' workshop and the NIAS-Exeter 'Intangible Histories' seminar at Exeter University in 2014, the Materials Heritage Exhibit at the IISc Open day and the lush NIAS-IGRMS workshop on 'Mural Art of Kerala' with resident mural artists in 2015, all evoked wide interest amongst student communities and the public.

RBI Programme on Interdisciplinary Approaches to Economic Issues

The programme has been successful in bringing out a number of research papers as well as submit a doctoral thesis for evaluation at Manipal University. The research output has been on a number of issues ranging from urban issues, manufacturing, and innovation. The doctoral thesis that was submitted was on understanding the circuits of globalization. Efforts in the past year have been to fulfill the vision of the programme, which is to use knowledge gained from a variety of disciplines to understand economic issues.



AGRO-ECOLOGY AND BIO-SECURITY PROGRAMME

Introduction

The Agro-ecology and Bio-security Programme (ABP) was initiated during the late 1992. The ABP focuses on the research and collaborative dialogues that are of societal significance and policy implications mainly through the cutting edge research on the ecological agriculture, sustainable livelihoods and food security, innovations in agriculture, sustainable development, conservation of natural resources, crop protection stewardship, environmental stewardship, agrarian studies, bioremediation, phytoremediation, agro-biodiversity, agro-climatology, agro-forestry, plant bio-security. The research programmes develop innovative approaches for solving problems through realistic situational case studies and the participation of various stakeholders for enhancing socio-economic and environmental wellbeing of the country.

The ABP has successfully completed several externally aided research projects of societal importance covering the above areas both at regional and national levels. The group has reported several original works including, a) Initiated bioremediation studies and identified an efficient microbial strain (*Mucor thermohylospora*) capable of degrading the toxic insecticide molecule "endosulfan" through oxidative and hydrolytic pathways for the first time; b) Carried out in-depth field investigations on use (and misuse) of pesticides in 28 districts in 12 Indian States and interacted with more than 5000 stakeholders, including farmers, scientists, policy makers, NGOs, manufactures and vendors etc. Further Designed and developed an unique software aided pesticide database for the first time; c) Examined the connections between the reported agrarian distress and socio-economic and ecological conditions in some parts of the country and also contributed immensely to the preparation of a scientific report on the agrarian crisis and possible remedial measures in Karnataka; d) One of the policy papers published in Current Science titled "Crop protection stewardship in India: wanted or unwanted" has extensively referred in a global policy document mainly for IPM in developing countries; e) A distinctive policy document was prepared in power sector particularly in the areas of Grid Security and Management focusing on planning challenges, operational challenges, technological challenges, market design and implementation, societal and human concerns; f) Prepared an exceptional policy document on bio-security involving regulatory/policy issues, technical issues and capacity building; g) Brought out a unique book/policy document in Organic Agriculture Sector entitled 'Organic Farming and Sustainability' etc,

The ABP has been organizing regularly discussion meetings, workshops, conferences, lectures pertaining to the important aspects on the above research areas involving various stakeholders including experts, students, farmers, policy planners, representatives from government, industry and non-governmental organizations. So far the ABP successfully organized 12 National/International Conferences relevant to the research areas of the Program.

Research Activities

We actively participated in a national level studies on Innovations, Policy and Institutional dynamics affecting Rice and Wheat Sectors in the country. Based on this work published a peer reviewed research paper on Innovations and technological breakthroughs that shaped Indian Agriculture and supported the food and livelihood security in the country. For instance, there are myriad innovations that have been part of agricultural transformation in India. This paper discussed various innovations and technological breakthroughs that took place in Indian agriculture during the British period and till now. As food security being India's major concern under changing climatic scenario, the reasons for slow down in food grain production in recent past have been looked into with a main emphasis on rice and wheat crops and the possible solutions for overcoming certain concerns related to food security have been discussed.

Detailed studies (surveys and analysis) were carried out on factors, patterns and intensity of pesticide use in and around cardamom hill reserves to quantify the annual pesticide consumption of cardamom and tea. As part of this study the survey revealed that cardamom had consumed 26.59 kg a.i ha⁻¹ in comparison with tea (8.70kg a.i ha⁻¹). Pesticide intensity of cardamom (0.0322 kg kg⁻¹) was higher than tea (0.0046 kg kg⁻¹). Risk weighed active ingredients values were 3.326 and 0.029 kg ha⁻¹ for cardamom and tea respectively. The pesticide use intensity in major cardamom growing areas of the CHR has experienced significant increase from



2002 and 2003. It was 7.10 kg a.i ha⁻¹ in the year 2002 and decreased slightly to 5.42 kg a.i ha⁻¹ for the year 2003. The number of pesticide sprays has been increased during the last two years (2011-2012). Pesticide residues in soils of all three cardamom growing hot spots were high. Hospital data of these cardamom hot spot regions showed higher levels of pesticide poisonings particularly for organophosphorous compounds. Therefore, the analysis

and results reported on pesticide consumption by cardamom and tea must be taken seriously to safeguard the degraded rainforest cardamom agroforestry system.

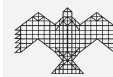
Outreach

The ABP conducts regular visits to the farmers' field and organise interactive meetings/training to the farmers and other stakeholders mainly in different parts of Karnataka and also other Southern States. During the last academic year the ABP has organized several Environmental/Agricultural Stewardship Programmes.

During this academic year, the Agro-ecology and Bio-security Programme submitted a project report entitled 'A Detailed Analysis of Innovations in Different Sectors of Agriculture in India' to the Department of Science and Technology, Government of India. This was a national level project initiated in several Indian States to study the innovations in research, policy and institutional dynamics affecting the growth in different sectors of agriculture with special focus on rice and wheat sectors in the country.



Dr S Ayyappan, Secretary, DARE and Director General, ICAR has signed the MoUs with Prof Baldev Raj, Director, NIAS in the presence of Mr R Rajagopal, Additional Secretary (DARE) and Secretary (ICAR), many DDGs & ADGs of ICAR, and Prof PK Shetty, NIAS.



Members of the Agro-ecology and Bio-security Programme



PK Shetty, *Anchor*

Doctoral Students: Priya Gupta and Nimisha Agarwal

PK Shetty

Professor
School of Natural and Engineering Sciences

Room No. S 21
Tel: 080-2218 5120
Fax: 080-2218 5028
Email: pkshetty17@gmail.com

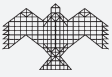
Joined NIAS on: August 6, 1992

Lectures

1. Bioterrorism- Myths or Reality? HK Education Society, Bangalore, October 6, 2014.
2. Sustainable Farming and Food Security, Savayava Krushikara Sangha, Bangalore, December 3, 2014.
3. Importance of Farm Biosecurity, Sahaja Krishi, Bangalore, February 27, 2015.
4. Delivered several talks on various issues related to Environmental/Agricultural Stewardship to the farmers and other stakeholders.

Awards and Memberships

1. Member of BBMP Ward Committee (Ward No.33), Bruhat Bangalore Mahanagara Palike (BBMP), Government of Karnataka, February 9, 2013 to April 2015.
2. Member of Advisory Board for R&D of POWERGRID, Government of India. August 3, 2011 onwards.
3. Member of the Scientific Advisory Board of a Journal of Springer on Philosophy and Technology. January 8, 2010 onwards.
4. Member of Nomination Council of the Infosys Prize, Infosys Science Foundation, since 2009.
5. Member of Technical Committee for the Implementation of Solid Waste Management Programme in Karnataka, Directorate of Municipal Administration, Government of Karnataka, December 2008.



ECOLOGY, BEHAVIOUR AND CONSERVATION PROGRAMME

Introduction

The Ecology, Behaviour and Conservation Programme led by Profs Anindya Sinha, Sindhu Radhakrishna and Dr VV Binoy, has, over the last eighteen years, specialised in investigating the biology of several nonhuman species, including amphibians, fish, primates and elephants, as well as different aspects of human-wildlife interactions across the country. Our studies encompass a variety of perspectives including ecology, behaviour, cognition, genetics, and conservation, which we explore through the use of a variety of observational, experimental, mathematical, computational and philosophical methods. The Programme currently consists of five research scholars, several short-term research associates and a number of collaborators from the three Programmes in NIAS and from ten institutions across India, UK and Australia. It is the only research group in the country working in the area of social cognition, communication and culture in any animal species, the only group that has been monitoring a primate population and tracking the life-history strategies of more than 1,300 individually identified animals continuously over fifteen years, one of the few groups in the world working on the behavioral ecology and conservation of nocturnal primates in the wild, and the only group in India that has been credited with the discovery of a new primate species.

Research Activities

The principal projects conducted by the Programme over the last year included those on intra- and inter-population variation in behavioural plasticity in a fish, the climbing perch; intraspecific variation in ecology and behaviour of the endangered slender loris; seed dispersal by rhesus macaques; communication and cognition of bonnet macaques; and the population genetics of Arunachal macaques. The important applied projects explored human-wildlife conflict in Kasargode district of Kerala, artificial propagation and reintroduction of an endangered fish, *Hypseobarbus curmuca* and the role of *Student Networks* in creating awareness about environment, water, sanitation and hygiene in rural and socio-economically marginalised areas of Kerala and Karnataka.

The essentially transdisciplinary nature of the fundamental and applied research conducted by the Programme is best exemplified by some of its major projects. Profs

Sindhu Radhakrishna and Anindya Sinha, for example, have been attempting to holistically understand drivers of human-animal conflict, involving primates and elephants, and possible mitigation strategies for such conflict by applying theories and methodologies from the social and biological sciences. Dr VV Binoy, on the other hand, aims to develop effective strategies for protecting biodiversity and sustaining the quality of natural ecosystems by merging disciplinary concepts from cognitive psychology, behavioural ecology, conservation biology and non-conventional methodologies of science communication.



School Network 1, Kerala, VV Binoy

More specifically, over the last year, the faculty and students of the Programme published seven peer-reviewed papers in international journals while Dr VV Binoy published a co-edited book on science communication, produced by Springer International, as part of his wide-ranging interests in citizen science and student networks. Prof Anindya Sinha guided the dissertations—one on sexual segregation and behavioural decision-making by the Nilgiri tahr, a wild goat and another on behavioural and physiological stress in wild elephants in a human-dominated landscape, both in the Western Ghats—of two Master's degree students of the Postgraduate Program in Wildlife Biology and Conservation of the National Centre for Biological Sciences in Bangalore.

Outreach

The Programme has been hosting a citizen science project on *Student Networks* in selected rural and urban areas of Karnataka and Kerala by bridging schools, colleges and research institutions. Students are trained to collect and compile baseline data on water, sanitation and hygiene (WaSH) problems in their neighborhoods, and in the preparation and distribution of ICE (*Information, Communication and Education*) materials to introduce eco-literacy in their communities. The faculty and students of the Programme have also developed extensive collaborations in their areas of interest with several national and international institutions as well as delivered lectures, attended conferences and conducted workshops or training sessions across the country over the last year. Dr VV Binoy and Prof Anindya Sinha offered a four lecture module on Animal Cognition and Communication for a three-credit course on *Behaviour, Cognition and Consciousness* for doctoral and postgraduate students organised by Prof Sangeetha Menon on behalf of the Consciousness Studies Programme. Prof Anindya Sinha conceptualised and conducted a two-credit course on *Philosophy of Biology* and a three-credit course on *Animal Behavioural Ecology* for postgraduate students of the Postgraduate Program in Wildlife Biology and Conservation at the National Centre for Biological Sciences, Bangalore. Prof Anindya Sinha and Dr VV Binoy gave lectures at the brainstorming meeting on *Culture Cognition and Consciousness: Implications for the 21st Century* organised by Prof Sangeetha Menon on behalf of the Consciousness Studies Programme in December 2014. Finally, Dr VV Binoy co-organised a seminar with Mr Pallava Bagla on *When Science Meets the Public: Bridging the Gap* in June 2014 and a workshop with Prof Sangeetha Menon on *Martial Arts: Harmony of Body and Mind* in March 2015, both at NIAS.



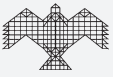
Slow Loris; Credit - Vicky Lakshman



Irrawaddy Dolphin



In the Field, Asmita Sengupta, February 2015



Members of the Ecology, Behaviour and Conservation Programme



Anindya Sinha, *Anchor*

Sindhu Radhakrishna

VV Binoy

Doctoral Students: Asmita Sengupta, Shreejata Gupta, Nishant M Srinivasaiah, Shaurabh Anand, and Debanjan Mitra (NIAS-Exeter University Collaborative Programme)

Anindya Sinha

Professor

School of Natural and Engineering Sciences

Room No. S 22

Tel: 080-2218 5117

Fax: 080-2218 5028

Email: anindya.rana.sinha@gmail.com

Joined NIAS on: November 15, 1996

Major Research Contribution for the Academic Year

Comprehensive documentation of the gestural communication system and its underlying cognitive basis in wild bonnet macaques, the first detailed study of its kind on a monkey species anywhere in the world (in collaboration with Shreejata Gupta, NIAS).

Completion of Year 14 of the Bandipur Project, exploring the demography, behavioural ecology and life-history strategies of a bonnet macaque population, comprising so far approximately 1,300 identified individuals, in the Bandipur–Mudumalai National Parks of southern India, a unique project proposed to run for 25 years (in collaboration with Kakoli Mukhopadhyay, independent researcher and Amit Sengupta, Hindustan Computers, Bangalore).

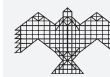
Completion of a comprehensive eight-year study on the phylogenetics, demographic history and population genetic structure of the Arunachal macaque, a species that we reported for the first time in 2005, in the Eastern Himalayas of northeastern India (in collaboration with Debapriyo Chakraborty, Nature Conservation Foundation, Mysore and Uma Ramakrishnan, National Centre for Biological Sciences, Bangalore).

The first ever investigation of behavioural and physiological stress in 68 individually identified Asian elephants in the human-dominated landscape of Valparai Plateau in the Western Ghats mountains (in collaboration with Sreedhar Vijaykrishnan, National Centre for Biological Sciences, Bangalore; Ananda Kumar Mavatur, Nature Conservation Foundation, Mysore and G Umopathy, Laboratory for Conservation of Endangered Species, Hyderabad).

Initiation of a pioneering study of the possible cognitive basis of prehistoric tool making by hominids in the Ganga Valley of northern India, approximately 10,000 to 60,000 years ago (in collaboration with Debanjan Mitra, NIAS and Exeter University, Exeter, UK; Bruce A Bradley, Exeter University, Exeter, UK and Prakash Sinha, Allahabad University, Allahabad).

Lectures and Panel Discussions

1. My Life with Animals, Summer School for Gifted Children, NIAS, April 11, 2014.
2. The Monkey in the Mirror: Social and Cultural Evolution in Bonnet Macaques, Course on Human Genetics and Genomics, Department of Molecular Biology and Genetics, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, May 1, 2014.
3. Choosing Biology as a Career, Nitte International School, Bangalore, September 6, 2014.



4. Drama in Real Life! Intentionality and Tactical Deception in Wild Bonnet Macaques, The Intangible Histories Symposium, Department of Drama, Exeter University, Exeter, UK, September 19, 2014.
5. Communication, Cognition and Consciousness in Nonhuman Primates, Brainstorming Meeting, NIAS Consciousness Studies Programme, December 11, 2014.
6. Panel Discussion on Policy for Wildlife Management, Ravi Chellam, Nitin D Rai and Anindya Sinha, NIAS-DST Training Programme on Policy for Science and Science for Policies, December 18, 2014.
7. The Monkey and the Elephant: Socio-Cultural and Cognitive Networks in Wild Mammalian Populations, COMSNETS 2015: Seventh International Conference on Communication Systems and Networks, Bangalore, January 6, 2015.
8. The Social Mind of the Bonnet Macaque, Science for Progress in India: Innovations in Technologies, DISHA 4, Fourth NIAS-DST Training Programme for Women Scientists, February 27, 2015.

Theses Guided

Master's Degree

A dissertation entitled "Behavioural Decisions, Ecological Situations: Sexual Segregation in the Nilgiri tahr *Nilgiritragus hylocrius*" by Aravind Sridharan, submitted in partial fulfillment for a Master's Degree, Postgraduate Program in Wildlife Biology and Conservation, National Centre for Biological Sciences, Bangalore, September 2014.

A dissertation entitled "Behavioural and Physiological Stress in Elephants in a Human-Dominated Landscape in the Western Ghats, Southern India" by Sreedhar Vijayakrishnan, submitted in partial fulfillment for a Master's Degree, Postgraduate Program in Wildlife Biology and Conservation, National Centre for Biological Sciences, Bangalore, September 2014.

Academic Courses

Courses Organised

A two-credit course on "Philosophy of Biology", consisting of lectures and discussion sessions for Master's degree students of the Postgraduate Program in Wildlife Biology and Conservation, National Centre for Biological Sciences, Bangalore; August-September 2014

A three-credit course on "Animal Behavioural Ecology", consisting of lectures, field methods, paper presentations and discussion sessions for Master's degree students of the Postgraduate Program in Wildlife Biology and Conservation, National Centre for Biological Sciences, Bangalore; February-April 2015.

Courses Taught

A two-lecture module on "Foundations of Biological Sciences" as part of a three-credit course on *Foundations* for doctoral degree students, National Institute of Advanced Studies, Bangalore; September 2014.

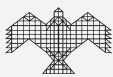
A four-lecture module (with VV Binoy) on "Essentials of Comparative Cognition as part of a three-credit course on Behaviour, Cognition and Consciousness: An Introduction for NIAS doctoral degree students, organised by NIAS Consciousness Studies Programme, October to December 2014.

Conferences, Panel Discussions and Meetings Organised

1. Discussion Meeting on Science, Technology and Innovation Policy with African Delegation, visiting the Centre for International Cooperation in Science at Chennai, NIAS, April 15, 2014.
2. Policy for Wildlife Management, Ravi Chellam, Nitin D Rai and Anindya Sinha, NIAS-DST Training Programme on Policy for Science and Science for Policies, NIAS, December 18, 2014.
3. The 29th Annual Programme for Senior Executives on Leading India to Excellence, NIAS; January 19-24, 2015 (with Chidambaran G Iyer).

Resource Person in Workshops and Meetings

1. Workshop to Generate Questions for the International Biology Olympiad, Hanoi National University of Education, Hanoi, Vietnam, September 28, 2014.



2. International Brainstorming Meeting for the 26th International Biology Olympiad, Aarhus 2015, Center for Science Education, Aarhus University, Aarhus, Denmark, January 29 to February 2, 2015.

Honours, Awards and Honour Lectures

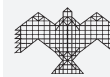
1. Plaque of Appreciation, Coordinating Committee, International Biology Olympiad, Prague, Czech Republic, July 2014.
2. Member, International Sub-Jury, Twenty-Fifth International Biology Olympiad, Bali, Indonesia; July 1 to 13, 2014.
3. Resource Person, Indian Team for the International Biology Olympiad, 2013-2014 and 2014-2015.
4. Keynote Lecture. The International Biology Olympiad Tests: Principles and Practice. Workshop to Generate Questions for the International Biology Olympiad, Hanoi National University of Education, Hanoi, Vietnam, August 28, 2014.
5. Institute Colloquium. A Beautiful Mind! Social Cognition in Wild Bonnet Macaques. Indian Institute of Science Education and Research, Pune, November 5, 2014.
6. Keynote Lecture. Almost Minds? Social and Mechanical Cognition in Wild Bonnet Macaques. National Symposium on Behavioural Ecology: Molecules to Organisms, Benaras Hindu University, Varanasi, November 7, 2014.
7. Institute Colloquium. True Lies! Intentionality and Deception in Wild Bonnet Macaques. Ashoka Trust for Research in Ecology and the Environment, Bangalore, December 8, 2014.
8. Invited Talk. Scio Ergo Sum: Experientially Acquired Cognitive Knowledge of the Self in a Nonhuman Primate. Minding Animals Conference 3, Jawaharlal Nehru University, New Delhi, January 15, 2015.
9. Keynote Lecture. The Monkey in the Town's Commons: An Anthropogenic History of the Bonnet Macaque. National Symposium on Environmental Impact on Biodiversity and Plant Development, Presidency University, Kolkata, India; February 20, 2015.

Academic Appointments

1. Senior Scientist, Nature Conservation Foundation, Mysore, March 2002 onwards.
2. Adjunct Teaching Faculty, National Centre for Biological Sciences, Bangalore, August 2010 onwards.
3. Adjunct Faculty, Centre for Neuroscience, Indian Institute of Science, Bangalore, June 2011 onwards.
4. Honorary Fellow, School of Humanities, University of Exeter, Exeter, United Kingdom, August 2012 onwards.
5. Scientific Advisor and Research Coordinator, Dhole's Den Research Foundation, Bandipur National Park, October 2012 onwards.

External Professional Commitments

1. Associate Editor, International Journal of Mind, Brain and Cognition.
2. Member, Research Advisory Board, Centre for Wildlife Studies, Bangalore, India, August 2004 onwards.
3. Representative, Biology, National Steering Committee of the Indian Science Olympiads, Government of India, February 2008 – March 2015.
4. Member, Karnataka State Wildlife Board, Bangalore, April 2009 – April 2014.
5. Vice-President, Indian Association for Teachers in the Biological Sciences, Mumbai, May 2009 onwards.
6. Dean, Academic Affairs, NIAS, February 2013 onwards.
7. Member, IUCN/SSC Primate Specialist Group and South Asia Group, Species Survival Commission of the International Union for the Conservation of Nature, Gland, Switzerland; renewed from March 2013 onwards.
8. Steering Committee, Postgraduate Program in Wildlife Biology and Conservation, National Centre for Biological Sciences, Bangalore, renewed from August 2014 onwards.
9. Member, Steering Committee, Postgraduate Program in Wildlife Biology and Conservation, National Centre for Biological Sciences, Bangalore, renewed from August 2014 onwards.
10. Member, External Institutional Review Committee, Ashoka Trust for Research in Ecology and the Environment, Bangalore, October 2014 to January 2015.



Sindhu Radhakrishna
Professor
School of Natural and
Engineering Sciences

Room No. S 23
Tel: 080-2218 5115
Fax: 080-2218 5028
Email: sindhu.
radhakrishna@gmail.
com

Joined NIAS on: September 1, 2002

Major Research Contribution for the Academic Year

Prof Sindhu's research contributions were primarily in the area of human-animal relations. At the beginning of the year, she was awarded a Nehru-Fulbright fellowship to pursue and expand her research interests in the area of Animal Studies. From February to July 2014, she was Fulbright visiting scholar at the Animal Studies Initiative, New York University. During this period she worked on a research project that looked at the history of primate conservation efforts in the US. Drawing on the results of this study that provided deep insights into factors that motivate people to support and pursue wildlife conservation, she organised and led a panel discussion on the theme "Wildlife conservation and Animal Studies" at the 3rd International Minding Animals conference that was held in JNU, Delhi. The talks at this meeting and the ensuing discussion were well-received amongst the Animal Studies community.

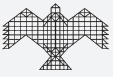
Lectures and Paper Presentations

1. Feeding Monkeys and Losing Trees: Consequences of Provisioning Rhesus Macaques for Seed Dispersal. Paper presented at the 9th Annual Meeting of Association for Tropical Biology and Conservation, Asia Pacific Chapter, Phnom Penh, Cambodia, March 31, 2015 (with Sengupta A).
2. Ghosts of Ayyalur: Behavioral Ecology of the Slender Loris, talk at the Rishi Valley School, Madanapalle, March 18, 2015.
3. Wildlife, Conservation Science and Animal Studies, talk at the international conference on Minding Animals 3, Delhi, January 19, 2015.
4. God or Pest: Human Primate Conflicts in India, talk at the symposium on Human Wildlife Conflict or Coexistence: What Do We Want?, Central University of Kerala, Kasaragod, October 15, 2014.
5. Conflict and Resolution between Human and Nonhuman Primates: Online Survey Results. Paper presented at the 37th Annual Meeting of the American Society of Primatologists, Georgia, USA, September 14, 2014 (with Baker M and Pebsworth P).

Academic Courses Offered

Co-Organiser (with VV Binoy), Workshop on Conservation Psychology: Attitude and Environmental Decision-making at the Student Conference on Conservation Science – Bangalore, September 2014.

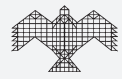
In a human dominated ecosystem, people's perception and attitude towards a species can critically impact its survival. Hence insights into the way in which the human mind operates while taking an environmental decision is essential for the successful conservation of any organism. A deeper understanding of the affective



dimensions of behaviours towards different life forms and the formation of environmental stewardship can not only enhance the efficacy of strategies for protecting biodiversity and controlling alien invasive species, but also contribute to environmental education and the management of human-wildlife conflict. However, despite its wider application in the conservation of biotic and abiotic natural resources, very little research has focused the formation of attitude towards the environment or environmental decision-making in the Indian context. The aim of this workshop was to introduce basic concepts of conservation psychology and the potential implication of knowledge from cognitive science in enhancing the efficiency of conservation activities. Speakers also elaborated on popular laboratory and field methodologies employed in this branch of ecology.

Awards and Memberships

1. Member, NIAS Ethics and Conflict Resolution Committee (2012 onwards).
2. Member, Research Advisory Board, Nature Conservation Foundation, Mysore (2013 onwards).
3. Member, Ethics Committee, Nature Conservation Foundation, Mysore (2013 onwards).
4. Reviewer for Research Grant Proposals, Animal Sciences Group, SERB-DST, Government of India, 2014; and the journal *Scientific Research and Essays*.
5. Evaluator for Research Presentations at the Student Conference on Conservation Science, Bangalore, September 2014.

**VV Binoy**

Assistant Professor
School of Natural and
Engineering Sciences

Room No. N 03
Tel: 080-2218 5106
Fax: 080-2218 5028
Email: vvbino@gmail.com

Joined NIAS on: September 2, 2010

Major Research Contribution for the Academic Year

One of the major achievements obtained during the year 2014-2015 is the development of Asian common toad *Duttaphrynus melanostictus* model system to understand how metamorphosis impacts tight linkage between behavioral traits (behavioural syndrome) in Amphibians.

My studies focusing personality traits, shoaling decision-making and lateralized utilization of brain in an air breathing fish climbing perch *Anabas testudineus* continued this year also.

Our team was able to establish 'student networks', a citizen science initiative aiming bridging of schools and colleges to research institutions for the joint knowledge production, in various districts of Kerala and Karnataka States. We completed the survey of attitude towards water resources and draught mitigation strategies amongst school and college students from these two focal states.

I was able to jointly initiate the following studies with other NIAS faculty; understanding the human dimensions of human-animal conflict in Kasargode district of Kerala state (with Sindhu Radhakrishna), Channelization of the talents of Indian children gifted in science technology and mathematics (with Anitha Kurup), development of autobiographic memory in school children and the impact of mild stroke and head injury on autobiographic memory (with Sangeetha Menon)

A book titled 'When Science Meet Public: Bridging the Gap', co-edited with Pallav Bagla has been accepted for publication by Springer.

Lectures

1. Human-Wildlife Conflict: The Mitigation Strategies, Panchayath Secretaries Forum, Kasargode, Kerala, February 23, 2015.
2. Bringing Environmental Pro Behaviours Amongst School Children: How Knowledge from Conservation Psychology and Citizen Science Movements Can Help. Environmental Conference. Swaraya Bharat-2014, College of Agriculture, Padannakad, October 16, 2014.
3. Human Mind: The Source of Environmental Problems as well as the Hope for Solutions, National Symposium on Human-Wildlife Conflict or Coexistence-What We Want?, Central University of Kerala, Padannakad, Nileshtar, October 15, 2014.
4. Bridging Academic Institution for Better Science Teaching, Tata Institute of Social Science, Mumbai, October 14, 2014.



5. Behavioural Syndrome and Lateralised Utilisation of Brain Hemisphere in an Air Breathing Fish, Climbing Perch. National Institute of Mental Health and Neuro Sciences (NIMHANS), August 30, 2014.
6. Our Natural Resources. Green Olympiad, The Energy and Resources Institute (TERI), Bangalore, July 9, 2014.
7. Introduction to Cognitive Science, Course for ISHAN VIKAS-UDHAN Programme, NIAS, December 25, 2014.
8. When Spider Webs Unite, They Can Tie Up a Lion, Efficacy of Citizens Science Programmes in Data Collection and Dissemination, lecture given to the Delegation, visiting the Centre for International Cooperation in Science at Chennai, NIAS, April 15, 2014.

Academic Courses

Three-credit course on 'Behaviour, Cognition and Consciousness' for doctoral degree and post graduate students. A four lecture module organised by NIAS Consciousness Studies Programme, September to December 2014.

Three-credit course on 'Biology of Behaviour' for doctoral degree and postgraduate students. Central University of Kerala, Kasargode. September 1 to 5, 2014

Three-credit course on 'Comparative Cognition' consisting of lectures, paper presentations and discussion sessions for doctoral degree students, (with Prof Anindya Sinha).

A one-lecture module on 'Animal Behaviour and Cognition' for doctoral degree students, National Institute of Advanced Studies, Bangalore, February 2014.

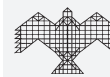
Training Programmes

Workshop on Martial Arts: Harmony of Body and Mind at NIAS, March 13, 2015 (with Prof Sangeetha Menon).

Seminar on When Science Meets the Public: Bridging the Gap at NIAS, June 20 to 21, 2014 (with Mr Pallava Bagla).

