

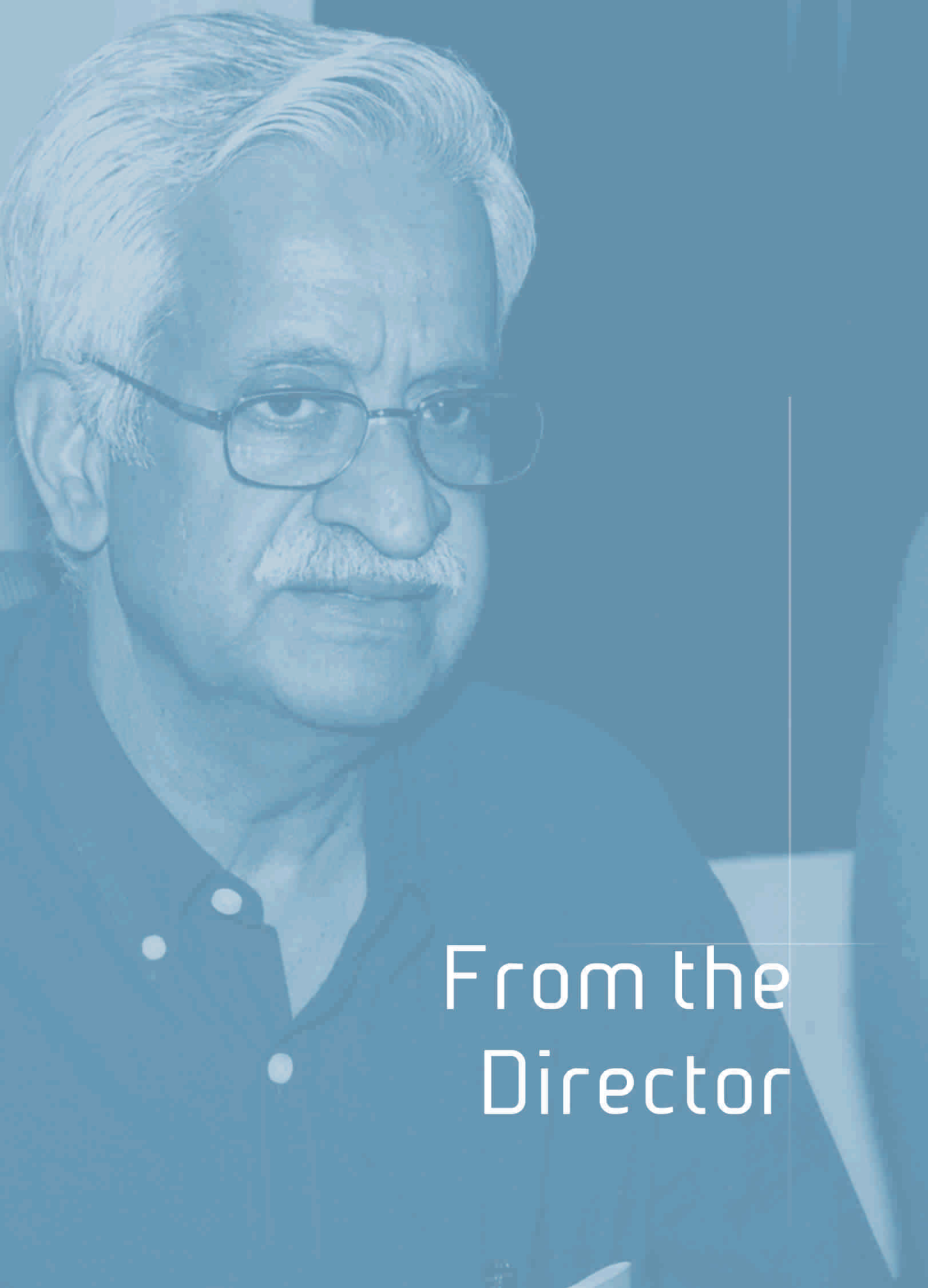


NATIONAL INSTITUTE OF ADVANCED STUDIES

ANNUAL REPORT • 2010 - 2011

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From the
Director

The year 2010-11 has been one of consolidation for NIAS. Not only have we been able to considerably strengthen the faculty with the addition of several new members but we have also strengthened the academic programs in almost all identified areas of research. The doctoral program has been making good progress. A number of students from the first batch of research scholars have already completed their thesis work, received their degrees and have found their first jobs in different academic and R&D institutions. The training programs, including the flagship senior executive program, have as usual received very enthusiastic response. While a description of the different research projects being implemented by the NIAS faculty is given in the ensuing pages of the report, I will like to highlight some of them having special relevance.

It is known that India operates a single time zone, the Indian Standard Time (Greenwich Mean Time + 5 hours and 30 minutes) even though the country extends over two time zones. We have no Day Light Saving Schemes in operation either. The possibility of having two time zones or Summer/Winter times have been considered in the past but have not been adopted since the perceived advantages were seen as marginal. Under the Energy and Climate Policy Program, NIAS undertook a study to examine the implications of the different options for Day Light Saving on over all energy consumption. The study revealed that while all Day Light Saving measures led to some energy saving, advancing the IST by 30 minutes as a one-time measure will save more energy on every day of the year than the other Daylight Saving Schemes (two time zones, summer/winter times) considered earlier while at the same time being less clumsy. The project was funded by the Bureau of Energy Efficiency, Ministry of Power, Government of India. The result has already been presented to an Inter-Ministerial group in New Delhi and is likely to lead to a formal policy decision by the Government soon.

As part of the RBI program on Interdisciplinary Approaches to Economic Issues, NIAS undertook a study of the Mahatma Gandhi National Rural Employment Guarantee Scheme in Karnataka. The process of the worker seeking the work, the process of providing the work and the consequences of this work not only as asset creation but also on poverty, purchasing power, gender equity and agriculture were all studied. The study resulted in specific recommendations to improve the functioning of the scheme in Karnataka. The study was funded by the Planning, Program Monitoring and Statistics Department of the Government of Karnataka.

Reaching the Un-reached in Education has been the focal theme of the Education Portfolio of NIAS. Based on the earlier VIDYANKURA / Chamarajanagar project experience, a perspective paper on education among tribals and adivasis was prepared at the all-India level and submitted to the Ministry of Tribal Affairs and to UNICEF that funded the study. Gifted Education is the new addition to the portfolio during this year. It is ironic that India with its more than 200 million students in the educable age has no program for gifted education. Jointly with Delhi University, Agastya Foundation and the University of Connecticut, NIAS is carrying out a holistic study of Gifted Education and we hope to come out with a Road Map for implementation. The program is supported by the Office of the Principal Scientific Advisor, Government of India.

The Archeo-metallurgy and Cultural Heritage program made considerable headway during the year. The NIAS-Exeter University collaboration project under the UK-India Education and Research Initiative (UKIERI) has been making good progress with several faculty and student exchanges. I led a team to Exeter last month to review the progress of the project and also discuss plans for the future. It was agreed that not only NIAS and University of Exeter will put in an application for the second phase of the collaboration in the next UKIERI call for proposals but we will also broaden the scope of collaboration considerably. It is proposed to organize a dissemination seminar in November 2010 in Bangalore, the proceedings of which will be published as a manuscript for wider dissemination of the results of the project. I may mention here that University of Exeter has been identified as one of the

nine UK Ivy League Universities. The University has established an India Office in Bangalore and has identified NIAS as one of its partners.

Public risk assessment and acceptance is another area that has caught our recent attention as one crying out for a multidisciplinary approach. For example the recent debates on nuclear energy, genetically modified food and even citing of major industrial projects have evoked so much of public emotions that bear little relation to the risks as assessed by experts. We realize that risk communication to the public, risk perception by the public and risk acceptance by the public are factors that play important roles in the public response and these span areas as diverse as science and technology communication, media, philosophy, sociology and even culture. The needed interdisciplinary expertise is available in very few institutions in the country and NIAS is one of them. We plan to launch a major initiative in this area of research.

We recognize that NIAS is a small institution. The multidisciplinary nature of our mandate ensures that the required expertise for any specific study is not always available in-house. We therefore decided to introduce a scheme of Adjunct Faculty, specialists working in other organizations but are willing to join hands with us on specific research investigations. As of date, we have about 20 Adjunct Faculty members in our rolls. Some of our faculty members have also been recognized as Adjunct Faculty in other sister organizations such as IISc, NCBS, etc.

We are in the process of charting out a roadmap for NIAS for the next decade and intend to come out with a vision document (Vision-2020) for NIAS. Clearly, interdisciplinary research, relevance to national needs and human resource development will dominate this effort.



School of Humanities

Prof Arindam Chakrabarti, *Professor (till June 25, 2010)*

Prof Sangeetha Menon, *Professor*

Prof S Ranganathan, *Homi Bhabha Visiting Professor*

Prof Malavika Kapur, *Visiting Professor*

Prof S Settar, *Visiting Professor*

Prof BV Sreekantan, *Visiting Professor*

Dr Rajesh Kasturirangan, *Associate Professor*

Dr Sharada Srinivasan, *Associate Professor*

Dr MG Narasimhan, *Deputy Programme Coordinator*

Dr Smriti Haricharan, *Post-doctoral Associate*

Dr Samir Karmakar, *Post-doctoral Associate*

Dr MB Rajani, *Post-doctoral Associate*



Prof Anand Paranjpe speaks at the discussion meeting sponsored by ICPR on "Indian Psychology" (January 7, 2011)

The School of Humanities is engaged in research in the broad areas of philosophy, psychology, literature, fine arts, and culture. Research in 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; archaeometalurgy and analysis of ancient metals; and translations of literary classics in Kannada into English.

PROGRAMMES

Members:

Dr Rajesh Kasturirangan,
Anchor
Prof Anindya Sinha

Post-doctoral Associates:

Dr V Binoy
Dr Samir Karmakar

Doctoral Students:

Ms Samiksha Bajpai
Mr Subhankar Chakraborty
Ms Rolla Das
Mr Sartaj Ghuman
Ms Shreejata Gupta
Mr Naresh Keerthi

a. COGNITION

The Cognition Programme is based on the assumption that cognition and other mental phenomena are central to the functioning of all living beings. To put it another way, the fundamental principles governing cognition run from single cells to human societies. Further, it is believed that cognition should be studied comprehensively as opposed to bits and pieces (which is the usual scientific approach), with the larger view of life on the one hand and classical problems in the social sciences and the humanities on the other. Such a birds-eye view of cognition inherently calls for an interdisciplinary approach, with crucial inputs from biology, philosophy, mathematics and cognitive science.

In 2010-2011, the Programme made substantial progress in fulfilling these above objectives. Presented the work in all its variations – philosophical work, mathematical models, empirical studies of humans and other species and social science applications in the form of written papers, both as papers written for journals and as papers presented in international conferences. Also built a core team of two faculty members, two postdoctoral associates and six graduate students each one of whom is involved in a range of theoretical and empirical research.

In the last year, the work made significant progress along three lines:

The philosophical and theoretical foundations of cognition.
The study of language, gesture and communication in humans.
The study of mental organization in non-human species.

A brief description of the work in these areas is given below:

Philosophical and Theoretical Foundations of Cognition

Cognitive Science lies at the intersection of the natural sciences and the humanities. As a consequence, some of the best work in cognitive science has come from taking

philosophical problems seriously and then adding a scientific perspective to these philosophical problems. Not surprisingly, the most cognitive science research presupposes the dominant positions of western philosophy. However, many cognitive scientists are aware that these philosophical approaches, while important are nevertheless limited. In recent years, cognitive science is in a theoretical ferment. For example, cognitive linguistics, roboticists, perception scientists and neuro-phenomenologists have all shown how the mind is embodied in concrete spatio-temporal structures. These theoretical debates all stem from the basic conceptual problems in the foundations of cognitive science, which raises the question: How do we change our fundamental intuitions about the mind in order to accommodate these new directions in cognitive science? and, can notions of the mind prevalent in the Indian philosophical traditions help us resolve some of the puzzles in the foundations of cognitive science?

The work on these topics was published in a prominent international journal and also presented in two international conferences.

The Study of Language, Gesture and Communication in Humans

This topic is perhaps the biggest contribution to scholarly research, involving three students, one postdoctoral associate and one faculty member. They have investigated the role of cognition, language and gestures in Indian languages and cognition at large. The goal is to understand the way in which language helps communicate our thoughts. They have researched this issue with an emphasis on spatial and temporal perspectives in serial and compound verb constructions using language data primarily from Bengali. They have also worked on the cognitive basis of compound verbs in Hindi. In related work, they have started looking at the basis of metaphorization and a generalization of metaphor and metonymy that they are calling metagnomy. Moving from language to gesture, they continue to expand their work on the cognitive and neural underpinnings of speech-gesture matrices. They want to understand the cognitive functions of different kinds of gestures in conceptualization and communication and investigate different kinds of gestures forms. Their work on language, gesture and communication has led to several publications and presentations at international venues this year, including the annual meetings of the Cognitive Science Society and the International Society for Gesture Studies.

Mental Organization in Non-human Species

One of the deep questions in cognitive science is the question of how the human mind evolved from its precursors in other species. In other words, to what extent are human capacities for perceiving and conceiving continuous with other species? Furthermore, one would also like to be able to study animal behaviour for its own sake, so that we have a better grasp of how other species come to know their environment. They continue their study of deception in macaques. The behavioural data that had been collected on four troops of bonnet macaques in and around Bangalore was analysed and they looked for patterns of generalization and flexibility in the instances of deception that they displayed. This analysis formed the basis of the presentations made at YETI, a conference for young ecologists in Bangalore and at the Congress of the International Primatological Society in Kyoto, Japan. They also continue to expand their field-based observations of Macaques; they have started behavioural studies of Macaque personality and communication that will yield new insights into the non-human primate world over the next year. In parallel, they have set up a laboratory to study the cognitive abilities of fishes. The apparatus and the experimental arena have been tested and standardized. Two hundred and twenty five climbing perches (*Anabas testudineus*), a freshwater fish, were collected from wetlands of Kerala and acclimatised to laboratory conditions. Experiments to study conspecific recognition, numerosity and transitive inference in this species will be carried out in the coming months.

Members

Prof Sangeetha Menon,
Anchor
Prof BV Sreekantan

Doctoral Students

Ms Namitha Kumar
Ms K Lakshmi
Ms Aneesha Sharma

Research Consultant

Dr Geetha Anand

b. CONSCIOUSNESS STUDIES & PHILOSOPHICAL FOUNDATIONS

Efforts to start discussions on consciousness studies commenced with Dr RL Kapur and Prof BV Sreekantan joining NIAS in the initial years of its inception. While Dr Kapur spearheaded meetings and papers on human health, behaviour and creativity, Prof Sreekantan initiated research in scientific and philosophical studies on consciousness. Subsequently, Dr Sangeetha Menon and Dr Anindya Sinha joined NIAS who focused on Indian philosophical contributions and animal cognition respectively. A larger group with other members was formed later and came to be called as 'Culture, cognition and consciousness' unit, which over a period of time extended its interests from science and philosophy to culture. Several landmark national and international conferences were organized at NIAS such as "Scientific and Philosophical Studies in Consciousness" (NIAS, 1998). This meeting was the first conference in India on this subject bringing together scientists, philosophers, artists, et al. to seek answers for fundamental questions on consciousness and human identity. The other major conferences co-organised are "Science and Metaphysics: Consciousness and Genetics" (NIAS, 2002); "Science and Beyond" (NIAS, 2003); "Consciousness, Experience and Ways of Knowing" (NIAS, 2006). Major scientific and philosophical institutions in India, United States and Europe sponsored these conferences.

Prof Sangeetha Menon's focus of research for the last academic year was Indian psychology, brain and self relations, and self-transformation. Research papers were presented and lectures delivered at nine national and international conferences. Work for one book was completed and progress made towards the completion of two other books: *Nature and Culture*, Narasimha and Menon (2011, PHISPC); *Brain and Self: Final frontiers of consciousness* (Menon, forthcoming in 2012); *Sourcebook of Indian psychology*, sponsored by Indian Council of Philosophical Research (Menon and Rao, forthcoming).

Of the meetings organized the most recent one was on Indian Psychology by Anand Paranjpe from Simon Fraser University, Canada. This event was sponsored by Indian Council of Philosophical Research. The research papers published include chapters in volumes published by Pearson Education, Oxford University Press, and three introductory essays for the library project of International Society for Science and Religion, Cambridge.

Two student internships were guided during this period. A student of integrated M.Sc. (School of Biological Sciences) from National Institute of Science Education and Research, Bhubaneswar completed a report on "Indian Psychology as a Basic Tool of Psychotherapy". Another research internship by a student of Sanskrit focused on concept of consciousness in Vaisesika system of Indian philosophy, and a paper was completed that is now being reviewed for a Journal publication.

Three doctoral students are being guided on areas such as wellbeing, creativity, and positive psychology. Three courses were offered for doctoral students on related topics. Outreach for national and international networking was facilitated through the Board memberships in International Association for Transpersonal psychology, Asia Consciousness Society, International Society for Science and Religion, and Adjunct faculty position in Gitam University, Vishakapatnam.

Prof BV Sreekantan is continuing his efforts at writing the book provisionally titled *Reality, Oneness and Consciousness* based on the latest information that he has collected from the relevant fields of modern physics, astrophysics, cosmology and neurosciences. The main theme of the book is that at the most fundamental level there is increasing realization

that there is a deep connection between these three topics since they perhaps all reduce to quantum processes of just one substratum, namely *vacuum*, though details have to be worked out. It is interesting that there have been similar insights in some of the ancient philosophies, which will also be discussed in the book.

PSYCHOLOGY

Prof Malavika Kapur's academic work in mainstream Psychology especially child psychology, providing professional services as a clinician and a trainer, applied multi disciplinary research in education, dissemination of models for preferred practices in child development and mental health and outreach activities through a Child Counselling Centre, teacher training workshops and working in rural and tribal areas in HD Kote in Karnataka. In addition she also acts as a consultant to national and international bodies like ICSSR, NCERT and the WHO and as resource person at seminars, workshops and conferences. Submitted project proposal to Department of Science and Technology namely *Promotion of Mental Health and Child Development in Rural School Children in Karnataka, 2011*.

HISTORY AND PHILOSOPHY OF SCIENCE

Dr MG Narasimhan has been working in the area of History and Philosophy of Science, with special focus on Biology. Currently he is studying various debates taking place in the interface between Evolutionary Biology and Development. Earlier to this he carried out a study of the Structure and Dynamics of the Theory of Evolution, specifically examining the mechanism of Natural Selection.

c. HERITAGE STUDIES

The coming together of archaeology with materials science, remote sensing and digital technologies has been developed at NIAS as a vibrant interdisciplinary Heritage Studies Programme

In archaeomaterials the principles of high alloying in ancient materials have been elucidated in collaboration with Prof Satyam Suwas of Indian Institute of Science. In studying ultra high carbon wootz steel metallography has been used to determine the evolution of microstructure in samples from the UKIERI survey in Telangana region. Electron back scattered diffraction studies have allowed us to map the texture. Analysis of ferrous artifacts excavated from the site of Kadebakele, North Karnataka by the teams of University of Michigan, University of Chicago and Karnataka State Department of Archaeology has been carried out by **Prof S Ranganathan** in collaboration with **Dr Sharada Srinivasan**.

In the case of high tin beta bronzes, metallography and thermograph have given insights into the making of vessels in Kerala. Modern scientific techniques are used to establish the processing maps with strain rate and temperature as main variables. The ultra high tin delta bronze leads to the Aranmula mirror. The nature of the phase leading to its specular quality has been pointed out. Part of this work is in collaboration with Prof H Mifune and colleagues at the University of Toyoma, Japan.

Remote sensing has emerged with major applications in establishing the landscape of archaeological sites. GPS study of the iron and steel making sites in Telangana under the UKIERI project has begun. This has been expanded with support from the Department of

Members

Dr Sharada Srinivasan,
Anchor
Prof S Ranganathan,
Co-Anchor
Prof S Settar
Prof BV Sreekantan

Post-doctoral Associates

Dr Smriti Haricharan
Dr MB Rajani

Doctoral Student

Ms Hema Thakur

Space, Government of India to cover Hampi and Thanjavur. **Dr MB Rajani** is the lead investigator for these studies.

An exciting development for archaeology is its confluence with computer vision, graphics and image processing. The NRDMS wing of DST has launched a major initiative with the objective of creation of the Indian Digital Heritage. For its first project the World Heritage Site of Hampi has been chosen. NIAS has been asked to play a major role for coordinating 12 Technology and 11 Culture projects with the investigators drawn from a wide variety of disciplines.

In addition **Prof S Settar** and Prof S Ranganathan have contributed to the creation of Digital Narratives in collaboration with Microsoft. Prof S Settar is member of the Evaluation Committee of Projects to claim World Heritage Status to Aihole, Badami – Archaeological Survey of India, New Delhi. He is Consultant to the Hampi Heritage Documentary Microsoft India. His target for the next year is completion of Kannada Lexicon of Transcriptions of the 1st Millennium CE.

UKIERI PROJECT on Pioneering Metallurgy: Origins of Steel-making in the Southern Indian Subcontinent

British Council funded UKIERI Standard Research Award (2009-mid 2011) for collaboration between NIAS and Exeter University, UK, with Dr Sharada Srinivasan and Dr Gill Juleff as lead researchers respectively and Prof Ranganathan as core researcher.

Objectives

The manufacture and use of high-grade steels in the Indian subcontinent before its widespread recognition in Europe is testified by European accounts from the 16th century onwards of the making of '*wootz*', a crucible steel. The intense study of *wootz* and the Damascus blades made from it by scientists such as Michael Faraday and Benjamin Hunstman spurred innovations at the core of the Industrial Revolution. Our knowledge of this exceptional material, however, lacks an understanding of the indigenous ferrous metallurgy that underpinned its development. Although most accounts for *wootz* came from southern India, with production sites in Andhra Pradesh, Karnataka and Tamil Nadu, little sustained field archaeology has been undertaken to establish the antiquity of iron metallurgy in southern India. The aim of this project was to understand the development of ferrous metallurgy in southern India, and in relation to the evidence from Sri Lanka. The starting point was the background related to production sites, ferrous artefacts and metalworking traditions as also explored through archaeometallurgical studies in southern India by the Indian lead researcher, Dr Sharada Srinivasan including from megalithic contexts. The aims were then to apply the research methodology developed in Sri Lanka by British lead researcher Gill Juleff (Exeter University) of conventional field survey and creation of a database related to archaeometallurgical sites. In addition, the project has in mind to explore the implications for advanced materials research with Prof S Ranganathan.

The award for the project entitled 'Pioneering Metallurgy: Origins of Steel-making in the Southern Indian Subcontinent' was successfully applied for as a collaboration between Exeter University and NIAS, to enable exchanges at the level of faculty and students and archaeometallurgical field investigations of sites related to the production of early iron and steel. The background to iron and steel working in southern India and metallurgy in southern India was explored. A major joint NIAS-Exeter field expedition over six weeks was undertaken to the Telengana region of Andhra Pradesh in over February 2010 to early March 2010 which has yielded rich archaeometallurgical evidence for pre-industrial production of iron and steel and over 120 sites surveyed and samples collected for archaeometallurgical study. A comprehensive database is being compiled on the sites surveyed, interviews with blacksmiths, and morphology of surface sites with location information through GPS recordings. Preliminary analytical investigations are underway to develop an appropriate methodology for the further study of the samples. Representative sampled materials are inventoried at NIAS and

being studied for macromorphology as well as further analytical investigations using techniques including CT scans, micro-structural and petrographic study. Monograph preparation is underway.

Digital Heritage of Hampi (2011-2013), 3 year project supported by DST on the topic of **Vijayanagara Bronzes: Insights from an Analytical cum Digital Approach**

Dr Sharada Srinivasan is Principal Investigator and Prof Ranganathan as Co-Principal Investigator and Prof Settar as advisor. This project is a component of a larger project involving technology and culture projects exploring the applications of digital technology to building up a digital resource base for the World Heritage site of Hampi.

Objectives

To undertake analytical-cum-digital studies on characterization and visual capture and 3-D modeling of Vijayanagara bronzes with a view to understanding the iconographic aspects and modelling in traditional sculpture and the ways in which these changed over different periods of Chola and Vijayanagara.

To undertake visual analysis attempting 3-D modelling such as using Synthescape, Maya and others on selected bronzes which have been technically examined or archaeometallurgically finger-printed so that they can be characterized as well as dated and to make valid stylistic comparisons and to explore the discriminating features across different periods.

To undertake related ethnographic and technical documentation related to associated crafts traditions in particular related to stone and bronze traditions.

Project on Analysis of Ferrous Artifacts Excavated from Kadebakele

Principal Investigator on Project on *Analysis of Ferrous Artifacts* excavated from the site of Kadebakele, North Karnataka by the teams of University of Michigan, University of Chicago and Karnataka State Department of Archaeology.

Heritage Science Project (2009-March 2011)

Pilot project sanctioned on scientific studies related to Heritage with reference to developing a larger programme at NIAS on Heritage Studies. Dr Srinivasan is an anchor with Prof Ranganathan. **Dr Smriti Haricharan** works in geoarchaeology and on the Telengana survey.

Collaboration with University of Toyoma on Heat Treatment of High-tin Bronzes

Collaborated with University of Toyoma, Japan on further investigations on heat treatment of high-tin bronzes with Prof Ranganathan as co-investigator. This project also built on Dr Sharada Srinivasan's previous identification on high-tin bronze crafts in Kerala.

Royal Society, UK-DST grant for Scientific Seminar

Co-applicant in successful award under Royal Society, UK-DST scheme for networking India-UK Science Seminar.

Title of proposed seminar: *Indian Iron and Steel – Developing Interdisciplinary Applications in Archaeometallurgy and Geospatial Archaeology*. The proposal was developed with Dr Gill Juleff of Exeter University as co-applicant. Probable dates for the seminar are in early 2012.

Charles Wallace India Trust (CWIT) Research Grant 2011

Successful awardee of Charles Wallace India Trust (CWIT) Research Grant 2011. It is proposed that this may be availed of a little ahead of the Royal Society Seminar proposed in early 2012.

Collaboration with KCHR, Kerala Council for Historical Research, on investigations on metal artefacts from Pattinam.

RESPOND Project applied to ISRO on the theme of 'Implications of satellite imagery on cultural heritage resource management', Dr Srinivasan is one of the co-investigators on the project with Prof Ranganathan as PI and Prof Settar as Co-PI and research team including Dr Rajani, Dr Smriti Haricharan and Ms Nalini. The objectives are to explore the following aspects using GIS, RS and GPS information:

- ✧ Further surveys of steel and Iron smelting sites in the Telegana region of Andhra Pradesh
- ✧ Mapping the heritage site of Tanjavur in Tamil Nadu, using RS and GIS
- ✧ Patterns of urbanization at Hampi using satellite images
- ✧ Encroachment of urbanisation at heritage sites around Chennai such as Mahabalipuram

OUTREACH AND OTHER ACTIVITIES

Prof Sangeetha Menon

A discussion meeting on Indian psychology was organised by Prof Menon sponsored by Indian Council of Philosophical Research on January 7, 2011. Prof Menon travelled to Mount Kailash and Mansarovar (Tibet) in August 2010 as part of her field work. She gave Valedictory and University Extension lectures at Aligarh Muslim University in October 2010. She offered two Course lectures at the Centre for Research in Christ University, Bangalore in March 2011.

Dr Sharada Srinivasan

The UKIERI project is a major international collaborative effort which has undertaken a major archaeometallurgical survey in an area of the country that has been not much studied before, that is the Telengana region. The year has also seen successes in consolidating efforts to build a team of committed researchers at NIAS working in the heritage studies and in building a critical mass of researchers and viable networks as through the UKIERI project. Another major success has been the pulling together of a major DST funded initiative on India Digital Heritage in relation to Hampi whereby together with Prof Ranganathan and Prof Settar, Dr Sharada Srinivasan played a significant role drawing together a team of interested groups from the cultural dimension, comprising various NGOs, groups and institutions especially in Bangalore, (and drawing from our earlier conference on *Tangible and Intangible Heritage of Hampi* in 2009), who could also be co-opted along with the group of people with a background in computer vision and related technologies in this broader project.

Dr Rajesh Kasturirangan coordinated the first NIAS summer school on Concepts and Methods in the Mind and Behavioural Sciences which was held from July 5 to 16, 2010. The school addressed topics that lie at the interface of mind, brain and society. The school was attended by about fifty students from various scientific disciplines and from all over India. One of the outcomes of the summer school was the creation of an online resource for the mind, brain and behaviour community in India. It has a website: <http://www.distributedmind.org>. This site is a comprehensive resource on the mind and behavioural sciences with a special emphasis on issues specific to students and researchers in India. Currently, the website has about one hundred and ten contributors from all over India, including faculty and students at the various institutions that conduct research in cognitive science.

Dr MG Narasimhan coordinated the eighth NIAS-DST course for Senior Scientists cum Administrators drawn from different DST R&D institutions. He participated in the brainstorming sessions organised by the Department of Science and Technology on behalf of NIAS.

Prof Malavika Kapur conducted spring workshop on *Psychology and Education* from April 7 to 9, 2010. The workshop was sponsored and funded by the ICSSR (India) cosponsored by ESRC (UK) and NWO (Netherlands). The workshop was held at NIAS with Prof Malavika Kapur as the convener. The aim was to provide a platform for developing collaborative research by the three nations, it was decided that people interested in such effort meet and develop over ten research protocols, during a Spring 2010 Workshop. The aim of the Spring Workshop to resolve some of these through hands-on development of

cross-cultural research proposals. Three areas emerged as crucial to the effort to bridge the gap between educational and developmental psychology research in three different cultures. Over 40 national and international delegates participated in the workshop.

She runs a free Child Guidance Clinic at the Prasanna Counselling Centre, Bangalore. She conducts outreach School Mental Health and Child Development projects in rural / tribal Schools in HD Kote.

She is council member of the ICSSR, Research Council and in addition to have been in their International Collaboration group with ESRC (UK) Research Committee and nominated by the ICSSR member for the Knowledge Commission's translation of text books into Indian languages initiative. She is member of the Departmental Advisory Board (DAB) of the Department of Educational Research and Policy Perspectives (DERPP) and International Research Division (IRD) of the NCERT. She is convenor of the group representing the profession of clinical psychology with initiative of setting up the Psychological Council of India to initiate the process with the Health and Family Welfare and HRD ministry.

Prof Malavika Kapur was invited by the Health and Family Welfare ministry as the President of the Indian Association of Clinical Psychologists, in July, 2010 for the Southern Consultation at NIMHANS Bangalore and National Consultation on the Mental Health Act at Health and Family Welfare Ministry, New Delhi, March 22, 2011. She was member of the International Advisory Group of the WHO Group on Classification of Children and Adolescent Psychiatric Disorders and attended two meetings in Geneva in March 2010 and November 2010. She was appointed as member of the Expert Committee for Psychology and Education, Indian Council of Social Science Research, New Delhi.

NEW STAFF

Dr Smriti Haricharan joined NIAS as Research Associate on June 1, 2010. She has completed her masters in Experimental Archaeology from the Department of Archaeology, University of Exeter, UK. In 2010 she completed her PhD on the Megalithic Burials around Chennai, using Siruthavoor as a case study. This archaeological site is approximately 40 km south of Chennai, and has over 500 megalithic burials spread over the site. Her thesis concentrates on spatially and temporally understanding the different types of megalithic burials at this site and using Geoarchaeology as a tool to understand the relationship between the burials and their landscape. In 2008 she was involved in excavating eight megalithic burials from this site.

She has been recently involved in creating awareness about archaeological sites, site preservation and public outreach having been awarded the UK Visiting Fellowship 2011-2012, from Nehru Trust for the Indian Collections at the Victoria and Albert Museum to research the viability of adjusting the Portable Antiquity Scheme, UK for the Indian context. Since joining NIAS she has had the opportunity to work on a large-scale Pioneering Metallurgy project funded by the UK India Education and Research Initiative (UKIERI), the lead investigators for which are Dr Sharada Srinivasan, Dr Gill Juleff, Senior Lecturer, Department of Archaeology, University of Exeter and Prof S Ranganathan. This project is aimed at understanding the history of iron production in northern Andhra Pradesh.

Dr MB Rajani joined NIAS as Research Associate on November 18, 2010. Prior to which she was a Research Scholar at NIAS since January 2005 conducting research towards PhD. Her doctoral thesis titled Space Based Archaeological Investigations was submitted to University of Mysore on June 28, 2010. Her research is in the field of remote sensing and GIS applications to archaeology. Her work uses remote sensing data together with available software packages for archaeological application taking into consideration specific geographical condition of individual sites. Some of them are: Multi-spatial, spectral and temporal analysis of the sand covered township of Talakadu near Mysore; 3D perspective views of Badami, Karnataka; Sea level changes and its implication on coastal archaeological site of Mahabalipuram.