Memberships

1. External Affiliate, Krasnow Institute of Advanced Study, George Mason University, USA.
2. IUCN Freshwater Specialist Group – South Asia.
3. Freshwater Fish Conservation Network – South Asia.
4. Ethological Society of India.
5. Limnological Association of Kerala.
6. Centre for Fundamental Studies, Thrissur, Kerala.



ENERGY AND ENVIRONMENT POLICY PROGRAMME

Introduction

Adequate, affordable, and secure access to modern commercial energy services for all residential, commercial, and industrial consumers remains central to meeting India's social and economic development goals. The Energy and Environment Policy Programme (EPPP) engages in research and analysis of critical challenges facing India's energy sector and provides an independent platform for scholars and practitioners to develop practical policy solutions and recommendations in support of national energy security and environmental sustainability. EPPP's research helps identify timely interventions to ensure an energy secure India capable of delivering on socio-economic development targets. EPPP strives to enrich India's energy policy discourse, dispel commonly-held myths, and enhance national capacity to deliver "sustainable" economic development in the context of growing concerns about national energy security, local environmental degradation, and global climate change. The overarching objective of EPPP is to create and sustain intellectual capacity for long-term energy research and technology assessment in support of inclusive energy access. The work of EPPP straddles several academic disciplines and draws on insights from natural and engineering sciences and social sciences.

Research Activities

The Energy and Environment Policy Programme (EPPP) devotes itself to the study of efficiency, equity, and environmental concerns arising from the country's energy sector. In the last year, members of the group published the following publications.

Clifford Singer, Timothy Milligan, and T.S. Gopi Rethinaraj (2014): How China's Options Will Determine Global Warming, *Challenges* 2014, 5(1), 1-25.

This paper extrapolates using analyses calibrated against extensive time series data for nine global regions the following: carbon dioxide emissions, global average temperature, atmospheric carbon dioxide concentrations, and surface ocean mixed layer acidity. Extrapolation of historical trends without policy-driven limitations has China responsible for about half of global carbon dioxide emissions by the middle of the twenty-first century.

S Chakravarty (2015): Cheap Oil, Climate Change Mitigation and India, *Economic and Political Weekly*, (38-43), Vol L No. 9, February 28, 2015.

This article analyses the causes and consequences of the oil crash of 2014, especially in the light of climate change mitigation. The impact is likely to be minor as solar PV and wind turbines, the two most promising renewable energy sources are in the electricity sector which does not use much oil. India benefits from a reduction in import bills.

TS Gopi Rethinaraj (2015): India's Nuclear Weaponisation: Warheads, Delivery Systems, and Doctrinal Compatibility in "India's Military Modernisation" Edited by Rajesh Basu and Bharath Gopalswamy. Oxford University Press. 2015. pp 67-88.

This book chapter reviews the progress made in nuclear weaponization and military modernization since the May 1998 nuclear tests and examines the challenges facing India in its pursuit of minimum credible nuclear deterrence. It also analyses whether current fissile material stocks and testing data are compatible with India's official nuclear posture.

HSK Nathan (2014): Solar PV for Rural Electricity in India – A Misplaced Emphasis, in *Economic and Political Weekly*, Vol - XLIX No. 50, December 13, 2014. pp 60-67.

This article highlights the fallacies in the arguments of promoting solar in rural areas and the causes of failures of such promotion and thereby push the idea of 'Solar PV: Urban first, rural later'.

Dilip R Ahuja, DP Sen Gupta, Anasuya Gangopadhyay, and Anitha Sampath (2015): Wind and Solar Energy for Meeting Karnataka's Future Electricity Demand. POSOCO.



This report advocates 4.8 GW of wind capacity and 2.5 GW of solar capacity in the state by 2022. The addition of a 1 GW pumped hydro storage facility capable of being used for a maximum of 10 hours at a time would help in the better integration of wind and solar capacity. The studies are continuing.

The group is also undertaking a project on assessment of remote village electrification in India through solar photovoltaic home lighting systems in the state of Karnataka supported by the South Asian Network of Development, Environment, and Economics (SANDEE), Kathmandu. Another project on assessment of potential, factors, and policy options of cross-border electricity trade in South Asia and regional integration is underway and supported by the South Asian Network of Economic Institute (SANEI), Dhaka. A report titled 'Hydro-power development and trade in South Asia - A tale of two Himalayan countries' was presented at Dhaka at 13th SANEI Annual Conference on August 29 and 30, 2014.

Outreach

The EEPP group coordinated the Twelfth Annual NIAS-DST Training Programme on Multidisciplinary Perspectives on Science, Technology and Society with the core theme of 'Energy Security and Management' during November 10 to 21, 2014. The programme was attended by about 30 senior management personnel drawn from various public sector scientific and industrial research organisations (BARC, IGCAR, ISRO, AMD, etc) and public sector industrial organisations (Indian Oil, BHEL, etc.). The participants were given a broad orientation in energy and environmental policies as well as a selection of topics concerning economic development and sustainability. The programme included about 20 lectures on various topics by subject experts and also special lectures by Dr Kirit Parikh, Dr Ajay Mathur, Mr Jairam Ramesh, and Dr SP Sukhatme.

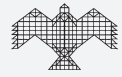
Dr K Kasturirangan spoke about the work done at NIAS on the proposal for Advancing Indian Standard Time to Mr Ajit Kumar Seth, the Cabinet Secretary of the Union Government. On March 18, 2015, NIAS sent a set of relevant publications and a communication to Mr Seth for further consideration within the Government.

This year the group also had its footprint in popular press through two articles by HSK Nathan: 'Global grid – Harnessing Green Power Round the Clock' in the August 2014 issue of *Geopolitics*; and an op-ed article on energy conservation in *The Pioneer* which urged that the government efforts to be directed at efficient production, reduction in T&D losses, and demand side management.

The EEPP group facilitated NIAS partnership in a two-day workshop on "Sustainable Technologies for Educational Campuses", which was held at the Golden Jubilee Seminar Hall, Indian Institute of Science, ECE Department, Bangalore during November 7 and 8, 2014 inaugurated by NIAS Director Prof Baldev Raj. The aim of the workshop was to support the dissemination and deployment of sustainable technologies in educational campuses. The group also presented the innovations by EEPP group at the Second National Seminar on Social Innovation organized by National Innovation Foundation (NIF) at Pune on November 17, 2014. Subsequently, the group has initiated a collaboration between NIAS and NIF.



Report Release Function, March 5, 2015 (Ms Varsha Joshi, MNRE)



Members of the Energy and Environment Policy Programme



Dilip R Ahuja, *Anchor*

DP Sen Gupta

TS Gopi Rethinaraj

Shoibal Chakravarty

Hippu Salk Kristle Nathan

Research Fellows: Anitha Sampath, Anasuya Gangopadhyay

Doctoral Students: Neesha Dutt, Priyam Laxmi Borgohain

Dilip R Ahuja

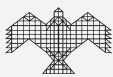
ISRO Professor of
S&T Policy
School of Natural and
Engineering Sciences

Room No. S 11
Tel: 080-2218 5135
Fax: 080-2218 5028
Email: drahuja@gmail.
com

Joined NIAS on: December 13, 1999

Lectures

1. Global Technology Watch Group on Renewable Energy Technologies, IIT Delhi, February 13, 2015.
2. Energy Savings from Adjusting Indian Standard Time, Session in NIAS-DST Course on Energy Security and Management, November 12, 2014.
3. IIT Bombay Autumn 2014 Climate Seminar Series: Invited Talk on Energy and Non-energy Consequences of Adjusting Indian Standard Time, Powai, Mumbai, October 22, 2014
4. The Extent to which Karnataka's Future Electricity Demand can be met with Renewable Energy, (with Anitha Sampath, Anasuya Gangopadhyay, Shoibal Chakravarty, Balaji Velury, DP Sen Gupta), Indian Institute of Management, Bangalore, August 12, 2014.
5. IPCC AR5 WG3 Mitigation Panel Discussion, Divecha Centre, April 15, 2014.



DP Sen Gupta
Visiting Professor
School of Natural and
Engineering Sciences

Room No. G 13
Tel: 080-2218 5062
Fax: 080-2218 5028
Email: sengupta.dp@
gmail.com

Joined NIAS on: October 1, 2009

Major Research Contribution for the Academic Year

Our sustained efforts in installing the Solar panel and studying its impact.

Lectures

1. Invited as chief guest to SSIT, Tumkur to inaugurate a workshop on “Special Electrical Machines” and delivered the keynote address, October 15, 2014.
2. The Extent to which Karnataka’s Future Electricity Demand can be met with Renewable Energy, (with Anitha Sampath, Anasuya Gangopadhyay, Shoibal Chakravarty, Balaji Velury, DP Sen Gupta), Indian Institute of Management, Bangalore, August 12, 2014.
3. Special invited lecture at Bose Institute, Calcutta on the occasion of 130th Birth anniversary of D.M. Bose on The history of Standard Time and the consequences of altering Indian Standard Time. November 26, 2014.
4. State of Rural Electrification in India, Twelfth NIAS-DST Training Programme on Multidisciplinary Perspectives on Science, Technology and Society, November 14, 2014.



TS Gopi Rethinaraj
Associate Professor
School of Natural and
Engineering Sciences

Room No. S 04
Tel: 080-2218 5148
Fax: 080-2218 5028
Email: rethinaraj72@
gmail.com

Joined NIAS on: June 2, 2014

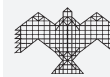
Academic Courses

Ph.D. Foundations Course (August-December 2014)

This is a mandatory course for first year PhD students in their first semester which introduces foundations of various disciplines, interdisciplinary and multidisciplinary approaches to research problems. This course was coordinated by Shivali Tukdeo and TS Gopi Rethinaraj, the former mainly responsible for running of the course.

Energy Systems: Technology and Policy (August-December 2014)

This course was offered to two Ph.D. students and the research staff and faculty



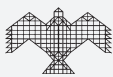
members of the Energy and Environment Policy Programme (EPPP). This was a lecture based course covering the technical, political, and socio-economic aspects of energy production and use. The course is an introductory graduate-level orientation aimed at those wanting to specialize in energy technology policy. The course was entirely taught by TS Gopi Rethinaraj.

Ph.D. Research Methodology Course (January-April 2015)

This is a mandatory course for first year Ph.D. students in their second semester and introduces the foundations of research methods and concepts in various disciplines. This course was coordinated by TS Gopi Rethinaraj, who taught about 30% of the total course content. The remaining lecture slots were given to various NIAS faculty members drawn from the three Schools. The main objective of the course is to help the students prepare the first draft of their dissertation research proposal through various assignments such as definition of research problem and its importance, literature review, research methods and conceptual frameworks, and roadmap. By the end of the semester, the student is expected to have a rough first draft of their research proposal, which goes through several revisions in consultation with their respective supervisors and gets its final form that's presented at the colloquium during the third semester.

Training Course

Coordinated the Twelfth NIAS-DST Training Programme on Multidisciplinary Perspectives on Science, Technology and Society was organized from November 10 to 21, 2014 for senior scientists, technologists and administrators. The main theme of the programme was 'Energy Security and Management'. Twenty-seven participants including three women scientists drawn from various institutions, laboratories and government departments in the country attended the programme.



Hippu Salk Kristle Nathan

Assistant Professor
School of Natural and
Engineering Sciences

Room No. A 02
Tel: 080-2218 5052
Fax: 080-2218 5028
Email: happyhippu@gmail.com

Joined NIAS on: February 24, 2012

Lectures

1. Four guest lectures on the sub-topics 'Frameworks for Measuring Sustainability' and 'Indicators of sustainability' under the course – 'Managing Technology for Sustainability', Department of Management Studies, Indian Institute of Science, Bangalore, March to April, 2015.
2. Innovations at Energy Environment Policy Programme at NIAS, 2nd National Seminar on Social Innovation organized by National Innovation Foundation (NIF) at Pune, November 17, 2014.
3. Sustainable Technology Initiatives in NIAS Campus – presented at the two-day workshop on 'Sustainable Technologies for Educational Campuses', Golden Jubilee Seminar Hall, Indian Institute of Science, ECE Department, Bangalore, November 7, 2014.
4. Gender-based Indicators in Human Development: Correcting for 'Missing Women', HDCA (Human Development and Capability Association) Annual Conference on Human Development in Times of Crisis: Renegotiating Social Justice, paper presentation at President Hotel, Athens, Greece, September 3, 2014.
5. Hydro-power Development and Trade in South Asia – A Tale of Two Himalayan Countries, 13th Annual South Asian Network of Economic Institutes (SANEI) conference at Ruposhi Bangla Hotel, Dhaka, August 30, 2014 (with Mr Sanket Sudhir Kulkarni).
6. Think Global Act Regional– Setting the Agenda through Global Grid, 2nd CUTS (Consumer Unity and Trust Society) International Conference on Regional Cooperation for Energy Security in South Asia, Keynote Presentation at Hotel Hindustan International, Kolkata, August 8, 2014.
7. Key to Global Arms Control through Determinants of Arms Trade, 26th International Summer Symposium on Science and World Affairs – presented at Princeton University, Princeton, New Jersey, August 1, 2014.

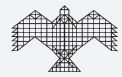
Academic Course

Contributed with one lecture in the Second semester Research Methodology Course under the Data module on the topic 'Data Gathering and Survey Design', March 10, 2015.

Other Information

Participation in Selected Conference/Workshop

1. SANDEE Research Communication Workshop, Kathmandu, Nepal, February 10 to 12, 2015 and SANDEE 28th Research and Training Workshop, Thimpu, Bhutan, June 16 to 27, 2014.



2. Round Table meeting for Addressing Economic Inequality in India – jointly organized by International Centre for Human Development and NIAS, January 8 and 9, 2015.
3. Three Day Workshop Climate Change Adaptation in India – Jointly by The Ministry of Environment Forests and Climate Change and Government of India and the United Nations Disaster Management Team, New Delhi, October 15 to 17, 2014.
4. 15th GDN (Global Development Network) Annual conference Accra, Ghana, June 18 to 20, 2014.

Report/Monograph Submitted

1. SANEI progress report on Cross Border Electricity Trade in South Asia and regional Integration - Potential Assessment, Underlying Factors, and Policy Options – submitted in January, 2015.
2. SANDEE progress report on Remote Village Electrification in India through Solar Home Systems-Assessment and Options – submitted in May, 2014.



Shoibal Chakravarty
Assistant Professor
School of Natural and
Engineering Sciences

Room No. S 15
Tel: 080-2218 5131
Fax: 080-2218 5028
Email: shoibalc@
gmail.com

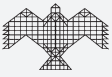
Joined NIAS on: July 1, 2014

Lecture

Energy and Climate: Is Climate Change Humanity's Biggest Challenge?, Ashoka University, Rajiv Gandhi Education City, Sonapat, Haryana, March 19, 2015.

Academic Course

Programming for Data Analysis and Modelling (in Python): This course taught the basics of programming in Python, primarily for the purpose of using data analysis and statistical tools.



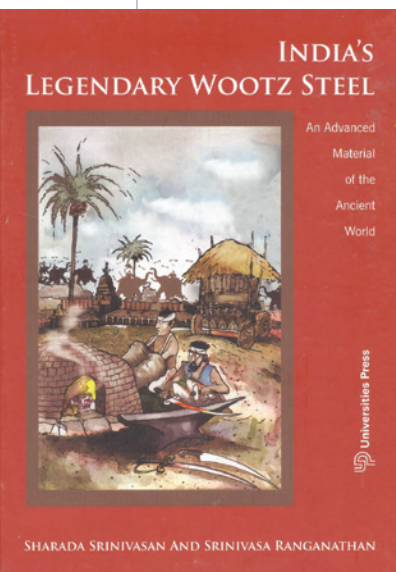
HERITAGE SCIENCE AND SOCIETY PROGRAMME

Introduction

The Heritage, Science and Society Programme has been engaged in trail-blazing cross-disciplinary research projects at the interface of culture, history of science and technology, conservation and preservation of heritage. The programme has strengths in the areas of art history, history, archaeology, south Indian languages, literature, epigraphy and Kannada classics. The programme has also nurtured areas less well supported in the national context of archaeological science and scientific methods of documentation and preservation of heritage and artisanal technologies. These include materials characterisation and conservation of metal artefacts and metal crafts using archaeometallurgical approaches, space-based applications of remote sensing, GIS satellite imagery in studying heritage and crafts clusters, use of digital technologies and computer vision in representing heritage sites. A unique thrust has been the documentation and promotion of marginalised artisanal technologies as an scientific and cultural educational resource and for sustainable development and livelihood promotion of crafts communities. Areas of research have included Vijayanagara and Chola art and architecture, Chalukyan inscriptions, Jaina and Buddhist art of Karnataka, Harappan and Megalithic material culture, Asokan edicts, Delhi Iron Pillar, Damascus swords, Tipu's rockets, Kannada classics, Sangam literature, sites of Nalanda, and links with Sri Lanka, Southeast Asia and Japan and related craft practices.

Research Activities

The DST supported national collaborative India Digital Project has undertaken innovative research on the digital representation of the rich heritage of Hampi, the capital of the medieval Vijayanagara dynasty. Its tangible heritage of art, sculpture, bronzes, murals and architecture, and intangible heritage of crafts, festivals and performance traditions are imaginatively documented towards generating a digital repository or 'knowledge bank'. Under the flagship research collaboration of the UKIERI-II, British Council supported NIAS-Exeter 'Intangible Histories' Split-site Ph.D. programme, nearly a dozen students are enrolled in PhD programmes jointly supervised by NIAS and Exeter University faculty and awarded by Exeter University. A major inter-disciplinary seminar was held in Exeter University in September 2014 on 'Intangible Histories' with NIAS faculty from schools of humanities, social sciences and natural sciences. Inter-disciplinary Ph.D. topics the NIAS-Exeter and NIAS doctoral programmes include traditional blacksmithy in Telangana, rock art surveys in Maski, early trade links between Sri Lanka and southern India, archaeocognition and prehistoric tool making in the Gangetic Valley, street theatre, Odissi dance, urban studies, early Buddhist art of Karnataka, Mysore and Tipu era painting traditions and folk theatre in Karnataka. Well received books and papers were brought out on Jaina art and philosophy of death in Karnataka by Prof S Settar, the scientific heritage of the skilled traditional Indian wootz steel, bronze casting and mirror working traditions by Prof Sharada Srinivasan and Prof S Ranganathan and remote sensing in studying the Buddhist site of Nalanda by Dr MB Rajani. Through the RESPOND project including Post-doctoral Associate Dr Smriti Haricharan (until September 2014), research was undertaken on satellite mapping of archaeometallurgical sites in Telangana, and Chola heritage. A major international volume on archaeometallurgical research on Asian metal artefacts crafts under the Beginning of the Use of Metals and Alloys conference series was readied for publication edited by Prof Sharada Srinivasan, Prof S Ranganathan and Dr Alessandra Giumlia-Mair. Prof Sharada Srinivasan was requested to peer review article for Bulletin of Material Science article on silicon bronzes for musical instrument (Manuscript Number: BOMS-D-14-00205).

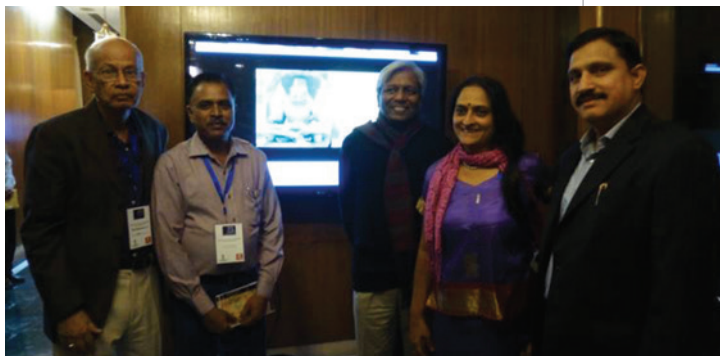


Outreach

A major outreach activity was the novel and acclaimed 'Digital Hampi Workshop and Exhibition' held in Delhi on November 18 and 19, 2014 co-coordinated by NIAS with IIT-D, with two dozen institutions and inaugurated by the Minister for Science and Technology and Secretary, DBT. This showcased multi-media interfaces in studying the art and architecture of the World Heritage site of Hampi such as 3-D models, kinect-based interactive displays, virtual walkthroughs, conjectural reconstructions of bazaars, laser-scanned and 3-D animations of sculptures, mapping of crafts clusters and interactive displays on murals. A week long workshop on 'Mural Art of Kerala' and traditional Theyyam performance was organised at NIAS in February 2015 in collaboration with Indira Gandhi Rashtriya Manav Sangralaya, Mysore Branch, and Institute of Mural Painting, Guruvayoor culminating in the painting of murals at NIAS. The 'Material Culture' workshop in April 2014, co-organised by NIAS, ASI, Jain University and Exeter University included presentations by NIAS-Exeter PhD students apart from NIAS and Exeter faculty on visual and material culture including crafts demonstrations and classical dance performances inspired by sculpture. The Materials Heritage Exhibition at IISC Open Day in which was co-curated by the NIAS Heritage Programme showcased interesting aspects of materials heritage such as the Delhi Iron Pillar and the Aranmula mirrors. A seminar chaired by Prof Baldev Raj was organised at IIC, Delhi on the award of ASM Landmark to the Delhi Iron Pillar in 2014. Prof Settar, who was felicitated by Karnataka Sahitya Akademi, BM Pratishthana and Yakshagana Kalaranga on his 75th birthday was interviewed on his books on Jaina Philosophy of Death. Prof Ranganathan, who received the INAE Lifetime award in 2015, and Prof Sharada Srinivasan gave public lectures at the Nehru Science Centre, Mumbai and lectured at workshops NML and IIT-G on Archaeometallurgy and Conservation. Prof Sharada Srinivasan was featured on the TEDX and Syntalk online platforms and had a photo-exhibition at Jain University on Chola bronzes and Gallery events at NGMA, Mumbai and National Museum, New Delhi on armoury. Dr MB Rajani, Homi Bhabha Fellow, is collaborating with IITGn in studying Dholavira and presented a paper at the DST-National Meeting on Airborne LiDAR at IIT Kanpur.



Historic Delhi Iron Pillar ASM Landmark Award 2014 organised by Prof Baldev Raj, Prof S Ranganathan, INAE, 2014; with Prof Sharada Srinivasan, Dr S Jaikishan, Prof Vibha Tripathi.



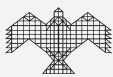
Inauguration of Digital Hampi Exhibition and Seminar, with DBT Secretary, Minister for S&T, India Habitat Centre, New Delhi (Profs Sharada Srinivasan and S Ranganathan), November 19, 2014.



NIAS Kerala Mural Workshop, with DST Secretary Prof Ashutosh Sharma, Prof Baldev Raj and Prof S Settar, February 21, 2015.



NIAS Kerala Mural Workshop, February 15, 2015 (Prof Sharada Srinivasan and Dr MB Rajani).



Members of the Heritage Studies Programme



Sharada Srinivasan, *Anchor*

S Ranganathan

S Settar

MB Rajani

Post-doctoral Associate: Smriti Haricharan (till August 8, 2014)

Doctoral Students: Hema Thakur, Sumitra Sundar

Tathagatha Neogi, Brice Girbal, Jemma Singleton, Kausalya Gunasena, Kathryn Bonnett (NIAS-Exeter University Collaborative Programme)

Sharada Srinivasan
Professor
School of Humanities

Room No. S 13
Tel: 080-2218 5125
Fax: 080-2218 5028
Email: sharasri@gmail.com

Joined NIAS on: June 10, 2001

Major Research Contribution for the Academic Year

Coordination as Associate Coordinator of cultural projects of DST-IDH Digital Hampi project and Steering Committee member for the Digital Hampi Exhibition on multimedia interfaces in the representation of the world heritage site of Hampi, at Habitat Centre, Delhi, September 2014.

Coordination of NIAS-Exeter "Intangible Histories" Split Side Ph.D. programme under the aegis of which two major seminars were held, one on Material Culture with ASI with NIAS, Jain University and Exeter Jain University faculty in April 2014, and in Exeter University on 'Intangible Histories' involving NIAS and Exeter faculty in September 2014.

Completion of work as editor of proceedings of the seventh international conference on Beginnings of Use of Metals and Alloys (BUMAVII) involving 28 papers on archaeometallurgy across Asia, along with Prof S Ranganathan and Dr Alessandra Giunlia-Mair.

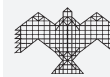
Significant research on digital and technological interfaces in the study of Vijayanagara sculpture revealing new insights on iconometric aspects of key examples of Vijayanagara sculpture such as Yoga Narasimha following laser scanning and documentation of key collections such as at Kamalapur Museum and Chandragiri Museum.

Significant research on high-tin bronzes from early historic and megalithic India also exploring technological parallels and contrasts with contemporary bronzes from Southeast Asia and the Hellenistic and Persian world also presented at key conferences such as 'Cross-cultural interactions in antiquity' hosted by INSA and Ambedkar University.

Initiation of new research on rock art in neolithic north Karnataka, and of comparisons between material culture of early historic southern India and Sri Lanka.

Lectures

1. Bell Metal Tradition, International Seminar on Cultural Heritage Management: A Global Perspective, Asiatic Society, Kolkatta, March 27, 2015.
2. Materials, Heritage, Women Patrons, International Women's Day Celebration in GTRE Auditorium, Bangalore, March 9, 2015.
3. Invited to participate on SynTalk Series, Science-philosophy Podcast Discussion on Realm of Things, Mumbai, February 28, 2015.
<https://soundcloud.com/syntalk/trot-the-realm-of-things-syntalk>



4. Intangible Heritage and Metallurgical Traditions of Vishwakarama Communities, National Seminar. Museums and Intangible Heritage in National Museum, Kolkata, February 24, 2015.
5. Metallurgy in Indian Antiquity, National Seminar on Methodological Aspects of Knowledge production in Pre-Modern India, Indian Institute of Science, Bangalore, January 26, 2015.
6. Metallurgy, Metal Crafts and Metallurgical Traditions". Cross Cultural Knowledge Exchange in Antiquity, Interactions between Greece, Iran, India and China, Ambedkar University Delhi. National Museum, New Delhi, January 9, 2015.
7. Metallurgy and Culture, NIAS Course for the Ishan Vikas-Udhan Programme, December 22, 2014.
8. Case Studies in Archaeometallurgical Investigations - High Tin Bronzes and Wootz Steel, Workshop on Archaeometallurgy and Archaeology. IIT-Gandhi Nagar, Ahmedabad, December 9, 2014.
9. Conservation and Characterization of Archaeological Objects; INAE meet on Award of ASM Historical Landmark for Delhi Iron Pillar at India International Centre, New Delhi, December 3, 2014.
10. Wootz Steel and Damascus Swords: Some Archaeometallurgical Insights, National Museum, New Delhi, December 3, 2014.
11. Digital Interfaces in the Study of Vijayanagara Sculpture, Digital Hampi Workshop and Exhibition, India Habitat Centre, New Delhi, November 19, 2014.
12. Elements of Siva's Dance, A Contemporary-Classical, Art-Science Dance Exploration into the Artistic Landscapes of Chola Bronzes. NGMA, Mumbai, November 15, 2014 (special event for the NGMA exhibition on 'Music Goddess').
13. The Legendary Wootz/'ukku' Steel: Exploring Production Landscapes in Southern India, Nehru Science Centre (NSCM) and National Gallery of Modern Art Mumbai (NGMA) (Ministry of Culture, Government of India), Mumbai, September 29, 2014.
14. High-tin Beta Bronzes from the South Asian Iron Age: Continuing Traditions, Corrosion Status and Conservation Issues, Steady Steps Ahead IASC Conference, CSMVS Museum, Mumbai, June 3, 2014.
15. Presentation on From Prince to Divinity: Archaeometric Insights on Iconographic Shifts in Ramayana Bronzes from Southern India, Intangible Histories, Exeter-NIAS Seminar, University of Exeter, September 19, 2014.
16. Science and Technology and Material Culture, 3 Day International Workshop on Material Culture. Collaborative Training/Participative Photo Exhibition by ASI, Jain University Campus, Bangalore, April 12, 2014.

Academic Courses

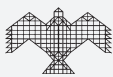
Core Course in Humanities in Material Culture (2014)

This course explored various aspects of material culture studies which is an emerging inter-disciplinary interdisciplinary field examining the relationship between society and artefacts, their history, manufacturing process, preservation, and interpretation of objects. It draws on theory and practice from such disciplines as art history, archaeology, anthropology, history, historic preservation, folklore, and museum studies. In particular the aspects of material culture studies relevant to the Indian context were also explored including case studies on materials heritage and spotlight on declining crafts and artisanal traditions.

Reading Course on Cultural Heritage Management (2015)

This course gave an introduction through guided reading and fieldwork case studies and marked essays to various facets of the field of cultural heritage management concerned broadly with the practices and pedagogical approaches related to cultural heritage preservation and in relation to cultural policies. The historiography and approaches in terms of the nominations and listings and management of World Heritage sites, and other categories that have emerged for safeguarding cultural property were explored in terms of gaining insights into best practices in heritage management and with comparative case studies with respect to the Indian context.

Co-ordinated NIAS-Exeter Split Site Ph.D. Programme with Prof Anindya Sinha and Dr Smriti Haricharan with half a dozen NIAS faculty participating from across schools as co-supervisors and related training, courses and supervision. Joint supervisory meetings took place between NIAS and Exeter faculty in NIAS in April 2014 and in Exeter University in September 2014.