School of

Natural and Engineering Sciences

Prof Dilip R Ahuja, *ISRO Professor of S&T Policy & Dean (Academic Affairs)*

Prof PK Shetty, *Professor*

Prof Anindya Sinha, *Professor*

Prof Prabhakar G Vaidya, *Professor*

Prof S Chandrashekar, *JRD Tata Visiting Professor*

Prof S Gopal, *Sir Ashutosh Mukherjee Visiting Professor*

Prof Saurabh Kumar, *Shri TV Raman Pai, Visiting Professor (August 26, 2010 to December 31, 2010)*

Visiting Professor (January 1, 2011 onwards)

Prof Rajaram Nagappa, *Visiting Professor*

Prof K Ramachandra, *Visiting Professor (till January 17, 2011)*

Prof N Ramani, *Visiting Professor*

Prof Lalitha Sundaresan, *Visiting Professor*

Dr Sindhu Radhakrishna, *Associate Professor*

Dr Manabrata Guha, *Assistant Professor*

Dr M Mayilvaganan, *Assistant Professor*

Dr Kshama Lakshman, *Post-doctoral Associate*

Dr Nabeel Mancheri, *Post-doctoral Associate*



India-US Workshop on "Science, Diplomacy and Policy" (January 11 to 13, 2011)

This School covers research in the field of engineering and mathematics, biosecurity, 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 biosecurity; pesticide and environmental stewardship; conservation of wildlife; primate behaviour; and international and strategic studies.

PROGRAMMES

a. AGROECOLOGY, BIOSECURITY & ENVIRONMENTAL STEWARDSHIP

Agroecology, Biosecurity and Environmental Stewardship group is carrying out studies in the following key research themes such as pesticide and environmental stewardship, Crop protection stewardship practices in different agroecosystems, Emerging and reemerging plant and animal pests and diseases, Agroterrorism – biosecurity threats and preparedness, Integrated Pest Management – Strategies for Sustainability, Sustainable agriculture, Socio-ecological Implications of Pesticide Use, Agricultural Innovation Systems in India etc.

Farmers' Education and Perception on Pesticide Use and Crop Economy

The present study on the farmers' education and perception levels in the pesticide predominant zones of India was done to have a base line data on the use and misuse of pesticide under various cropping situations. Agriculture is an important sector for economic development in India. Crop production is an important income source for millions of farmers in some cases with few cropping alternatives due to ecological constraints. All over the world majority of farmers rely on pesticides and fertilizers to increase yields. Pesticide use in most Indian agriculture is an essential part of production technology. The focus was on pesticide use intense crops such as paddy, cotton, sugarcane, wheat, apple, pomegranate, mango, grapes and vegetables covering different agro-ecological zones in India. Primary data were collected from farmers, agricultural labourers, pesticide vendors and agricultural officers. Intensive survey involving farmers belonging to 28 districts in 12 Indian states was carried out in pesticide use predominant regions to study the influence of farmer's awareness, education and practices related to pesticide use as well as Integrated Pest Management (IPM) measures.

Data were collected through pretested schedules and the data were analyzed. The results revealed that though overall consumption of pesticide decreased, the expenditure incurred on pesticides remained high. Most of the respondents in the surveyed area followed their

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own spraying schedules and pesticide doses to manage ever increasing insect pests and disease problems. More than 50% of the respondents applied both single and cocktail pesticides to manage their crop pests. Greater number of the literate farmers had strong perception on the negative impacts of pesticides on soil, water, air and beneficial organisms. Only 20% of the respondents obtained their information on plant protection aspect from the agricultural extension officer and the rest of 80% of the farmers used unreliable information in crop production of surveyed areas. The respondents in the study regions were of the opinion that chemical methods of pest control are very effective in combating serious pest infestation. In the study area it was observed that only 3% of the respondents followed organic farming in a successful way. The total area under organic farming in India is negligible. There is a tremendous scope for agricultural extension activity through which stewardship can be achieved in these pesticide predominant regions. Nevertheless, costs on ever increasing safety measures for pesticide applicators would be an additional burden which is to be considered seriously under resource poor small and medium holding systems.

Research and Higher Education Scenario in Select Indian State Universities

This work was an attempt to study the state of higher education; in particular research, in science and technological fields in select state universities in India (two state universities from each region viz. East, West, North, South and North-East). University research activities were critically examined based on internationally accepted metrics such as the credentials of the faculty, PhDs awarded, research publications, patents secured and recognition accorded via cited publications, major research grants and awards. This study is confined to only ten selected state universities from the different regions of the country. The findings from this study would be useful to understand regional disparities in science and technological developments in the country.

The result of the analysis revealed that during the period of survey Calcutta University ranked first in terms of published research articles, on an average 664 articles in a year in peer reviewed national and international journals. Similarly Madras, Panjab, Rajasthan, Mysore, Gauhati, Pune, Mumbai, Patna and Sikkim Manipal Universities published 600, 582, 538, 328.33, 221, 184.33, 112.5, 47 and 5 articles respectively. The ratio of number of faculty to research publication varied from 1:0.05 to 1:1.9 in the selected universities. University of Madras, Panjab, Rajasthan and Calcutta have ratio more than 1:1. University of Madras received the maximum research funds of 41.46 crore rupees and ranked first among the selected ten universities. Considering the overall performance of universities in our analysis, Calcutta University and Madras University respectively captured the first two places.

Intensive Cultivation of Cardamom and Its Environmental Impacts

The recent intensification of small cardamom (*Elettaria Cardamomum* Maton) farming, and the prospects of intensification, will have the major detrimental impacts on the Indian cardamom hills ecosystem. The increased (4 fold) cardamom production during the past 30 years was associated with a several fold increase in the consumption of fertilizers and pesticides as well as drastic reduction in erstwhile rainforest land and canopy cover. Based on simple linear extension of past trends, and the anticipated future demand of cardamom would be associated with approximately 3 fold increase in both nitrogen and phosphorus fertilizer rates as well as pesticides (4-5 fold increase in number of spray rounds) and further reduction in forest canopy cover (40%). These projected changes would have dramatic impacts on the functioning of the cardamom ecosystem because of complete loss of biodiversity and land and forest degradation. The largest impacts would be on fresh water ecosystem, which would experience eutrophication by high rates of nitrogen and phosphorus release from cardamom and tea plantations, and contaminated with various toxic pesticides. These detrimental environmental impacts of intensive cardamom agriculture can be minimized only if there is much more efficient use and recycling of nutrients between forest and soil.

b . ECOLOGY, BEHAVIOUR AND CONSERVATION

The Ecology, Behaviour and Conservation Programme (EBCP) of the School of Natural and Engineering Sciences, led by Anindya Sinha, Professor and Sindhu Radhakrishna, Associate Professor, has, over the last fourteen years, specialised in studying the biology of primates and other animal species from a variety of perspectives including ecology, behaviour, cognition, genetics, and conservation through the use of a variety of observational, experimental, mathematical, computational and philosophical methods. Exceptional for the kind of research it has been conducting, the EBCP is also remarkable for several other reasons, the least of which is the enormous breadth of its research areas, despite its small size. Consisting of eight research scholars, two post-doctoral fellows and several collaborators from all three Schools in NIAS and from twelve institutions across India, Japan and the United States of America, it is the only group in the country that is currently 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 750 individually identified animals continuously over ten years, one of the few groups in the world working on the behavioural ecology of nocturnal primates in the wild, and the only group in India that has been credited with the discovery of a new primate species.

A. ECOLOGY, DEMOGRAPHY, BEHAVIOUR, GENETICS AND CONSERVATION OF SOUTHERN INDIAN DIURNAL PRIMATES

1. **Distribution, Morphology, Behavioural Ecology and Phylogenetics of the Bonnet Macaque**

The bonnet macaque, ubiquitous but endemic primate of peninsular India, has been celebrated through art, sculpture and literature as an integral part of southern Indian culture for almost over two thousand years. And yet we know so little of this species, considered one of our most important agricultural pests. The bonnet macaque is believed to consist of two subspecies with subtle morphological differences, with the southern subspecies restricted to southeastern India.

Over the last year, we have examined the morphology, demography and life history strategies of identified individuals in selected troops of the two subspecies in two protected areas – Bandipur National Park and Kalakad-Mundanthurai Tiger Reserve – within their respective distributions. This investigation, the fieldwork for which was completed last year, thus aims to confirm the biological legitimacy of the two subspecies using several alternative empirical field and laboratory approaches, including geographical distribution, morphometric analysis and population genetic differentiation.

2. **Demography, Ecology and Social Evolution in Wild Bonnet Macaques**

We have also been continuing a long-term field project, begun in 2000 and proposed to continue for twenty years, investigating the demographic structure, population dynamics and socioecology of a population of wild bonnet macaques in the Bandipur National Park – Mudumalai Wildlife Sanctuary complex in the states of Karnataka and Tamil Nadu.

During the last year, we have continued our demographic monitoring of twenty-two troops of the species and concluded quantitative observations on the socioecology of five of these groups. During this work, we have been able to document the influence of the tourist traffic through these sanctuaries on the evolution of a new unimale form of social organisation in this species, characterised by certain unique demographic and behavioural features. Our

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studies on the socioecology of selected multimale and unimale troops in this population have allowed us to evaluate the ecological and anthropogenic factors that may have influenced the trajectories of social change in this population.

3. Social Organisation and Social Relationships in Wild Bonnet and Rhesus Macaques

We have also completed a field study on the demography and socioecology of pure and mixed-species troops of rhesus and bonnet macaques in the states of Andhra Pradesh and Maharashtra last year. Two important accomplishments of this project include the delineation of the distribution boundary of rhesus and bonnet macaques in peninsular India, and studies on the behavioural ecology, demography and conservation status of the two species and their mixed troops in selected sites in western Maharashtra.

4. Ecology and Conservation of the Lion-Tailed Macaque in Karnataka

The lion-tailed macaque is a highly endangered primate that is facing imminent local extinction or is on a sharp decline in many protected areas over its distributional range in the Western Ghats. The newly discovered Sirsi-Honnava population of the macaque marks the northernmost point of its distribution. Over the last year, we have been continuing our studies on the ranging and feeding ecology of this population and initiated conservation measures to protect its last constituent groups.

B. ECOLOGY, BEHAVIOUR AND CONSERVATION OF NORTHEAST INDIAN DIURNAL PRIMATES

1. Community Ecology and Conservation of Primate Communities in the Lowland Rainforests of the Brahmaputra Valley, Assam

We are continuing our research project on the distribution and community ecology of four macaque species – the Assamese macaque, pigtailed macaque, rhesus macaque and the stump-tailed macaque, together with the hoolock gibbon and the capped langur – in the lowland rainforest fragments of the Upper Brahmaputra Valley in Assam.

Over the last year, during the second phase of this project, we had conducted and completed a detailed observational study on the resource utilisation, competition and niche partitioning displayed by the above-mentioned primate community in the Hollongapar Gibbon Wildlife Sanctuary of upper Assam. This project also aims at evaluating the survival status of these endangered primates and devising conservation strategies for the endangered populations of these species. Local people – students, teachers, researchers, conservationists and forest management personnel – in upper Assam have thus been trained over the last five years, including the last, in some basic methodologies to enable them to monitor specific macaque communities, identified as threatened, and implement appropriate management strategies for their conservation.

2. Social Behaviour and Communication in the Hoolock Gibbon

The hoolock gibbon, the only anthropoid primate found in India, is a pair-living, territorial species, which duets extensively. There have been various hypotheses suggested to explain the function of this behaviour in monogamous primates include territory advertisement, pair-bonding, mate defence, resource defence and group cohesion. This study aims to understand the nature of social behaviour of this species, and how duetting contributes to the repertoire of social behaviour in this primate.

Our preliminary results from the fieldwork, which was concluded last year, suggest significant difference in the patterns of social behaviour across the three study groups, a rather more dominant role of the adult male in the monogamous relationship in contrast to the predicted equality of dominance status across the two sexes and considerable infant care by the adult males in the study groups. Some support could be established for the pair bonding, territory defence and pair-advertisement hypotheses to explain duetting in our study groups.

C. DISTRIBUTION AND CONSERVATION OF THE TWO NOCTURNAL INDIAN PROSIMIANS

1. **Distribution, Abundance and Conservation Status of the Slender Loris in the Eastern and Western Ghats**

Our studies on the slender loris has been continuing to explore the geographical range limits of the two Indian subspecies, the Mysore slender and the Malabar slender loris, their population densities, and factors affecting their abundance in the Eastern and Western Ghats mountains.

Field surveys investigating the presence and abundance of lorises were conducted in the states of Tamil Nadu, Kerala, Maharashtra and Goa over the last year. Apart from exploring the distribution patterns of the two subspecies, an important aim of the study has also been to examine the conservation status of the species, with particular reference to the effects of hunting and habitat degradation. The study is not only directly relevant to the conservation of the slender loris, but would also enhance our understanding of biodiversity of the Eastern and the Western Ghats.

2. **Population Survey of the Bengal Slow Loris in Northeastern India**

Our project on the Bengal slow loris, initiated last year, has been surveying forested areas in Mizoram and Meghalaya in northeastern India, in order to estimate the population status of this highly endangered, though virtually unknown, species. The species is seriously threatened by hunting and deforestation and yet, due to a lack of information about its behaviour or ecology, stable conservation measures cannot be initiated to ensure its survival.

This study is part of a long-term effort to map the distribution of the species in all the states of northeastern India, determine critical conservation threats to its survival and study the socioecology of the species. Thus, the goal of this project is not only to achieve immediate management measures but also to work towards a long-term effort that will result in more stable and enduring conservation strategies for the Bengal slow loris.

D. INDIVIDUAL TEMPERAMENT, SOCIAL COGNITION AND COMMUNICATION IN NONHUMAN PRIMATES, HUMANS AND FISH

1. **Social Cognition, Communication and Culture in Wild Bonnet Macaques**

One of our long-term interests has been to investigate the social cognitive abilities of wild bonnet macaques, particularly from the perspective of both distributed and/or embodied cognition as well as individual internal processes such as theory of mind. Our earlier studies had focused on specific behavioural processes including the acquisition of social knowledge and tactical deception in this species.

Over the last year, we have been continuing our exploration of these processes and their interactions in wild bonnet macaques, drawing upon inter-disciplinary approaches such as observational studies of behaviour, philosophical analyses and mathematical modelling. We have also continued to document behavioural transmission in this macaque and are currently investigating the cognitive processes underlying tactical deception in wild groups of this species.

2. **Temperament and Personality in Wild Bonnet Macaques**

Personality, from an evolutionary perspective, represents a meta-category of the output of a suite of species-typical, relatively domain-specific, evolved psychological mechanisms designed possibly in response to the social adaptive problems recurrently faced by our primate ancestors.

Early last year, we initiated a study on the evolutionary reconceptualisation of the development, structure, and processes of human personality through a closer understanding of the nature of

temperament/personality in nonhuman primates that live in complex social groups, often in changing environments. We are currently in the process of devising novel methodologies that could be employed to not only define but to gain deeper insights into several issues of personality in a nonhuman primate species, typically characterised by remarkable variation in individual life-history strategies. These include, but are not restricted to, consistency/variability in personality traits, individual differences against the background of a ubiquitous species-typical nature, sex differences and similarities, age-graded and developmentally contingent personality phenomena, and the contextual determinants of personality.

3. Mechanical and Social Cognition in the Climbing Perch

Cognitive abilities had traditionally been thought to be a uniquely human capacity until several authors established the existence of cognitive capacities comparable to that in humans in many species of mammals, some birds and fish. The currently prevailing view in evolutionary cognitive psychology thus accepts the possible continuity of phylogenetically shared core systems from nonhuman species to that of our own. Recent investigations have claimed that fish, animals residing at the base of vertebrate evolution, are not 'organisms with a three-second memory' but also possess complex cognitive abilities and may even have culture and consciousness comparable to that in advanced vertebrates.

Last year, we initiated a project that aims to test whether a freshwater fish, the climbing perch, possesses certain cognitive abilities and to examine, if possible, the underlying mechanisms responsible for the execution of these phenomena. The abilities that we have begun to examine include visual recognition of conspecific and heterospecific individuals, use of numerical information to discriminate between small, discrete quantities, and the application of transitive inference or the deciphering of the relationship between pairs of non-adjacent elements through the ordering of known adjacent elements.

E. MOLECULAR, POPULATION AND BEHAVIOURAL GENETICS OF INDIAN MACAQUES

1. Phylogenetics and Phylogeography of Bonnet, Assamese and Arunachal Macaques

This collaborative project has been exploring the molecular phylogeny of the sinica group of macaques, including the Arunachal macaque species complex, Assamese macaque and the bonnet macaque. We have already determined the exact phylogenetic position of the Arunachal macaque and the macaques of central Arunachal Pradesh within this species group.

During the last year, we have begun to employ species-specific microsatellite DNA sequence probes to investigate the population genetic structure of the Arunachal macaque, the macaques of central Arunachal Pradesh and the Uttarakhand macaque, and the molecular population genetics of bonnet macaques over its entire distribution range in peninsular India. We have also been exploring the subspecies status of the bonnet macaque using a molecular taxonomic approach. Our most noteworthy achievements during the last year include a complete characterisation of about thirty bonnet macaque and Arunachal macaque microsatellite sequences and the successful isolation and amplification of both mitochondrial and nuclear DNA from faecal samples.

2. Behavioural Genetics of Aggression in Bonnet Macaques

In this collaborative project, initiated in May 2007, we are exploring the genetic basis of certain social behavioural patterns in macaques. We are studying the genetic polymorphism of the promoter region of a gene, 5-HTTLPR, responsible for the uptake and transport of the important neurotransmitter serotonin, in three macaque species: the behaviourally well studied bonnet macaque, the recently-discovered Arunachal macaque complex and the ecologically-restricted liontailed macaque. A well-characterised sequence length polymorphism at this locus influences individual behavioural traits and

cognitive abilities in humans and rhesus macaques. Macaques have been classified into four continuous grades on the basis of their behavioural attributes, ranging from highly hierarchical and nepotistic species to the most egalitarian and tolerant ones.

Our analyses of wild populations of the three above-mentioned species, conducted over last year, have found that the polymorphism occurs in both the bonnet macaque, an egalitarian and tolerant species, and in the rhesus macaque, a despotic and highly hierarchical species. Our results thus reject a role for this particular polymorphism in interspecific behavioural variability and indicate that polymorphic species enjoy greater ecological success possibly due to their higher intraspecific variability in individual behavioural traits.

F. THEORETICAL ANALYSIS AND COMPUTATIONAL MODELLING OF THE STRUCTURE AND DYNAMICS OF PRIMATE SOCIETIES

1. Social Network Analysis of Bonnet Macaque Societies

Our research on primate societies has so far implicitly assumed that social complexity arises due to cognitively sophisticated decision-making processes exercised by each individual on the basis of individually acquired and processed information. Group-level dynamics of complex primate societies could, however, also be explained by more parsimonious, non-cognitive alternative hypotheses arising from general individual-based rules, as predicted by principles of self-organisation and chaos.

Last year, we initiated an investigation into appropriate agent-based models that could account for several emergent properties of the bonnet macaque social networks that we have earlier observed. We are interested in the role played by interactions between general rule-based behaviours and individual-specific cognitive behaviours in the emergence of social networks such as those of cercopithecine primates, which perhaps represent an intermediate stage between the simpler prosimian groups and the much more complex human societies.

2. Development of Statistical Methods and Computational Tools

This project, being conducted over the last two years, aims to explore the possibility of developing more robust statistical methods and computational tools to model complex social dynamics data and determine guidelines for the allocation of sampling effort when dealing with complex systems such as primate societies.

G. ECOLOGY, BEHAVIOUR, GENETICS AND CONSERVATION OF BIRDS AND MAMMALS IN THE WESTERN GHATS

1. Demography, Ecology, Behaviour, Population Genetics and Conservation of the White-Bellied Shortwing

The white-bellied shortwing is a threatened bird, which lives almost exclusively in the shola patches of the Western Ghats. We have been studying its ecology, demography, behaviour, genetics and conservation over the last six years, especially across isolated habitats exhibiting varying levels of ecological and anthropogenic disturbances.

Over the last year, we have continued our investigations into (1) the population dynamics, foraging ecology and vocal communication of populations in natural forests and along a disturbance gradient, and (2) the population genetic structure of the species and the molecular sexing of individuals. Our results indicate that populations separated by appreciable geographical distances and/or severe anthropological disturbances are genetically distinct from each other to varying degrees; these populations thus represent 'sky-islands' in the high-altitude shola forest patches of the Western Ghats.

During the last year, we also examined breeding song variation across two isolated, genetically different populations of the bird and also between two genetically similar populations in a single area separated by deforested lands. We found that all three populations were significantly different from each other with most difference between the genetically different populations across the two isolated populations. We also found that in each population, there were individuals that sang songs that were typically of another population while some individuals sang only songs of its own type. Our preliminary results thus imply cultural differences between populations isolated by fragmentation while corroborating accepted patterns of congruence between song and genetic divergence across isolated habitats.

2. Behavioural Ecology and Conservation of Flying Squirrels

Flying squirrels are nocturnal, arboreal small mammals, distributed largely in the fast disappearing tropics of south and southeast Asia. India has upto eleven species of flying squirrels, and two of these are distributed in the Western Ghats: the endemic and vulnerable Travancore flying squirrel and the Indian giant flying squirrel.

During the last year, as part of our ongoing project on the behavioural ecology and conservation of these two species, we continued our studies to explore if the two species are sympatric across different forest types and altitudes, and to record their natural abundance levels in such habitats.

Detailed field studies will not only enable us to understand the field biology of these virtually unknown species of mammals, birds and reptiles better but also allow us to frame conservation strategies for them as they continue to be highly endangered in their natural, often fragmented, habitats of the Western Ghats.

H. HUMAN-WILDLIFE CONFLICT AND COOPERATION

The interaction between humans and wildlife is also an important component of conservation. This relationship could range from conflict to co-existence and to co-operation, and is typically influenced by a number of factors. Attempts to understand human-wildlife interactions often tend to stereotype both human communities as well as wild species, when in reality, both are multidimensional in their makeup. Understanding the complex dynamic that drives this interaction can be vital in planning management strategies to deal with present or potential conflict. We have recently initiated four projects, which are exploring different dimensions of human-wildlife conflict.

1. Rhesus Macaque-Human Conflict in Northern India: Attitudes and Perceptions

Primates occupy a unique place in Indian society and culture. Various viewed as pets, playfellows, deities, and pests, they serve to provide amusement and are even seen as objects of reverence and affection while being reviled as scourges and 'simian terrorists', especially when they raid cropfields and kitchens. Although primates have always coexisted with humans in India, often amicably enough, increasing populations and decreasing resources have turned this relationship more fraught over the past few decades. And this situation is, perhaps, most forcibly expressed in the case of the rhesus macaque in northern India.

The aim of this study, initiated early last year, is to document the nature of the rhesus macaque-human conflict in selected villages in the affected states of Uttarakhand and Himachal Pradesh in order to evaluate the attitudes and perceptions of the local agricultural community towards the problem macaques. The specific objectives of our study are thus to assess the nature of human-rhesus macaque conflict in these villages, evaluate the demography and foraging ecology of the problem macaque

troops, particularly with reference to the extent of crop-raiding, assess the socio-economic impact of crop-raiding caused by the macaques, and evaluate the attitudes and perceptions of the local community towards the rhesus macaque and its conservation.

2. Human-Hanuman Langur Conflict at Dakshineswar, West Bengal

This project, conducted over the last two years, examined the nature of conflict between a troop of hanuman langurs and humans at the Dakshineswar Kali Temple and Debottar Estate, Kolkata. The aims of this investigation are to examine a consolidated time-activity budget of the troop, determine dietary composition and its variation during the course of the day, observe and categorise human-langur interactions at the temple, identify the key individual adult females who contribute to these interactions, and finally, conduct a survey of people's perceptions and attitudes towards the langurs, a threatened species increasingly facing conflict with people.

3. Human-Elephant Conflict Around Bannerghata National Park, Karnataka

Human-elephant conflict has emerged as one of the pressing issues influencing prospects of long-term conservation of the Asian elephant in India. It has the capacity of turning the tide against elephant conservation and making decades of effort in protecting the species worthless. Such conflict is more pronounced in fragmented elephant habitats, the norm in human-dominated elephant range countries, and it is thus crucial that we understand the behavioural ecology of elephants in response to resource availability and human disturbance in such habitats.

Last year, we initiated a study that proposes to estimate resource availability and human disturbance in the human-dominated elephant habitats around the Bannerghata National Park and evaluate the demographic, foraging, social and ranging behaviour of elephants in this area. We will assess the behavioural adaptations of elephants to the prevailing conditions of resource availability and human disturbance, the nature of interactions between humans and elephants, the possible temporal and spatial separation between the two species.

4. Irrawaddy Dolphin-Human Interactions at the Chilika Lagoon, Orissa

In this study, we use the interaction between the Irrawaddy dolphin and fishers of Chilika lagoon as an example of a human-wild species relationship. The objectives of this study have been to (a) understand the feeding behaviour of dolphins at fishing nets, (b) determine perceptions of fishing communities towards the Irrawaddy dolphin at Chilika Lagoon, and (c) explore the socio-economic, political, historical, ecological and cultural drivers of fisher attitudes towards dolphins. Our initial results from fieldwork, conducted over the last two years, indicate that Irrawaddy dolphins are fairly dependant on fishers as they spend 60% of their time barrier foraging at stake nets. Fishers, on the other hand are mostly positive to neutral in their attitude towards dolphins, with traditionalism and proximity to dolphins being important variables in influencing their dispositions. As preliminary studies indicate that the population of Irrawaddy dolphins at Chilika lagoon is low and decreasing, the importance of preserving the relationship between fishers and dolphins is apparent, especially as local stakeholders will have to actively participate in mitigating human-related dolphin mortality in the future.

I. CONSERVATION EDUCATION

1. Conservation Education through Citizen Science: A Pilot Study in Malappuram District, Kerala

The need to implement stringent and decisive conservation measures in a populous and biodiversity-rich country like India is well acknowledged; the actual implementation of public education and awareness in order to protect our biological resources is, however, not an easy task. As a step towards realising the goal of integrating conservation education into science education in schools, we embarked upon a project of developing conservation education through citizen science. The more

specific aims of our project are to improve students' understanding of biodiversity and raise awareness about threats to biodiversity. In the pilot phase of our project initiated last year, we have begun a study in the Malappuram district of Kerala, involving students in the age group of 13-15 from 15-20 schools in the district.

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Ms Soumya Mangalagiri
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Ms Neesha Dutt

c. ENERGY AND CLIMATE POLICY PROGRAMME

The Programme for Research on Energy and Climate Policy at NIAS is devoted to exploring and finding solutions to some of India's vexing energy problems that also exacerbate climate change. The Centre would be focused on policy relevant analysis useful for decision-making in the country. Its guiding principle is to suggest solutions that do not create a different set of problems while trying to solve one set. While the failure to provide adequate energy supplies will prove to be a damper on India's economic growth aspirations, each of the energy sources that we could tap have their own constraints to rapid growth.

Sustainable energy can be defined as energy systems, technologies and resources capable of supporting long-term human and economic development subject to the following four constraints: 1) Costing the least in economic terms; 2) Preserving the integrity of natural systems; 3) Extending energy services to people currently unserved; and, 4) Reducing the risk of geopolitical conflict arising out of competition for unevenly distributed energy resources. Globally, current energy systems pay attention to the first constraint but fail in varying degrees to adhere to next three constraints.

India has the dual problem that while providing clean, reliable and affordable energy services for continued economic growth to those with access, it has the obligation to provide similar services to hundreds of millions currently unserved. In order for this to be socially sustainable, the production of energy has to pay increasing attention to adverse social impacts (e.g., displacement, resettlement and rehabilitation of people) and to be environmentally sustainable, to the adverse environmental impacts which at the global scale include climate change, air and water pollution at the regional scale and land degradation at the local level. To maintain reliability, the security of supplies has to be ensured.

During the year, the Programme conducted research on Options for Adjusting Indian Standard Time for Saving Energy. This project was funded by the Bureau of Energy Efficiency, Ministry of Power, Government of India. The draft Report was published as a NIAS Report R3-2010 in October 2010 and presented to an Inter-Ministerial Group in New Delhi on December 15, 2010. The following is a brief summary of the study.

Options for Adjusting Indian Standard Time for Saving Energy

Countries have experimented with Daylight Saving Time (DST) to better align human activities to the daily cycle of light and darkness and to save energy. There have been demands for the introduction of two time zones from north-eastern India. We estimated the energy savings from the introduction of DST, and from the introduction of two time zones, and compared them to the alternative of obtaining year-long benefits of daylight saving by advancing Indian Standard Time (IST). We found that the option of advancing IST consistently saves more energy as compared to the corresponding DST, which in turn saves more energy than corresponding time zones. This is because the benefits of advancing IST accrue for the entire year throughout the country, whereas the benefits of DST are confined

to summer months and the benefits of two time zones are largely in the lower energy consuming eastern part. We recommend advancing IST by half hour to being UTC + 6:00. This will confer the advantages of DST and time zones without their disadvantages and save over 2 billion units of electricity per year during the difficult to supply evening peaks.

d. INTERNATIONAL STRATEGIC AND SECURITY STUDIES PROGRAMME

The mainstay of the Programme is the five year (2008-2013) DRDO sponsored study relating to *Science and Technology Dimensions of National Security*. The principal objective of the project is to build up a science and technology focused multi-disciplinary capability in the field of strategic studies at NIAS. While the MOU with DRDO broadly outlines the parameters of the five year study, specific topics of study get outlined in the biannual review taken by DRDO. Mid-term review of the Project was done in March 2011 and the review committee expressed satisfaction over the results produced so far. The committee also recommended the priority areas of study that needs to be taken up in the second half of the Project duration. In addition, a new project study on *Future War under Emergent Conditions* was approved by the DRDO authorities. The project will be of one year duration. The study is expected to identify areas of future exploration and it is likely that separate funding will be earmarked for later continuation.

The Programme also carries out studies specific to User defined needs of other institutions as well as on subjects of topical interest and two proposals are under active consideration of the sponsoring agencies.

Topics of Study

- ✧ *Update of Chinese and Pakistani Ballistic Missiles*
The performance of the missiles was updated using the in-house developed trajectory programme which includes the effect of earth rotation.
- ✧ *Template for Innovation*
Presented to the DRDO review team in the October 2010 review. DRDO will examine the possibility of adopting the template.
- ✧ *Terrorism Studies*
Cataloguing of terrorism incidents, type of devices used, casualties have been collected and catalogued. It is proposed to collect further material and examine for the establishment of a pattern.
- ✧ *Study of Integrated Air Defence System*
The study examines the critical design features of an ideal integrated air defence system. Case studies of Pakistan and China are included.
- ✧ *Consolidation of Work on Single Crystal Turbine Blade Material Development and Application in China*
Report has been prepared and is under review.
- ✧ *Analysis of Anti-ship Ballistic Missile Feasibility*
The scope of study includes issues of long range detection using 'over-the-horizon' radar, detection uncertainties, missile trajectory shaping and warhead maneuvering requirements to target aircraft carriers.

Members:

Prof Rajaram Nagappa,
Anchor
Prof S Chandrashekar
Prof S Gopal
Dr Manabrata Guha
Prof Saurabh Kumar
Dr Nabeel Mancheri
Dr M Mayilvaganan
Prof N Ramani
Prof Lalitha Sundaresan

Adjunct Faculty:

Vice Adm (Retd) RN Ganesh
Prof Subrata Ghoshroy
Prof Bhupendra Jassani
Dr LV Krishnan
Vice Adm (Retd) Vijay Shankar

- ✧ *Indian Strategy in the Eastern Oceans*
The study aims at building strategic-military scenarios.
- ✧ *Emerging Concepts of War*
Based on round table discussion held in NIAS, follow up work with DRDO and Integrated Defence Staff is taken up.
- ✧ *Study of Rare Earth Elements in China – Growth, Strategy and Implications*
The study plans to explore the rare element reserves in China and China's role in the supply-demand equation, price mechanism and policy implications.
- ✧ *Nuclear Weapons in Relation to India's External Strategic Environment*
Review of literature on all related issues, nuclear disarmament in particular and the changing politico-diplomatic equations in the Asia-Pacific region.
- ✧ *Political Economy of India's Free Trade Agreements*
The study analyses the economic, political and strategic motives behind Indian FTA's.

OUTREACH AND OTHER ACTIVITIES

Prof Dilip R Ahuja organized the Indo-US Workshop on *Science, Diplomacy and Policy* jointly with the American Association for the Advancement of Science, Bangalore from January 11 to 13, 2011. He also organized the Symposium on Towards Substantial Green Energy Supply for Urban Karnataka in 2020 and 2050, jointly with The Goethe Institute and GTZ, Bangalore on November 9 and 10, 2010. He helped draft the Ministerial Declaration to emerge from the Delhi International Renewable Energy Conference in November 2010.

The ninth NIAS-CISAC Track-2 Dialogue Meeting was held at NIAS with the CISAC team on October 21, 2010. Topics on civil nuclear cooperation, biological threats and biological security and science cooperation and confidence building measures were discussed.

DST sponsored course on *National Security and Strategic Contexts* was conducted by the Programme during September 20 to 24, 2010. The Course was attended by 24 middle and senior level officers of Government Departments. **Prof Lalitha Sundaresan and Dr Manabrata Guha** coordinated the event.