NIAS Collaborative course and workshop on Material Culture with Jain University, ASI and Exeter University (April 11 to 14, 2014)

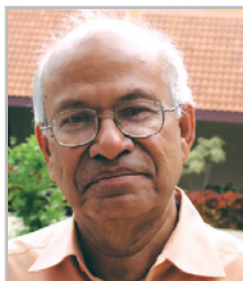
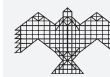
This 3-day workshop and course which was open to students in Bangalore and elsewhere, aimed to illustrate several facets in the study of Visual and Material Culture and the interfaces between archaeology, art history and materials technology, crafts and performing arts. Organising and participating institutions included Jain University (led by Prof Choodamani Nandagopal), NIAS (led by Prof Sharada Srinivasan), Archaeological Survey of India (led by Dr Nambirajan) and Exeter University (led by Prof Gillian Juleff). NIAS-Exeter UKIERI-II 'Intangible Histories' doctoral students also made presentations on archaeology. A highlight was the performance session integrating art history and dance history by Jain University and NIAS members including well known danseuse Lakshmi Gopalakrishna. NIAS-Exeter doctoral student Sabina Sen (guided by Prof Sangeetha Menon) gave an Odissi dance exposition based on Gita Govinda and Prof Sharada Srinivasan gave a Bharata Natyam dance exposition inspired by Nataraja worship at Chidambaram. Exhibitions were hosted by ASI on Karnataka's heritage, Canara Bank on Crafts, Dr Soumya Manjunath Chauhan on art, Prof Sharada Srinivasan on Chola bronzes and with pottery demonstrations.

Non-NIAS Courses

1. Gave two lectures on Archaeometallurgy with screening of Aranmula and Swamimalai documentaries, School on Characterisation and Conservation of Archaeological objects, CSIR-National Metallurgical Laboratory, Jamshedpur, October 13 to 17, 2014.
2. Three lectures given on Case Studies in Archaeometallurgical Investigations, High Tin Bronzes and Wootz Steel, with screenings of films on Aranmula Mirror Making and Swamimalai Bronze Casting, Workshop on Archaeometallurgy and Archaeology. IIT-Gandhi Nagar, Ahmedabad, December 9 and 10, 2014.
3. Indian Metals Heritage, Course on Capacity Development Programme in Built Heritage Studies and Conservation, Module on Material Technology and Conservation, Chatrapati Shivaji Maharaj Manav Vastu Sangrahalaya (CSVMS), Mumbai, January 19 to 23, 2015.

Memberships

1. Member, Standing Committee, Beginning of Use of Metals and Alloys International Conference.
2. Editorial Board, Ethnoarchaeology Journal (USA).
3. Board Member, Institute of Archaeometallurgical Studies, London.



S Ranganathan
Homi Bhabha Visiting
Professor
School of Humanities

Room No. F 23
Tel: 080-2218 5073
Fax: 080-2218 5028
Email: rangu2001@
yahoo.com

Joined NIAS on: July 2, 2004

Major Research Contribution for the Academic Year

Our research has been expanded to cover Cultural Heritage Science

Our work on Wootz Steel led to an understanding of the grand microstructural transformation from pearlite to spheroidite. Another major contribution has been securing recognition for the Delhi Iron Pillar as a historical landmark by ASM, USA. We brought out new features concerning the transition in material, religion, epigraphy and empires in passing from the Ashokan sandstone pillar to the Gupta iron pillar.

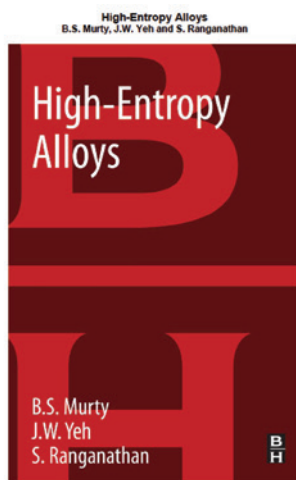
A project conceived by Prof Roddam Narasimha plans to recreate the rockets of Tipu, a major technological contribution from India. The material aspects of rocket casing have been assigned to Prof Ranganathan.

Current work revolves around the intersection between humanities and technology. Following the acclaimed British Museum book on the history of the world through 100 objects, he is working together with Prof Baldev Raj on the history of India through 100 objects.

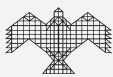
Another theme is the materials heritage of Japan. The Tatara iron making, the Samurai Swords and Bronze Buddha statues offer interesting comparisons. In collaboration with Kazuhiro Nagata and Manako Tanaka experiments are planned for the synchrotron at Spring 8 in Japan for studying ores from different mines in India and ancient artefacts.

Lectures/Conference Presentations

1. Solid Solutions- Their Limits and Extensions, National Workshop on High-Entropy Alloys: Prospects and Challenges, IC&SR Auditorium, IIT Madras, March 28 to 29, 2015.
2. Amorphisation by Destabilisation of Binary Crystalline Intermetallic Compound with Equiatomic Multicomponent Substitution, National Workshop on High-Entropy Alloys: Prospects and Challenges, IC&SR Auditorium, IIT Madras, March 28 to 29, 2015 (with Drs S Kashyap, C Chattopadhyay, A Takeuchi, Y Yokoyama and BS Murty).
3. The Magnificent Delhi Iron Pillar: Historical, Aesthetic and Metallurgical Aspects, NRC-M Workshop on Advances in Corrosion Engineering, Indian Institute of Science, Bangalore, December 22, 2014.
4. Alloyed Pleasures, INAE Lifetime Contribution Award, INAE Annual Convention, Jaipur, December 12 to 13, 2014.



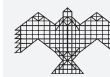
Publisher: Elsevier (ISBN: Print book - 9780128002513; E-book - 9780128005262)
Webpage: <http://store.elsevier.com/product/author.jsp?isbn=9780128002513>
Authors: B.S. Murty, IIT Madras, India; J.W. Yeh, National Tsing Hua University, Taiwan
and S. Ranganathan, IISc, Bangalore, India
Pages: 216 pages
Cost: E-book: USD 37.5, Print: USD 37.5, Print + E book: USD 60 (as on 12.08.2014)



5. Archaeology: Old Subject and New Science; The Coming of Cultural Heritage Science, Workshop on Archaeology and Archaeometallurgy, IIT Gandhinagar, December 8, 2014.
6. Indian Metallic Heritage, INAE Discussion Meeting on Indian Metallic Heritage: Perspectives and Issues on Characterisation and Conservation of Ancient Metallic Objects at India International Centre, New Delhi, December 3, 2014.
7. High-Entropy Alloys – A New Class of Engineering Materials, Commonwealth Science Conference, Royal Society, Bangalore, November 25 to 28, 2014 (with Dr BS Murty).
8. Digital Renderings and Iconographic and Iconometric Study of Vijayanagara Sculpture , DST-IDH Workshop on Digital Hampi, New Delhi, November 18, 2014 (with Prof Sharada Srinivasan, Mr Rajarshi Sengupta, Mr Praveen Johnson, Ms Padmapriya Selvakumar, Ms Uma Kritika and Mr Sadashiva Settar)
9. Reimagining Vijayanagarara, DST-IDH Workshop on Digital Hampi, New Delhi, November 18, 2014.
10. The Coming of Cultural Heritage Science, CSIR-National Metallurgical Laboratory, Jamshedpur, October 13, 2014.
11. Quasicrystals: The Golden Road to Stockholm, International Year of Crystallography, Indian Physics Association, Kalpakkam Chapter, Indira Gandhi Centre for Atomic Research, November 12, 2014.



12. The Magnificent Delhi Iron Pillar: History and Metallurgy, JSW-NSC Annual Lecture Series Iron and Steel Heritage of India In memory of Sir M Visvesvaraya, Nehru Science Centre, Mumbai, October 7, 2014.
13. The Magnificent Delhi Iron Pillar: History and Metallurgy, Institute of Historical Metallurgy and Materials University of Science and Technology, Beijing, September 1, 2014.
14. Multicomponent Equiatomic High-entropy Alloys, Tsing Hua University, Beijing, August 29, 2014.
15. Metastable and Multicomponent High-Entropy Alloys, 15th International Conference on rapidly Quenched and Metastable Materials, Shanghai, China August 24 to 28, 2014.
16. Multiscale Materials Science; A Challenge to Computational Materials Science, NRC-M Workshop on Monte Carlo and Molecular Dynamics, Indian Institute of Science, Bangalore, June 22, 2014.



17. Multicomponent Equiatomic High Entropy Alloys: A Challenge to Computational Materials Science, ACCMS-WGM, Astana, Kazakhstan, June 5 to 7, 2014 (with Dr Umesh Waghmare).
18. Magnesium Dreams: From Discovery to Design, NRCM Summer Workshop on Magnesium Alloys, Indian Institute of Science, Bangalore, May 5 to 6, 2014.
19. The Coming of Archaeological Materials Science, the Sixth International Materials Education Symposium, Cambridge, UK, April 10, 2014.

Training Course

School on Characterisation and Conservation of Archaeological Objects, CSIR-National Metallurgical Laboratory, Jamshedpur, October 13, 2014.

Awards and Memberships

1. INAE Lifetime Contribution Award 2014.
2. NASI Platinum Jubilee Fellow, Indian Institute of Science
3. Member, Board of Directors, CSTEP.
4. Member, Governing Council, Rajiv Gandhi Institute for Steel Technology (RGIST).
5. Visitor's Nominee, IIT Gandhinagar.
6. International Advisory Committee, BUMA.
7. Conference Series 2006, 2009, 2013, 2017.
8. Editorial Board Member, Materials Discovery, Elsevier.
9. Member of the Organizing Committee for The Sixth International Materials Education Symposium, Cambridge, UK, April 10, 2014.
10. Member of the Advisory Committee of the first Asian Materials Education Symposium, Singapore, December 11 to 12, 2014.



S Settar

Honorary Visiting
Professor
School of Humanities

Room No. F 21
Tel: 080-2218 5069
Fax: 080-2218 5028
Email: ssetter@yahoo.
co.in

Joined NIAS on: August 5, 2002

Keynote Addresses in Conferences, Seminars and Workshops

1. Confirmation of Annual Literary Award organised by JSS Institute, Mysore, March 25, 2015.
2. Panchavarnam – An Art Workshop held at NIAS, February 7 to 16, 2015.
3. A special lecture in the Annual Kannada Sahitya Sammelan held at Shravana Belgola, February 1 to 3, 2015.
4. South Zone Educational Convention organised by All India Save Education Committee, Bangalore, February 28, 2015.
5. Felicitation to Hosthota Manjunatha Bhagavatha, a great exponent of Yakshagana, at Udupi, February 15, 2015.



Prof S Settar felicitated by Karnataka Sahitya Akademi on Jaina Philosophy books, early 2015.

6. Lawrence Pinto Human Rights Award Confirmation, Mangalore, January 31, 2015.
7. Sahitya Sambhrama – Annual Literary Meet – Dharwad, January 15, 2015.
8. Book Release – Hinduthva or Hind Svaraj – Kannada Sahitya Parishat, Bangalore, November 28, 2014.
9. Alwas Nudisiri – Literary and Cultural Festival Mudubidre, November 16, 2014.
10. Seminar organised by Central University, Gulbarga on Shastriya Kannada Project - Kuvempu Bhasha Bharathi, Bangalore, November 5, 2014.
11. National Mission on Monuments – State Level Committee meeting – Bangalore, October 21, 2014.
12. Prakrta Katha Sahitya Book Release – Kannada Sahitya Parishat, Bangalore, October 7, 2014.

Awards and Honours

1. Dr Paduru Gururaja Bhat Memorial Award, Mysore, 2014.
2. Alwas Nudisiri Award, Mudubidre, 2014.
3. Shravana Belgola Shilashasana Award (awarded once in 12 years), 2014.
4. Interaction with the audience: Video recording on current state of Kannada Literature – Sanchi Pratishtana, Bengaluru, March 14, 2015.
5. A day-long seminar organised on literary works of Prof S Settar held by BM Shri Pratishthana, Bangalore and felicitation of the author, March 22, 2015.



MB Rajani
Assistant Professor
School of Humanities

Room No. A 01
Tel: 080-2218 5051
Fax: 080-2218 5028
Email: mbrajani.nias@gmail.com

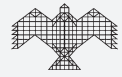
Joined NIAS on: January 1, 2015

Major Research Contribution for the Academic Year

The study on the landscape of the archaeological site of Nalanda has revealed that the extent of the old establishments could have been 6-7 times larger than the currently protected site and it has also pointed at specific structural remnants. The detailed research paper is accepted by *Archives of Asian Art*, Hawaii University Press, scheduled for Spring 2016 issue. Ongoing work has appeared in *Fredrick Asher Nalanda: Situating the monastery*, Marg, Volume 66 Number 3, March 2015.

Lectures

1. Airborne LiDAR Application for Archaeological Research, DST-National Meeting on Airborne LiDAR, IIT Kanpur, January 19, 2015.



2. Session Chair 'History and Archaeology of Ancient India: Graduate Students Workshop' Archaeological Sciences Centre, IIT Gandhinagar, January 31, 2015.

Academic Courses

Offered a two credit course on Cultural and Societal Applications of GIS, February to April 2015. The course was delivered through lectures, guest lectures, seminar and lab. GIS is a powerful tool for organizing, visualizing and analyzing any data which has a geo-spatial component. It therefore has applications in a variety of domains. This course was designed to emphasize the applications of GIS for various sub-topics under the broad fields of culture and society. It discussed several case studies, with lectures by the instructor and guest lectures by other experts, focusing on methodologies and resulting outcomes. Students received guidance to undertake a research project as part of this course, where they investigated spatial aspects of research problems in their chosen domains. The findings were discussed in seminars, as part of the course. Participants conducted lab work on their own laptops using open source softwares.

Awards

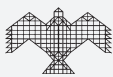
1. Homi Bhabha Fellowship for 2 years (from November 2015).
2. Guest Faculty, Archaeological Sciences Centre, IIT Gandhinagar.
3. Visiting Faculty, NIIT University, Neemrana, Rajasthan.



Smriti Haricharan
Post-doctoral
Associate
School of Humanities

Joined NIAS on: June 1, 2010

Room No. A 01
Tel: 080-2218 5051
Fax: 080-2218 5028
Email: smriti.march.
forth@gmail.com



RBI PROGRAMME ON INTERDISCIPLINARY APPROACHES TO ECONOMIC ISSUES

Introduction

The RBI Programme on Interdisciplinary Approaches to Economic Issues seeks to use the knowledge gained from a variety of disciplines to understand economic issues. Unlike conventional interdisciplinary economics which takes the methods of economics to other areas, the RBI programme seeks to work in the opposite direction. Its effort is to enhance economic analysis by adding to established economic methods the perspectives gained from other disciplines. The programme is funded by interest from a corpus of Rs.75 lakhs. This amount was provided by the RBI in three annual installments after evaluating the work done in each year.

Research Activities

During the year the programme continued working towards using a multidisciplinary approach to understand various issues of public policy. A paper 'Impact of entrepreneur on the sectoral system of innovation: Case study of the Indian crude oil refining industry' by Chidambaran G Iyer was published. This paper using concepts from evolutionary economics and connectionist perspective of entrepreneurial theory tried to highlight the importance of the entrepreneur and the role of the entrepreneur in initializing and crystallizing the sectoral system of innovation.

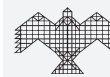
The published paper 'Towards a location-sensitive policy for manufacturing in Karnataka' by Narendar Pani, argued that as states have moved to attract investments in the post-liberalisation era, two distinct patterns have emerged. Some states have focused on their largest city, while others have adopted a more dispersed strategy of attracting investment. Taking the experience of Karnataka, this paper looked at the consequences of concentrating on a single centre to boost industrialization, bringing in insights from New Economic Geography.

Another paper 'Addressing the Rural in Indian Cities' by Narendar Pani looks at the rural in Indian cities using the case of Bengaluru. The paper argues that the influence of the rural in Bengaluru, and arguably most Indian cities, is multidimensional. This influence can emerge in locations that are within the geographical limits of the city as well as in villages some distance away. Thus for an urban policy to be effective it must be willing to address all issues that affect Indian cities even if they arise in remote rural areas.

The study 'Preparation of District Human Development Report of Bengaluru Urban District' whose aim was to capture variations in the status of human development at the district level, involved preparing the human development index, gender inequality index, child development index, food security index, urban development index, and composite development index for Bengaluru Urban district. The study also computed dalit development index for a gram panchayat in the most backward taluk of the district. Work on the report also included writing detailed chapters on Education, Health, Income, Standard of living, Gender, Status of SCs and STs, Governance, and Urban issues.

Outreach

Outreach has been primarily in the form of newspaper articles and talks. Prof Narendar Pani, wrote two articles for The Hindu Business Line a) 'Now that Bangalore is Bengaluru', November 9, 2014, b) 'Municipal bodies — the bigger, the better', April 2, 2015. Dr Chidambaran G Iyer, gave a talk on 'Evaluation of the Processes in the Implementation of JnNURM in Karnataka' at the State Institute of Urban Development, Mysore on September 10, 2014. Dr Chidambaran Iyer delivered the Inaugural and Key Note address for at the first national level post graduate economics fest 'Econcentric-2015' on February 27, 2015 at Christ University, Bengaluru.



Members of the RBI Programme on Interdisciplinary Approaches to Economic Issues



Narendar Pani, *Anchor*

Chidambaran G Iyer

Doctoral Students: KG Asha, S Soundarya Iyer, NS Nalini, Ankita Rathi

Narendar Pani

Professor
School of Social
Sciences

Room No. S 08
Tel: 080-2218 5145
Fax: 080-2218 5028
Email: narendar.pani@
gmail.com

Joined NIAS on: April 9, 2007

Major Research Contribution for the Academic Year

My major research contribution this year was in developing a theory of endemic corruption that relates it to the gap between legality and the descriptive morality in a society. Based on the papers of Sir Mark Cubbon, that I had an opportunity to access from the India Office Records available in the British Library in London, I was able to trace the consequences of his imposing a British jurisprudence on a very different local descriptive morality of Bengaluru in 1834. The consequences of this effort included a spurt in malicious false cases that led to an overcrowding of the courts. And as false cases became a widespread practice it hurt the moral authority of the legal process, leading in turn to a situation where there was very little stigma attached to illegal corrupt activities.

Lectures

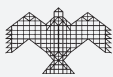
1. Panel discussion on the Union Budget, Department of Management Studies, Indian Institute of Science, Bangalore, March 13, 2015.
2. Panel discussion on the Union Budget, Bangalore International Centre, March 2, 2015.
3. Neo-Gandhian Approach to Development, 12th Annual NIAS-DST Programme, November 17, 2014.
4. Death of a Dramatist: Contesting Imperceptible Spaces in Indian Cities, presented at an interdisciplinary symposium on 'Intangible Histories' in the Department of Drama at the University of Exeter, September 19, 2014.
5. Functioning Anarchy of Indian Cities: A Neo Gandhian Interpretation of the Urban, Graduate Programme on Development Seminar, Watson Institute of International Studies, Brown University, USA, April 2, 2014.

Academic Courses

I taught modules in the core course on social sciences, the Foundations course, and the Methodology course. In the core course on social sciences the module was on logic in the social sciences. Using a broad brush approach it covered the different systems of logic in Western and Indian philosophy, as well as the major paradoxes. It then related these borrowings from the realm of philosophy to the social sciences.

Training Course

One-week in-service training programme for All India Service Officers for the year 2014-15 was conducted on the theme 'Multidisciplinary Perspectives on Urban Development' between October 13 and 17, 2014.



Memberships

1. Member of the Task Force on Manufacturing set up by the Government of Karnataka.
2. Member of the Vision Group on Bengaluru set up by the Government of Karnataka.



Chidambaran G Iyer
Assistant Professor
School of Social
Sciences

Room No. S 15
Tel: 080-2218 5131
Fax: 080-2218 5028
Email: chidambaran.
iyer@gmail.com

Joined NIAS on: June 7, 2010

Major Research Contribution for the Academic Year

The paper 'Impact of entrepreneur on the sectoral system of innovation: Case study of the Indian crude oil refining industry' using concepts from evolutionary economics and connectionist perspective of entrepreneurial theory tried to highlight the importance of the entrepreneur and the role of the entrepreneur in initializing and crystallizing the sectoral system of innovation.

Another important contribution was the continuing work on 'Preparation of District Human Development Report of Bengaluru Urban District'. This study contained computing the human development index, gender inequality index, child development index, food security index, urban development index, and composite development index for Bengaluru Urban district. The study also computed dalit development index for a gram panchayat in the most backward taluk of the district. In addition to collecting data for the five taluks of the district and computing the indices; work on the report also included writing detailed chapters on Education, Health, Income, Standard of Living, Gender, Status of SCs and STs, Governance, and Urban Issues.

Lectures

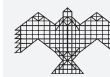
1. Inaugural and Key Note address for at the first national level post graduate economics fest 'Econcentric-2015' on 27th February 2015 at Christ University, Bangalore.
2. 'Evaluation of the Processes in the Implementation of JnNURM in Karnataka' at the State Institute of Urban Development, Mysore, September 10, 2014.
3. Inaugural and Key Note Address for at the first national level post graduate economics fest 'Econcentric-2015', Christ University, Bangalore, on February 27, 2015.
4. Case study session with Prof Narendar Pani 'Issues from JnNURM in Karnataka' in the One-week In-service Training Programme for AIS officers on 'Multidisciplinary Perspectives on Urban Development', September 2014.

Training Course

Co-coordinator for the 29th NIAS Programme for Senior Executives on Leading India to Excellence, January 19 to 24, 2015.

Outreach

1. One of the judges for the IX National Young Economist Competition held on December 15, 2014 at Christ University, Bengaluru.



2. External examiner for M.A. thesis proposal and final presentations of students of Christ University, Bengaluru held in June 2014 and March 2015, respectively.
3. Attended the National Conference on 'Technology: Corporate and Social Dimensions' organized by Forum for Global Knowledge Sharing along with the Indian National Academy of Engineering and hosted by NIAS from October 27 to 29, 2014.



SS Meenakshisundaram
Visiting Professor
School of Social Sciences

Room No. F 20
Tel: 080-2218 5070
Fax: 080-2218 5028
Email: meenakshi54@
hotmail.com

Joined NIAS on: December 10, 2004

Lectures

1. NGOs, Community Engagement and the State, workshop on Social Responsibility of Higher Educational Institutions, Centre for Research in Social Sciences and Education, Jain University, Bangalore, March 19, 2015.
2. Rural Governance and Development, workshop on Inclusive Growth, Tata Institute of Social Sciences, Mumbai, February 23, 2015.
3. Innovations in Public Services, a panel discussion, Centre for Leadership and Management, RV Institute of Management, Bangalore, December 13, 2014.
4. Functioning Style of Indian Prime Ministers and the PMO, Printing Technologists Forum, Anna University, Chennai, December 10, 2014.
5. Trends in Decentralization, international conference on Gandhi and Gram Swaraj, Kerala Institute for Local Administration, Mulamkunnathukavu, November 27, 2014.
6. Second Level Institutions for Agriculture Development, Dr Kurien Memorial Lecture, KIIT University, Bhubaneswar, Odisha, November 20, 2014.
7. Decentralization in India – The Way Forward..., panel discussion with Senior Officers from the IAS, Lalbahadur Shastri National Academy of Administration, Mussoorie, September 11, 2014.
8. Challenges in Communicating Issues Related to Land and Natural Resources, Seminar on Science Communication, NIAS, June 20, 2014.
9. Enabling Development through Panchayats in India, Keynote Address, Institute for Rural Management Anand, Gujarat, May 27, 2014.
10. Public Administration in Karnataka from a Historical Perspective, Institute for Social and Economic Change, Bangalore, May 23, 2014.

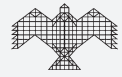
Memberships on the Board of Management

1. Centre for Sustainable Development, Bangalore.
2. Institute of Social and Economic Change, Bangalore.
3. India Wash Forum, New Delhi.
4. Institute of Social Sciences, New Delhi.
5. IIPA, Karnataka Regional Branch, Bangalore.
6. Institute for Societal Advancement, Thiruvananthapuram.
7. MYRADA and a few other institutions promoted by MYRADA.

CLUSTER - STRATEGY, SECURITY AND CONFLICTS

Programmes

- Conflict Resolution
- International Strategic and Security Studies Programme



HIGHLIGHTS

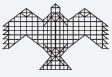
Conflict Resolution Programme

Organised lecture series by Prof Ashutosh Varshney of Brown University, USA on “Ethnic Conflict” from August 4 to 8, 2015. The lectures introduced to the classic texts on ethnicity, nationalism and ethnic conflict, as also to the more important recent work. These lectures have been put on the web as the first online course of the programme.

International Strategic and Security Studies Programme

Uranium is a key dual use material for the production of nuclear weapons. ISSSP has pioneered the development of a new robust algorithm for identifying a Uranium Mill using open source satellite imagery. Based on a study of 13 known uranium mills, a set of keys have been derived for identifying uranium mills and separating them from other mills which bear similar signatures. The findings are being presented at the 37th Conference of the European Safeguards Research and Development Association (ESARDA).

Two Policy Briefs were brought out during the year. The first one was on ‘Advanced Environment Monitoring Techniques’ which followed the deliberations held on the same topic in NIAS. The second brief covers Research and Development on Rare Earths and Value addition in India.



CONFLICT RESOLUTION PROGRAMME

Introduction

The Conflict Resolution Programme was set up in 2009 with the aim to develop an inclusive knowledge base that would help effectively address major conflicts that affect India or have the potential to do so. The breadth of the knowledge base is being built through developing backgrounders on individual conflicts. The depth is provided by research both into individual conflicts and the conceptualisation of social conflict and its resolution. The dissemination is to be carried out through courses on conflict resolution, targeted at all who could have to deal with social conflicts, whether they are in industry, government or civil society. In short, the programme aims to both develop knowledge and disseminate it in a way that influences both popular perceptions and policies aimed at conflict resolution.

In line with these objectives the work in this Programme is classified into three main categories – writing backgrounders, research on major conflicts in India and courses on conflict resolution. The work done so far in the Programme has been largely concentrated in the first two areas. Regarding courses on conflict resolution, the programme launched its first online course: Speaking of Ethnic Conflict by Prof Ashutosh Varshney of Brown University, USA.

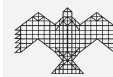
Research Activities

The Programme continues develop backgrounders on conflicts in India. Dr Anshuman Behera's backgrounder on "Maoist Conflict in Odisha" is under review. Two more backgrounders on "Maoist Conflict in Chhattisgarh and Maoist Conflict in Andhra Pradesh" are in pipeline. The backgrounders are targeted at the intelligent layperson who requires a quick and yet reliable account of a specific conflict. By their very nature these backgrounders attempt to provide a picture on which there is some measure of consensus among scholars. Even as we are quite aware that this is not always possible, a concerted effort is made to provide a view as close to the consensus as possible.

Research during the year also focused on both domestic and social conflicts. Prof Narendar Pani and Ms Soundarya Iyer published a paper "Towards a Framework to Determine Backwardness: Caste, Inequality and Reservations in India". This work explores to concepts used, implicitly or explicitly, in the literature on caste and reservations to come up with a framework to determine dominance based caste hierarchies in a milieu of change. Prof Narendar Pani also wrote a NIAS working paper titled "Functioning Anarchy of Indian Cities: A Neo-Gandhian Interpretation of the Urban". This paper reworked the Gandhian method to help understand the challenges of urban India, including the serious gender crisis. Prof Pani has also been exploring the relationship between descriptive morality and the law in an effort to conceptualize endemic corruption in India. In a paper that is currently under review he has taken the case of Mark Cubbon's 1834 steps to introduce British jurisprudence on a very different morality in the then Mysore, to demonstrate that the mismatch between morality and the legal system can institutionalize corruption. Another area that has been recently added to the focus of research is the Maoist conflict in India. In this area the Maoist conflicts in nine different states of India will be studied keeping in mind the socio-political and economic specificities of individual states. Research on Maoist conflict would focus on how conflict resolution measures such as development initiatives, negotiation and peace talks could be used to resolve it.

Outreach

Prof Narendar Pani continued his column 'Cityzen' in the national financial daily "Business Line". The articles in this column covered multiple dimensions of the Indian urban experience, ranging from policy interventions to the joy and challenge of living in India's cities. Dr Anshuman Behera published online in the website of International Security Network, Switzerland, an article titled "No Easy Solution in Ending India's Bodo Conflict". Dr Behera's article titled "The Big Catch" was published in Geopolitics magazine. He also published an article titled "Modi's Nepal Visit should not take the Beaten Track" in The Pioneer, August 2, 2015.



Members of the Conflict Resolution Programme



Narendar Pani, *Anchor*
Anshuman Behera
Doctoral Student: Anamika Ajay

Anshuman Behera
Assistant Professor
School of Social
Sciences

Room No. A 1
Tel: 080-2218 5051
Fax: 080-2218 5028
Email:
beheraisanshuman@
gmail.com

Joined NIAS on: January 31, 2014

Major Research Contribution for the Academic Year

A backgrounder on Maoist Conflict in Odisha is under review. A book chapter on India-Nepal Relationship has been published. A commentary highlighting the difficulties in resolving the Bodo Conflict in Assam has been published in International Security Network, Switzerland. Major focus of research interest for this year has been on understanding the Maoist Conflict in India. Two backgrounders on “Maoist Conflict in Chhattisgarh” and “Maoist Conflict in Andhra Pradesh” are in pipeline. Development and conflict is another area of my research interest. On this issue I delivered a lecture on Development as a Source of Conflict: The Sahukars, Displaced Persons and Maoists in Koraput. Research paper on this subject will be sent for journal publication.