Round Table on *Future War* was conducted on September 25, 2010 with the participation of very senior officials from the Defence Ministry and senior academics.

Nine Discussion Meetings were held during the year with National and International participants. Topics included security issues, strategic affairs, public policy, space policy and security, Indo-US strategic relations and South / Southeast Asia.

NEW STAFF

Prof S Gopal joined NIAS as Sir Ashutosh Mukherjee Visiting Professor on May 1, 2010. He has been with the Govt. of India for more than three and a half decades during which he had wide experience in analysis of national and international security and strategic affairs. After retirement he was instrumental, along with some other colleagues, in starting a think tank - Institute of Contemporary Studies Bangalore. The Institute had started a quarterly called Contemporary Analyst in which Prof Gopal has been a regular contributor. One of the important papers has been on CTBT entitled India and the CTBT. He has also wide experience in technical and imagery intelligence analysis.

Prof Saurabh Kumar joined NIAS as Shri TV Raman Pai Chair Visiting Professor on August 26, 2010. He is a former diplomat who has worked on disarmament, nuclear and other strategic security issues in the Ministry of External Affairs. He retired as India's Ambassador to the IAEA, UNIDO and the UN Offices in Vienna, and to Austria. Other senior diplomatic assignments held by him include those of Deputy Chief of Mission of the Embassy of India in Austria (and Permanent Mission of India to the IAEA, UNIDO & UN) and Deputy Chief of Mission of the Embassy of India, Thimpu, Bhutan. At Headquarters, he has served as a Joint Secretary in the Cabinet Secretariat and in the Foreign Service Training Institute and as Director (UN) in the Ministry of External Affairs. He was a member of the Indian delegation to the Third Special Session of the UN General Assembly on Disarmament in 1988 and the UN Conference on the Relationship between Disarmament and Development in 1987.

Dr M Mayilvaganan joined NIAS as Assistant Professor on November 2, 2010. He earned a doctorate degree in International Studies from Jawaharlal Nehru University, New Delhi, India. Prior to joining NIAS, he was a Senior Lecturer at Department of International and Strategic Studies, University of Malaya, based at Kuala Lumpur, Malaysia where he taught South Asia in International Relations, Modern Warfare and International Politics. His past positions include Associate Fellow at Institute for Defence Studies and Analyses (IDSA), New Delhi specializing Sri Lanka in particular and South Asia in general; Advocacy and Communication Officer at South Asian Development Initiative (SARDI), New Delhi. Dr Mayilvaganan's major research and teaching interests include South Asia, Terrorism, US China's Foreign Policy and Defense Strategy; Japan Foreign Policy, Climate Change, Refugees, Conflict and Peace studies. Currently he is undertaking a research project on Terrorism in India and China's Strategic interest in South Asia at the NIAS.

Dr Nabeel Ajmal Mancheri joined NIAS as Post-doctoral Associate on November 15, 2010. He obtained his Ph.D. from the School of International Studies, Jawaharlal Nehru University, New Delhi in 2010. He has experience in the areas of international economics, trade and trade policies and energy resource management as well as an interest in a variety of public policy issues of India and East Asia. Presently he works on a study titled "Rare Earth Elements in China: Growth, Strategy and Implications". He has worked for OECD, as a Junior Economist based in Paris and New Delhi in 2008. He has been awarded Japan Foundation Fellowship for the year 2008-09 and has been a visiting researcher at Graduate School of International Development and Cooperation (IDEC), Hiroshima University, Japan. He was a recipient of the Australia-India Council (AIC) Fellowship of Department of Foreign Affairs and Trade, Australia, for the year 2007-08, hosted by Australian National University. He has several publications on to his credit on areas of trade policy, Asian regionalism, India - East Asia relations and, energy resource management in India and Japan and Australia.



School of

Social Sciences

Prof N Shantha Mohan, *Professor*

Prof Narendar Pani, *Professor*

Prof Carol Upadhyya, *Professor*

Prof AR Vasavi, *Professor*

Prof Malati Das, *Visiting Professor (till December 31, 2010)*

Prof SS Meenakshisundaram, *Visiting Professor*

Dr Solomon Benjamin, *Associate Professor*

Dr Anitha Kurup, *Associate Professor*

Dr Chidambaran G Iyer, *Assistant Professor*

Dr M Amarjeet Singh, *Assistant Professor*

Dr Shivali Tukdeo, *Assistant Professor*

Mr Ritajyoti Bandyopadhyay, *Research Associate*



First NIAS-GEAR Workshop on “Identification of Gifted Children in Science and Mathematics for School Teachers” (January 17 to 19, 2011)

The School of Social Sciences consolidated 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 five programmes: water, urban studies, education, interdisciplinary approaches to economic issues, and conflict resolution.

PROGRAMMES

a. CONFLICT RESOLUTION PROGRAMME

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 programme hopes to directly address the knowledge deficits that may impede the resolution of major conflicts of interest to the country. Such conflicts could be at any level from the local to the national, regional and global as long as they have an impact on India. The programme tries to achieve its objectives by being sensitive to the interface between the understanding of individual conflicts and the larger conceptualization of conflict. It studies individual conflicts in depth with the twin purpose of identifying elements that can be used to resolve them, as well as to further develop the overall understanding of conflicts and their resolution. In the process it also networks with individuals and institutions to generate information and analytical tools to understand conflict. The programme aims to disseminate knowledge about conflicts in a way that influences both popular perceptions and policies aimed at conflict resolution. 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.

Research has been carried out in a number of areas of conflict. **Prof Narendar Pani** looked at the relationship between reservations and conflict. Caste-based reservations of government jobs and seats in educational institutions in India have been associated with bouts of sometimes intense social conflict. The debate on this conflict has been focused primarily on the case for and against reservations per se. Even when variations have been noticed in the degree of conflict generated by reservations across regions, the tendency has been to attribute the differences to local social conditions. Very little attention has been paid to the question of whether the type of reservations implemented in each region influences the nature and extent of conflict. This study compared the Mandal Reservations

Members:
Prof Narendar Pani,
Anchor
Dr M Amarjeet Singh

with the reservations in princely Mysore in 1921, making the case to distinguish between reservations with exclusion and reservations without exclusion.

Prof Pani also looked at the debate built around associating identity politics with affiliation to a singular identity. While supporters of singular affiliation argue for the dominance of the major identity, the critics focus on the fact that identities can be robustly plural, thereby implying limitations to identity politics based on singular affiliation. Using empirical evidence from Bangalore this study argued that it is possible, and indeed perfectly consistent, for a robustly plural society, with a variety of identities to choose from, to support forms of singular affiliation identity politics. A free multiparty democracy can then exist even when its politicians are not committed to moderate ideological stances, because its people keep changing the choice of the identity they choose to emphasise.

As major focus of the research of **Dr M Amarjeet Singh** was the conflicts in Northeast India. In addition to specifics of the conflicts in this region the focus was also on taking the lessons from these conflicts to understand disputes elsewhere. In his work on “Demography, Migration and Conflict” Dr Singh explored the gradual redefinition of migration as a problem and its instant prominence in the public mind, particularly in Northeast India. It also examined how the Indian government responded to the anti-migration propaganda by devising migration control measures.

Dr Amarjeet Singh also initiated a study on States Reorganization in India, exploring the extent to which criteria used during the 1956 exercise remain relevant today. This study investigates the context in which reorganization of states was carried out in 1956, and the broad arguments underlying the reorganization of that year. The study then goes on to outline how the basis of these arguments has been altered over the last half a century.

The programme brought out four backgrounders this year: *The Cauvery Conflict* by SS Meenakshisundaram, Priya Raghavan and Amarjeet Singh; *The Mullaperiyar Conflict* by Madhusoodhanan CG and Sreeja KG; *Conflicts in Assam* by Amarjeet Singh; and *Living with Elephants: Exploring the Nature and Cause of Human-Elephant Conflict in India*, by Sindhu Radhakrishna and Anindya Sinha, 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. This is not always possible, but a concerted effort is made to provide a view as close to the consensus as possible.

Members:

Dr Anitha Kurup, *Anchor*
Prof AR Vasavi
Dr Shivali Tukdeo

Doctoral Students:

Ms Anu Joy
Ms R Maithreyi
Mr Rahul Mukhopadhyay

b. EDUCATION PROGRAMME

The year 2010-2011 focused on consolidating earlier work that included intense field-work and action research in ways that could lead towards opening up of academic, policy and advocacy inputs at both state and national levels. The interlinking of research, advocacy and outreach is now carried out through the following three nodal initiatives: (1) Research in Critical Areas of Education (2) Platform for Education Policy (3) Curriculum Exchange Network.

The faculty working on education at NIAS has initiated research on a variety of areas with a conscious effort to link it to wider audiences. In this, we view education from diverse perspectives and contribute to the current knowledge base. Our research has concentrated on the following major issues: (a) Trained Scientific Women Power: How much are we Losing

and Why? (b) Trends in Higher Education: Creation and Management of Database of PhDs (c) Status Report on Adivasi / Tribal Education in India (d) Developing Methodologies for Identification of gifted Children in Science and mathematics in the age group 3-15 year (e) Writing Gender / Caste through English Education (f) International influences on education policy (g) Policy directions in higher education (h) Citizen Science Education.

a) Trained Scientific Women Power: How Much are we Losing and Why?

This study has been undertaken in collaboration with the Panel for Women in Science of the Indian Academy of Science. **Dr Anitha Kurup** was the co-principal investigator of this project along with the Chair of the Panel for Women in Science, Prof Rohini Godbole, IISc, Bangalore. Through the project NIAS has conducted a large scale qualitative survey, for the first time in the country, covering 568 women scientists and 226 men scientists.

During the last year the team was engaged in data entry, data selection and development of the analysis plan based on inputs from the experts. The panel of experts who closely worked with the team included, Prof Lalitha Sundaresan, Professor in Statistics and part of the International Strategic and Security Studies Programme of NIAS. Having prepared the section of the draft analysis of the data, the team made presentations of the preliminary findings at several fora. The study report was exclusively covered by *The Hindu* highlighting the findings of the study. The article Beyond Family and Societal attitudes to retain women in science was published in Current Science. The NIAS Team was supported by Ms Maithreyi R, as a Research Associate and Mr Kantharaju B. as a Statistical Assistant. An electronic version of the report is on the NIAS website for wider publication.

b) Trends in Higher Education: Creation and Management of a Database of PhDs in India

The study has been undertaken by NIAS, in collaboration with INFLIBNET, Ahmedabad and TCS to analyze the production of PhDs in the country for a ten-year period, between 1998 and 2007. Ms Hamsa Kalyani; Ms R Maithreyi; Mr B Kantharaju were also associated with the project. The project initiated the creation of the first authentic single point data reference large-scale inter-institutional database of doctoral theses, by disciplines, regions and gender. The project will post decade-wise statistics along with graphic representation on the INFLIBNET site with periodic updating. The data was analysed and the preliminary findings of the report was shared with experts before finalising. The report has been published. Copies of the report was distributed to over 200 universities, science and technology institutions including the IITs who participated in the study. An electronic copy of the report is put up on the NIAS website for wider dissemination. The report received wide range publicity and enquiries about the study were made by research scholars both within and outside the country.

c) Perspective Paper on Education among Adivasis

Based on extending the work and experiences from the Chamarajanagar project, this project was an attempt to address issues related to Scheduled Tribes and De-notified Tribes at the all-India level. A proposal was developed and submitted to the UNICEF, New Delhi and supportive funds were provided by UNICEF to develop a perspective paper. The exercise has entailed three pronged activities. One, a review of all data and policies related to education of Adivasis/the Tribals; two, regional and national consultations so as to solicit widespread inputs and suggestions; and the development of a perspective paper based on inputs from key persons across the country. The first national consultation was held at NIAS. A public lecture on *Inclusive Higher Education* was also delivered by Prof Ganesh Devy of the Bhasha Research Center. The report will review the status of education (all levels) among Adivasis. Regional and institutional level details will be accessed through partners (individuals and institutions). Best Practices, including details of innovative programmes and idea will be documented. Details from the VIDYANKURA / Chamarajanagar project will form the substance of the Karnataka section of the report.

d) Identification of Gifted Children in Math and Science in India with Reference to the Age Group 3-15 Years

Few studies in India have looked at identification of and programmes for gifted children. Recent studies in the fields of neuroscience and cognition have established the role of environment in early childhood in facilitating optimal neuronal connections and development. Hence, early identification of gifted children is essential. India faces a challenge in identifying gifted children due to the diversity of the population. The target children belong to a wide range of socio-economic and cultural backgrounds. The commonly used tools for identification like the intelligence tests, academic tests have been challenged due to its western origin.

It is in this context, that the project argues for developing methodologies, tools for identification of the gifted children that will combine aspects of traditional Indian education that emphasized the 'minds on' and inductive logic along with the aspects of the western modern education that underscore 'hands on' and deductive logic. The project anchored at NIAS has received support for a period of one year. It has three collaborators engaged in three pilot programs received to identify gifted children in rural and urban settings. Group I is the NIAS research team, located in Bangalore, targets children from 3-8 years. Group II for 12 to 15-year olds is called Agastya and has rural sites throughout the country. Group III, i.e., Delhi University focuses on students who are 9-13-years old and includes approximately 20 schools in Delhi.

e) Sadgunmanjari: Writing Gender / Caste through English

Dr Shivali Tukdeo in collaboration with Ms Shefali Chandra (Washington University, St. Louis) has been working on writing and translating a book that focuses on gender, social reforms and education in 19th century Maharashtra. Conceptualised as 'feminist roundtable', the book will include translation of the original Marathi text Sadgunmajari (1890), with six scholars responding to the text. Translation of the text is complete. The book will be published in 2011 by Navayana / CUNY Feminist Press.

Platform for Education Policy (PEP) To facilitate the review, reform, and re-formulation of educational policies in the nation, we propose to undertake reviews of select policies. Collaborating with various educationists and institutions, NIAS was to act as a 'platform' in which discussions, dialogues, and debates were to be undertaken. A key goal was to provide long-term reviews and inter-institutional mentoring and support through which new policies could be implemented and observed over a period of time. The following programmes and activities were conducted during this period:

a) Consultation and Advocacy for Addressing Problems faced by Reserved Category Students in Technical Education Institutes

NIAS in collaboration with Centre for Research and Education in Social Transformation (CREST), Kozhikode, organized a one-day consultation to share support modules and programmes for reserved category students with national technical institutes and state departments of higher and technical education. Following this, a format was developed for all technical institutes to collect and analyse data pertaining to the academic performance of reserved category students. This has been submitted to the MHRD (IIT desk). NIAS also developed and implemented a training-cum-orientation module for all fresh reserved category students of the IIT Delhi. The ten day workshop (July 8 to 17, 2010) held at IIT Delhi was a success with students evaluating the training programme as a positive input. NIAS has also attempted to initiate a similar programme with the Indian Institute of Science, Bangalore.

b) Perspective Paper on Education Policy

Given the several overlapping, at times contradictory, factors that go into shaping education, our main purpose was to develop a systematic analysis of education policy in India, taking into account history, processes, structures, and cultural politics. In particular, the perspective paper addresses the following issues: 1) Historical analysis of Indian education policy 2) Education and institutionalised forms of

exclusion 3) Overview of theories, systems and procedures involved 4) review of select policies 5) Gaps between policy/programmes/action frameworks.

c) Emerging Directions in Global Education (EDGE) Forum

The fourth edition of the Annual International conference of EDGE was organized at New Delhi between March 9 and 11, 2011. The theme of the conference was “Shaping the Future of Indian Higher education”. Dr Anitha Kurup was part of the organising team that conducted the conference that had over 15 panel themes, 4 workshops and 4 highlight lectures. Among other aspects, the conference discussed the draft higher educational Bills, issues related to expansion, quality, technology, faculty, curriculum in relation to the higher education sector.

d) Response to the Foreign Educational Institutions (Regulation of Entry and Operations) Bill, 2010

The Foreign Educational Institutions (Regulation of Entry and Operations) Bill (2010) was introduced in the hopes to raise quality of higher education, expand the education sector and bring in new models of institutional management. In June 2010, NIAS submitted a document to the Ministry of Human Resource Development (MHRD) with a response and recommendations for the bill. The Bill has not been discussed adequately in public forums. Every attempt should be made to make it available to the public for reaction, response and critique. As part of the Emerging Directions in Global education (EDGE) Forum, NIAS along with the other founding institutions submitted the response to the Higher Education Bill to the MHRD, Government of India for consideration and review.

Curriculum Exchange Network (CEN)

Linked to the Platform for Education Policy (PEP) and to some of the on-going innovative research and teaching programmes at NIAS, this initiative seeks to share, exchange, and engage with new curricula for a range of subjects and disciplines. Network activities include:

i) Agrarian and Rural Studies: Trends, Texts, Pedagogies and Collaborations

A national level conference was held at NIAS, on October 19 and 20, 2010. This consultation was organized at NIAS by Prof AR Vasavi and Dr Padmini Swaminathan of MIDS, Chennai, with support from the Ford Foundation, New Delhi. The focus of the seminar cum consultation was to not only identify the trends and complexities in rural India but to also assess the state of research, teaching, and availability of materials in various academic institutions and to assess the possibility of initiating a national-level network to enhance the study of rural and agrarian issues. A national-level network was formed to facilitate an e-discussion group, and for the group to meet regularly over the next few years.

ii) International Seminar: 'Shifting Perimeters: The Ethical, Legal, and Social Aspects of Human Genome Research'

Bringing scholars from India, the United States of American, United Kingdom, South Africa, and the Netherlands, an international seminar was held at NIAS on November 15 and 16, 2010. It was jointly organized by the Indian Institute of Advanced Study, Shimla, and NIAS and addressed some of the concerns and issues related to Human Genome research. It concluded with a call for further studies and policies related to the understanding and regulation of human genomics research.

Members:

Prof Narendar Pani, *Anchor*
Dr Chidambaran G Iyer

Doctoral Students:

Ms KG Asha
Mr K Jafar

c. RBI PROGRAMME ON INTERDISCIPLINARY APPROACHES TO ECONOMIC ISSUES

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.

During the year the RBI programme made considerable progress towards using a multidisciplinary approach to understand both urban and rural issues. The major thrust of the efforts to understand the rural economy during the year was the study of the Mahatma Gandhi National Rural Employment Guarantee Scheme in Karnataka conducted for the Planning, Programme Monitoring and Statistics Department of the Government of Karnataka. The study conducted by **Prof Narendar Pani** and **Dr Chidambaran G Iyer**, with research assistance from Mr Raghavendra HV and Ms Soundarya Iyer recognized the diversity of the state and looked at Karnataka as a set of five regions. Within each of these regions it studied the process of the worker seeking work, the process of providing work through the creation of assets, and the consequences of this work on poverty, agriculture, purchasing power and gender. Since the study looked at both the enabling processes within government and the impact on the rural economy it needed information both from the official machinery and from the households in villages. The data on the functioning of the official machinery was collected through a qualitative survey and the data from households in villages was collected through a multi-stage stratified cluster sample. Based on this information the study recommended specific steps that could improve the functioning of the scheme in Karnataka. The final report was prepared after a national workshop discussed a draft report.



Workshop on "The Draft Report on the Evaluation of the Impact of Processes in the Mahatma Gandhi National Rural Employment Guarantee Scheme in Karnataka" (March 28, 2011)

The work on the urban sector was concentrated on the experience of Bangalore. Following the Italian philosopher Giambattista Vico the effort was to present the emergence of Bangalore over the last two centuries through the voices of those who experienced the turning points in the city's history. Such an approach allows us to capture the imaginations of the city at various points in its history and reduces the impact of current day imaginations on our understanding of the past. This effort resulted in a book that received extensive, and largely positive, reviews.

At the same time there was also an effort to develop a view of the city from below by looking at local institutions, particularly the family. As the debate on the family in India has developed a greater focus on practice, there has been a need to understand the vast diversity of this institution. While such an emphasis on detail is essential it also tends to take attention away from more comprehensive concepts that are needed to understand processes that cover different types of families, such as migration. In a paper a field view of the households of women working in Bangalore's garment industry was used to develop concepts of collective households and collective families. The paper then went on to use a modified version of the concept of migration capital to argue that collective families play a critical role in the process of migration, cutting across the economic, the social and the cultural.

d. TRANSNATIONAL STUDIES - PROVINCIAL GLOBALISATION: THE IMPACT OF REVERSE TRANSNATIONAL FLOWS IN INDIA'S REGIONAL TOWNS

The Provincial Globalisation ('ProGlo') research project is an international collaborative research programme with the Amsterdam Institute for Social Science Research (AISSR), University of Amsterdam (UvA), initiated in January 2010. It is funded by the WOTRO Science for Global Development Program of the Netherlands Organisation for Scientific Research (NWO), the Netherlands. The programme will run for five years, ending on December 31, 2014.

The Provincial Globalisation programme consists of five independent but interlinked research projects (three PhD and two postdoctoral) located in three states of India – Andhra Pradesh, Karnataka, and Gujarat. The research will document a broad range of 'reverse flows' or resource transfers by migrants, including economic resources (household remittances, investments in land); 'social remittances' (flows of ideas, support for NGOs), and cultural flows (such as religious donations). The objective is to examine the influence of these 'reverse flows' at the regional level.

The PhD projects will be intensive studies of three selected regions – Anand District in Gujarat, Guntur District in Andhra Pradesh, and Dakshina Kannada District in Karnataka – focusing on the key provincial towns and their rural hinterlands. The two postdoctoral projects will provide macro- and meso-level mappings of transnational linkages and flows at the regional, state, and national levels. By tracking the transnational networks, mechanisms and destinations of resource transfers comparatively across three regions, the research programme will provide more general insights into the economic, social, political, and cultural impacts of remittances (both material and non-material) from migrants abroad into India.

Members:

Prof Carol Upadhyya,
Principal Investigator
Dr Puja Guha,
Research Economist

Doctoral Students:

Ms Sulagna Mustafi
Ms Sanam Roohi

Several initial field and research visits have been made by the team members in preparation for their long-term field projects. In addition, consultants and field researchers have been working in the research sites under the guidance of the programme supervisors and the postdoctoral researchers to gather data for the programme. Outputs include documentation of NRI contributions to village development activities in Anand region; a report on different dimensions of transnational links in the Charotar region of Gujarat; and a comprehensive project report on NRI involvement in the health sector in Guntur District. These reports will contribute to the Working Paper series and future publications.

Overview of Individual Projects

Postdoc Project: Migration, Transnational Flows and Development in Provincial India: An Economic Perspective — (Dr Puja Guha, NIAS)

Although India is largest recipient of remittances in the world, there has been very little research to examine the economic impact of these flows in the local and regional economies which receive them. Moreover, evaluations of economic impacts usually focus on change in consumption patterns of the receiving households. However, there is evidence that migrant remittances are increasingly channeled into different sectors of the economy such as education, health, and public infrastructure, and that such flows have significant social, political and religious associations. This two-year project aims to map and document these flows and their economic outcomes at the regional and state levels through the use of quantitative data sources and methods, both conventional and innovative.

Religion, Identity, and Power: Transnationalism and Communalism in Coastal Karnataka — Ms Sulagna Mustafi (NIAS)

This study seeks to understand the rise of communal politics in Dakshina Kannada District of coastal Karnataka in the context of extensive migration from the region and the formation of transnational networks. Through close historical and ethnographic study, the project will attempt to discover linkages between mobility, new forms of modernity, and rapid economic growth in the region, and transformations in religious identities and local politics.

Provincial Diaspora and Role of Philanthropy in Development: A Study of Coastal Andhra — Ms Sanam Roohi (NIAS)

This research project will investigate the impact of regional diasporas on social development in the Guntur region of Andhra Pradesh, by studying the linkages (transnational as well as regional) among social structures, politics, space, labour / professional mobility, and philanthropy. Focusing on the philanthropic activities of NRIs who donate funds to development projects and other initiatives in the region, this study will gauge their impact on structures of domination and socio-economic development.

Sending and Spending: The Micropolitics of Remittances in Central Gujarat — Ms Sanderien Verstappen (AISSR)

This study will analyse the micropolitics surrounding remittances in Anand District, Gujarat, focusing on how reverse flows of resources from migrants (re)produce or undermine local social hierarchies. It will also explore how strategic choices about sending and spending are made, by both migrants and local people, in relation to struggles over social and spatial visibility.

A public website for the programme (www.provglo.org) was launched in March 2011. The website will serve as a platform to publicise the programme's activities and disseminate the research findings. It will also be used to host forums for exchange of ideas with the stakeholders of the programme as well as interested researchers and the public.

e. URBAN RESEARCH AND POLICY PROGRAMME (URPP)

The objectives of the Urban Research and Policy Programme (URPP), as outlined in the programme document, are:

- ✧ To develop a conceptual and theoretical framework for the understanding of urban settlements and society, rooted in the realities of India's cities and villages, that would form the intellectual and ethical basis of all further work;
- ✧ To carry out focused, grounded and multi-disciplinary research on, and value-based intellectual analysis of, issues of national importance related to urbanisation, especially policy-oriented research;
- ✧ To provide a platform for an exchange of ideas among representatives of governments and their agencies, political parties, civil society organisations, the media, and various thinkers, activists, and citizens;
- ✧ To engage in advocacy and outreach to all target groups in government and civil society;
- ✧ To serve as a think tank on urban issues.

The research and outreach activities over the last year have been directed to fulfilling these objectives.

The URPP at NIAS takes on a particular significance in being located in Bangalore – often portrayed in both popular media and academic literature as India's 'Silicon Valley'. Since the late nineties Bangalore has been at the forefront of new experiments in urban governance and the site of several mega projects and infrastructure development initiatives in response to the city's rapid demographic and economic growth.

Bangalore thus encapsulates several key issues confronting 'the Indian city' today, including the conflicts associated with the incorporation of peripheral areas into the metropolitan structure, the persistence of urban poverty, and serious contradictions between innovations in management and governance and resulting social tensions associated with land acquisition, water privatisation, the management of wetlands, 'slum' redevelopment, and urban renewal. The URPP is well positioned at NIAS, with its interdisciplinary orientation, to address these myriad urban issues from a grounded and theoretically informed academic perspective, as well as a practical policy-oriented one. The research and outreach activities over the last one year have been directed to these objectives. The URPP is beginning to have a substantial impact through its presence at major international and national academic and policy conferences, policy discussions within the Government of Karnataka, and through research on several serious issues confronting Bangalore and other urban centres in India.

The URPP has organised or been engaged in a variety of public events, workshops and lectures that have brought its name into the civic life of Bangalore. The 'City in Question' public lecture series has been well attended, throwing light on international issues, including conflicts in housing in Kurdistan, the civic politics surrounding Hong Kong's new high speed transit system connecting to Mainland China, and global policymaking, as well as urban issues in India (the globalisation of Chandigarh). A workshop on the Urban Commons also produced significant debates and outputs.

Members:

Prof Carol Upadhy
Co-Anchor

Dr Solomon Benjamin
Co-Anchor

Mr Ritajyoti Bandyopadhyay
Research Associate

Workshop on the Urban Commons

A workshop on the Urban Commons was held on August 18-19, 2010. The workshop involved academics, activists, policy makers, media practitioners, stakeholders. Prof Vinay Gidwani (Department of Geography, University of Minnesota, USA), who was hosted by the URPP as a visiting scholar in August, took a leading role in drafting the concept note, selecting study material and conducting the workshop. Following the workshop, the participants drafted a concept note on the urban commons which was circulated within the wider academic community and among urban practitioners. This workshop was linked to a larger international conference on the commons held in January 2011 at Hyderabad. At the conference an edited volume entitled 'Vocabularies of Commons' was released by the Nobel Laureate Prof Eleanor Olstrom. The volume includes three book chapters stemming from the NIAS Urban Commons workshop, including two authored by programme members (Solomon Benjamin, Ritajyoti Bandyopadhyay).

Visiting Faculty

Prof Vinay Gidwani, Professor, PhD Program in Earth and Environmental Sciences, Graduate Centre, City University of New York, was a visiting scholar at the URPP in July 2010. Several activities were planned during his visit, including the Workshop on the Urban Commons, a Master Class, and a seminar for students and other scholars.

PhD Courses

URPP faculty have offered courses on urban studies in 2010-11 to a diverse group of students, including 'Reading Cities from the Grassroots', taught by Dr Solomon Benjamin.

RESEARCH PROJECTS

Urban Governance in Bangalore: The URPP research agenda focuses on the areas of urban land, wetlands, and governance in both metro cities and small towns. A report on Urban Governance in Bangalore, based on research carried out by the URPP over the last two years, is under preparation.

Participatory Regional Plan for Pondicherry: This is an innovative process based on decentralised consultations with nine groups from Pondicherry's civil society and the administration across two states, the Union Territory of Pondicherry and Tamil Nadu. The project, started in November 2010 with funding from the French Environmental agency ADEM, seeks to promote a 'ground-up' process to frame development issues in the region and a participatory way to their resolution. Dr Benjamin is the lead consultant.

Re-conceptualising Indian and Chinese Urbanisms beyond Western Concepts: Dr Benjamin and Prof Wing-Shing Tang of the Department of Geography, Hong Kong Baptist University, have begun a collaborative research process in this area, which will focus on emerging urbanisms that interconnect India with China. Preliminary research funding was received from the Department of Geography, Hong Kong Baptist University, to support meetings and joint fieldwork in Mumbai, Bangalore and Hong Kong, leading to the development of a major joint research proposal.

COLLABORATIONS

URPP's evolution on the path of a well-recognised think tank on key issues confronting Indian and other cities in the Global South is illustrated by several collaborations under way or on the anvil:

- ✧ URPP will collaborate with the Global Research Centre of the University of Manchester. Dr Benjamin is leading the Indian component of 'Urban Asset Planning in Colombia and India' to be initiated in early 2011, with fieldwork in Pondicherry.

- ✧ URPP faculty have initiated a partnership with a group of nine organisations in Pondicherry for the development of an innovative planning process for the Pondicherry Regional Plan.
- ✧ URPP with the French Institute Pondicherry (IFP) and the Centre de Sciences Humaines (CHS), Delhi, are initiating a research project entitled 'SUBURBIN', funded by the French National Research Agency. Dr Benjamin leads one of the three main components on urban land.
- ✧ Dr Benjamin has been invited to collaborate with a network of scholars at Goldsmith College of the University of London and Sarai-CSDS (Delhi) to propose new ways to conceptualise city relations following the 2008 financial crises and the increasing linkages between cities in India, China, and Africa.
- ✧ The URPP will collaborate with Prof Peter van der Veer of the Max Planck Institute for the Study of Religious and Ethnic Diversity, Goettingen, Germany, on a research programme, 'Urban Aspirations in Bangalore'.
- ✧ Mr Ritajyoti Bandyopadhyay (Research Associate) will collaborate with researchers from the University College London (Prof Jenny Robinson), and University of California Berkeley (Prof(s) Ananya Roy and Raka Ray) on a research project, 'Comparative Urbanism', in Asia, Europe, and Latin America.

OTHER ACTIVITIES

Urban Documentation Centre and Archive at NIAS

This archive has been initiated to collect and make available reports, academic articles and data sources on urban affairs in India and particularly in Karnataka. The archive will be made available for use by other researchers, and there will be searchable online index on the planned URPP website.

f. WATER PROGRAMME

Water is a vital resource and is an area of both contention and conflict. These conflicts could be between villages, districts, states or countries, between rural, peri-urban and urban areas, between the rich and the disadvantaged, between various stakeholders and different sectors. Thus, the nature of these conflicts is diverse and methods adopted in addressing them are often constrained by the restrictive and dominant approach that is adopted in addressing them. It is further aggravated by the lack of objective and validated facts to facilitate rational discussion and decision-making among the various stakeholders that could lead to acceptable solutions. It is in this context that a multidisciplinary and multi stakeholder perspective has been adopted in order to understand the complexities and the inter-connectedness of the different dimensions regarding the sector in order to meet the needs of the country. The main objectives of the programme are:

- ✧ Research for generating a data and information base and analysing them using a conceptual framework which adopts a multidisciplinary perspective.
- ✧ Provide platforms for sharing the results of the research and facilitate multi stakeholder dialogues to influence policy.

Members:

Prof N Shantha Mohan,
Anchor

Doctoral Student:

Mr Sailen Routray

- ✧ Strengthen networks and facilitate the participation of partnerships from the local to the global (Zonal Water Partnerships, Country Water Partnerships to Global Water Partnerships) in research, dialogue and advocacy activities.

Water Conflicts in India: The State, the People and the Future (ongoing, NIAS project, 2010-11):

As evidence reveals, most work on water and water conflicts in India have narrow thematic and sectoral foci. As such, this project envisages filling in this important gap by taking a theoretical, methodological and empirical approach that is both collaborative and multidisciplinary so as to understand the complexities and the inter-connectedness of the different dimensions regarding the sector in order to meet the needs of the country.

The research centres around the understanding of these conflicts in the context of the federal nature of the Indian State, inter-sectoral conflicts surrounding interstate river waters that impinge upon people's lives and livelihood, such as agriculture vs. industry, urban vs. rural and dalits vs. others and so on. In this direction papers have been generated by professionals drawn from various disciplines, the civil society and policy makers. The issues covered include the history of the interstate conflicts, a philosophical discourse on ownership of water and the states in India, case studies to understand the ways in which rivers play an important role in imagining Indian States and regionality, inter-sectoral conflicts surrounding water and their implications for the future of water conflicts in India. The papers are being edited for publication by Routledge Publishers, New Delhi.