Training Courses

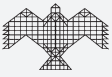
1. Coordinated NIAS Social Science Core Course with Prof Anitha Kurup for the year 2014-15.
2. Assisted Prof Narendar Pani in coordinating Training Programme for All India Service Officers (October 13 to 17, 2014).

Award and Membership

1. Invited as a member of Board of Studies to evaluate Curriculum for MA International Relations, Christ University.
2. Invited as an external examiner to evaluate one of the Ph.D. scholars’ proposal and presentation at Institute for Social and Economic Change, Bangalore.

Outreach

1. Appeared as a panel discussant on Maoist Conflict in Odisha, OTV.
2. Reviewed a Book Manuscript on ‘Demand for Smaller States in India’ from Sage Publication.



INTERNATIONAL STRATEGIC AND SECURITY STUDIES PROGRAMME

Introduction

In the context of the strong influence of science and technology outputs on weapon systems and their bearing on national security, the International Strategic and Security Studies Programme (ISSSP) interrogates contemporary issues from a science and technology perspective. In the process, ISSSP also examines the connected political, military, organizational and structural linkages of the subject matter to get a holistic picture. This is a unique capability that ISSSP has established over the last few years – a capability well recognized by the strategic establishment in India. The major focus areas of engagement include nuclear weapons and space security issues; China's developments of critical dual use materials and technologies; and the implications of China's rise for the countries of the Asia Pacific region.

ISSSP partners with other like-minded organizations in the pursuit of its goals. It is a track-2 dialogue partner with the Committee on International Security and Arms Control (CISAC) of the National Academy of Sciences. Collaborative arrangements are also in place with the Bandarnaike Centre for International Studies, Colombo and the Institute for Peace and Conflict Studies, New Delhi.

The programme is staffed with a blend of people with S&T, political science and international relations background and is well networked with various domain specialists to provide in depth assessments, to the various research problems that ISSSP pursues.

Research Activities

A very comprehensive database comprising missile images, their physical dimensions, performance assessment and trajectory simulation for nominal performance as well as for specific reported/deduced flight data matching is in the making. The database has built-in capability to take into account missile upgrades/variants for verifying their impact on the missile capability and performance. The weapon systems these missiles are required to host are also examined and continuously updated.

A critical evaluation of Chinese space capabilities with emphasis on the linkages with their missile programme is being pursued. Chinese plans and capabilities towards space exploration, space application and military uses of space are also being examined.

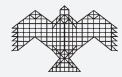
As a sequel to the above nuclear and space weapons related projects on China, ISSSP is planning to conduct a detailed study that includes links between nuclear weapons tests and warheads, missile delivery vehicles, vulnerabilities and Chinese strategy for deterring both nuclear and conventional war. The study will specifically examine the role of ambiguity in the deployment of China's nuclear and conventional weapons in deterring US intervention over a Taiwan conflict.

A survey of the current status and research efforts underway on hypersonic technologies was carried out. Based on this technology priorities for an Indian programme on hypersonic vehicle technologies were identified.

ISSSP continues to pursue its interests in using open source satellite imagery to identify and characterize nuclear and other strategic installations.

The abilities of India's neighbours, especially China to integrate advanced technologies with the production of hi-tech products continues to be an area of interest for the programme. As a follow-up to our earlier study on China's grand strategy for establishing a dominant position in the global Rare Earths industry, a critical evaluation of R&D related to Rare Earths in India and their connections with various products and industries in the country was taken up.

As a part of ISSSP's ongoing efforts to understand the impact of China's rise on the countries of the Asia Pacific region, data bases on the countries of the region are being continuously updated. A detailed study on Myanmar has been taken up. ISSSP plans to progressively take up studies on the other countries of the Indian Ocean Region.



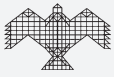
Outreach

During the year, ISSSP organized nine events involving discussion meetings with members from international think tanks as well as talks and public lectures by well-known personalities. Important and interesting events included:

1. Book Release: Commercialisation of Space, edited by Prof Bhupendra Jasani (Adjunct Faculty) and Prof Ram Jakhu and co-published by NIAS was released by Dr K Kasturirangan.
2. Public lecture on
 - India-Pakistan Relations – the Way Forward by Ambassador Hussain Haqqani, former Pakistan Ambassador to the United States.
 - Pakistan's Nuclear Development and India's Strategy and Doctrine by Prof Neil Joeck, University of California, Berkeley.
 - New World Order and Wars in the 21st Century by Prof Subrata Ghosh-Roy, MIT.
3. Interaction with NASA specialists – Dr Ellen Stofan, Chief Scientist, Dr David Miller Chief Technologist and Mr Kent Bress, Director Aeronautics and Cross Agency Support Division on the Mars Atmosphere and Volatile Evolution (MAVEN) mission on 20 November 2014.
4. Workshop on Advanced Environment Monitoring Techniques on September 25 and 26, 2014 was a focused event that brought out the state-of-the-art in India in respect of seismological, radionuclide, acoustic and satellite monitoring techniques. The workshop deliberations have been prepared as a policy brief.
5. Members of the Programme were invited to events within and outside the country.
6. The Programme website www.issp.in is populated by topical commentaries, analysis and study reports contributed by the faculty members and research fellows. The section ISSSP Reflections contains articles based on current areas of research of members of the Programme. ISSSP reports are also hosted on the website as also details of the publications.



Group Photo with Ambassador Hussain Haqqani



Members of the International Strategic and Security Studies Programme



Rajaram Nagappa
Visiting Professor
School of Natural and
Engineering Sciences

Room No. F 07
Tel: 080-2218 5087
Fax: 080-2218 5028
Email: r.nagappa@gmail.com

Rajaram Nagappa, *Anchor*

S Chandrashekar

N Ramani

Lalitha Sundaresan

M Mayilvaganan

Arun Vishwanathan

Baldev Raj

Doctoral Students: Murali Murti, BR Guruprasad, Sanket S Kulkarni

Senior Research Fellows: Aditi Malhotra (*till January 2015*), Sadhvi Chouhan (*till February 2015*)

Junior Research Fellows: PS Ramya, Suparna Bannerji, Kaveri Ashok

Research Associate: Viswesh R (*till December 2014*)

Joined NIAS on: February 1, 2007

Major Research Contribution for the Academic Year

Examination of launch and satellite statistics indicates a significant lack of capacity to meet military space requirement. A survey carried out of small and micro-satellites indicates earth observation missions with resolution to meet many of the defence service needs are possible. Satellite throughput can be increased by using standard structural and electric bus for the satellites and involving industry to produce them. Simulation showed that Agni-V missile has the potential to orbit small satellites on 100-150 kg class. Additionally, the Agni-V derived launch vehicle can be mobile and can be launched from different locations. Use of small satellites and Agni-V derived launch vehicle can redress the capacity shortage problem to some extent.

Lectures

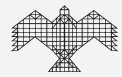
1. Nuclear Energy Security and its Ramifications at the SIS-ICWA Annual Dialogue, School of International Studies, Jawahrlal Nehru University, November 10 to 12, 2014.
2. Contours of India's Aerospace Command – Issues of Space Security at the Centre for Joint Warfare Studies, January 15, 2015.
3. Revisiting Indo-US Space Partnership at the National Conference on Synergy Building in Indo-US Relations: Challenges in the Coming Decade, School of International Studies, Jawaharlal Nehru University, March 12 to 13, 2015.

Workshop/Conference Coordinated

1. Workshop on Advanced Environment Monitoring Techniques, September 25 to 26, 2014 (with Dr Arun Vishwanathan).
2. Conference on Technology: Corporate and Social Dimensions, October 27 to 29, 2014, event jointly organised by Knowledge Forum, Indian National Academy of Engineering and NIAS (with Dr M Mayilvaganan).

Awards and Memberships

1. Chairman, Research Council, Advanced Systems Laboratory, DRDO, Hyderabad.
2. Member, Research Council, Aeronautical Development Establishment, DRDO, Bengaluru.
3. Co-Chairman, Assessment Boards, Recruitment and Assessment Centre, DRDO.



S Chandrashekar
JRD Tata Visiting
Professor
School of Natural and
Engineering Sciences

Room No. F 08
Tel: 080-2218 5084
Fax: 080-2218 5028
Email: schandra@nias.
iisc.ernet.in

Joined NIAS on: July 2, 2004

Major Research Contribution for the Academic Year

As a part of our understanding of China's strategic thinking we have initiated a major effort that links nuclear weapons, missiles, China's vulnerabilities and strategy. This is a joint ISSSP effort and is in the final stage of completion. When completed this may be the first study of this kind in the country.

Our joint work (Lalitha Sundaresan, Bhupendra Jasani and S Chandrashekar) on identifying Uranium Mills using satellite imagery has been successfully completed. We have developed a robust algorithm that helps identify a Uranium mill using features and patterns that can be seen on commercially available satellite imagery. We also have a method of estimating the capacity of a Uranium Mill using certain measurements. This is a very unique study that could possibly be the first of its kind in the world.

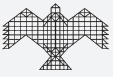
I have helped by colleague Prof N Ramani with making the desk top version of our Trajectory Software Quo Vadis operational.

Lectures

1. Taught three classes for colleagues at IIMB on Crisis Management in Complex Systems. These lectures were a part of the basic course on Business Strategy for various long duration education programmes at IIMB.
2. Lecture on Women Power in Corporate India, 4th NIAS-DST Training Programme for Women Scientists, February 24, 2015.

Memberships

1. Continued to function as a member of the Board of Trustees of the RBANMS Group of Educational Institutions (one of the oldest Charities in Bangalore) and helped the Charities with their operations and strategy.
2. Served on the selection committee for faculty recruitment and promotion at IIM Udaipur.
3. Continued to serve on the Review Committee for DST supported R&D projects at the Indian Institute of Science.



N Ramani

Visiting Professor
School of Natural and
Engineering Sciences

Room No. F 04
Tel: 080-2218 5093
Fax: 080-2218 5028
Email: narayan.
ramani@gmail.com

Joined NIAS on: November 1, 2007

Major Research Contribution for the Academic Year

Quo Vadis, The Missile Trajectory Software has been improved in several ways: The convergence algorithm has been automated and its efficiency vastly improved. The code has been cleaned up. Google Map could not be implemented. The package is being used by members of ISSSP for a number of our missile studies and updates.

Lecture

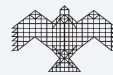
Missile Trajectory Computation, lecture to the students from NIT, Itanagar under the Ishan Vikas Udhan Programme, NIAS, December 24, 2014.

Membership

Continued to participate in a number of Project Reviews conducted for the Department of Electronics and Information Technology (DietY). These are at: CDAC, Hyderabad, IIT, Patna, DSCI, Delhi, IIT, Kharagpur and Jadavpur University. These are annual/bi-annual meetings and at some of these I function as the Chairman and at others, as a Member. All of these are in the area of Information Security.

Other Information

Involved in supporting the computing and networking infrastructure at NIAS. Specifically, simple implementations of Campus WiFi and VC have been put in place and are under evaluation.



Lalitha Sundaresan
Visiting Professor
School of Natural and
Engineering Sciences

Room No. F 05
Tel: 080-2218 5089
Fax: 080-2218 5028
Email: sundaresan.
lalitha@gmail.com

Joined NIAS on: May 14, 2008

Major Research Contribution for the Academic Year

Pakistan's Missile technology capability and the production capacity in the country was assessed during the year. In addition the Vulnerability of Pakistan's Nuclear Assets was also studied. The results were submitted to the funding agency as a report.

A study to assess the nature of R & D on Rare Earths and Value Addition in India was carried out and a Policy Brief was prepared and submitted to the concerned agencies.

Training Course

Organized and coordinated NIAS-DST Training Programme for Directors and Senior Scientists on Policy for Science and Science for Policies, December 15 to 19, 2014.



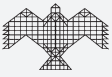
M Mayilvaganan
Assistant Professor
School of Natural and
Engineering Sciences

Room No. S 12
Tel: 080-2218 5133
Fax: 080-22185 028
Email: mumayil@
yahoo.com

Joined NIAS on: November 2, 2010

Major Research Contribution for the Academic Year

Coordinated a research project on Indian Ocean Region that positively developed a knowledge bank on the important littorals and extra regional powers in Asia-Pacific apart from bringing out a publication on "Asia-Pacific Power Dynamics: Strategic Implications and Options for India" from the organized seminar and workshop. I have also given various interviews to print and digital media on Prime Minister Modi's visit to countries in IOR and on issues related to Sri Lanka. Also coordinated NIAS Ph.D. Entrance Exam Process along with Dr Shivali Tukdeo.



Lectures

1. Sri Lankan National Security And Foreign Policy In Transition, in the International Conference on Postcolonial Societies in Transition (ICPST) Organized by the Faculty of Humanities and Social Sciences, University of Ruhuna, Matara, Sri Lanka, March 3, 2015.
2. Japan and Australia: India's New Geo-Political Allies in the Changing Asia-Pacific, in the International Relations Conference 2014 On Maritime Security: Unlocking India's Great Power Partnerships, organized by Association of Asia Scholars at Pondicherry University, December 9, 2014.
3. China in the Indian Ocean Region: Changing Geopolitics and Challenges, in the International Conference on China in the Indian Ocean Region, organized by the Centre for Indian Ocean Studies, Osmania University, Hyderabad, November 14, 2014 (with Ms Ramya P, Research Associate, NIAS).

Academic Course

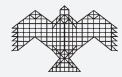
Offered Module in NIAS Foundation Course on 'Migration and Security' for the first year students.

Training Courses

1. Coordinated, NIAS Forum for Global Knowledge Sharing's National Conference on Technology: Corporate and Social Dimensions, October 27 to 29, 2014.
2. Coordinated, NIAS-DST Training Programme on Policy for Science and Science for Policies, December 15 to 19, 2014, along with Prof Lalitha Sundaresan.

Awards and Memberships

1. Member of International Advisory Board of "Malaysian Journal of International Affairs" (since September 2013).
2. Member of Board of External Examiner for Master's Dissertation, Department of Political Science, Post Graduate Research Center, St. Joseph College, Bangalore.
3. Member of Board of External Evaluator for the end-semester exam evaluation, Department of Political Science, Post Graduate Research Center, St. Joseph's College, Bangalore.
4. Visiting Faculty of Foreign Service Institute (FSI) of Ministry of External Affairs, New Delhi.
5. Member, Australia-India Interdisciplinary Research Network (AIIRN).



Assistant Professor
School of Natural and
Engineering Sciences

Room No. A 02
Tel: 080-2218 5052
Fax: 080-2218 5028
Email: arun_
summerhill@yahoo.
com

Joined NIAS on: October 3, 2011

Major Research Contribution for the Academic Year

One of the major research focus is Chinese nuclear capabilities strategy with Prof S Chandrashekar. I have also been invited to write on regular basis for the Stimson Center's website "Generation Why" website. The website provides a platform for young and upcoming strategic experts from India and Pakistan.

Lectures

1. Verifying a Nuclear Weapons Free World: Political and Technical Components, International Conference on "A Nuclear Weapon-Free World: From Conception to Reality," Institute of Defence Studies and Analyses, New Delhi, April 2, 2014.
2. Growth of the Islamic State: Challenges for the International Community, 2014 Summer Workshop of Regional Center for Strategic Studies (RCSS), Colombo, Kaluthara, Sri Lanka, September 17, 2014.

Training Course

Organised and Coordinated (with Prof Rajaram Nagappa), 2-day National Workshop on Advanced Techniques in Environmental Monitoring at NIAS, September 25 to 26, 2014.

Lectures Organised at NIAS

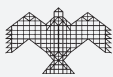
1. Talk by Dr Neil Joeck, Professor, University of California-Berkeley on Pakistan's Nuclear Developments and India's Strategy and Doctrine, September 10, 2014.
2. Public Lecture by Ambassador Hussain Haqqani, Pakistani Ambassador to US on India-Pakistan Relations and the Way Ahead, July 31, 2014.

Memberships

1. Member, Board of Studies, Centre for International Politics, School of International Studies, Central University of Gujarat, Gandhinagar.
2. Member, Board of Studies, Masters in International Relations, School of Law, Christ University, Bangalore.

Elected Memberships

1. Full Member, International Institute of Strategic Studies (IISS), London, United Kingdom.
2. Full Member, International Network of Emerging Nuclear Specialists (INENS), United States.
3. Associate Member, Institute for Defence Studies and Analyses (IDSA), New Delhi.



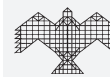
Baldev Raj
Director, NIAS

Room No. F 15
Tel: 080-2360 1969
Fax: 080-2218 5076
Email: baldev.dr@gmail.com

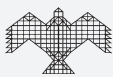
Joined NIAS on: September 1, 2014

Lectures

1. Advanced Materials and Technologies, Colloquium Talk, Indian Institute of Science Education and Research (IISER), Mohali, March 27, 2015.
2. Energy Security and Sustainability: Approaches and Priorities for Growing and Aspiring India, Public Lecture, Indian Institute of Science Education and Research (IISER), Mohali, March 26, 2015.
3. Energy Security and Sustainability: Approaches and Priorities for Growing and Aspiring India, Inaugural Address at the Seismech'15, Annual Symposium of Department of Mechanical Engineering, IIT Guwahati, March 20, 2015.
4. Approaches to Prioritise Applications and Leadership in Unmanned Aerial Systems, Invited Talk at the Round Table on Civilian Applications of Unmanned Aerial Systems, International Institute for Aerospace Engineering and Management, Jain University, Bangalore, March 7, 2015.
5. Energy Security and Sustainability: Approaches and Priorities for Growing and Aspiring India, Presidential Address at the Book Release Function entitled: Wind and Solar Energy for Meeting Karnataka's Future Electricity Demand organized by NIAS and The Power System Operation Corporation Limited, NIAS, March 5, 2015.
6. Gender Participation in Science and Technology: an Essentiality to Meet National Aspirations, Valedictory Address, NIAS-DST (DISHA Programme for Women in Science) Course on Science for Progress in India: Innovations in Technologies for Scientists and Technologists, February 27, 2015.
7. Keynote Address at NRDC Prize Award Ceremony and Conference on Make in India: Opportunities through Innovation, PSG College of Technology, Coimbatore, February 25, 2015.
8. Plenary Discussion on Nuclear Energy – The Present and Future for India, International Round Table Conference on Sustainable Development – New Perspectives and Emerging Trends – SDNPET-2015, AIMS Institutes, Bangalore, February 13, 2015.
9. Energy Security and Sustainability: Approaches and Priorities for Growing and Aspiring India, Eminent Lecture Series of the Institute, Mahatma Gandhi Institute of Technology, Hyderabad, February 7, 2015.
10. A Perspective on Energy Demands and Security: Technology, Ethics and Equity, Honour Lecture, Nuclear Fuel Complex, Hyderabad, February 6, 2015.
11. A Perspective on Corrosion Management: Experiences and Challenges, Plenary Lecture, International Conference on Corrosion TECH during CHEMTECH World Expo 2015, Bombay Exhibition Grounds, Mumbai, January 31, 2015.



12. A Holistic Perspective in Science and Technology of India in the 21st Century, Convocation Address at Indian Institute of Information Technology Design and Manufacturing (IIITDM), Kancheepuram, January 30, 2015.
13. A Career in Non-Destructive Evaluation: Fun, Fame, Money and Building India, Honour Lecture, Two-day Skill Development Workshop on “Non Destructive Testing For Engineering Students” at QIS College of Engineering & Technology, Ongole, Andhra Pradesh, January 28, 2015.
14. Building a Holistic Perspective of India in the 21st Century, 12th Convocation Address, Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA), Bangalore, January 12, 2015.
15. Challenging Inequalities: A holistic Aspiration, IC4HD (International Centre for Human Development) – NIAS Round Table – Addressing Economic Inequality in India, January 8, 2015.
16. Science is Fun: Service to Society is Accomplishment. Inaugural Address, .NIAS Course for Ishan Vikas-Udhan Programme, December 22, 2014.
17. Approaches to Education and Informal Mechanisms for Skill Development, Invited talk at the National Level Consultation on Skill Development, Employment and Mobility in India, December 22, 2014.
18. India’s Asian Order: Culture, Economy and Security, Keynote Address at International Conference on India’s Asian Order: Culture, Economy and Security, Department of Civics and Politics, Univ. of Mumbai, Mumbai, December 8, 2014.
19. Sustainable Engineering and Technology: Relevance, Ethics and Scalable, 1st Convocation address, National Institute of Technology Puducherry (Karaikal), December 6, 2014.
20. Presidential Address: Discussion Meeting on Indian Metallic Heritage: Perspectives and Issues on Characterization and Conservation of Ancient Metallic Objects, organised by INAE, ASI, Dept. of Culture & IIM, ASM Intl. USA, New Delhi, December 3, 2014.
21. Energy Security and Sustainability: Approaches and Priorities for Growing and Aspiring India, Honour Lecture at the Institute Lecture Series, Excellence Awards Function, IIT Gandhinagar, December 2, 2014.
22. Frontiers of Casting Science and Technology, Keynote address at the VII National Foundry Conclave, Hotel Le Meridien, Coimbatore organized by Confederation of Indian Industry (CII) Southern Region; (Session 1: In Pursuit of knowledge), November 27, 2014.
23. National Energy Perspective, the Twelfth Annual NIAS-DST Training Programme on Multidisciplinary Perspectives on Science, Technology and Society (Core Theme: Energy Security and Management), NIAS, November 10, 2014.
24. Distributed Life Cycle Management; Energy and Water Sustainable Systems, Inaugural talk at the Workshop on Sustainable Technologies for Educational Campuses, ECE Department, Indian Institute of Science, Bangalore, November 7, 2014.
25. Energy Security and Sustainability: Approaches and Priorities for Growing and Aspiring India, Foundation Day Lecture at the Indian Institute of Technology Kanpur, November 2, 2014.
26. Presidential Address: Role of Indian National Academy of Engineering in Nation Building, Special Brainstorming Meeting on the theme “Weather and Climate” during Engineer’s Conclave-2014 (jointly organized by INAE & ISRO) at Bangalore during October 30, 2014.
27. Management of Water Challenges: Opportunities in Context of India, Plenary Lecture at the Second International Conference on Emerging Technologies for Clean Water, IIT Madras, Chennai, October 24, 2014.
28. Industry Distinguished Collaboration: National and Global Challenges, Realising Synergy of Interdisciplinarity to Grow Future Technologies, CEO and Senior Team of R&D Leaders during the Annual Review of Tata Consultancy Services, Corporate Office, Mumbai, October 21, 2014.
29. Management Actions Following Tsunami at Kalpakkam, Dr SS Ramaswamy Memorial Endowment Lecture, 31st DAE Safety and Occupational Health Professionals Meet, IGCAR, Kalpakkam, organized by Atomic Energy Regulatory Board, October 15, 2014.
30. Science and Technology in India: Demography, Diversity and Demands, Scholars of San-diego University, USA, 2014, PSG Institute of Management, Coimbatore October 10, 2014.
31. Energy Security and Sustainability: Approaches and Priorities for Growing and Aspiring India, Plenary



Lecture at the Forty-Seventh Engineer's Day Celebration to commemorate 154th birth anniversary of Dr Sir M Visvesvaraya in The Institution of Engineers (India), Karnataka State Centre, Bangalore, September 15, 2014.

32. A Perspective on S&T Frontiers, Standardization Efforts and Management of National GIS, Consultation Meeting on Standards and Foundation Dataset for National GIS, NIAS, September 11, 2014.
33. Gender Synergy: Growing Young Women Leaders in Science and Technology, Inaugural Address at the International Training Programme on "Leadership and Career Development for Women Scientists and Technologists", NIAS, September 8, 2014.

Memberships

1. President, CAETS, International Council of Academies of Engineering and Technological Sciences, Inc., US (2015 onwards).
2. Chairman, Programme Advisory Committee (PAC), Materials and Engineering Sciences/Materials, Engineering Science and Technology of Energy Systems, Department of Science and Technology (2015 onwards).
3. Chairman, Research Council, Gas Turbine Research Establishment (GTRE), Government of India, Ministry of Defence, DRDO (2015 onwards).
4. Chairman, Expert Committee for Review of Commission Criticality and Operation of Prototype Fast Breeder Reactor (500 Mwe), BHAVINI, Government of India (2015 onwards).
5. Member, Advisory Board, VAAK-Virtual Academy of Ancient Knowledge Systems, Samskriti Foundation, Mysore, 2015 onwards.
6. Co-Chairperson, Senior Selection Committees, Recruitment and Assessment Centre, DRDO, Govt. of India, Ministry of Defence, 2015 onwards.
7. Member of the Editorial Board of the eminent Journal "Engineering", Chinese Academy of Engineering, 2015 onwards.
8. Member of Natural Sciences Sub Commission, Indian National Commission for cooperation with UNESCO (2014).
9. Member, Governing Council, Forum for Global Knowledge Sharing (2014-17).
10. Advisor, National Design and Research Forum, The Institution of Engineers, 2014.
11. Member, Technical Research Centre (TRC), JNCASR (2014 onwards).
12. Member, Advisory Panel, Manufacturing Today Magazine (April 2015 onwards).
13. Editorial Board of Defence Science Journal (2015-16).

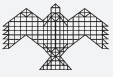
Honours and Awards

1. Prof TR Anantharaman Memorial Award, Metallurgy Day, Department of Metallurgical Engineering, IIT-Banaras Hindu University, Varanasi, 2015.
2. Lifetime Achievement Award, Indian Science Monitor & Indo Asian Foundation for Archaeological Research (in presence of Hon'ble Chief Justice MN Venkatachaliah), 2015.
3. Dr SS Ramaswamy Memorial Endowment AWARD, 31st DAE Safety and Occupational Health Professionals Meet, IGCAR, Kalpakkam, October 15, 2014.
4. Member, Search cum Recommendation Group of Queen Elizabeth Prize in Engineering, 2014.
5. Lifetime Achievement Award, Systems Society of India (SSI), November 5, 2014.
6. Eminent Engineering Award, Engineering Council of India, 2014.
7. Life Time Achievement Award of India, Eminent Metrologist of India (2014) World Metrology Day Metrological Society of India, CSIR-Centre for Machining Technology of India, May 20, 2014, Bangalore.

CLUSTER - SOCIAL TRANSFORMATIONS

Programmes

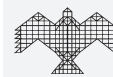
- Education
- Mobility and Transnationalism



HIGHLIGHTS

Education Programme

The Gifted Education Programme has developed and standardised tools for identifying the gifted children in science and maths (3 to 18 years) that suit Indian conditions. NIAS is providing mentoring support to the gifted children in partnership with Indian Institute of Science, Bangalore. For the first time Prof Anitha Kurup, a social scientist was a part of the India Delegation for the International Conference of Women in Physics organized in Waterloo, Canada in 2014. She co-authored the India Country Paper for 2014. Several of the key findings and recommendations were based on her research: Trained Scientific Women Power: How Much Are We Losing and Why? Prof Kurup was the only non-Vice Chancellor delegate on the India Team of the South Asian women in Leadership series organized by the British Council in New Delhi in January 2015. The theme was women and Leadership: The Absent Revolution.



EDUCATION PROGRAMME

Introduction

The Education Programme has been active in the areas of educational research, teaching, advocacy and outreach. Working on all levels of education and interacting with different stakeholders, we have been involved in identifying trends, reviewing schemes, drafting reports and collaborating around issues involving meaningful, viable visions of education. The four new thrust areas identified by the programme are (1) Learning metrics for the education of gifted students (2) Women in the STEM disciplines (3) Quality education for the marginalized communities [seasonal migrants and Adivasis] and (4) Vocational Education. Serious engagement with each of the thrust areas will involve conducting reviews of key educational policies, bringing together institutional representatives/educationists to partake in innovative research, teaching, training and facilitating conversations between policy-makers and key stakeholders in the education field. We are confident that the multi-pronged approach including trans-disciplinary research, advocacy, curriculum development and teaching will lead to a change in pedagogic and instructional practices. Our long term goal is to be recognized as a centre of excellence in educational research and a nodal agency that can address the multiple complex issues in education in the country.

Research Activities

Dr Shivali Tukdeo along with Prof Carol Upadhy organized a national workshop on Mobilising India: Skills, Livelihoods and Migration. She has developed and submitted the proposal to several agencies.

Outreach

NIAS has been identified by the MHRD along with other IITs to be part of the prestigious Ishaan Vikas-Udhan Programme initiated by the Prime Minister to nurture talent among the children from the North eastern state. For more details visit <http://www.iitg.ac.in/ivau/>

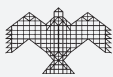
NIAS has developed a full-fledged proposal for establishing a National programme on Gifted Education anchored at NIAS. Several proposals and presentations are made to potential agencies in the government and corporate sector seeking for financial assistance. The NIAS model for identification of the gifted children in Maths and Science is available for interested state governments, Kendriya Vidhyalaya, Navodaya schools, other private educational



Prof Anitha Kurup and Dr Swatee Bapat with the participants.



Prof Anitha Kurup speaking to the participants.