OUTREACH AND OTHER ACTIVITIES

Dr Chidambaran G Iyer was co-instructor for the course *Introduction to Statistics for the Social Sciences* offered during the first semester for the academic year 2010–11. He was also the instructor for three economic sessions for the foundation course of the School of Social Sciences *Perspectives in Social Sciences*.

Prof SS Meenakshisundaram participated in the Task Force meetings organized by the Department of Public Enterprises to finalize memoranda of understanding between public sector units and the Government of India in the petroleum sector. He undertook the Business Process Re-engineering Study and Implementation Support to the Rural Development Department of Bihar, for the Government of Bihar. He reviewed the book on *Squatting with Dignity-Lessons from India* for Current Science, Bangalore.

Prof Meenakshisundaram has been on the Board of Management of the Centre for Sustainable Development, Bangalore; Institute for Social and Economic Change; India Wash Forum, New Delhi; MYRADA and the Institutions promoted by MYRADA.

He is also a member of the Advisory Committee of IDRC-NCAER Project on Decentralization and Rural Development, located at NCAER, New Delhi and Research Advisory Committee on Decentralization at the Centre for Development Studies, Thiruvananthapuram. He has been an Adjunct Faculty in the Gandhigram Rural University, Gandhigram, Tamil Nadu.

Prof N Shantha Mohan conducted a two day training programme to facilitate the process of writing the country initial and first report to CEDAW for a representative group of about 60 government officials from the different ministries of the government of Afghanistan on invitation from the Ministry of Foreign Affairs, Government of Afghanistan, May 18 and 19, 2010.

She coordinated the training programme on *Gender Issues in Indian Science on Transcending Barriers to Performance: The Indian Woman in Science*, supported by Department of Science and Technology, Government of India, New Delhi at NIAS, November 22 to 26, 2010.

Fourth and Fifth Periodic Report on CEDAW, India (ongoing): The Government of India ratified the United Nations Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1993 as a consequence of which it is mandatory for the Government to report to the CEDAW Committee (United Nations) once in four years. She is facilitating the preparation of the report in partnership with all the Ministries of the Government of India. The framework of substantive equality has been adopted.

Prof Narendar Pani was the coordinator of the 25th NIAS course for Senior Executives. This is the flagship course of the institute and the theme this year, as in several recent years, was on *Excellence in Leadership*. The course attracted participants from diverse backgrounds including the government, the private sector, and the defence services. The course was well received. Eighty-eight percent of the sessions received a feedback score of over 4 on a five point scale. The Cultural programme received a feedback score of 5 and the field visit, 4.4. The overall rating for the course was 4.6.

Prof Pani taught a course on statistics, capsules in the foundation course and the methodology course for PhD students. As Adjunct Faculty in the Indian Institute Science he taught a course on the Economics of Indian Cities.

Prof Carol Upadhya was convenor, with Prof Mario Rutten (AISSR), of international seminar on *Global Relationships in Indian Perspective*, organised by ICSSR and NWO (the Netherlands), June 22-23, 2010, Institute for Social and Economic Change, Bangalore.

She co-organised (with Dr Solomon Benjamin and Dr Vinay Gidwani) workshop on the *Urban Commons*, August 18 and 19, 2010, at NIAS. The workshop report, widely disseminated Concept Note on the Urban Commons, and published papers by Dr Solomon Benjamin and Mr Ritajoti Bandhopadhyay.

She organised national-level consultation on The Mobility of Indian Scientists and Technologists, at NIAS on February 1 and 2, 2011. Sponsored by NIAS and Indian National Science Academy (INSA). Key academics and government officials participated in the consultation, which explored the question of international mobility of highly trained scientific and technical personnel from India and their relationship with Indian S&T institutions and activities. The aim was to determine the need for future research and policy initiatives in this area. A workshop report and recommendations are under preparation. Based on this consultation, the Director is interested in seeking funding for a new research initiative in this area, which also would be linked to the ongoing activities of the ProGlo programme.

Prof AR Vasavi

Network for Rural and Agrarian Studies: Objectives were to initiate a nation-wide discussion cum resource group to review and undertake academic work on rural and agrarian studies. Ford Foundation, New Delhi, provided funds to organize a consultation at NIAS, which was held from October 17 to 19, 2010. A detailed report and a summary report have been completed and are to be printed.

Perspective paper on Education among Adivasis (with Dr Shivali Tukdeo and Ms Revathi Sampath Kumaran); Supported by UNICEF, New Delhi. Objectives are to develop a comprehensive paper on education among Adivasis across the nation. Two national level consultations and five regional consultations were planned. First consultation held at NIAS, on September 16 and 17, 2010; three consultations at Tamil Nadu, Maharashtra, and Orissa. Another national level consultation was held at Tejgarh, Gujarat at the Adivasi Academy.

Prof Vasavi taught courses on Modules for Social Sciences at NIAS. Along with Prof Carol Upadhy she taught a course on Sociology of India at NIAS from January to April 2011. As external member and

project coordinator, she supervised Dissertation on *Adivasis and Education: Experiences from Chamrajnagar* by Mr P Veerbhadranaika; submitted to Mysore University. She was Field / India Academic Advisor for four students from various international universities.

Development of ten-day course for Incoming Reserved Category Students at IIT-Delhi: In association with CREST, Kozhikode, developed and reviewed ten-day course for reserved category students; Course; July 7 to 16, 2010 at IIT-Delhi. Course called, NIAS-CREST course.

Selection Committee for Department of Sociology, Central University, Hyderabad, October 30 to 31, 2010.

Prof Vasavi is member of the Academic Audit Committee, appointed by the Governor of Goa to undertake a comprehensive review of the functioning and orientation of Goa University. Two meetings and review sessions were held during January 26 to 30, 2010 and February 20 to 24, 2011.

She coordinated the international conference on *Shifting Perimeters: The Ethical, Social, and Legal Implications of Human Genomics Research*, held at NIAS in coordination with the Indian Institute of Advanced Study, Shimla from November 16 to 17, 2010.

NEW STAFF

Dr Chidambaran G Iyer joined NIAS on June 1, 2010 as Assistant Professor. His most significant research contribution is Inter and Intra productivity spillovers, wage spillovers due to foreign firms in the Indian manufacturing industry. Comparison of technological and productivity characteristics, among domestic and foreign firms.

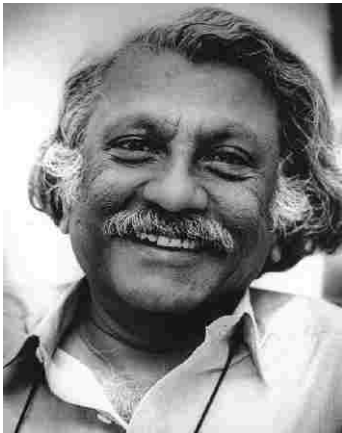
Dr Chidambaran Iyer's research interests cover policy oriented issues in Industrial and Agricultural Economics. He has worked on a Computable General Equilibrium model for the Indian Economy for a Planning Commission Project. In a project with Infrastructure Development Finance Company Limited, he has also worked in the construction of Infrastructure index for India. The infrastructure index consisted of sub-indices on power, roads, telecom, airports, and ports. Recently he has also worked on household demand functions using consumption data from various National Sample Survey rounds.

Dr Chidambaran Iyer has completed his B.Tech. in Chemical Engineering from Dr Babasaheb Ambedkar Technological University, Lonere, Maharashtra. He obtained his PhD in Development Studies from the Indira Gandhi Institute of Development Research, Mumbai.

Mr Ritajyoti Bandyopadhyay joined NIAS on November 2, 2010 as Research Associate. He has navigated a diverse ideoscape comprising Marxist History, Subaltern Studies, history of the present and urban geography to arrive at his current abode in Urban Research and Policy Programme at NIAS, Bangalore. Before joining NIAS, he studied history, sociology and urban theory in Jadavpur University, India, Centre for Studies in Social Sciences, Calcutta, India, El Colegio de Mexico, Mexico City, Mexico and University of California, Berkeley, USA. His approach to theory and experience reveals a productive tension between disciplines and intellectual traditions. He studies issues of urban change, poverty, work, class and gender within the context of postcolonial India. However, it is the problematic rather than the region or the discipline that drives his scholarship.

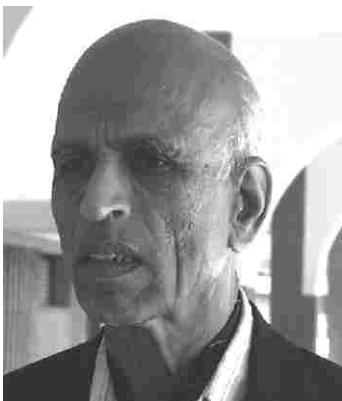


In Memorium



Prof V Radhakrishnan
Senior Associate, NIAS,
passed away on March 3, 2011

A condolence meeting was held at
NIAS on March 4, 2011



Prof K Ramachandra
Visiting Professor, NIAS,
passed away on January 17, 2010

A condolence meeting was held at
NIAS on January 18, 2011

Obituary for K Ramachandra

By Kishor G Bhat, NIAS
(Kishor Bhat was a doctoral student of Prof Ramachandra)

On January 17, 2011, NIAS said goodbye to a dear friend, Professor KANAKANAHALLI RAMACHANDRA, who graced our halls with his presence in the last leg of his career. Those of us who have had the opportunity to know him and work with him at NIAS will truly miss him. Professor Ramachandra was a good friend to one and all, but he always brought his special friends with him. Now these friends were always difficult to deal with. Some of us found them scary, some intimidating, and almost always difficult to understand, but Ramachandra knew these friends very well, and would always want us to meet them and get to know them. He would speak of them insistently, and sometimes it was difficult to know when he began and they ended. He would instantly love anyone who showed them any compassion, consideration, or respect, and if anyone pleased them, he would treat such a person as a god. These friends of his, of course, were numbers.

He was born on August 18, 1933 in the Mandya district of Karnataka. He moved to Bangalore when he was young. His father, a school teacher and a poet, passed away when Ramachandra was barely a teenager. To finance his education Ramachandra worked in Minerva mills as a clerk. During his undergraduate days, he developed an interest in mathematics. He initially took up mathematical problems as a hobby, and over time the hobby became more serious. One of his teachers suggested to him to read G. H. Hardy's "Ramanujan: Twelve lectures on subjects suggested by his life and work." He told us how reading that book was like reading a thriller novel, with twists, turns and surprises, sometimes too complicated to understand and sometimes too baffling to comprehend.

He made it through his masters, and once he enrolled for his PhD at the Tata Institute of Fundamental Research, he could claim some sense of financial stability. He was there with a sense of trepidation, until his work started speaking for itself and he rose into prominence. His PhD resulted from a series of lectures by K Siegel. Many have considered it his finest work.

Ramachandra felt that mathematics was not just an activity to be practiced, but a tradition to be passed on to the next generation. He worked hard in training students to take their place in the world of number theory. Many of them have grown and reached high reputation, a fact that made Ramachandra proud, which each of their accomplishments. Apart from his students, Ramachandra had many esteemed collaborators. On his 70th birthday celebration, a conference was held at NIAS, where elite mathematicians from all over the world came to give their regards to him. Among his more famous collaborators was a Professor Paul Erdos, a Hungarian mathematician who was well known for his butterfly approach to mathematics. Erdos never had a permanent address, and would travel from country to country meeting with mathematicians from all over the world and collaborate with them, accumulating over 500 collaborators in total. He would bring mathematical pollen from one part of the world and bring it to another. It was an honour for Erdos to visit you, and an even greater honour to have a paper with him. It meant that he felt that you would be able to aid him in a problem that he felt that you alone were capable of solving. When he visited India, he stayed with Ramachandra at his home in Mumbai. Together they published two joint papers on additive number theory. Ramachandra kept a correspondence with Erdos through out his life.

At TIFR, Ramachandra wrote over 150 articles and four books on number theory and founded the Hardy-Ramanujan Society, through which he founded and edited the "Hardy-Ramanujan Journal: A journal devoted to Primes, Diophantine equations, Transcendental Numbers and other questions on 1, 2, 3, 4, 5..." He was the recipient of many awards for his work. He retired in 1996, when he joined NIAS as an Honorary Visiting Professor. After retirement, his production did not slow down one bit. He published over 40 articles and another book, an introductory book on the theory of numbers. He guided one last PhD student, the author of this piece.

Working with Ramachandra was always an experience. I always had my bag filled with "Ramachandra stories." Most of them were so fantastic, that people would scarcely believe that there was such a person who could be so focused a mathematician... at least until they met him themselves.

Ramachandra was a legend. It was my honour and privilege to have known him, and to have been able to work with him as closely as I have. I was able to see him work at close quarters. He taught me truly what research was all about. It is with great sadness to see my teacher pass on so soon. He was someone who truly lived mathematics. To work with him was an expression of love and to learn from him was an expression of kindness. Those of us who have been part of the mathematics group in NIAS miss him. We know that mathematics as a whole suffers his loss. Those of us who work with the numbers that he so dearly loved know that they are not as easy to work with now that he is no longer with us. He is survived by his wife and daughter.

Below is a copy of some reminiscences of Professor Prabhakar Vaidya on Ramachandra:

"I, like the rest of us, have not had sufficient time to reflect on the magnitude of the great personal loss that I have suffered. I am going to mention one immediate thing that springs to my mind.

I will miss visiting his office. His office was physically quite close to mine. Yet, the few steps I often took to visit his office were nothing short of magical. Once you entered his door, I was transformed into a magical world. There were these two towering portraits of Hardy and Ramanujan. I would look at them in reverence and then my eyes would wander to his scribbling on the whiteboard. He would notice where they had rested and his face would be lit. "This one is by Saudarajan. He has improved the result of Montgomery, which was in turn an improvement of the famous result of Vinogradov..."

(This was his world. Numbers, theorems, Hardy, Ramanujan. Michigan was mostly Montgomery and when he announced at our faculty meeting that Vinogradov had passed away, he could not stop his tears.)

He would notice my confusion as I try to grasp this new result on the board and say in a kind voice, "oh don't worry about these constants, they don't matter ...". I keep asking myself, "log log log of x?.." How on earth does anyone think of this? He would start explaining and I would look at his face and say to myself, "Can God have a kinder face?"

No matter how many times I visited his office, the result was the same. I was a much purer version of me than the person who entered. I was back in my childhood, worshipping Ramanujan, dreaming that one day I will prove Fermat's last theorem – I would be lost in my books, in numbers, in dreams...

That boy is now mostly gone. And yet, in his room, he was back. The innocence, the purity – Professor Ramachandra, radiated it to us. The glow would last for while, even after I used to leave his room. I knew that this was a very special Darshana. Yes, the rest of my day would sail quite smoothly now.

Was I really this lucky to have known this extraordinary genius, this man whose devotion to Ramanujan was greater than Hanuman's for Rama, this utterly, extraordinarily humble man, this living saint, who chose to say hello to me?"



Courses



Participants of the 25th NIAS Course for Senior Executives on "Excellence in Leadership" with the Director and the Faculty of NIAS (January 3 to 8, 2011)

SENIOR EXECUTIVES COURSE

The course for senior executives is the cornerstone on which the National Institute of Advanced Studies builds its efforts to help develop an effective and sensitive leadership in India. First organized more than two decades ago in January 1989 with the involvement of Mr JRD Tata and Dr Raja Ramanna, the course has developed a niche for itself over the years. It brings senior executives in touch with a variety of disciplines and experiences to help them evolve fresh perspectives of their own specialized fields. The course does so through lectures, panel discussions, field visits and special sessions designed to help participants link their experiences to established analytical concepts.

The 25th edition of this course for senior executives on *Excellence in Leadership* was organised between January 3 and 8, 2011. Inaugurated by Prof Yoginder K Alagh, Former Union Minister, Government of India and Chairman, Institute of Rural Management Anand (IRMA), Ahmedabad, the course had 18 participants, including three women. The participants were from government, various public and private sector companies, research institutions and armed forces.

The speakers invited to address the participants also came from backgrounds ranging from culture, sports and media to information technology. They included Prof Vijayalakshmi Ravindranath, Mr MS Sathyu, Mr BG Verghese, Dr Mukund Govind Rajan, Mr Ravi Kant, Mr Krishna Byre Gowda, Dr Ravi Chellam, Dr Nitin D Rai, Air Chief Marshal SP Tyagi (Retd), Mr Paranjy Guha Thakurta, Ms Sevanti Ninan, Mr Nandan Nilekani and Mr Nandan Kamath. In addition there were also speakers from NIAS including the Director, Prof VS Ramamurthy, Prof SS Meenakshisundaram, Prof Anindya Sinha and Prof Narendar Pani.