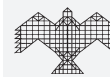
institutional networks. For more on the gifted Education programme please visit www.prodigy.net.in

Prof Anitha Kurup organised two workshops for senior women scientists in the country. The first one was a one week workshop for Women in Leadership developed and organised in collaboration with DST, IUSSTF and COACH (a US based organization). The second was a one week workshop that focused on both scientific achievements of women scientists along with key reflections of their journey as a women Science and Technology professional. Both the training organized along with the long term research interest in women in the STEM disciplines, NIAS has submitted a proposal for the establishment of a centre for excellence of Women in Science and Engineering, India (WiSE-India) at NIAS.

Prof Anitha Kurup is Member, Adhoc Task Force Expert Group, School Education, Higher Education, for the RFD, Education Department, Government of Karnataka, India (2012- till date).



TTW Pune Group Photo.



Members of the Education Programme



Anitha Kurup, *Anchor*

Shivali Tukdeo

Doctoral Students: R Maithreyi, Chetan B Singai, Anupama Mahajan, Savitha Suresh Babu

Research Associate: Jinna Bordoloi (*till June 2014*)

Research Assistant: Ajay Chandra

Anitha Kurup

Professor

School of Social
Sciences

Room No. S 05

Tel: 080-2218 5144

Fax: 080-2218 5028

Email: bkanitha@
gmail.com

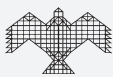
Joined NIAS on: January 2, 1995

Major Research Contribution for the Academic Year

Development of a three stage model for the identification of gifted children in India, based on extensive fieldwork and validated for the rural and urban population of India in the age group 3-12 years; Teacher training workshop to equip teachers with skills necessary to identify gifted children is carried out and over 100 teachers have been trained in Bangalore, Tumkur, Kochi, Hyderabad and Pune; development of curriculum and video class for gifted and talented education for teacher educators as part of the revised D.Ed. curriculum of the Karnataka state. During the last year, NIAS developed a Mentor- Mentee network; and a Parents network of the gifted children. The website of National Association of Gifted Education-India – PRODIGY- Promoting the Gifted Young in India is launched and can be reached on www.prodigy.net.in

Lectures

1. Leading Academic Work through Collegiality in a National Seminar on Leadership: Leading desirable changes in Higher Education for Higher Educational Leaders, March 12, 2015.
2. Policy directions to retain talent of women in the STEM disciplines in a panel on Gender Discrimination in Science as part of the Women Science Congress, University of Mumbai, January 5, 2015.
3. Review of Efforts to address gender in science education in a roundtable discussion on Science Education for Diversity and inclusion organized by Sociology Department, University of Mumbai, January 4, 2015.
4. Chaired a session on Trade Environment and Sustainable Development in the International Seminar (jointly organised with the Sichuan Academy of Social Sciences (SASS), Chengdu, China) on Green Economy and Sustainable Development at ISEC, Bangalore. This seminar is November 6, 2014.
5. Presented the key findings related to Women in Science for the High Power Committee on Status of Women to review the draft chapter on Higher education organized by HPCW at New Delhi, November 3, 2014.
6. Women Scientists and Engineers in India and the US: Impressions from the Field, ICWIP Conference, Waterloo, Canada, August 7, 2014.
7. Design and Sustainability Well Being and Empowerment Through a Gender Lens for the Indo-Dutch International Conference on Design for Sustainability Well Being and Empowerment, Institute for Social and Economic Change, Bangalore, June 12, 2014.
8. Academic Challenges and Leadership in Higher Education for Workshop on Effective Management of Xavier Board Colleges organized by Xavier Board in collaboration with Christ University, Bangalore, May 20, 2014.



Academic Courses

1. Gender Studies in Foundation Course.
2. Two Credit Introductory Course in Gifted Education.
3. Three credit course in Core Course in Social Sciences coordinated with Dr Anshuman Behera. Taught Education and Gender: Emerging issues in the disciplines.
4. Qualitative Methods in Research Methodology Course.

Training Courses

Coordinated the International Training Programme on Leadership and Career Development for Women Scientists and Technologists, A NIAS-DST-IUSSTF –COACH, between September 8 and 12, 2014

Coordinated the Ishan Vikas-Udhaan Programme for the Gifted Children in STEM from the 6 semester engineering students for 6 days between December 22 and 27, 2014.

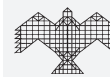
Coordinated The Fourth NIAS-DST Training Programme for Women Scientists (Under DISHA Scheme) Science for Progress in India: Innovations in Technologies between February 23 and 27, 2015.

Awards and Memberships

1. Member of Board of Governors of the Institute for Social and Economic Change Bangalore [<http://www.isec.ac.in/>] for a period of 3 years starting 2013.
2. Member, Academic Council, Christ University, Bangalore.
3. Member, Academic Council, Bhagat Phool Singh Mahila Vishwavidyalaya, Sonapat, Haryana.
4. Expert, School Education, Higher Education for RFD Framework, Government of Karnataka.
5. Core Member, Ishaaan Vikas Programme, MHRD, Government of India.

Other Information

Guide to Dr Dhanawanthi Nayak on Mimesis in Indian Art and Culture: Implications for Education. Doctoral Degree Awarded in 2015 from Manipal University.



Shivali Tukdeo
Assistant Professor
School of Social
Sciences

Room No. S 12
Tel: 080-2218 5133
Fax: 080-2218 5028
Email: tukdeo@
gmail.com

Joined NIAS on: March 10, 2010

Major Research Contribution for the Academic Year

Part of the research in the year 2014 was continuation of earlier work regarding exclusion, access and education policy and part of it emerged out of new interests – i.e. skill development, new employment avenues and education. My paper this year in the journal, 'Policy Futures in Education' compares Right to Education (RTE) discourse with that of the Foreign Institutions Entry and Operations Bill.

Lectures

1. Indian Higher Education as a Pedagogic Project, Keynote Speech, Enabling Pedagogies Conference, Shiv Nadar University, Greater Noida, March 27, 2015.
2. Social Sciences and New Pedagogies. Christ University, Bangalore, October 16, 2014.
3. Education and Marginalisation. Environment Resource Group, Bangalore, September 9, 2014.

Academic Courses

Teaching

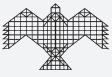
1. Perspectives in Education Research (offered in 2014 monsoon semester): Designed as a broad introduction to the field of education research, the course began with locating education as a discipline of research, teaching and scholarship and the tenets that are central to these endeavours. The course was structured around intellectual and institutional histories of modern disciplines, connections between theory and practice, and included some of the central readings on educational issues in India.
2. Sociology of Education (offered in 2015 winter): Designed as a reading course for the first year students in the education programme, this course offered an introduction to sociology of education. Part of the course focused on developing research projects and doctoral proposals.

Coordination

1. Research Methodology (Winter 2014)
2. Foundations Course (Monsoon 2014)

Memberships

1. Member, board of studies, School of Rural Management, Indian Institute of Health Management and Research, Jaipur.
2. Member, Board of studies, Jawaharlal Nehru Technological University, Hyderabad.



Malavika Kapur
Visiting Professor
School of Humanities

Room No. F 05
Tel: 080-2218 5091
Fax: 080-2218 5028
Email:
malavikakapur@
yahoo.co.in

Joined NIAS on: May 1, 2003

Major Research Contribution for the Academic Year

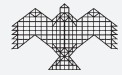
Two on-going outreach programmes: One is running a Free Child Guidance Centre in Bangalore, every Saturday afternoons offering services to around 300 children and the other one being promotion of creativity and enhancing scholastic skills through play way method and providing material for the intervention throughout the academic year for tribal primary school children in HD Kote for about 150 children in three schools.

Lectures

1. Invited lecture on Child and Adolescent Community Mental Health, JSS Medical College Hospital, JSS University, Mysore, January 5, 2015.
2. Child Development and Mental Health, Mahrashi Vidya Mandir, Sipcot, Hosur, January 2, 2015.
3. Inaugural address on Current Practices in School Guidance Programme, Regional Institute of Education, Mysore, October 9, 2014.
4. Child Ayurveda, Neurophysiology Department, NIMHANS, Bangalore, August 22, 2014.
5. Child Development and Mental Health, BGS School, Bangalore, May 17, 2014.
6. Child Development, Shikshana Shibira, Hindu Seva Prathisthana, Bangalore, May 12, 2014.
7. Lecture on Insights from Kashyapa Samhita, Ananda, Bangalore, May 3, 2014.

Outreach

1. SAP Meeting of UGC GRS on a project on Disabilities, Department of Psychology, Calcutta University, Kolkata, November 12, 2014.
2. Invited as the judge for the Hackathon Competition for Developmental Disabilities, Bangalore, November 9, 2014.
3. Invited to be the expert on Selection Committee of the Professor of Psychology under CAS of the UGC, Tata Institute of Social Sciences, Mumbai, September 11, 2014.



PROVINCIAL GLOBALISATION: THE IMPACT OF REVERSE TRANSNATIONAL FLOWS IN INDIA'S REGIONAL TOWNS

(TRANSNATIONAL AND MOBILITY STUDIES)

Introduction

Provincial Globalisation ('ProGlo') is a five-year international collaborative research programme of NIAS with the Amsterdam Institute for Social Science Research (AISSR), University of Amsterdam (UvA), funded by the Integrated Programme of WOTRO Science for Global Development, Netherlands. The programme is co-directed by Prof Carol Upadhy and Prof Mario Rutten (University of Amsterdam). The aim of the programme is to explore the relationship between Overseas Indians and Indian development at the regional level across three states of India, by tracking how resources such as remittances, philanthropic contributions, and NRI investments are shaping processes of socio-economic development in India. ProGlo draws on expertise and perspectives from several disciplines and interdisciplinary areas within the social sciences – sociology, anthropology, economics, geography, political science, migration studies, and urban studies.

The programme consists of several interlinked research projects, doctoral and postdoctoral. Research is being carried out in three regions: central Gujarat, coastal Andhra Pradesh and coastal Karnataka. The Ph.D. projects are intensive case studies while the postdoctoral projects provide macro- and meso-level studies of transnational linkages and flows at the regional, state, and national levels. Taken together, these studies have mapped a range of resource flows from Overseas Indians, including household level remittances, financial investments, and philanthropy, and will provide a comparative regional level perspective on migration and development in India.

Research Activities

The programme began in January 2010 and was to be completed at the end of 2015. We have received an extension until October 2015 to enable us to complete the planned outputs and dissemination activities.

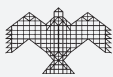
During the last six months we have made substantial progress in fulfilling the objectives of the programme. The three Ph.D. projects are on track for completion in 2015, and the postdoctoral fellows as well as the two co-directors have completed their individual projects and are in the process of writing up the outputs. During the past year, two Research Reports, one ProGlo Working Paper, and one journal article were brought out by team members. With the winding up of the research activities this year, several publications are in the pipeline, including an edited volume with chapters by all team members.

The Provincial Globalisation programme is poised to make significant contributions to the growing international literature on migration, globalisation, and transnationalism, by exploring in depth the diverse connections that the Indian diaspora maintain with their home towns and regions. The component research projects have documented in detail the diversity of flows of financial resources and 'social remittances' between Overseas Indians and their home regions, and the complex consequences of these flows for local development. The outputs will contribute to national and international policy debates on the links between migration and development and the relationship of Overseas Indians with India.

Outreach

The findings of the programme have been widely disseminated through published journal articles, public lectures and conference participation by team members, the ProGlo Working Paper and Research Report series, and a programme website and Facebook page.

A geo-visualisation project on migration and remittance patterns in India has been completed. The web pages, which will be hosted on the ProGlo website, will display quantitative and qualitative data using maps and interactive visual displays for wider dissemination of the research outcomes.



Members of the Provincial Globalisation Programme



Carol Upadhyia
Mario Rutten (AISSR, University of Amsterdam)
Doctoral Students: Sanam Roohi, Sulagna Mustafi, Sanderien Verstappen (AISSR)
Consultant Researchers: Anju Christine Lingham, Keya Bardalai

Carol Upadhyia

Professor
School of Social
Sciences

Room No. S 07
Tel: 080-2218 5141
Fax: 080-2218 5028
Email: carol.
upadhyia@gmail.com

Joined NIAS on: September 1, 2003

Major Research Contribution for the Academic Year

The Provincial Globalisation research programme, co-directed by Prof Carol Upadhyia, is well on the way to making significant contributions to the literatures on migration, globalisation, and transnationalism. The programme's unique focus on regional diasporas and the resources they send back to their home regions has brought to light the multi-dimensional and multi-directional nature of migrant remittances and their complex outcomes for economic and social development. These diverse connections, flows, and effects of migration and diasporic involvements have been documented in detail by the component projects across three regions of India.

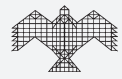
Prof Upadhyia's individual research projects in Coastal Andhra Pradesh have focused on social transformations in the rural and urban landscapes, especially in patterns of education, landholding, and investment, in response to international migration from the region. The research findings have been disseminated through conferences and lectures and are in the process of publication.

Lectures and Conferences

1. Engineering Mobility? Education, Social Aspirations, and (In)equalities in Coastal Andhra Pradesh, presentation for Educational Records Research Unit, School of Social Sciences, JNU, March 19, 2015.
2. Speculating on Development: Transnational Circuits of Accumulation in Coastal Andhra, Faculty Seminar, Centre for the Study of Social Systems, Jawaharlal Nehru University, March 17, 2015.
3. Quality and Inequality: Engineering Education, IT Skills, and the Problem of 'Employability', Conference on Skill Development and Social Transformation in India, Oxford Department of International Development, January 12 and 13, 2015.
4. Provincial Globalisation: Remapping the Region in India, lecture for course on Production of Knowledge: Cultural Politics of Spatiality, Centre for Contemporary Studies, Indian Institute of Science, November 22, 2014.
5. Valuing Real Estate: Speculation in Land and Urban Transitions in South India, presentation at NIAS-Exeter Interdisciplinary Symposium on Intangible Histories, College of Humanities, University of Exeter, September 19, 2014.

Awards and Memberships

1. Visiting Professor, Centre for the Study of Social Systems, JNU, March 16 to 21, 2015.
2. Member (representing NIAS), Governing Council, Centre for Research and Education for Social Transformation (CREST), Kerala.



3. Honorary University Fellow, School of Humanities, University of Exeter, UK, 2012 to present.
4. Member, Editorial Advisory Board, Contributions to Indian Sociology.

Course

During the first term of 2014-15, I designed and taught a new seminar course entitled 'The Anthropology of Circulation and Value'. The course explored how value is socially created, mobilised and transformed through different modes of circulation. It addressed several topics that are usually the province of other disciplines – markets, finance, property, credit and debt, risk, and infrastructure – from an anthropological perspective. About ten students from NIAS and other institutions attended the course.

Other Research Project

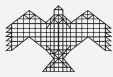
The 'Great Transformation': Urban Land Markets, Livelihoods and the Growing Ecological Crisis in Asia's Cities

The 'Great Transformation' is a cross-country comparative research project being implemented by Prof Carol Upadhyia in collaboration with Profs. Michael Goldman (Sociology) and Vinay Gidwani (Geography) of the University of Minnesota, funded by the Interdisciplinary Center for the Study of Global Change (ICGC), University of Minnesota, Twin Cities (USA). The NIAS part of the project focuses on Bangalore, while a parallel project is being conducted in Jakarta, Indonesia. The aim of the study is to map the 'social life of land' in globalising cities of Asia, especially changes in land use and tenure, social ecologies, livelihoods, and environmental impacts on the urban peripheries.

During the last year, the fieldwork in five sites in North and South Bangalore was completed and the final project report is under preparation.

Outreach

Prof Carol Upadhyia co-organised, with Dr Shivali Tukdeo, a National Level Consultation on Skill Development, Employment and Mobility in India, at NIAS, December 22, 2014. The workshop was organised to help us conceptualise a new research programme on skill development at NIAS.



INVITED VISITING CHAIR PROFESSORS

SCHOOL OF HUMANITIES



Sisir Roy

TV Raman Pai Chair Visiting Professor
Email: sisir.sisirroy@gmail.com

Lecture

Invited talk at National Conference: Advances in Consciousness Studies at Kaivalyadham Yoga Institute, Lonavala, November 28-29, 2014.

SCHOOL OF NATURAL AND ENGINEERING SCIENCES



Pallava Bagla

TV Raman Pai Chair Visiting Professor

Period: March 14, 2014 to May 13, 2014 and June 16, 2014 to August 12, 2014

Email: pallava.bagla@gmail.com

SCHOOL OF SOCIAL SCIENCES

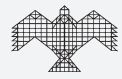


Ashutosh Varshney

Raja Ramanna Chair Visiting Professor

Period: June 27, 2014 to August 26, 2014

Email: ashutosh_varshney@brown.edu



NIAS TRAINING PROGRAMMES

Senior Executives Programme

The 29th Annual Programme for Senior Executives was held from January 19 to 24, 2015. The theme of the programme was 'Leading India to Excellence'. The participants included senior executives from various government organisations as well as from private industry. The programme included lectures and discussions on a gamut of subjects, ranging from rural affairs, medicine to defence issues. Mr K Venkataramanan, CEO and MD of Larsen and Toubro Limited set the tone of the programme with his inspiring inaugural address. The intense morning sessions were addressed by well-known personalities including Dr Amrita Patel, Mr Krishna Byre Gowda, and Mr SV Ranganath, all of whom brought in their valuable experience and learnings into the discussions. The evening public lectures by leading lights such as Justice N Santosh Hegde and Dr MS Valiathan were extremely well received by the participants as well as by the members of the citizenry of Bengaluru.

A highlight of the programme this year was the *Yakshagana* performance by the Sahyadri Mahila Yakshagana Samootha, an association of women that has created history by storming a traditionally male bastion. Ms Arundhati Nag, a prominent south Indian polyglot film and stage personality, weaved the magic of theatre into her public lecture. The field visit, during this programme, was to the ISRO Satellite Manufacturing Centre in Bengaluru.

The following comment by one of the participants summarises well the experience that they had in the programme: "A highly effective programme, which impacts all the participants, who are at the focal point of development and responsibilities. The NIAS platform provides diversified information to the participants to make them complete in their responsibilities as senior executives and to do justice to their duties."

The Programme was coordinated by Prof Anindya Sinha and Dr Chidambaran G Iyer.

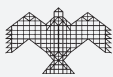
Ms V Girija assisted in the coordination of the Programme.



Mr K Venkataramanan



Participants of the 29th NIAS Programme for Senior Executives on "Leading India to Excellence" with the Director and the Faculty of NIAS.



NIAS-DST Training Programme on Science for Progress in India: Innovations in Technologies

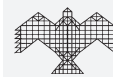
The fourth NIAS-DST Training Programme on Science for Progress in India: Innovations in Technologies was organized by NIAS during February 23 and 27, 2015. The programme was organized for senior women scientists drawn from reputed research and development laboratories and Science and Technology organisations across India. The objective of the programme was to provide an opportunity for senior women scientists to explore and acquaint with the current developments and innovations in science and technology in India. In the process of developing leadership among the senior scientists, they engage in debates and constructive dialogues that leads to social progress. The Programme was inaugurated by Prof Vijayalakshmi Ravindranath, Chairperson, Centre for Neuroscience, Indian Institute of Science, Bangalore and valedictory address was jointly delivered by Dr Tessy Thomas, Outstanding Scientist and Director Advanced Systems Laboratory, Defense Research and Development Organisation, Hyderabad and Prof Baldev Raj, Director, NIAS. The speakers included Prof Rohini Godbole, Prof Ajay K Sood, Prof S Chandrashekar, Prof Dipankar Banerjee, Prof Rohini Balakrishnan, Prof Shobhana Narasimhan, Dr Veena Srinivasan and Ms Chandrika Kaushik – all science leaders of India. As part of the programme, a Panel Discussion was scheduled on Policy against Sexual Harassment in the Workplace and Sexual harassment in academic institutions: Need for visibility and action. The Panelists on these topics were Prof V S Elizabeth, NLSUI, and Prof Chayanika Shah, Mumbai University.

The Programme was coordinated by Prof Anitha Kurup.

Ms Gayathri N Lokhande assisted in the coordination of the Programme.



Participants of the NIAS-DST Training Programme for Women Scientists on Science for Progress in India: Innovations in Technologies with the Director and the Faculty of NIAS.



NIAS-DST Training Programme on Policy for Science and Science for Policies

The NIAS-DST Training Programme for Directors and Senior Scientists, “Policy for Science and Science for Policies”, was held during December 15 to 19, 2014. The programme was inaugurated by Dr RB Grover, Director, Homi Bhabha National Institute, Homi Bhabha Chair Professor and Member of the Atomic Energy Commission on December 15, 2014. Prof Baldev Raj, Director, NIAS gave a valedictory address on December 19, 2014. The programme began with an introductory talk on “Changing Perspectives in the Indian Science Policy” by Dr PN Desai of Jawaharlal Nehru University, New Delhi. Dr B Jasani, King’s College, London gave a talk on “A Policy for Space Security”. This was followed by a talk on “India’s Mars Orbiter Mission and Space Policy” by Dr S Arunan, ISRO. Prof Malavika Kapur and Dr A Sharma spoke about Policies for Primary Education and Higher Education respectively. Energy and Climate Change Policy was addressed by Dr R Khosla and Dr PC Maithani gave a talk on the Renewable Energy Policy. Prof Anindya Sinha conducted a panel discussion on Policy for Wild Life Management. The programme also covered topics such as “Policy for Public Health”, “S&T Component in Foreign Policy” and “Evolving Policies for Cyber Security”.

As part of the programme, the participants had an opportunity to visit the ISRO Satellite Tracking Centre. A puppet show titled “Ashtavakra” by a Bangalore based group Dhaatu was organized for the participants.

The Programme was coordinated by Profs Rajaram Nagappa, Lalitha Sundaresan and Dr M Mayilvaganan.

Ms JN Sandhya assisted in the coordination of the Programme.



Participants of the NIAS-DST Training Programme on Policy for Science and Science for Policies with the Director and the Faculty of NIAS.



Multidisciplinary Perspectives on Science, Technology and Society

The Twelfth NIAS-DST Training Programme on Multidisciplinary Perspectives on Science, Technology and Society was organized from November 10 to 21, 2014 for senior scientists, technologists and administrators. The main theme of the programme was 'Energy Security and Management'. Twenty-seven participants including three women scientists drawn from various institutions, laboratories and government departments in the country attended the programme.

The Programme was inaugurated by Dr Kirit S Parikh, Chairman, Integrated Research and Action for Development, New Delhi who addressed the participants on the theme 'Energy and Development'. The valedictory address on 'Energy Efficiency and Conservation' was delivered by Dr Ajay Mathur, Director General, Bureau of Energy Efficiency, Ministry of Power, New Delhi. The speakers covered a wide range of topics on the main theme 'Energy Security and Management' included Prof Baldev Raj, Mr M Gopalakrishnan, Dr Anil Razdan, Prof Dilip R Ahuja, Dr Sudhir Vasudev, Prof Debabratha Das, Prof DP Sen Gupta, Dr TS Gopi Rethinaraj, Dr AR Upadhyaya, Prof Geetham Tiwari, Mr SK Chande, Prof Ramprasad Sengupta and Dr VK Agrawal. Other speakers in the context of science, technology and society included Prof VS Ramamurthy, Amb Saurabh Kumar, Prof Narender Pani, Prof Shreekanth Gupta, Prof J Srinivasan and Mr Nitin Pai.

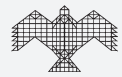
Two special evening lectures on the themes 'Climate Change and India' and '10th Raja Ramanna Memorial Lecture – Estimating India's Future Electricity Needs' were delivered by Mr Jairam Ramesh and Prof SP Sukhatme respectively.

Apart from the lecture sessions mentioned above, participants' shared their experience on the general theme of 'Crisis Management' in different sectors familiar to them both at the organizational and personal levels.

As part of the Programme, a visit to Central Power Research Institute, Bangalore relating to the theme was organized to learn about Research and Testing Facilities like 1200KV Testing Transformer, Impulse Voltage



Participants of the Twelfth NIAS-DST Training Programme on Multidisciplinary Perspectives on Science, Technology and Society with the Director and the Faculty of NIAS.



Generator, Impulse Current Generator, 400 KV Quadra Pole Insulator String under Pollution Test, Energy Meter, Power Transformer, Air Conditioner, Cable, Capacitors, Battery, LED, PV Module etc testing and an outdoor visit to Hassan and related historical places of Tourism were arranged and conducted by Mr P Srinivasa Aithal, Head, Administration, NIAS. A documentary film 'SWITCH' on energy future and transition was screened to the participants and a cultural programme on Hindustani Vocal Recital by Vidhwan J Mevundi and Team was arranged on the eve of the closure of the programme.

The Programme was coordinated by Dr TS Gopi Rethinaraj.

Ms Gayathri N Lokhande assisted in the coordination of the Programme.

One-week In-service Training Programme for All India Service Officers on Multidisciplinary Perspectives on Urban Development

A one-week in-service training programme for All India Service Officers for the year 2014-15 was conducted on the theme 'Multidisciplinary Perspectives on Urban Development' between October 13 and 17, 2014. The 24 participants in the training programme were middle to senior level All India Services officers from various government departments from different States of the country. The training programme was inaugurated by Prof KC Sivaramakrishnan, Honorary Research Professor, Centre for Policy Research, New Delhi.

The speakers included Dr Sai Balakrishnan, Prof Geetam Tiwari, Mr Kirtee Shah, Mr AS Bhal, Prof Partha Mukhopadhyay, Mr MR Jaishankar and Dr Gautam Bhan. The programme concluded with the valedictory address by Dr A Ravindra. There were four afternoon sessions on Case Study based group discussions.

The Programme was coordinated by Prof Narendar Pani.

Mr KS Rama Krishna assisted in the coordination of the Programme.



Participants of the In-service Training Programme for All India Service Officers on Multidisciplinary Perspectives on Urban Development with the Faculty of NIAS.



International Training Programme on Leadership and Career Development for Women Scientists and Technologists

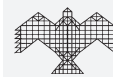
An International Training Workshop on Leadership and Career Development for Women Scientists and Technologists was organized by NIAS, DST and IUSSTF between 8 and 12 September 2015. The workshop was facilitated by representatives of COACH- an US based organization working towards creating women leaders in science and technology across the globe. The objective of the workshop was to provide information and necessary skills for the career development of the women scientists and engineers. In addition, the workshop aimed at creating a platform for mentoring for potential women science leaders. The key speakers in the workshop included Prof Geraldine Richmond, President Elect, American Association for the Advancement of Science; Prof Pushpalatha Murthy, Prof Laura Greene(All Coach Faculty). The Indian faculty included, Prof Vijayalakshmi Ravindranath, IISc. Bangalore; Ms Kumud Srinivasan, President, Intel, India; Prof Shobhana Narasimhan, JNCASR, Bangalore, Prof Rohini Godbole, IISc., Bangalore; Prof Anitha Kurup, NIAS, Bangalore among others. NIAS proposes to hold regional and state level workshops for women in the STEM disciplines as a long term commitment to train women leaders in science and technology.

The Workshop was coordinated by Prof Anitha Kurup and Dr Shivali Tukdeo.

Ms V Girija assisted in the coordination of the Programme.



Participants of the International Training Programme on Leadership and Career Development for Women Scientists and Technologists with the Director and the Faculty of NIAS.



NIAS DOCTORAL PROGRAMME

The doctoral programme at NIAS draws on and is shaped by the various research themes that have been part of the institute in recent years. The overall orientation of the Ph.D. programme is interdisciplinary research, which is carried out within the broad framework of three schools: Humanities, Social Sciences, and Natural Sciences and Engineering. The broad-based structure of the programme is in tune with the very focus with which the institute was formed. As spelled out in the mission statement of NIAS, the confluence of different schools of inquiry needs to be explored in the spirit of understanding the complex nature of contemporary problems. In particular, the institute is committed to public education, collective knowledge creation, civic engagements and mentoring junior scholars.

The doctoral programme was initiated at the Institute in 1999 with the signing of a Memorandum of Understanding with the Manipal Academy of Higher Education (MAHE), instituting a NIAS-MAHE Doctoral Programme. It was agreed at that time that students guided by NIAS faculty (who were recognised as guides by MAHE) would be allowed to register with MAHE and would follow its rules for the doctoral programme. NIAS had no financial responsibility for students given that most students were supported by faculty research grants. Under this arrangement, five students registered with MAHE between 1999 and 2004. The doctoral programme entered a second phase in the year 2004-05 when it was expanded and regularised on the basis of financial support received from the Indian Space Research Organisation, the Department of Science and Technology and the Ministry of Earth Sciences which allowed NIAS to offer fellowships.

NIAS does not directly grant degrees but has received recognition as a research centre from several universities, including Manipal University, University of Mysore, and the Indira Gandhi National Open University (IGNOU). Students register with one among these universities and carry out their research at NIAS. Students go through a year of mandatory course work, followed by supervised guidance for four years. Information on the rules, course requirements and regulations governing the doctoral programme is available in the Student Handbook, which is revised and updated annually.

A total of sixty four students have been part of NIAS doctoral programme since its inception and Twenty three students have successfully completed their Ph.D. as of March 2015. Thirty one have registered their Ph.D. and ten students are carrying out pre-registration process. As of March 2015, a total of forty-one students are enrolled in the programme — fourteen in the School of Humanities, fourteen in the School of Natural Sciences and thirteen in the School of Social Sciences.

A list of the students who have registered with a university and their dissertation topics is given below:

Doctoral Committee

Dr TS Gopi Rethinaraj,
Chairperson and Academic Head
Prof Sangeetha Menon, *Member*
Dr Shivali Tukdeo, *Member*
Dr M Mayilvaganan, *Member*
Dr Anshuman Behera, *Member*



SCHOOL OF HUMANITIES

Rolla Das, Cognitive Science

Understanding Communication through Semiotic Assemblies: A Study of Speech-Gesture Composites in Pragmatics

K Lakshmi, Psychology

Self and Well-Being: A Qualitative Approach with Focus on the Mahabharata (Thesis Submitted)

Hema Thakur, Ancient History and Archeology

Material Culture and Social Formations in Northeast Karnataka (c.300BCE-c.300 CE)

Naresh Keerthi, Cognitive Science

Cognitive Tropes – Beyond the Cognitive Metaphor

Samiksha Bajpai, Linguistics

A Cognitive Analysis of the Compound Verb in Hindi

Namitha A Kumar, Psychology

A Study of Subjectivity and Selfhood in the Context of Subjects with Physical Disabilities: A Theoretical Approach

HR Meera, Cognitive Science and Sanskrit

Language Game and the Role of Suggestion (Vyarigya) Therein

NS Nalini, Economics

First Nature and Urbanisation Terrain and Urban Development of Bangalore, 1971-2011

Nishant Seth, Cognitive Science

The Phenomenology of Perceptual Plasticity: What It Is Like To Perceive Through Novel Stimuli.

Shatarupa Bhattacharyya, Economics

Interaction between Development and Festival: Durga, Kali and Bonbibi-Dakhinray in the Sundarbans

Sumitra S, Archaeology

Creative Collectives: A case study of collaborative practices in Karnataka

Dr Shankar R, Psychology

Temporary registration completed

KN Venkatesh

Yet to register

Krupa Rajangam

In the process of completing course work

SCHOOL OF NATURAL AND ENGINEERING SCIENCES

PS Sajini Anand, Mathematics

Nonlinear, Multidimensional Transformations and Its Applications to Signal Processing (Waiting for Award Notification)

Neesha Dutt, Energy and Environment

Urban Greens: Ecological Impacts and Socio-economic Drivers of Turfgrass Ecosystems

Asmita Sengupta, Behavioral Ecology

Seed Dispersal by Rhesus Macaque (Macaca Mulatta)

Shreejata Gupta, Behavioral Ecology

Development of Integrated Gestural and Vocal Communication Systems in Wild Bonnet Macaques Macaca Radiata

Priya Gupta, Environmental Science

Interface of Exclusionary Conservation Policies and Rights of Communities: Case Study of a Protected Area

Priyam Laxmi Borgohain, Energy and Environment

Downstream Environmental and Socio-economic Impacts of Hydropower Projects in Northeast India – Case Studies of Ranganadi and Lower Subansiri Hydroelectric Projects

Sanket Kulkarni, International Studies

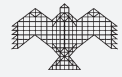
India's Energy Security Concerns and Policy Formulation: A Case Study of Cross-Border natural Gas Pipelines

Nimisha Agarwal, Environmental Science

Assessment of Farmers' Perception of Climate Change and Local Adaptation Strategies in Uttar Pradesh.

Nishant Srinivasaiah, Behavioral Ecology

Grabbing the Bull by the Tusks: Behavioural Ecology of the Male Asian Elephant in a Human-Dominated Landscape



Shaurabh Anand, Behavioral Ecology
Patterns and Determinants of Human-rhesus Macaque Conflict

Ranjith V
In the process of completing course work

Murali Murti, B R Guruprasad and Mary Abraham
In the process of registration

SCHOOL OF SOCIAL SCIENCES

Sowjanya R Peddi, Social Anthropology
Food Retail Practices in Bangalore: A Comparative Anthropological Study

Chetan B Singai, Education
Higher Education and University Governance in India: A Case Study of Two Universities in Karnataka

KG Asha, Economics
Dynamics of Labour Relations across Different Circuits of Globalization (Thesis Submitted)

Rashmi M, Media
Mobile Phones and Changing Media Consumption Practices in Bangalore

R Maithreyi, Education
Reconceptualising Life Skills Education: A Critical Analysis of Ideas around Childhood, 'Risk' and 'Success'

Anamika Ajay, Economics
The Impact of Development on Social Conflicts: Case Studies of Intra-Family and Inter-Group Strife in Two Villages in Kerala

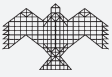
Sulagna Mustafi, Anthropology
Transnationalism and Muslim Identity in Dakshina Kannada, India

Ankita Rathi, Economics
Transition from Village to Town: A Study of Two Settlements in Punjab

Sanam Roohi, Anthropology
Provincial Diaspora, Philanthropy and Social Domination: A Study of Coastal Andhra Pradesh, India

Savitha Suresh Babu, Keya Bardalai and Anupama Mahajan
In the process of completing course work

Soundarya Iyer, Economics
Dynamics of Rural Transformation in Karnataka: A View from Three Villages



INTANGIBLE HISTORIES: A COLLABORATIVE RESEARCH PROGRAMME IN ARCHAEOLOGY AND DRAMA BETWEEN NIAS AND EXETER UNIVERSITY, UK

The UKIERI-II supported NIAS-Exeter Split-Site PhD initiative, with an MoU with Exeter University, imaginatively brings together the disciplines of archaeology, natural sciences, performance studies, sociology, philosophy, economic history, urban studies, cognitive studies with the aim of throwing more light on aspects of tangible and intangible heritage. In a truly inter-disciplinary endeavour, this programme also has participation from faculty members cutting across schools.

NIAS and the University of Exeter in UK were awarded funding for two projects, to run simultaneously from 2011 to July 2105. These projects relate to the development of two closely associated split-site doctoral programmes, one in areas relating to Archaeology (coordinated by Sharada Srinivasan in NIAS) and the other relating to Drama (coordinated by Anindya Sinha). Moreover, as the programmes in Archaeology and Drama have both been envisaged as being inter-disciplinary in nature and significantly concerned with our intangible heritage, the two technically independent projects have, in practice, been brought together under an over-arching theme of *Intangible Histories*. Apart from the core strengths of each programme in Archaeology and Drama respectively, the programmes have also sought to engage with the disciplines of philosophy, cognitive studies, social sciences and urban studies in order to create new pedagogical approaches and academic opportunities.

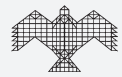
Coordinators

Sharada Srinivasan
Anindya Sinha
Smriti Haricharan*

Significant progress has been towards the development of the programme with a number of key milestones having been met with respect to staff exchanges and the selection of nearly a dozen doctoral students, registered at Exeter University but who work under the joint supervision of faculty from NIAS and Exeter University.

In April 2014, the upgrade interviews of the first cohort of students took place along with the students' presentations and the selections of one student each in archaeology and drama for the third cohort. A successful 'Material Culture' Workshop was also held from 11th to 14th April as a collaboration between Jain University, NIAS, ASI and Exeter University with presentations by NIAS-Exeter students. In late Sept 2014, NIAS faculty visited Exeter University for the purpose for joint supervisory meetings including Prof Sharada Srinivasan, Prof Anindya Sinha, Dr Smriti Haricharan, Prof Carol Upadhyay and Prof Narendar Pani. A major seminar on 'Intangible Histories' was held at Exeter University where presentations were made by both NIAS and faculty on diverse but interlinked facets of their research. NIAS-Exeter student Sabina Sen gave a fine Odissi performance on both occasions. Another interesting performative highlight was the song of blacksmiths from Sri Lanka rendered by NIAS-Exeter student Kausalya Gunasena at the Exeter seminar.

* Until August 8, 2014

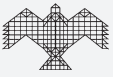


The students in Archaeology from the first cohort include Tathagatha Neogi, Brice Girbal who will be working on various aspects of the ethno-archaeological and archaeo-metallurgical studies in the Telengana region of Andhra Pradesh under the joint supervision of Prof Sharada Srinivasan (NIAS) and Dr Gillian Juleff (Exeter) and Alice Lowson, working on portable antiquities in the Chennai area under the joint supervision of Dr Smriti Haricharan (NIAS) and Dr Gill Juleff (Exeter). From the second cohort the students selected were Debanjan Mitra working on archaeo-cognition and stone tools working with Prof Anindya Sinha (NIAS) and Prof Bruce Bradley (Exeter) and Jemma Singleton working on rock art in Karnataka with Prof Sharada Srinivasan (NIAS) and Dr Linda Hurcombe (Exeter). The candidate selected in 2014 in Archaeology is Kausalya Gunasena to work with Prof Sharada Srinivasan (NIAS) and Dr Gill Juleff (Exeter) on personal adornment in Sri Lanka and South India in the early historic period.

The three first-cohort students in Drama include Sabina Sweta Sen, who will work on the semiosis of senses in contemporary and historical Odissi practice under the supervision of Prof Sangeetha Menon (NIAS) and Dr Jerri Daboo (Exeter), Sharanya Murali on performing psycho-geographies of exile in post-Partition Delhi under Prof Carol Upadhyia (NIAS) and Dr Stephen Hodge (Exeter), and Swati Arora on urban intervention as participatory praxis during performances in public spaces in Delhi under Prof Narendar Pani (NIAS) and Dr Catherine Turner (Exeter). The second cohort includes Rebecca Savory working on flash mobs as an urban Indian phenomenon with Dr Shivali Tukdeo (NIAS) and Dr Jerri Daboo. Rosie Bristowe selected in 2014 is supervised by Prof Carol Upadhyia (NIAS) and Dr Katherine Newey (Exeter) on exhibitions and identities. A fresh round of applications has been sent out for one studentship each in Archaeology and Drama in 2015.



Joint NIAS-Exeter Seminar at Exeter University on Intangible Histories, September 2014.



NIAS ANNUAL MEMORIAL LECTURES

Three annual memorial lectures were organised – Dr Raja Ramanna Memorial Lecture, Prof CV Sundaram Memorial Lecture and Prof RL Kapur Oration.

SECOND CV SUNDARAM MEMORIAL LECTURE



Prof Ian Glover

*Emeritus Reader in Southeast Asian Archaeology,
Institute of Archaeology, University College London
Decorated Bronze Bowls from Thailand and South
Asian Connections in the Late First Millennium BCE
March 6, 2015*

TENTH RAJA RAMANNA MEMORIAL LECTURE



Prof S P Sukhatme

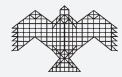
*Professor Emeritus, Indian Institute of Technology
Bombay
Estimating India's Future Electricity Needs
November 13, 2014*

SECOND RL KAPUR ORATION



Prof Girishwar Misra

*Vice Chancellor, Mahatma Gandhi Antarrashtriya
Hindi Vishvavidyalaya, Wardha, Maharashtra
Culture and Self: Some Emerging Concerns
June 13, 2014*



NIAS PUBLIC PROGRAMMES

Mr Richie Ahuja

Asia Regional Director, Environmental Defence Fund, New Delhi
Low Carbon Rural Development – A Pathway for Climate Resilience and Adaptation
March 31, 2015

Mr Jean-Marc Séré-Charlet

Minister Counsellor, The French Embassy, New Delhi
Climate Negotiations and the Paris Conference (COP-21): What is at Stake? What are the Perspectives?
March 26, 2015

Prof James Avis

University of Huddersfield, UK
It's All About Work: New Times, Post-Fordism and Vocational Pedagogy
March 19, 2015

Prof Bharat H Desai

Chairman, Center for International Legal Studies, Jawaharlal Nehru University, New Delhi
Environment and Development a Predicament
March 11, 2015

Ms Varsha Joshi

Ministry of New and Renewable Sources of Energy, Government of India, New Delhi
Release of the Report: Wind and Solar Energy for Meeting Karnataka's Future Electricity Demand
March 5, 2015
(In collaboration with The Power System Corporation Limited)

Folkland Artists

Kasargode, Kerala
Shinkarimelam (Drum Percussion) and Theyyam Performance
February 16, 2015

Dr Radhakrishnan Delhibabu

Artificial Consciousness Lab, Kazan Federal University, Kazan, Russia
Cognitive Modeling Lab, IT University Innopolis, Kazan, Russia
Dynamics of Belief with Decision Making Problems
January 30, 2015

Ms Arundhati Nag

Founder and Managing Trustee, Sanket Trust, Bangalore
Creativity and Innovation in Indian Theatre: The Ranga Shankara Story
January 22, 2015



Folkland Artists



Dr Radhakrishnan Delhibabu



Ms Arundhati Nag



Sahyadri Mahila Yakshagana Samooha

Prof Raja V Ramani

Emeritus Professor of Mining Engineering and Emeritus, George H Jr. and Anne B Deike Chair in Mining Engineering, The Pennsylvania State University, USA
Mining, Environment and Sustainable Development
January 22, 2015

Sahyadri Mahila Yakshagana Samooha

Sahyadri Colony, Sirasi, Uttara Kannada
Yakshagana – Kamsavadhe
January 21, 2015



Justice N Santosh Hegde

Justice N Santosh Hegde

Former Justice of the Supreme Court of India, Former Solicitor General of India and Former Lokayukta Chief of the State of Karnataka
Fall in Moral Values and Consequences Thereof
January 19, 2015

Prof Seeram Ramakrishna

Professor, National University of Singapore, and Chair, University Excellence Care Project
International Mobility Patterns of Scientists and Their Influence on Research Culture, Performance and Visibility
January 5, 2015



Prof Sisir Roy

Dhaatu

Bangalore
Ashtavakra – Puppet Show
December 18, 2014

Mr Jayateerth Mevundi

Hubli-Dharwad
Hindustani Classical Vocal
November 20, 2014

Prof Sisir Roy

TV Raman Pai Chair Visiting Professor, IAS
Quantum Theory and Consciousness
November 14, 2014

Prof Mike Gregory

University of Cambridge
Changing Patterns of Manufacturing – Implications for Education, Research and Practice
November 11, 2014



Mr Jairam Ramesh

Mr Jairam Ramesh

Member of Parliament, Rajya Sabha and Senior Visiting Fellow, The Hindu Centre
Climate Change and India's Energy Policy
November 10, 2014

Dr Prathibha Karanth

Program Director and Managing Trustee, Com DEALL Trust
Mind or Body – The Key to the Self and the Other in Autism
October 31, 2014



Dr Prathibha Karanth

Dr K Kasturirangan

Formerly Member, Planning Commission, Government of India and
Member of Parliament (Rajya Sabha)
Indian Space Programme-Societal Dimensions
October 27, 2014

Vidwan Bangalore Manjunath

Bangalore
Carnatic Classical Saxophone Recital
October 15, 2014



Vidwan Bangalore Manjunath

Ambassador Husain Haqqani

Former Pakistani Ambassador to United States (2008-2011)
India-Pakistan Relations and the Way Ahead
July 31, 2014

Mr Naresh Keerthi

Doctoral Scholar, NIAS
The Cognitive Turn in Language Studies – Back to the Future
July 25, 2014

Mr Jairam Ramesh

Member of Parliament and Former Union Minister of Rural Development
Responsible to Science, Responsive to Society: A New Dialogue
June 20, 2014

Prof SN Sridhar

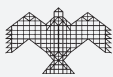
Distinguished Service Professor of Linguistics and India Studies, and
Director, Center for India Studies, Stony Brook University, New York
*The World of a Multilingual: Implications of the Indian Experience for
Models of Cognitive Science and Sociolinguistics*
June 16, 2014

Prof Narendar Pani

Professor, School of Social Sciences, NIAS
*The Making and Unmaking of Strategic Voting: The Modi Victory in a Long-
Term Perspective*
May 26, 2014



Ambassador Husain Haqqani



NIAS WEDNESDAY DISCUSSION MEETINGS

NIAS Wednesday Discussion Meetings is one of the outreach events that have continued since the inception of the Institute. The faculty of the Institute meets every Wednesday morning for semi-formal academic discussions after a lecture delivered by a member of the faculty. These Wednesday meetings also serve as a forum for invited guest speakers to deliver lectures on subjects of their choice.

Prof Sangeetha Menon is the Coordinator of Wednesday Discussion Meetings.

Dr Shivali Tukdeo

Assistant Professor, NIAS
University, Under Construction
March 25, 2015

Dr TS Gopi Rethinaraj

Associate Professor, NIAS
Systems Thinking and System Dynamics Modelling: A Framework and Method for Interdisciplinary Inquiry?
March 18, 2015

Dr Hippu Salk Kristle Nathan

Assistant Professor, NIAS
Rural Lighting through Solar PV – A Supply Side Analysis of Home Lighting Systems in Karnataka, India
March 11, 2015

Mr Sreedhar Vijayakrishnan

Nature Conservation Foundation, Mysore
Palakapyan Ponderings: Human–Elephant Relationships in India over Historical Times
March 4, 2015

Dr VS Elizabeth

Professor, National Law School of India University (NLSIU), Bangalore
and

Dr Chayanika Shah

Visiting Professor, Tata Institute of Social Science, Mumbai
Panel Discussion on Policy against Sexual Harassment of Women at the Workplace
February 25, 2015

Prof Malavika Kapur

Visiting Professor, NIAS
Missing in Action – Play!
February 18, 2015

Prof Sharada Srinivasan

Professor, NIAS
Cross Cultural Interactions in Antiquity and Indian Finds of Beta Bronzes
February 11, 2015

Dr PS Goel

Prof MGK Menon DRDO Chair, Research Centre Imarat
In Pursuit of Excellence: My Experience in Space, Earth Sciences and DRDO
January 21, 2015

Prof Sisir Roy

TV Raman Pai Chair Visiting Professor, NIAS
Arrows of Time
January 14, 2015

Prof S Ranganathan

Homi Bhabha Chair Visiting Professor, NIAS
Alloyed Pleasures; Multimetallic Cocktails
January 7, 2015

Dr Frank Krueger

Assistant Professor, Department of Psychology, George Mason University
Diffusion of Responsibility Attenuates Altruistic Punishment: A Functional MRI and Multivariate Granger Causality Mapping Study
December 17, 2014

Prof DP Sen Gupta

Visiting Professor, NIAS
Sir Ashutosh Mukherjee: The Scholar and the Great Educationist: A Homage on his 150th Birth Anniversary
December 10, 2014

Dr Anshuman Behera

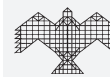
Assistant Professor, NIAS
Development as a Source of Conflict: Sahukars, Displaced Persons and Maoists in Koraput
November 26, 2014

Mr Shridhar K Chande

Former Vice Chairman, Atomic Energy Regulatory Board
Nuclear Safety and Regulation in India
November 19, 2014

Prof Dilip R Ahuja

ISRO Professor of Science and Technology Policy, NIAS
Energy and Non-Energy Benefits from Advancing Indian Standard Time
November 12, 2014



Prof S Ranganathan

Homi Bhabha Chair Visiting Professor, NIAS
Armchair Archaeology
November 5, 2014

Mr Kirtee Shah

Chairman, KSA Design Planning Services Private Limited, Ahmedabad
Cities, Poverty and Response to the Challenge of Poverty
October 15, 2014

Prof S Chandrashekar

JRD Tata Visiting Professor, NIAS
and

Prof Lalitha Sundaresan

Visiting Professor, NIAS
Identifying and Monitoring Uranium Mills Using Satellite Imagery
October 8, 2014

Dr TS Gopi Rethinaraj

Associate Professor, NIAS
India and the Uranium Cartel
September 17, 2014

Dr Janaki Balakrishnan

Associate Professor, NIAS
Interesting Cycles and Oscillations
September 10, 2014

Dr MG Narasimhan

Adjunct Faculty, NIAS
Aspects of Cultural Evolution
September 3, 2014

Dr Jahnavi Phalkey

Lecturer, History of Science and Technology, King's College, London
Science and Technology in Bangalore: Prospects for an Exhibition
August 27, 2014

Ms Namitha A Kumar

PhD Scholar, NIAS
Science as a Personal Quest: The Story of Nancy Wexler and the Huntington Gene
August 20, 2014

Prof Dilip R Ahuja

ISRO Professor of S&T Policy, NIAS
The Futility of Systematic Spiritual Exercises (The FoSSE Project)
August 13, 2014

Dr Leena Chandran-Wadia

Senior Fellow, Observer Research Foundation, Mumbai
Prospects for Electricity Access in Rural India using Solar Photovoltaic-based Mini-grids
August 6, 2014

Prof Carol Upadhya

Professor, NIAS
Engineering Mobility? The 'IT Craze'; Transnational Migration, and the Commercialisation of Education in Coastal Andhra
July 30, 2014

Prof S Ranganathan

Homi Bhabha Visiting Professor, NIAS
The Magnificent Delhi Iron Pillar: Historical, Aesthetic and Metallurgical Aspects
July 23, 2014

Prof Rajaram Nagappa

Visiting Professor, NIAS
Harnessing Military Technology
July 16, 2014

Prof Narendar Pani

Professor, NIAS
Mark Cubbon and the Social Roots of Corruption in Bengaluru
July 9, 2014

Prof SN Sridhar

Distinguished Service Professor of Linguistics and India Studies, and Director, Center for India Studies, Stony Brook University, New York
If Shakespeare Wrote an Epic: The Genius of Kumaravyasa
July 2, 2014

Ms Anasuya Gangopadhyay, Ms Anitha Sampath and Prof Dilip R Ahuja

Energy and Environment Programme, School of Natural and Engineering Sciences, NIAS
Reducing Karnataka's Electricity Deficits through Wind and Solar Power
June 25, 2014

Dr TS Gopi Rethinaraj

Associate Professor, Energy and Environment Programme, NIAS
Fissile Material Cut-off Treaty (FMCT): Options for Resolving the Stalemate
June 18, 2014



Prof Chitra Akkoor

Assistant Professor, Keene State College, New Hampshire
Bikharna as a Way of Speaking about Diaspora among Afghan Hindus in Germany
June 11, 2014

Prof Anitha Kurup

Professor, School of Social Sciences, NIAS
Identification of Gifted Children in India
May 28, 2014

Prof SS Murthy

Adjunct Faculty, NIAS
Off Grid Power Generation Using Renewable Energy for Developing Economies to Energize Dispersed Communities
May 21, 2014

Mr Kiran Batni

Researcher on Topics in Philosophy, Politics and Economics
India's Pyramid of Corruption and How to Deal With It
May 14, 2014

Dr Chidambaran G Iyer

Assistant Professor, School of Social Sciences, NIAS
Aspects of Human Development in Bangalore Urban District
May 7, 2014

Ms Namitha A Kumar

Ph.D. Scholar, School of Humanities, NIAS
The Cognitive Unconscious and Implicit Biases: A Social Intelligence Approach
April 30, 2014

Dr Veena Rao

Adjunct Faculty, NIAS
Transplantation of a British Scientist to India: JBS Haldane
April 23, 2014

Prof Pallava Bagla

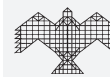
Science Editor, New Delhi Television; Correspondent, SCIENCE and Shri TV Raman Pai Chair Visiting Professor of Science Communication, NIAS
Challenges of Communicating Science in India: Bridging the Gap between Scientists and the Public
April 16, 2014

Dr Shoibal Chakravarty

Research Consultant in the Energy and Environment Research Programme, NIAS
Climate Change and Nuclear Power: The Role of Accidents
April 9, 2014

Dr Aneesha Sharma

Faculty, Srishti School of Art, Design and Technology, Bangalore
Phenomenon of Letting Go: A Peek inside the Creative Experiences of Artists
April 2, 2014



NIAS ASSOCIATES' PROGRAMME

NIAS shares its experiences, both intellectual and cultural, with a select group of distinguished persons. As Associates, they enjoy certain privileges, including access to the NIAS library, invitations to all major events and opportunities to dine with the NIAS faculty and distinguished visitors. As of now we have 150 distinguished personalities as our associates. NIAS organises regular associates meetings, which include lectures, plays, and performing arts events.

Currently, Prof S Setter is the Chairman and Prof PK Shetty is the Coordinator for Associates' Programme.

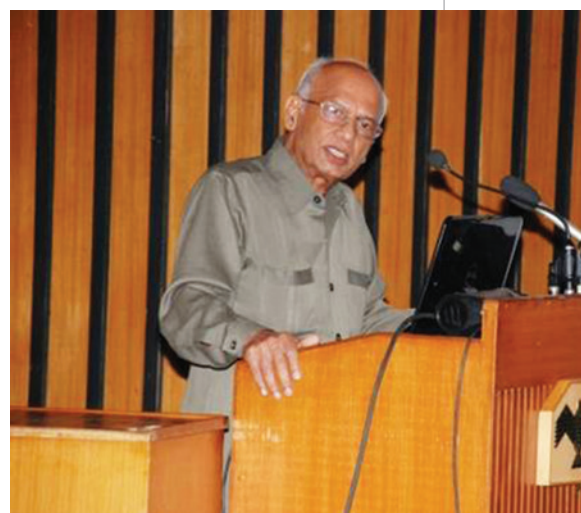
Dr MS Valiathan

National Research Professor
Manipal Academy of Higher Education, Manipal
Ayurveda and Modern Science: A Tapestry in the Making
January 20, 2015

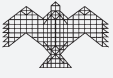
Dr K Kasturirangan

Emeritus Professor
NIAS and Formerly Chairman
ISRO; Member of Parliament (Rajya Sabha)
Book Release: Commercialization of Space: Opportunities and Challenges
(Editors: Bhupendra Jasani and Ram Jakhu)
December 16, 2014

In addition, the tenth Raja Ramanna Memorial Lecture by Prof SP Sukhatme was also Associates' Programme.



Dr MS Valiathan



NIAS LITERARY, ARTS AND HERITAGE FORUM

The Literary, Arts and Heritage Forum aims to be an innovative platform for occasional lectures on diverse topics of cultural interest and of interest to science and culture, science and society, including literature, the arts and aspects of heritage.

Prof Sharada Srinivasan and Prof Sangeetha Menon are the Coordinators of the NIAS Literary, Arts and Heritage Forum.

Prof Vanamala Viswanatha

Professor, English Studies, Azim Premji University
*On Translating Harischandra Kavya, A Pre-Modern
Kannada Classic into English in a Postcolonial Frame*
November 6, 2014

Dr Adam Yamey

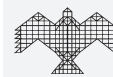
Writer, Researcher and Dentist, London
From Albania to Sicily - A Travelogue and a History
October 20, 2014

Ms Shruti Suresh

Former Research Assistant, NIAS
*A Rendezvous with Womanhood – A Bharatnatyam
Dance Recital*
October 9, 2014

Dr Unni Krishnan

Associate Professor, Manipal University
*Kannada Mother Goddess 'Thayee Bhuvaneshwari', the
Regional Daughter of 'BharathMatha'*
July 30, 2014



NIAS LIBRARY

The Library continues to be supported by the Tata Trust and the patron driven acquisition activity was carried out in a consistent manner throughout the year. 300 books were purchased during the year taking the collection to 15,550 books. In addition, books in Kannada language and some donated books were also added to the collection. Libsys software is being used for housekeeping operations. Content page service for books was introduced during the year. The table of contents of new books is being scanned and integrated in the catalogue record of books. The Library catalogue is accessible on the internet.

NIAS Library continues to be a member of the UGC-INFONET Digital Library Consortium managed by INFLIBNET and has online access to journals published by Oxford University Press, Cambridge University Press, Taylor and Francis Publishers as well as JSTOR through this consortium. The Library also subscribes to journals of relevance from other reputed publishers and these journals are reviewed periodically for its usage. Subscription to 13 journal titles was suspended to accommodate the same number of new journals for new students and research programs. The total number of journal subscriptions in print and electronic format is 1604. The Library has arrangements for document delivery services with other Libraries; the required articles are being obtained routinely using this service. Subscription to databases includes JSTOR which provides access to more than 2585 journals archives and Indiastat.com, a portal for India's socio-economic data and information. Based on faculty recommendations, back runs of some Indian print journals, not available in electronic format were acquired for the Library in the last few years. An index to articles of these journals is being developed in Libsys for easy search and retrieval for the benefit of faculty and students. All subscriptions can be browsed from NIAS Library website. Off campus access to subscriptions is provided via Athens.

The Library continues to update the NIAS website. The eprints institutional repository of NIAS is being populated with research publications of NIAS faculty and students.

Trial access for e-journals from World Scientific Publishers and search facility on KNIMBUS platform was provided during the year.

The infrastructure includes a workstation which provides access to datasets such as census and NSSO data, Windows server connected to five thin clients and a photocopy machine as well as two Linux servers. The facilities include access to licensed content and Library catalogue, internet browsing, desktop applications, scanning, printing and photocopying. The total number of photocopies made and articles printed by Library users is 25682 pages. The number of visitors to NIAS Library during the year is 1250.

Library Resources

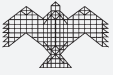
Sl No.	Library Resources	Numbers
1	Books	15550
2	Kannada Books	322
3	Donations	742
4	Theses	22
5	Current Subscriptions	1604
6	Bound Volumes	2273
7	Data CDs	331
8	CDs	344
9	Lectures on DVDs	435
10	Magazines	6
11	Newspapers	10



Hamsa Kalyani
Deputy Librarian

Room No. G 01
Tele: 080-2218 5022
Fax: 080-2218 5028
Email: hamsakalyani@
yahoo.co.in

Joined NIAS on: May 1, 1992



PUBLICATIONS

BOOKS

Balakrishnan Janaki and **B V Sreekantan** (2014). *Nature's longest threads: New frontiers in the mathematics and physics of information in biology*. Singapore: World Scientific Publishing.

Bhardwaj Anil, **Baldev Raj** (2015). Internal corrosion of pipelines. Narosa Publishing House Pvt Ltd. and Alpha Science International Ltd., UK.

Jasani Bhupendra and Ram Jakhu eds. (2015). *Commercialisation of space: Opportunities and challenges*. Bangalore: NIAS, New Delhi: Pentagon Press.

Murty B S, J W Yeh and **S Ranganathan** (2014). *High-Entropy Alloys*, Elsevier.

Nagappa Rajaram (2014). *Evolution of solid propellant rockets in India*. New Delhi: DRDO.

Nagarajan, Hari K, Hans P. Binswanger-Mkhize and **S S Meenakshisundaram** (2014). *Decentralization and Empowerment for Rural Development*, Cambridge University Press.

Raj Baldev and S Raju (2015). *Materials for energy systems*. Indian Institute of Metals, Transaction of the Indian Institute of Metals.

Raj Baldev, P Chellapandi, P R Vasudeva Rao (2015). *Sodium fast reactors with closed fuel cycle*. Taylors Francis Group, CRC Press, USA.

Settar S (2015). *Sāvannu arasi: Icchāmarāñada Jainasiddhānta mattu cāritrika sādrśyagalū*. Kannada translation of the book entitled Pursuing death: The Jain philosophy of voluntary termination of life and its historical practices (translated by O.L.Nagabhushanaswami). Bangalore: Abhinava.

Settar S (2015). *Sāvannu svāgatīsi: Śravana Belgola itihāsada hinneleyalli icchāmarana prakriye*. Kannada translation of the book entitled Inviting death: Voluntary termination of life in the background of Śravana Belgola (translated by Sadananda Kunawalli and S Settar). Bangalore: Abhinava.

RESEARCH PAPERS

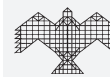
Balakrishnan R, J Bahuleyan, D Nandi and **Jain Manjari** (2014). Modelling the effects of chorus species composition and caller density on acoustic masking interference in multispecies choruses of crickets and katydids. *Ecological Informatics* 21: 50-58.

Behera Anshuman (2014). The big catch. *Geopolitics* V(IV): 58-60.

Chakraborty D, **Anindya Sinha** and U Ramakrishnan (2014). Mixed fortunes: Ancient expansion and recent decline in population size of a subtropical montane primate, the Arunachal macaque *Macaca munzala*. *PLoS ONE* 9: e97061.

Chakraborty D, U Ramakrishnan and **Anindya Sinha** (2014). Quaternary climate change and social behavior shaped the genetic differentiation of an endangered montane primate from the southern edge of the Tibetan Plateau. *American Journal of Primatology*, DOI: 10.1002/ajp.22343.

Chakravarty Shoibal (2015). Cheap oil, climate change mitigation and India. *Economic and Political Weekly*, 9: 38-43.



Chidambaran G Iyer (2013). Urbanization in India and productivity of manufacturing industries: An empirical study. *Indian Economic Review* 2013 48(2): 297-322.

Delanthabettu S, M Menaka, B Venkatraman, **Baldev Raj** (2015) Defect depth quantification using lock-in thermography. *Quantitative InfraRed Thermography Journal*, 1-16.

Dinesh V P, P Biji, Anuradha Ashok, S K Dhara, M Kamruddin, A K Tyagib and **Baldev Raj** (2014). Plasmon-mediated, highly enhanced photocatalytic degradation of industrial textile dyes using hybrid ZnO@Ag core-shell nanorods. *The Royal Society of Chemistry Advances* 4(103): 58930-58940.

Gupta Shreejata and **Anindya Sinha** (2014). A wild boar hunting: Predation on a bonnet macaque by a wild boar in the Bandipur National Park, southern India. *Current Science* 106: 1186-1187.

Haricharan Smriti and **Naresh Keerthi** (2014). Can the tinai help understand the iron age early historic landscape of Tamilnadu?. *World Archaeology* 46(5): 641-660.

Harini, RS, J Nampoothiri, B Nagasivamuni, **Baldev Raj**, K R Ravi (2015). Ultrasonic assisted grain refinement of Al-Mg alloy using in-situ MgAl₂O₄ particles. *Materials Letters* 145: 328-331.

Juleff Gillian, Sriperumbudur Jaikishan, **Sharada Srinivasan, Srinivas Ranganathan** and Brian Gilmour (2014). Northern Telangana, an iron and crucible steel production landscape in India. *ISIJ International* 54(5): 1030-1037.

Hongray T, B Ashok and **J Balakrishnan** (2014). Effect of charge on the dynamics of an acoustically forced bubble. *Nonlinearity* 27: 1157-1179.

Hongray T, B Ashok and **J Balakrishnan** (2015). Oscillatory dynamics of a charged microbubble under ultrasound. *Pramana: Journal of Physics* 84: 517-541.

Kumar Namitha A (2014). Corponormativity and marking apart: The body of people with disabilities as a site of social and psychological discrimination and oppression in India. *Italian Journal of Disability Studies* 2(1): 64-79.

Kumara H N, R Sasi, R Suganthasakthivel, **Mewa Singh**, H S Sushma, K K Ramachandran and W Kaumanns (2014). Distribution, demography, and conservation of lion-tailed macaques (*Macaca silenus*) in the Anamalai hills landscape, Western Ghats, India. *International Journal of Primatology* 35: 976-989.

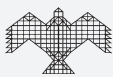
Kurup Anitha (2014). Gifted Child's Right to Education. *Inclusive Education Learning Curve XXIII* (October): 6-8.

Kurup Anitha, Ajay Chandra and **V V Binoy** (2015). 'Little minds dreaming big science': Are we really promoting 'children gifted in STEM' in India?. *Current Science* 108 (5):779-781.

Mayilvaganan M (2014). Sri Lanka-Pakistan Relations: Search for Strategic Partnership?. *FPRC Journal* 2: 119-129.

Mishra Srijit and **Hippu Salk Kristle Nathan** (2014). "Measuring HDI - The old, the new and the elegant: Implications for multidimensional development and social inclusiveness", *Asia Research Center working paper no. 63*, London School of Economics, September.

Murugan M, **P K Shetty**, Thomas George, R Ravi, A Subbiah and K Vijayakumar (2014). Pesticide use in Indian cardamom hills: Factors, patterns and intensity. *International Journal of Social Ecology and Sustainable Development* 5(3): 65-80.



Nagae Takekazu, **Sharada Srinivasan**, **Srinivas Ranganathan**, RM Pillai, Yasuji Shimizu and Haruhisa Mifune (2014). Thermographical analysis of continuing tradition of mirror casting in Kerala. *ISIJ International* 54(5): 1172-1176.

Nagappa Rajaram (2014). Harnessing military technology in India - the case for aerospace technologies, SYNERGY, *Journal of the Centre for Joint Warfare Studies*. <http://www.cenjows.in/synergyDetail.php?s=97>.

Natarajan, R and **Baldev Raj** (2015). Technology development of fast reactor fuel reprocessing in India. *Current science*, 108(1): 30-38.

Nathan Hippu Salk Kristle (2014). Global grid – harnessing green power round the clock. *Geopolitics* 5(1): 71-73.

Nathan Hippu Salk Kristle (2014). Solar energy for rural electricity in India: A misplaced emphasis. *Economic & Political Weekly* 49(50): 60-67.

Pani Narendar (2014). Bridging the gap: Addressing the rural in Indian cities. *Yogana* 68: 21-24.

Pani Narendar (2015). Towards a location-sensitive policy for manufacturing in Karnataka. *Journal of Social and Economic Development*. DOI 10.1007/s40847-015-0001-8.

Pani, Narendar and **Soundarya Iyer** (2015). Towards a framework to determine backwardness: Caste, inequality and reservations in India. *Journal of South Asian development* 10 (1): 48-72.

Prasad Soumya, M Krishnadas, **Kim R McConkey** and A Datta (2014). The tangled causes of population decline in two harvested plant species: A comment on Ticktin *et al.* (2012). *Journal of Applied Ecology* 51: 642-647.

Radhakrishna Sindhu (2014). Rethinking animal-human boundaries: Insights from primatology. *NMML Occasional Paper Series*, Nehru Memorial Museum and Library, New Delhi.

Radhakrishna Sindhu, **V V Binoy** and **Anitha Kurup** (2014). The culture of environmental education: Insights from a citizen science experiment in India. *Current Science* 107(2): 176-178.

Raj Baldev, W Aulbur, M Kodumudi, RV Arcot, K Jayaraman and A Goel (2014). The next growth story: Experts predict 2015 entails for Indian manufacturers. *Manufacturing Today* 4 (12): 48-52.

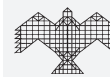
Santhosh K, **H N Kumara**, A D Velankar and **Anindya Sinha** (2015). Ranging behavior and resource use by lion-tailed macaques (*Macaca silenus*) in selectively logged forests. *International Journal of Primatology* 36: 288-310.

Saraswat R, **Anindya Sinha** and **Sindhu Radhakrishna** (2015). A god becomes a pest? Human-rhesus macaque interactions in Himachal Pradesh, northern India. *European Journal of Wildlife Research*, DOI: 10.1007/s10344-015-0913-9.

Sarwat Syed Ghazi, M Ramya, Prince Sabahut Ali, **Baldev Raj** and K R Ravi (2015). A new thermodynamic parameter G_{CE} for identification of glass forming compositions. *Journal of Alloys and Compounds* 627: 337-343.

Sasi B, S Sosamma, C Babu Rao, R Vijayashree, P Kalyanasundaram and **Baldev Raj** (2014). Indirectly excited eddy current sensor. *Experimental Techniques* 38(5): 70-74.

Selvakumar R, S Aravindh, J.Ravichandran, U Kamachi Mudali, C Anand Babu, P Radhakrishnan, **Baldev Raj** (2014). Impregnation of S-layer protein isolated from extremophilic *Bacillus Licheniformis* NARW 02 onto titanium phosphate ceramic enhances uranium removal from aqueous solution. *Current Science* 106(12):1719-1725.



Sengupta Asmita, Kim R. McConkey and **Sindhu Radhakrishna** (2014). Seed dispersal by rhesus macaques *Macaca mulatta* in northern India. *American Journal of Primatology* 76: 1175-1184.

Shetty P K, K Manorama, M Murugan and MB Hiremath (2014). Innovations that shaped Indian agriculture-then and now. *Indian Journal of Science and Technology* 7(8): 1176-1182.

Singer Clifford, Timothy Milligan, and **T S Gopi Rethinaraj** (2014). How China's Options will Determine Global Warming. *Challenges* 5(1): 1-25.

Sinha N K, **Raj Baldev** (2014). Leakage limits for inflatable seals of sodium cooled fast breeder reactor, *Nuclear Engineering and Design*, 266, 194-198.

Stork D, P Agostini, J-L Boutard, D Buckthorpe, E Diegele, S L Dudarev, G Federici, M R Gilbert, S Gonzalez, A Ibarra, Ch Linsmeier, A Li Puma, P F Morris, L W Packer, **Baldev Raj**, M Rieth, M Q Tran, D J Ward, C English, G Marbach and S J Zinkle (2014). Developing structural, high-heat flux and plasma facing materials for a near-term DEMO fusion power plant: The EU assessment. *Journal of Nuclear Materials* 455(1-3): 277-291.

Stork Derek, Pietro Agostini, Jean-Louis Boutard, Derek Buckthorpe, Eberhard Diegele, Sergei L Dudarev, Colin English, Gianfranco Federici, Mark R Gilbert, Sehila Gonzalez, Angel Ibarra, Christian Linsmeier, Antonella Li Puma, Gabriel Marbach, Lee W Packer, **Baldev Raj**, Michael Rieth, Min Quang Tran, David J Ward and Steven J Zinkle (2014). Materials R&D for a timely DEMO: Key findings and recommendations of the EU Roadmap Materials Assessment Group. *Fusion Engineering and Design* 89(7):1586-1594.

Tukdeo Shivali (2015). Class divided: Global pressures, domestic pulls and a fractured education policy in India. *Policy Futures in Education*. DOI: 10.1177/1478210314567287.

Tukdeo Shivali (2014). The not-so-hidden power of mobility and education: Indian diaspora, knowledge industries and the development imperatives. *Journal of Diaspora Studies* (1): 56-70.

Tukdeo Shivali and **Suresh Babu** (2015). Teachers' work and teachable moments in the new regime *Economic and Political Weekly* 50 (12). <http://www.epw.in/web-exclusives/teachers%E2%80%99-work-and-teachable-moments-new-regime.html>

Vishwanathan Arun (2014). Pakistan's Nasr/Hatf-IX missile: Challenges for Indo-Pak Deterrence. *Strategic Analysis* 38(4): 444-448.

BOOK CHAPTERS

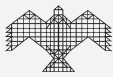
Balakrishnan J (2014). Instabilities in sensory processes. In: *Nature's longest threads: New Frontiers in the Mathematics and Physics of Information in Biology* (eds. J. Balakrishnan and B.V. Sreekantan). Singapore: World Scientific, pp. 37-46.

Behera, Anshuman (2015). India-Nepal relationship: Towards progressive partnership In: *India and her neighbours: Towards a proactive partnership* (ed. Badrul Alam), Kalpaz Publications.

Dixit, Bharat, Satyam Suwas, **Sharada Srinivasan**, S. Jaikishan and **S Ranganathan** (2014). Microstructural analysis of a wootz steel blade from southern India, Proc of the 8th Conference of the Beginning of the Use of Metals and Alloys (BUMA VIII) eds. Kazuhiro Nagata, Eiji Izawa and Eiji, Yamasue, 264-271.

Kuchibhotla Lakshmi and **Sangeetha Menon** (2014). Self and empathy In: *Interdisciplinary perspectives on consciousness and the self* (eds. Sangeetha Menon, Anindya Sinha, and B V Sreekantan), New Delhi: Springer, pp 171-192.

Kuchibhotla Lakshmi (2015). Self, well-being, and the Mahabharata: A qualitative reading In: *Qualitative research on illness, well-being and self-growth: Contemporary Indian perspectives* (eds. A. K. Dalal and K. Ravi Priya), New Delhi: Routledge, pp 230-243.



Madhusoodhanan C G, **K G Sreeja**, T I Eldho and **P K Shetty** (2015). Contentions over the Mullaperiyar and implications for river basin management, In: *Sharing blue gold: locating water conflicts in India* (eds. N Shantha Mohan and Sailen Routray). Bangalore: NIAS, pp.113-134.

Iyengar Sudharsana V and **J Balakrishnan** (2014). q-deformations and the dynamics of the larch bud-moth population cycles. In: *Nature's longest threads: New Frontiers in the Mathematics & Physics of Information in Biology* (eds. J Balakrishnan and B V Sreekantan). Singapore: World Scientific, pp. 65-80.

Nagae Takekazu, **Sharada Srinivasan**, **Srinivasa Ranganathan**, R M Pillai, Yasuji Shimizu and Haruhisa Mifune (2014). 'Thermographical Analysis of Continuing Tradition of Mirror Casting in Kerala', Proc of the 8 th Conference of the Beginning of the Use of Metals and Alloys (BUMA VIII) eds Kazuhiro Nagata, Eiji Izawa and Eiji, Yamasue, 363-367.

Nagappa Rajaram (2014). Space security in India In: *Handbook of Space Security - Policies, Applications and Programs* (eds. K-U Schrogl, P L Hays, J Robinson, D Moura and C Gianopapa), SpringerReference, pp 454-466.

Nathan Hippu Salk Kristle and **Jayashree V** (2015). Self help groups: a medium of Water conflict resolution, In: *Sharing blue gold: locating water conflicts in India* (eds. N Shantha Mohan and Sailen Routray). Bangalore:NIAS, pp.183-198.

Raj Baldev, U Kamachi Mudali, John Philip and Sitaram Dash (2015). Nanotechnology in energy technology In: *The Nano-Micro interface: Bridging the micro and nano worlds* (eds. Marcel Van de Voorde, Matthias Werner and Hans-Jörg Fecht), Chapter 19, Vol. 2. Wiley-VCH Verlag GmbH & Co. KGaA. pp. 383-403.

Routray Sailen and **N Shantha Mohan** (2015). Water as an ethic: three ways of talking about water, rights, and conflicts, In: *Sharing blue gold: locating water conflicts in India* (eds. N Shantha Mohan and Sailen Routray). Bangalore: NIAS, pp.1-12.

Roy Sisir (2015). Quantum Ontology: A New Direction of Cognitive Modeling In: *Advances in Cognitive Neurodynamics* (ed. by Hans Liljestrom). Springer, pp. 419-423.

Sreeja K G and **P K Shetty** (2015). Invisible people: Migrant labourers in the context of Integrated River Basin Management, In: *Sharing blue gold: locating water conflicts in India* (eds. N Shantha Mohan and Sailen Routray). Bangalore: NIAS, pp.215-233.

Srinivasan Sharada (2014). Iconographic trends in Rama worship: Insights from techno-cultural studies of bronzes. In: *The Ramayana in literature society and the arts* (ed. Krishna N). Chennai: CP Ramaswamy Aiyar Institute of Indological Research, pp. 345-362.

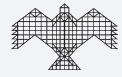
Tukdeo Shivali (2015). Literacies and power: Looking for adivasi voice in education. In: *India's children: Essays in social policy* (eds. A.K. Shiva Kumar, Preeti Rustagi and Ramya Subramanian). Delhi: Oxford University Press.

Upadhyaya Carol (2014). Employment, exclusion and 'merit' in the Indian IT industry. In: *The Problem of Caste: Essays from Economic and Political Weekly* (ed. Satish Deshpande). Hyderabad: Orient Blackswan, pp. 141-51. (Reprinted from EPW).

Westley M, S Sen and **Anindya Sinha** (2014). Newtonian chimpanzees? A molecular dynamics approach to understanding decision-making by wild chimpanzees. In: *Nature's Longest Threads: New Frontiers in the Mathematics and Physics of Information in Biology* (eds. Balakrishnan J and Sreekantan BV). World Scientific Lecture Notes in Complex Systems. World Scientific, Singapore, pp 81-102.

CONFERENCE ABSTRACTS

Baker M, P Pebsworth and **Sindhu Radhakrishna** (2014). Conflict and resolution between human and nonhuman primates: Online survey results. Abstract in: Program and abstracts of the 37th meeting of the American Society of Primatologists, *American Journal of Primatology* 76(S1), p 96, September 2014.



Gupta Shreejata and Anindya Sinha (2014). Referential gestural communication in wild bonnet macaques *Macaca radiata*. Twenty-Fifth Congress of the International Primatological Society, Hanoi, Vietnam; August 2014.

Gupta Shreejata and Anindya Sinha (2015). Gestural communication of wild bonnet macaques *Macaca radiata* in the Bandipur National Park, India: Repertoire, context and intentionality. Thirty-Eighth Meeting of the American Society of Primatologists, Bend, Oregon, USA; June 2015.

Keerthi Naresh and V V Binoy (2015). "Angling in the Sanskrit sea' – insights on ichthyology from the Sanskrit literary canon. Seminar on "Flora and Fauna in Ancient Indian Literature" Department of Zoology, Dr. A.V. Baliga College of Arts and Science, Kumta, Karnataka. 13-14 March 2015.

Keerthi Naresh (2015). Who gives a fig-Notices of ficus spp in Sanskrit literature. *National Seminar on Flora and Fauna in ancient Indian literature*, Dr A V Baliga College of Arts and Science, Kumta, 14-15th March 2015.

Keerthi Naresh (2015). Interpreting venkatamakhin's prabandha-knowledge beyond texts and orality. (Panel on "People's art and knowledge systems"), *38th Indian Social Science Congress*, Vishakapatnam, 31 March 2015.

Keerthi Naresh (2015). Probing the prabandha-reading meaning and method in a premodern genre. CCS Decennial Seminar, Methodological aspects of knowledge production in pre-modern India, Indian Institute of Science, 24-26 January 2015.

Keerthi Naresh (2014). The semantics of 'cunanku' in Sangam Tamil poetry-a cognitive resolution. Annual Conference of the Dravidian Linguists Association, 26 June 2014.

Narayanan P Ramesh, Satyam, Suwas, P P Sinha and **S Ranganathan** (2015). Evolution of texture and its influence on the failure of components in some aluminium alloys, Materials Science and Engineering, 17th International Conference on Textures of Materials (ICOTOM 17). 82.

Radhakrishna Sindhu (2015). Wildlife, conservation science and animal studies. Abstract in: *Book of Abstracts, Minding Animals Conference 3*, Delhi, India January 2015, p.236.

Rao A, M Watve, **V V Binoy** and **Anindya Sinha** (2014). Exploration of linkages between morphology and personality in the Asian common toad. 51st Annual Conference of the Animal Behavior Society, Princeton, New Jersey, USA; August 2014.

Sinha Anindya (2015). *Scio ergo sum*: Experientially acquired cognitive knowledge of the self in a nonhuman primate. *Minding Animals Conference 3*, New Delhi, India; January 2015.

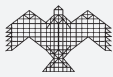
Sinha Anindya and K Mukhopadhyay (2014). The monkey in the town's commons: An anthropogenic history of the bonnet macaque. Twenty-Fifth Congress of the International Primatological Society, Hanoi, Vietnam; August 2014.

Srinivasaiah Nishant M (2015). Of elephants and men: My conversations with J K Dobi. *Minding Animals Conference 3*, New Delhi, India; January 2015.

Srinivasan Sharada, Rajarshi Sengupta, Praveen Johnson, Padhmapriya Selvakumar, Uma Kritika, **Srinivasa Ranganathan**, **S Settar** (2014). Digital renderings and iconographic and iconometric study of Vijayanagara sculpture Proceedings of DST-IDH Workshop on Digital Hampi.

Tukdeo Shivali (2014) Educational transformation: Possible alternatives to the educational crisis. Conference organised by South Asian University, New Delhi.

Tukdeo Shivali (2014) The Deepening Footprint of Neoliberalism: Policy Moments in Education. Conference on Educational Transformation and Transformative Education organised by South Asian University, New Delhi.



Tukdeo Shivali and **Chetan Singai** (2014) Where have all the Girls Gone?: Vocational education in India and the tangled puzzle of gender. Annual Conference, Comparative Education Society India (CESI).

Vijayakrishnan S, M A Kumar and **Anindya Sinha** (2015). The blind men and the elephant: Unraveling the cultural ecology of the complex relationship between two intelligent species. Minding Animals Conference 3, New Delhi, India; January 2015.

Vijayakrishnan S, M A Kumar, G Umapathy and **Anindya Sinha** (2014). The battle within: Behavioural and physiological stress in Asian elephants in a human-dominated landscape in the Western Ghats, southern India. Students' Conference on Conservation Science, Bangalore, India; September 2014.

Watve M, **V V Binoy** and **Anindya Sinha** (2014). Population versus individual behavioral syndromes: How metamorphosis changes correlated behaviors in the common Indian toad. 15th Congress of the International Society for Behavioral Ecology, New York City, USA; July-August 2014.

Watve M, Rao A, **V V Binoy** and **Anindya Sinha** (2014). Inter-population variability in exploratory behaviour during metamorphosis in the Asian common toad. 51st Annual Conference of the Animal Behavior Society, Princeton, New Jersey, USA; August 2014.

BOOK REVIEWS

Ahuja Dilip R (2014). Review of *The governance of energy megaprojects: Politics, hubris and energy security* by Benjamin K Sovacool and Christopher J Cooper. (Edward Elgar Publishing Limited, 2013). *Current Science* 106(7): 1017-1018.

Kumar Namitha A (2014). Review of *The wounded storyteller: Body, illness, and ethics* by Arthur W Frank (Chicago: University of Chicago Press, 1997) *Indian Anthropologist* 44(1): 95-98.

Pani Narendar (2014). Review of Darwinian view of political order. Book Review. *The Hindu* 23 December.

Pani Narendar (2014). Review of Role of learning in the economy. Book Review. *The Hindu* 13 October.

Tukdeo Shivali (2014). Review of *Complexity, institutions and public policy: Agile decision making in a turbulent world* by Graham Room. (Edward Elgar Publishing Ltd, 2011). *Current Science* 106(7): 1014-1015.

Vishwanathan Arun (2015). Explaining Negotiations. Review of the US-India nuclear agreement: Diplomacy and domestic politics by Dinshaw Mistry (New Delhi: CUP, 2014). *The Book Review* XXXIX(2): 55-56.

OUTREACH ARTICLES

Ahuja Dilip R and **D P Sengupta** (2014). Many time zones would be chaotic. *Outlook*, 20 January: 62-63.

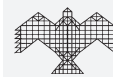
Ahuja Dilip R and **D P Sengupta** (2014). Changing time. *The Indian Express*. 13 January.

Bagla Pallava (2014). Science in the time of elections: Science and technology may not form part of the daily vitriol that is spewed in election speeches, but scientists need not despair. *The Hindu*, 30 April.

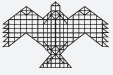
Behera Anshuman (2014). Modi's Nepal visit shouldn't take the beaten track. The other voice, *The Pioneer*, 2 August.

Behera Anshuman (2015). No easy solution in ending India's bodo conflict. *International Security Network*, Switzerland. 27 February.
<http://www.isn.ethz.ch/Digital-Library/Articles/Detail/?lng=en&id=188338>

Chandra Ajay (2014). Parenting feature: Parenting your gifted child. *Parentcircle*. June: 10-13.



- Keerthi Naresh** (2014). No Translation is an Island. *The Book Review*, 38(8) August.
- Keerthi Naresh** (2015). "Many Ramayanams"- Says thunchat Shri Ramanujan ezhuthacchan? - A response. *DLA News* 39(3): 3-4.
- Kulkarni Sanket Sudhir** (2015). SAARC energy agreement: A step in the right direction. *IDSAs* (http://www.idsa.in/idsacomments/SAARCEnergyAgreemen_sskulkarni_050115.html), 5 January.
- Kurup Anitha** (2014). Gifted Advocacy. *Parentedge*, November-December: 22-23.
- Kurup Anitha** (2014). Nurturing gifted children: Academic and school concerns of gifted children. *Parentedge*, May-June: 42-43.
- Kurup Anitha** and Amita Basu (2014). Nurturing gifted children: Educational options for gifted children. *Parentedge*, July-August: 22-23
- Kurup Anitha** and Amita Basu (2014). Nurturing gifted children: Academic and school concerns of gifted children. *Parentedge*, May-June: 42-43
- Kurup Anitha** and Amita Basu (2015). Gifted children-school and family dynamics. *Parentedge*, March-April: 24-25.
- Kurup Anitha** and Basu Amita (2014). Nurturing gifted children: Educational resources outside school. *Parentedge*, September-October: 27-28.
- Kurup Anitha** and Basu Amita (2014). Nurturing gifted children: Socio-emotional concerns of gifted children. *Parentedge*, January-February: 55-56.
- Kurup, Anitha** (2014). Nurturing gifted children: Parenting gifted children not a cakewalk. *Parentedge*, March-April: 28-29.
- Nagappa Rajaram, S Chandrashekar, N Ramani, L Sundaresan** and V Rammohan, (2014) Launch of Pakistani Shaheen-II (Hatf VI) Ballistic Missile on November 13, 2014, <http://issp.in/publications/reports/>
- Nathan Hippu Salk Kristle** (2014). Energy conservation day: Symbolism doesn't pay. *The Pioneer*, 20 December.
- Nathan Hippu Salk Kristle** (2015). Solar Energy: Urban first, Rural later. *SANDEE*: <https://sandeeresearch.wordpress.com/2015/03/12/solar-energy-urban-first-rural-later/> 12 March.
- Pani Narendar** (2014). A hundred dysfunctional cities. *Business Line*, 2 June.
- Pani Narendar** (2014). A serious hurdle to Swatch Bharat. *Business Line*, 5 October.
- Pani Narendar** (2014). Now that Bangalore is Bengaluru. *Business Line*, 9 November.
- Pani Narendar** (2014). When Greens go too far. *Business Line*, 1 December.
- Pani Narendar** (2014). We don't need fancy infrastructure. *Business Line*, 3 July.
- Pani Narendar** (2014). Tackling urban India's garbage crisis. *Business Line*, 11 May.
- Pani Narendar** (2014). For Smart Cities of another kind. *Business Line*, 5 August.
- Pani Narendar** (2014). Defective vision crashing the parties. *Business Line*, 6 April.



Pani Narendar (2014). Can't turn Varanasi into Kyoto. *Business Line*, 2 September.

Pani Narendar (2015). Some not so smart ideas. *Business Line*, 8 March.

Pani Narendar (2015). Where a million false cases flourish. *Business Line*, 5 February.

Pani Narendar (2015). Inequality is rising, but who cares?. *Business Line*, 6 January.

Tukdeo Shivali (2014). The language of choice. *Indian Express*, New Delhi, 9 June.

Tukdeo Shivali (2014). Towards a rational literacy – education and beyond. *Kafila.org* (<http://kafila.org/2014/10/05/towards-a-rational-literacy-education-and-beyond-shivali-tukdeo/>), 5 October.

Tukdeo Shivali and **Savitha Suresh Babu** (2015). Where is teaching headed in the Modi regime?. *Indiatogether* <http://indiatogether.org/teaching-and-teachers-in-the-modi-regime-education> 18 March.

Varshney Ashutosh and **Narendar Pani** (2014). Modi's institutional designs: His approach resembles that of Indira Gandhi but he must note in Delhi what one controls slips away. *Indian Express*, Delhi Edition, 28 July.

Vishwanathan Arun (2014). India's missile modernization and credible minimum deterrence. *South Asian Voices*, 18 June.

Vishwanathan Arun (2014). Reminisces of the 13th RCSS Summer Workshop, ISSSP Reflections No. 22. 14 October.

Vishwanathan Arun (2014). Revamping India's national security structure: Agenda for the Indian government. ISSSP Working Paper. 27 June.

Vishwanathan Arun (2014). India Pakistan Relations: Two Questions on the Way Forward – Part II, Generation Why: South Asian Voices, Stimson Center, Washington DC, 2 June.

Vishwanathan Arun (2014). India Pakistan Relations: Two Questions on the Way Forward – Part I, Generation Why: South Asian Voices, Stimson Center, Washington DC, 20 May.

REPORTS

Sampath Anitha, Anasuya Gangopadhyay, Shoibal Chakravarty, Dilip R Ahuja and D P Sengupta (2014). Wind and solar energy for meeting Karnataka's future electricity demand. Submitted by National Institute of Advanced Studies to Power System Operation Corporation Limited. June 2014.

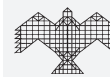
NIAS PUBLICATIONS

Deshpande Hema and Gee Ameena Suleiman (2014). Age, Family Type and Domestic Conflict in Bangalore (R21-2014). Bangalore: NIAS.

Kurup Anitha, Amita Basu, Ajay Chandra and Parvathy Jayan (2014). Teacher training module for identifying gifted children with the teacher nomination form for gifted children (Ages 3-12) (Kannada Translation) (R24-2014). Bangalore: NIAS.

Kurup Anitha, Shivali Tukdeo, Chetan B. Singai and Kanthi Muthaiah (2014). Engagements in higher education (Seminar Report R27-2014). Bangalore: NIAS.

Mayilvaganan M, Aditi Malhotra, Viswesh R, and Sadhavi Chauhan (2014). Asia-Pacific power dynamics: Strategic implications and options for India (Workshop Report R25-2014). Bangalore: NIAS.



Mayilvaganan M, Aditi Malhotra, Viswesh R, and Sadhavi Chauhan (2014). Asia-Pacific power dynamics: Strategic implications and options for India (Seminar Report R26-2014). Bangalore: NIAS.

Mohan N Shantha and Sailen Routray (2015). Sharing blue gold: Locating water conflicts in India (SP6-2015), Bangalore: NIAS.

Nagappa Rajaram, Soma Perumal and Viswesh Rammohan (2014). An overview of hypersonic vehicle technologies (Report R29-2014), Bangalore: NIAS.

Narendar Pani (2014). Functioning anarchy of Indian cities: A neo-Gandhian interpretation of the urban (R28-2014). Bangalore: NIAS.

Sampath Anitha, Anasuya Gangopadhyay, Shoibal Chakravarty, Dilip R Ahuja and D P Sengupta (2015). Wind and Solar Energy for meeting Karnataka's Future Electricity Demand. NIAS, Power System Operation Corporation Limited.

Shetty P K, Claude Alvares and Ashok Kumar Yadav (eds.) (2014). Organic Farming and Sustainability (SP5-2014). Bangalore: NIAS.

Singh Amarjeet (2014). Conflict in Tripura (B9-2014). Bangalore: NIAS.

Sundaresan Lalitha and S Chandrashekar (2014). R&D on rare earths and value addition- the Indian case. Bangalore: NIAS.

Tellis Ashley J (2014). Pivot or Pirouette: the U.S. Rebalance to Asia (L8-2014) Bangalore: NIAS.

Upadhyay, Carol (2014). Engineering mobility? The 'IT craze: Transnational migration and the commercialisation of education in coastal Andhra. (Provincial Globalisation Working Paper No. 7). Bangalore: NIAS, August 2014.

INTERVIEWS

Kurup Anitha (2014). Ask the Expert. *Parentedge*, July-August: 78.

Kurup Anitha (2014). Ask the Expert. *Parentedge*, March-April: 26.

Raj Baldev (2014). Interaction of IGCAR Newsletter Editorial team with eminent personalities. *IGC Newsletter* 101:1-7

Sengupta Uttam (2014). India preponed: Different voices ask for a change in the IST's stranglehold over India. *Outlook*, 20 January.

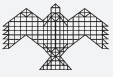
PRESS REPORTS

Tripathy Srikanta (2014). INAE Insight: Private sector needs to spend more on R&D. *Times of India*, Jaipur Edition, 16 December. (Baldev Raj).

MASTER'S DEGREE THESES

Aravind Sridharan (2014). *Behavioural Decisions, Ecological Situations: Sexual Segregation in the Nilgiri Tahr Nilgiritragus hylocrius*". Postgraduate Program in Wildlife Biology and Conservation, National Centre for Biological Sciences, Bangalore. [Guide: Anindya Sinha].

Sreedhar Vijaykrishnan (2014). *Behavioural and Physiological Stress in Elephants in a Human-Dominated Landscape in the Western Ghats, Southern India*. Postgraduate Program in Wildlife Biology and Conservation, National Centre for Biological Sciences, Bangalore. [Guide: Anindya Sinha].



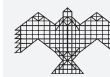
DOCTORAL THESES

Jafar K (2013). *The Impact of Education-Led Growth on Human Development: A Case-Study of Malappuram District, Kerala*. Manipal University. [Guide: Narendar Pani].

Lakshmi Kuchibhotla (2014). *Self and Well-being: A Qualitative Approach with a focus on Mahabharata*. University of Mysore. [Guide: Sangeetha Menon].

Sajini Anand P S (2014). *Nonlinear, Multidimensional Transformations and their Applications to Signal Processing*. University of Mysore. [Guide: Prabhakar G Vaidya].

Dhanwanti Ramachandra Nayak (2015). *Mimesis in Contemporary Culture: Implications for Pedagogy*. Manipal University. [Guide: Anitha Kurup].



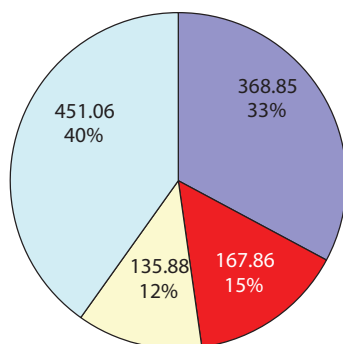
NIAS ADMINISTRATION

As a registered society, NIAS derives its administrative and financial authority through the society, represented by the general body. The Council of Management which is currently chaired by Shri S Ramadorai, is vested with full power and authority to do all acts, deeds, etc which are necessary for the promotion and fulfillment of the objectives set out in the Memorandum of Association. The Director, presently Dr Baldev Raj is the chief executive and exercises general, administrative and financial control over the affairs of NIAS. The Director is assisted in the administrative and finance matters by Head (Admin. & Finance).

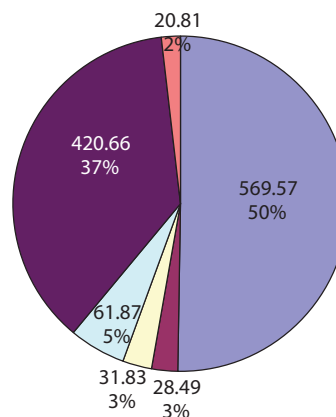
Besides management of all resources such as infrastructure, finance, human resources, estates etc., general administrative matters are also handled by Head (Admin. & Finance). Administration enables recruitment and deployment of staff, servicing their needs and empowering them to effectively contribute to the objectives of NIAS. It services the students programme in which forty-one students work for their Ph.D. degrees. Administration also takes care of the campus, its facilities such as the Auditorium, lecture halls, meeting rooms, classrooms, guesthouse, dining halls, etc and all other infrastructure of NIAS. Administration also plays a unique role in conducting various programmes including training courses. Procurement of materials and consumables, maintenance of facilities, inventory control, etc are also done by Administration. Compliance with various statutory requirements such as Provident Fund, Professional Tax, Income Tax, etc., is also taken care by Administration. The administrative set up consists of, in addition to the Head-Administration, an Office Manager, two Assistant Managers in the area of Administration and Accounts & Finance and other Secretarial/Office/Supporting Staff, in all numbering 31.

Finance management, accounting, auditing (internal and statutory), resource mobilization and expenditure control are carried out systematically. An overview of finances for the year 2014-15 is given below:

Cash Inflow (Rs. in lakhs)

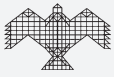


Cash Outflow (Rs. in lakhs)



NIAS has a specified investment of Rs. 1811.34 lakhs (exclusive of project funds) as on 31st March 2015.

During the year, the Institute has received 6 new research projects with a total value of Rs.233.66 lakhs. Total value of projects handled during the year including the projects sanctioned in the earlier years was Rs.1633.63 lakhs. Foreign exchange component included in this sum was Rs. 299.45 lakhs.



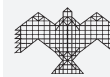
P Srinivasa Aithal
Head, Administration & Finance

Room No. G 14
Tele: 080-2218 5020
Fax: 080-2218 5028
Email: admin@nias.iisc.ernet.in

Joined NIAS on: November 1, 1995



*Left to Right top: MS Shivakumar, B Lalu, C Shashidharan, KS Rama Krishna, P Srinivasa Aithal, A Deva Raju, VA Ramesh, P Satish Bhat
Left to Right below: Gayathri N Lokhande, S Lalitha, JN Sandhya, R Vijayalakshmi, AS Mary Stella, V Girja*



NIAS FINANCIAL REPORTS

AUDITOR'S REPORT

The Members of National Institute of Advanced Studies

Report on the Financial Statements

We have audited the financial statements of the "NATIONAL INSTITUTE OF ADVANCED STUDIES", Indian Institute of Science Campus, Bangalore – 560 012, which comprise the Balance Sheet as at 31st March, 2015 and the Statement of Income and Expenditure Account for the year then ended and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation of the financial statements. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on the financial statements based on our audit. We conducted our audit in accordance with the Standards on Auditing issued by the Institute of Chartered Accountants of India. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

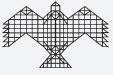
An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion and to the best of our information and according to the explanations given to us, the said accounts give the information required and give a true and fair view in conformity with the accounting principles generally accepted in India:

- 1) In the case of the Balance Sheet, of the state of affairs of National Institute of Advanced Studies as at 31st March, 2015.
- 2) In the case of the Income and Expenditure Account, of the Excess of Expenditure over Income for the year ended on that date.



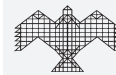
We further report that:

- a) The Balance Sheet and Income and Expenditure Account dealt with by this report, are in agreement with the books of accounts.
- b) In our opinion, proper books of account as required have been kept by the Institute so far as appears from our examination of those books.

for B.R.V. GOUD & CO.,
Chartered Accountant
FRN No. 000992S

Place : Bangalore
Date : 07-08-2015

Sd/-
(A.B.ShivaSubramanayam)
Partner
M No. 201108



Balance Sheet

(Amount in Rupees)

Particulars	As at 31 March 2015	As at 31 March 2014
Sources of Funds:		
Capital Fund	77,299,030	77,299,030
Corpus Funds	33,500,000	33,500,000
Other Funds	183,988,835	178,235,426
Current Liabilities	22,929,067	5,288,169
Provisions	1,462,133	324,364
Excess of Income over Expenditure	-	8,779,191
TOTAL	319,179,065	303,426,180
Application of Funds:		
Fixed Assets		
Gross Block	167,316,099	162,451,112
Less: Depreciation Block	106,705,475	98,994,211
Net Block	60,610,624	63,456,901
Investments	250,397,276	230,113,041
Current Assets, Loans and Advances		
Advances, Deposits & Receivables	5,667,826	3,962,785
Cash and bank balances	1,818,467	5,893,453
	7,486,293	9,856,238
Excess of Expenditure over Income	684,872	-
TOTAL	319,179,065	303,426,180

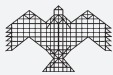
As per our report of even date,
for B.R.V.GOUD & CO.,
CHARTERED ACCOUNTANTS
FRN 000992 S

Sd/-
(PROF BALDEV RAJ)
DIRECTOR

Sd/-
(A.B.SHIVA SUBRAMANYAM)
PARTNER
M.NO. 201108

PLACE : BANGALORE
DATE : 07-08-2015

Sd/-
(P. SRINIVASA AITHAL)
HEAD-ADMINISTRATION



Income and Expenditure account

(Amount in Rupees)

Particulars	Year ended 31 March 2015	Year ended 31 March 2014
Income:		
Grants and Donations	36,884,731	50,549,411
Interest on Investments	16,785,852	16,889,484
Overhead & Administrative Charges Received	10,534,818	10,025,906
Miscellaneous Income	3,053,786	2,241,364
	67,259,187	79,706,165
Expenditure:		
Administrative Expenses	54,262,544	44,007,484
Repairs and Maintenance	2,848,995	3,086,513
Research, Symposia and Course	3,018,753	3,152,755
Professorship	2,694,975	2,437,179
PhD Programme	6,186,719	6,059,123
Depreciation	7,711,264	7,633,618
	76,723,250	66,376,672
Surplus/(Deficit) for the year	(9,464,063)	13,329,493
Add: Balance in income and expenditure account brought forward	8,779,191	(4,550,302)
Balance Carried forward to the Balance sheet	(684,872)	8,779,191

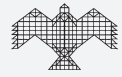
As per our report of even date,
for B.R.V.GOULD & CO.,
CHARTERED ACCOUNTANTS
FRN 000992 S

Sd/-
(PROF BALDEV RAJ)
DIRECTOR

Sd/-
(A.B.SHIVA SUBRAMANYAM)
PARTNER
M.NO. 201108

PLACE : BANGALORE
DATE :07-08-2015

Sd/-
(P. SRINIVASA AITHAL)
HEAD-ADMINISTRATION



Sponsored projects income and expenditure account (consolidated)

For the year ended 31st March, 2015

Particulars	Scientific Research 2014-15	Scientific Research 2013-14	Social Science Research 2014-15	Social Science Research 2013-14
	Rs.	Rs.	Rs.	Rs.
A. INCOME:				
Projects Receipts	37,862,010	36,747,688	7,243,626	11,700,744
TOTAL (A) Rs.	37,862,010	36,747,688	7,243,626	11,700,744
B. EXPENDITURE:				
Projects Expenditure	30,463,053	36,823,893	8,983,834	11,697,790
TOTAL (B) Rs.	30,463,053	36,823,893	8,983,834	11,697,790
C. SURPLUS/(DEFICIT) FOR YEAR (A-B) TRANSFERRED TO PROJECTS FUND	7,398,957	(76,205)	(1,740,208)	2,954

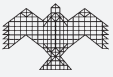
As per our report of even date,
for B.R.V.GOUD & CO.,
CHARTERED ACCOUNTANTS
FRN 000992 S

Sd/-
(PROF BALDEV RAJ)
DIRECTOR

Sd/-
(A.B.SHIVA SUBRAMANYAM)
PARTNER
M.NO. 201108

PLACE : BANGALORE
DATE : 07-08-2015

Sd/-
(P. SRINIVASA AITHAL)
HEAD-ADMINISTRATION



NIAS COUNCIL OF MANAGEMENT

Mr S Ramadorai (Chairman)

Chairman
National Skill Development Corporation
Bombay House
24, Homi Mody Street
Mumbai 400 001

Prof André Bêteille

69, Jorbagh
New Delhi 110 003

Mr Xerxes Desai

41, 4th Cross
Defence Colony
Indiranagar
Bangalore 560 038

Dr Devaki Jain

C II/41, 2nd Floor
Safdarjung Development Area
New Delhi 110 016

Mr Sanjay Kothari

Secretary
Ministry of Personnel, Public Grievances & Pensions
Government of India
112/A, 1st Floor, North Block
New Delhi 110 001

Prof Anurag Kumar

Director
Indian Institute of Science
Bangalore 560 012

Mr Bharat Lal Meena

Principal Secretary
Higher Education Department
Government of Karnataka
Multi-storey Building
Bangalore 560 001

Mr ISN Prasad

Principal Secretary
Finance Department
Government of Karnataka
Vidhana Soudha
Bangalore 560 001

Prof Baldev Raj

Director
National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore 560 012

Dr Arcot Ramachandran

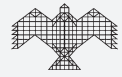
No.3, Crescent Road
High Grounds
Bangalore 560 001

Prof Ashutosh Sharma

Secretary
Department of Science and Technology
Government of India
Technology Bhavan
New Mehrauli Road
New Delhi 110 016

Prof Narendar Pani (Secretary)

National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore 560 012



**NIAS
SOCIETY**

Mr S Ramadorai (Chairman)

Chairman
National Skill Development Corporation
Bombay House
24, Homi Mody Street
Mumbai 400 001

Prof André Bêteille

69, Jorbagh
New Delhi 110 003

Mr Xerxes Desai

41, 4th Cross
Defence Colony
Indiranagar
Bangalore 560 038

Dr Devaki Jain

C II/41, 2nd Floor
Safdarjung Development Area
New Delhi 110 016

Mr Sanjay Kothari

Secretary
Ministry of Personnel, Public Grievances & Pensions
Government of India
112/A, 1st Floor, North Block
New Delhi 110 001

Prof Anurag Kumar

Director
Indian Institute of Science
Bangalore 560 012

Mr Bharat Lal Meena

Principal Secretary
Higher Education Department
Government of Karnataka
Multi-storey Building
Bangalore 560 001

Mr ISN Prasad

Principal Secretary
Finance Department
Government of Karnataka
Vidhana Soudha
Bangalore 560 001

Prof Baldev Raj

Director
National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore 560 012

Dr Arcot Ramachandran

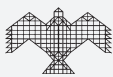
No.3, Crescent Road
High Grounds
Bangalore 560 001

Prof Ashutosh Sharma

Secretary
Department of Science and Technology
Government of India
Technology Bhavan
New Mehrauli Road
New Delhi 110 016

Prof Narendar Pani (Secretary)

National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore 560 012



NIAS STAFF

Director

Baldev Raj

Professors Emeritus

K Kasturirangan
Roddam Narasimha
VS Ramamurthy

Visiting Professors

Pallava Bagla, *TV Raman Pai Chair Visiting Professor*
(from March 14, 2014 to May 13, 2014 and June 16,
2014 to August 12, 2014)

S Chandrashekar, *JRD Tata Visiting Professor*

DP Sen Gupta

Malavika Kapur

SS Meenakshisundaram

Rajaram Nagappa

N Ramani

S Ranganathan, *Homi Bhabha Visiting Professor*

Sisir Roy, *TV Raman Pai Chair Visiting Professor*

S Settar

BV Sreekantan

Lalitha Sundaresan

Ashutosh Varshney, *Raja Ramanna Chair Visiting
Professor (June 27, 2014 to August 26, 2014)*

Professors

Dilip R Ahuja, *ISRO Professor of S&T Policy*

Anitha Kurup

Sangeetha Menon

Narendar Pani

Sindhu Radhakrishna

PK Shetty

Anindya Sinha, *Dean (Academic Affairs)*

Sharada Srinivasan

Carol Upadhya

Associate Professors

Janaki Balakrishnan

Rajesh Kasturirangan (*till February 28, 2015*)

TS Gopi Rethinaraj

Assistant Professors

Anshuman Behera

VV Binoy

Shoibal Chakravarty

Chidambaran G Iyer

M Mayilvaganan

Hippu Salk Kristle Nathan

MB Rajani

Shivali Tukdeo

Arun Vishwanathan

Post Doctoral Associate

Smriti Haricharan (*till August 8, 2014*)

Gangan Deep Kaur

Deputy Librarian

Hamsa Kalyani

Head (Administration & Finance)

P Srinivasa Aithal

Office Manager

B Lalu

Assistant Manager (Administration)

A Deva Raju

Assistant Manager (Accounts & Finance)

P Satish Bhat

Senior Executive Assistants

V Girija

KS Rama Krishna

S Lalitha

Gayathri N Lokhande

Executive Assistants

JN Sandhya

C Shashidharan

VB Mariyammal

AS Mary Stella

R Vijayalakshmi

Junior Executive Assistants

VA Ramesh

MS Shivakumar

Support Staff

Sukhdev Behra

R Harish

G Nagaraja

Gajanana S Naik

Mujeeb Pasha

N Rajesh

N Ramesh

SR Rathnam

S Revanna

S Sampath

N Sathyamurthy

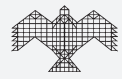
B Shivanandappa

V Srinivasa

MV Sudhakara

Mohammed Umar

G Venugopal



NIAS ADJUNCT FACULTY

SCHOOL OF HUMANITIES

Dr Bruce Bradley

Associate Professor
University of Exeter
Exeter, UK

Dr N Chandrasekaran

Former Pro-Vice Chancellor, Manipal University
and Senior Vice President, MEMG
Manipal

Dr Vijay Chandru (till April 30, 2014)

Chairman and Chief Executive Officer
Strand Life Sciences
Bangalore

Dr Smriti Haricharan

Fulbright-Nehru Postdoctoral Research Fellow
Department of Anthropology
University of Chicago
Chicago

Dr Stephen Hodge

Senior Lecturer
University of Exeter
Exeter, UK

Dr S Jaikishan

Former Principal
SLNSA Oriental Degree College
Dharmapuri

Dr Gillian Juleff

Senior Lecturer
University of Exeter
Exeter, UK

Mr Shivanand Kanavi

Consulting Editor, Business India
Former Global Head, M&S Communication, CMC
Limited

Prof BN Karkera

Reactor Engineer, Visiting Professor and Consultant
to BRNS Project on HLC
NITK, Surathkal

Dr MG Narasimhan

Former Associate Professor
NIAS, Bangalore

Dr Meera Natampally

Principal Architect
SEKOS Architecture Firm
Bangalore

Mr S Raghatham

Journalist/Researcher
Bangalore

Dr Veena Rao

Independent Researcher
Bangalore

Dr Catherine Turner

Senior Lecturer in Drama
University of Exeter
Exeter, UK

CONSCIOUSNESS STUDIES PROGRAMME

Dr Vijay Bhatkar

Former Chancellor
D.Y. Patil (Medical) University
Kolhapur

Dr Nalini Dwarakanath

Professor
Consultant Counseling Psychologist
Center for Counselling and Support
Indian Institute of Science
Bangalore

Dr Ratnavalli Ellajosyula

Head, Department of Neurology
Specialist in Cognitive Neurology
Manipal Institute for Neurological Disorders
Manipal Hospital
Bangalore

**Dr BN Gangadhar**

Dean, Behavioural Sciences
Professor and Head, Department of Psychiatry
Special Officer, Advanced Center for Yoga
National Institute of Mental Health
and Neurosciences
Bangalore

Dr Vishweshwara Guttal

Assistant Professor, Centre for Ecological Sciences
Indian Institute of Science, Associate Faculty, IISc
Math Initiative
Ramalingaswami Fellow (Department of Biotechnology, Government of India)
Bangalore

Prof Prathibha Karanth

Founder Director and Managing Trustee
Communication DEALL Trust
Bangalore

Dr Bindu M Kutty

Professor
Department of Neurophysiology
National Institute of Mental Health and
Neurosciences
Bangalore

Dr LM Patnaik

Honorary Professor
Department of Electronic Systems Engineering
Indian Institute of Science
Bangalore

Dr Jamuna Rajeswaran

Associate Professor and Consultant
Clinical Neuropsychology and Cognitive Neuroscience
Department of Clinical Psychology
National Institute of Mental Health and Neuro-
sciences
Bangalore

Dr Aneesha Sharma

Senior Faculty at Srishti School of Art, Design and
Technology
Bangalore

Dr PA Suresh

Director, Institute for Communicative and Cognitive
Neuroscience
Kavalapara, Palakkad, Kerala

**SCHOOL OF NATURAL SCIENCES AND
ENGINEERING****Dr B Ashok**

Assistant Professor
International Institute of Information Technology
Bangalore

Dr Maan Barua

Research and Teaching Staff
Somerville College
University of Oxford
UK

Mr Amal K Chakrabarti

Former Director, DRDL
Hyderabad

Ms Arundhati Ghose

Former Ambassador
Government of India
New Delhi

Mr S Gopal

Former Sir Ashutosh Mukherjee Chair Visiting
Professor
NIAS, Bangalore

Dr Manabrata Guha

Senior Research Prize Fellow
Department of Politics
Languages and International Studies
University of Bath
UK

Dr Kota Harinarayana

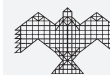
DS Kothari DRDO Chair – ADA
Aeronautical Development Establishment
Bangalore

Dr Michael A Huffman (till September 30, 2014)

Associate Professor
Section of Social Systems Evolution
Primate Research Institute
Kyoto University
Kyoto

Dr Manjari Jain (till April 2, 2014)

Assistant Professor
Department of Biological Sciences
Indian Institute of Science Education and Research
Mohali



Dr HN Kumara (till September 30, 2014)
Scientist –Conservation Biology
Sálim Ali Centre for Ornithology and Natural History
(Under Ministry of Environment and Forests, Govern-
ment of India)
Anaikatty, Coimbatore

Dr MD Madhusudhan (till September 30, 2014)
Senior Scientist and Trustee
Nature Conservation Foundation
Mysore

Dr Kim R McConkey (till September 30, 2014)
Researcher
E-64, Sainikpuri
Secunderabad

Mr KR Sridhara Murthi
Director, IIAEM
Jain University
Bangalore

Prof S Srinivasa Murthy
Former Vice Chancellor
Central University of Karnataka
Gulbarga

Dr Charmalie AD Nahallage (till September 30,
2014)
Senior Lecturer
Department of Sociology and Anthropology
University of Sri Jayawardenepura
Sri Lanka

Dr RR Navalgund
Director and Distinguished Scientist
Space Applications Centre, ISRO
Ahmedabad

Dr Soumya Prasad
National Environmental Sciences Fellow
Centre for Ecological Sciences
Indian Institute of Science
Bangalore

Dr Raghuraman K
Former Senior Program Coordinator in the Director
General's Office for Policy
IAEA, Vienna

Dr YS Rajan
Dr Vikram Sarabhai Distinguished Professor
Indian Space Research Organisation
Bangalore

Dr Mukund Kadursrinivas Rao
Principal Investigator
DST Sponsored project on National GIS Standards
NIAS, Bangalore

Dr Gautam Sen
Former Professor
University of Pune
Pune

Dr Mewa Singh (till September 30, 2014)
Ramanna Fellow and Professor of Psychology
University of Mysore
Mysore

Dr AK Sinha (till May 5, 2015)
Paramilitary Officer from Sashastra Seema Bal (SSB)
and
Senior Research Officer, National Disaster
Management Authority (NDMA)
New Delhi

Dr Sitabhra Sinha (till September 30, 2014)
The Institute of Mathematical Sciences
CIT Campus, Taramani
Chennai

Dr Prakash Sinha (till January 7, 2015)
Reader (Associate Professor)
Department of Ancient History, Culture and
Archaeology
University of Allahabad
Allahabad

Mr VVR Sastry
Former Executive Director
Centre for Development of Telematics (C-DOT)
Bangalore

AGROECOLOGY AND BIOSECURITY PROGRAMME

Dr MV Srinivasa Gowda (till March 1, 2015)
SBM Chair Visiting Professor in Economics
University of Mysore
Mysore



Dr MR Hegde (till March 5, 2015)
Principal Scientist & Chairman
Research Management and Co-ordination Unit
Indian Institute of Horticultural Research
Bangalore

Dr MB Hiremath (till March 11, 2015)
Scientist
KLES PK Hospital & MRC
Belgaum

Dr K Manorama
Senior Scientist (Agronomy)
Directorate of Oil Palm Research, Pedavegi,
West Godavari District, Andhra Pradesh

INTERNATIONAL STRATEGIC AND SECURITY STUDIES PROGRAMME

Vice Admiral RN Ganesh
Former Director General, Indian Nuclear Submarine
Programme
Government of India
New Delhi

Dr Subrata Ghoshroy
Professor, Massachusetts Institute of Technology
MIT, Boston

Prof Bhupendra Jasani
Department of War Studies
King's College
London

Mr LV Krishnan
Former Director
Safety Research and Health Physics Programmes
Indira Gandhi Centre for Atomic Research
Kalpakkam

Mr Saurabh Kumar
Former Ambassador of India to the International
Atomic Energy Agency
United Nations Industrial Development Organisation
and the UN Offices in Vienna
Government of India
New Delhi

Dr Prahlada
Formerly Distinguished Scientist and Chief Controller,
Research and Development
(Aero and Services Interaction), DRDO, Ministry of
Defence, New Delhi
Vice Chancellor, Defence Institute of Advance
Technology
Pune

Admiral Vijay Shankar
Admiral Katari Chair of Excellence
The United Services Institution
New Delhi

Mr P Soma
Former Deputy Director
ISRO Telemetry Tracking and Command Network
Bangalore

Dr KP Vijayalakshmi
Professor
Jawaharlal Nehru University
Delhi

SCHOOL OF SOCIAL SCIENCES

Dr N Shantha Mohan
Former Professor
NIAS, Bangalore

Prof Mario Rutten
Professor, Comparative Sociology and Anthropology
of Asia
Department of Anthropology and Sociology
and Fellow of the Amsterdam Institute for Social
Science Research
University of Amsterdam
Amsterdam

Dr Jyoti Sharma (till September 30, 2014)
Assistant Professor, Department of Education
Shyama Prasad Mukherji College (For Women)
New Delhi