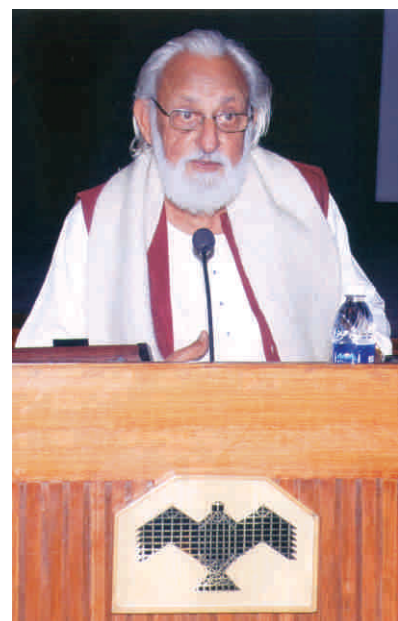
The cultural programme featured Odissi Dance Recital, Śriyah – A Decade of Dance Making by The Nrityagram Dance Ensemble, Bangalore. A visit was arranged to ISRO Telemetry, Tracking and Command Network (ISTRAC), Baylalu.

The valedictory address was given by Dr Baldev Raj, Director, Indira Gandhi Centre for Atomic Research, Kalpakkam.

The course was coordinated by Prof Narendar Pani and co-coordinated by Dr M Amarjeet Singh.

MULTIDISCIPLINARY PERSPECTIVES ON SCIENCE AND TECHNOLOGY

The eighth NIAS-DST training programme on Multidisciplinary Perspectives on Science, Technology and Society was organized from July 26 to August 7, 2010 for senior scientists-



Mr MS Sathyu, Film Director, Bangalore during the Public Programme on "Pioneering Cinema - 37 years after Garam Hawa", followed by Screening of the Film (January 3, 2011)



Participants of the Eighth NIAS-DST Training Programme on “Multidisciplinary Perspectives on Science, Technology and Society” with the Director and the Faculty of NIAS (July 26 to August 7, 2010)

cum-administrators. Twenty four participants including four women drawn from various research institutions of the Department of Science and Technology, other departments and ministries of Government of India. This programme was especially focused on core theme on 'Knowledge Management' apart from lectures on multidisciplinary perspectives with social, economic and political, scientific and technological issues in the country.

The programme was inaugurated by Prof P Balaram, Director, Indian Institute of Science, Bangalore and addressed the participants on 'Knowledge Management Strategies Across Ages' and the Valedictory Address was delivered by Prof Ashok Mishra, Chairman, Intellectual Ventures India, Bangalore on the topic of 'Excitement in Creativity and Inventions'. Other eminent speakers on multidisciplinary perspectives included Prof N Mukunda, Prof Narendar Pani, Ms Shakun Mohini, Prof Sriram Ramaswamy, Dr MG Narasimhan, Prof SG Kulkarni, Dr Harini Nagendra, Prof BV Sreekantan, Prof Meenakshisundaram, Prof R Gadagkar, Prof Malavika Kapur, Brig Arun Sahagal, Prof Anindya Sinha and a joint talk by Prof Dilip R Ahuja and Prof DP Sengupta, The other prominent faculty delivered lectures on a core theme of 'Knowledge Management' included Prof VS Ramamurthy, Ft Subbaih Arunachalam, Dr Sundara Nagarajan, Dr Prabudha Ganguli, Dr VK Gupta, , Dr R Saha, Dr Kalpana Sastry and Dr Zakir Thomas. NIAS is planning to bring out a publication on 'Knowledge Management'. The faculty delivered lectures on a sub-theme titled 'Nanotechnologies' included Prof S Ranganathan, Dr Alok Dhawan and Dr KR Srinivas.

As part of the above programme, a visit to the Centre for Research and Education in Science and Technology (CREST), facility of Indian Institute of Astrophysics (IIA), Bangalore situated in Hoskote to provide exposure to the remarkable accomplishments of the high-altitude Himalayan Chandra telescope, the activities of IIAP and observe the night sky through video conferencing with the telescope apart from listening to and interacting with CREST faculty on the other development. An outdoor programme was also organized at the Kabini River Jungle Lodges to enable the participants to present their work related experiences. The whole programme was evaluated by the course participants on day-to-day basis. The evaluation of the participants presentations at Kabini formed part of the process and it was one of the important components.

The programme was coordinated by Dr MG Narasimhan.

NATIONAL SECURITY AND STRATEGIC CONTEXTS

A one week program on the National Security and Strategic Context was held at NIAS during September 20 to 24, 2010. This was sponsored by the Department of Science and Technology, Government of India. The programme included lectures which addressed External and Internal security issues faced by India, Cyber Security, Role of Science and Technology in National Security amongst others. The participants included senior personnel drawn from the Departments of space, Defense, Atomic Energy, Ministry of Agriculture and CSIR laboratories. The programme was inaugurated by Dr R Chidambaram, Principal Scientific Advisor, Government of India. He elaborated on the “The Many Dimensions of National Security” in his talk. The participants benefited from lectures given by eminent speakers such as Prof R Narasimha, Prof N Balakrishnan, Adm (Retd) Vijay Shankar, Dr Bhuveshkumar, Mr PC Halder, Mr Jayadev Ranade, and Mr Ajit Doval. There were two speakers from abroad Dr Michael Dillon from the University of Lancaster, UK and Dr Julian Reid from the University of Lapland, Finland.

The programme was coordinated by Prof Lalitha Sundaresan and Dr Manabrata Guha.



Participants of the NIAS-DST Programme on “National Security and Strategic Contexts” with the Director and the Faculty of NIAS (September 20 to 24, 2010)

GENDER ISSUES IN INDIAN SCIENCE AND TECHNOLOGY

As a DST initiative of Women's Component Plan, the NIAS-DST training programme on *Gender Issues in Science and Technology* was organized between November 22 and 26, 2010. The programme is second in the series and the main theme was *Transcending Barriers to Performance: The Indian Woman in Science*. Twenty three participants including four men participated in the programme. Since issues surrounding gender are of importance to both men and women, this programme was targeted for both men and women scientists and technologists so that they are sensitized to the issues that impact women's performance as scientists. It further envisaged enabling men and women scientists to interact with experts as well as among themselves in order to explore the potential of women, identify barriers and facilitate their effective participation.

The course was inaugurated by Dr (Mrs) Syeda Saiyidain Hameed, Member, Planning Commission, Government of India, titled 'Engendering the Eleventh and Twelfth Five Year Plans' and the valedictory address was delivered by Prof VS Ramamurthy, Director, NIAS. Other speakers included Dr Shekhar Seshadri, Prof Prajval Shastri, Prof Narendar Pani, Prof N Shantha Mohan, Prof Malavika Kapur, Dr BK Anitha, Prof Anil Gupta, Prof SS Meenakshisundram, Dr Vinita Sharma, Dr Sumi Krishna, Ms Asha Ramesh, Ms MP Geetha Devi and Prof Rama Govindarajan.

As part of the programme, a visit to the Indian Satellite Centre (ISAC), Bangalore, Bharatha Natyam recital and illustrated presentation by Dr Sharada Srinivasan, NIAS and presentations by course participants to share their experiences and views among themselves were organized.

The programme was coordinated by Prof N Shantha Mohan.



Participants of the NIAS-DST Programme on "Gender Issues in Indian Science and Technology" with the Director and the Faculty of NIAS (November 22 to 26, 2010)



Doctoral Programme

Doctoral Committee

Prof BV Sreekantan, *Chairman*

Dr Rajesh Kasturirangan, *Academic Head*

Prof Carol Upadhy, *Member*

Prof Anindya Sinha, *Member*

Dr Sindhu Radhakrishna, *Member*

Dr MG Narasimhan, *Member*



The NIAS Doctoral Programme was initiated at the Institute in 2005, with the aim of developing a cadre of young scholars who could pursue and develop interdisciplinary research in a variety of areas as envisaged in the foundational document of the Institute, the Memorandum of Association. The Programme is supported financially by the Indian Space Research Organisation and the Department of Science and Technology, Government of India. The programme also admits project-based research scholars, whose funding comes either from their own projects (such as NET-UGC/CSIR fellowships) or from project grants obtained by the faculty (in terms of Junior research Fellowships or other such fellowships); such students also register with various universities under the NIAS Doctoral Programme.

NIAS has received recognition as a research centre from Manipal University, University of Mysore, Indira Gandhi National Open University (IGNOU) and in the Tumkur University. NIAS faculty members have been recognised by these institutions as PhD guides. A Doctoral Programme Committee oversees the functioning of the programme. NIAS faculty have been offering a range of courses keeping in view the research interests and needs of the students.

Seven batches of students have been admitted to the NIAS Doctoral Programme so far, bringing the total number of students to thirty four in 2010-2011 – seven in the School of Humanities, thirteen in the School of Natural and Engineering Sciences, twelve in the School of Social Sciences and two in the International Strategic and Security Studies Programme. Six students have obtained their Doctoral Degree and two students have submitted their thesis to the concerned universities.

The NIAS Doctoral programme is thus developing into a well-integrated and unique programme with an emphasis on multidisciplinary research. Most of our students are working across disciplines, often in areas that they have not earlier studies, creating a vibrant intellectual atmosphere on campus. For instance, interdisciplinary projects are marrying philosophy with biology, environmental science with sociology, cognitive science with behavioural biology, education with anthropology and remote sensing with archaeology.

The programme is growing in strength, enabling the institute to produce a set of scholars who will carry forward the research programmes and traditions already established by the distinguished faculty of the Institute. In future, the Doctoral Programme will be put on a more sustainable foundation and will expand both in terms of the scope and depth in order to meet the upcoming challenges of the nation. Towards this end, NIAS, under the leadership of our current Director, Prof VS Ramamurthy, is initiating new areas of research and is upgrading the research facilities in accordance with international standards.

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

School of Humanities

Ms Rolla Das, Cognitive Science

Understanding communication through semiotic assemblies: A study of speech-gesture composites in pragmatics

Ms K Lakshmi, Psychology

Self and Well-being: A qualitative approach with focus on the Mahabharata

Ms Hema Thakur, Ancient History and Archaeology

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

Ms Samiksha Bajpai, Mr Naresh Keerthi, Ms Namitha A Kumar and Ms HR Meera
Not yet registered

Ms PS Sajini Anand, Mathematics
Nonlinear, Multidimensional Transformations and its Applications to Signal Processing

Mr Kishor G Bhat, Mathematics (thesis submitted)
Games in the Garden of Numbers

Mr Mayukh Chatterjee, Ecology, Behaviour and Conservation
Social Behaviour, Ecology and Population. Dynamics of the Northern Bonnet Macaque (Macaca Radiata Radiate)

Mr Rishi Kumar, Ecology, Behaviour and Conservation
Distribution, demography and behavioural ecology of mixed species troops of the bonnet macaque (Macaca radiata) and rhesus macaque (M. mulatta) in peninsular India

Ms Swarnali Majumder, Mathematics
Theory and Practice of Inverse Problem: Finding Equation from ECG and Speech Data

Mr Muthuswamy Murugan, Environmental Science
Factors and Patterns of Pesticide Usage in Cardamom Hill Agro Ecosystem and its Impact on Ecosystem Sustainability

Mr Narayan Sharma, Ecology, Behaviour and Conservation
Behavioural Ecology & Conservation of Primate Communities in the Lowland Evergreen Forests of Upper Brahmaputra Valley, Assam

Ms KG Sreeja, Environmental Science
Emergent Non-agrarian Livelihoods and Resource Linkages in the Agroecosystems of a River Basin: A Case Study of Chalakudy River Basin, Kerala

Mr Subhankar Chakrabarty, Ms Neesha Dutt, Mr Sartaj S Ghuman, Ms Shreejata Gupta, Mr JRV Muralikrishna, Ms Asmita Sengupta and Mr Tobby Simon
Not yet registered

Ms KG Asha, Economics
Dynamics of labour relations across different circuits of globalization

Mr K Jafar, Economics
The Impact of Education-Led Growth on Human Development: A case study of Malappuram

Ms Anu Joy, Education
Children's Understanding of Scientific Concepts

Mr Rahul Mukhopadhyay, Social Anthropology (thesis submitted)
Anthropology of the Education Bureaucracy

Ms Leena Pascal, Art Education
Pictorial Representation and its Development in Children

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

School of
Natural and
Engineering
Sciences

School of
Social Sciences

Mr Sailen Routray, Development Studies
Shifting Waterscapes: Tradition, Development and Change in Orissa

Ms Sahana Udupa, Social Anthropology
Informing News: Information Revolution and the Transformation of News Media in Bangalore

Ms R Maithreyi, Ms Sulagna Mustafi and Ms Sanam Roohi
Not yet registered

GRADUATED STUDENTS - 2010-2011

School of Humanities

Ms Vijayluxmi Beehary-Panray, Archaeology
Arts and Crafts as an Aspect of the Mauritian Cultural Identity with Special Reference to Indo-Mauritians

Ms Meera Baidur, Philosophy and Wildlife Biology
Conceptualization of Nature: Towards a Philosophy of Conservation and Action from Indian Traditional Thought

Mr SK Arun Murthi, Philosophy
Philosophical Problems of Laws of Nature and Explanation

Ms MB Rajani, Space Archaeology
Archaeological Investigations using Remote Sensing Techniques

School of Natural and Engineering Sciences

Mr Robin V Vijayan, Ecology, Behaviour and Conservation
*Ecology, Behaviour and Evolution of a Threatened, Endemic Bird, the White-bellied Shortwing *Brachypteryx major*, in the Western Ghats Mountains, Southern India*

School of Social Sciences

Ms Indira Vijayasimha, Education
Understanding Science Teachers' Praxis: An Ethnographical Study of Science Teaching in Four Bangalore Schools



Library

Library Committee

Prof Anindya Sinha, *Chairperson*

Prof Narendar Pani

Prof Sangeetha Menon

Prof S Ranganathan

Prof N Ramani

Ms Hamsa Kalyani, *Secretary*



View of NIAS Library

The library has continued to support the research and teaching needs of the Institute during the last year by acquiring relevant reading materials with the grant provided by the Jamsetji Tata Trust. The library has completed two years of its systematic collection development programme, which is guided by the faculty and the Library Committee. The focus of this programme has been to strengthen the collection in disciplines, which are not adequately represented in the existing library collection as well as to add relevant resources required for the new research programmes of the Institute. The library strives to facilitate this programme by providing the faculty with information such as new and forthcoming titles from reputed publishers, publishers catalogues as well as activating trial access to various academic e-resources from publishers and aggregators. The total library collection is indicated in Table 1.

Table 1: Library Holdings

Sl No.	Resources	Numbers
1.	Books	12725
2.	Journals	2714
3.	Data CDs	259
4.	CDs and DVDs	183
5.	Back volumes of Journals	1787
6.	Videos	19
7.	NIAS Lectures (Audio Tapes)	1450
8.	NIAS Lectures (DVDs)	258

Book Acquisitions

The library has expanded its collection significantly during the year by accommodating the recommendations of all faculty and students. Special efforts were made to acquire a number of rare and out-of-print books, which are valuable additions to the collection. The total number of books acquired during year is 1157.

Journal Subscriptions

The library currently subscribes to 2714 journals, which includes 21 new journals added during the year as well as a thousand journals from JSTOR collection. Access to full text

content of 1680 journals is available on the intranet to the readers. The library continues to participate in the UGC-Infonet consortium for the journal collections indicated in Table 2.

Table 2: UGC-Infonet Consortium

Sl No.	Journal Collections	No. of Journals
1	Oxford University Press	207
2	Cambridge University Press	224
3	Taylor and Francis Journals	1173
	Total	1604

Online Databases and CDROMS

The library has extended its subscription to the entire collection of datasets on India Stat.com website which includes disciplines such as Agriculture, Economics, Education, Labour, Environment, Forest and Wildlife, Demography, Sociology, Industries, Villages, Urban areas etc. This is proving to be a useful resource for our student community. The library has also acquired all the National Sample Survey Data available on CDROMS. The library has also been enriched with about 88 CDROMS and DVDs containing documentaries, films, reports etc.

Institutional Repository of NIAS

The institutional repository of NIAS developed by the library centralizes, preserves and makes accessible institutional output generated by faculty and students over the web. The type of content in this repository includes articles, book chapters, books, reports, monographs, conference papers, teaching resources, audio and visual materials. Special efforts are being made to convert the audio recordings of lectures delivered at NIAS to digital format. The process also includes reducing the noise and file compression. These lectures are then being uploaded into the repository. The repository is designed with user-friendly search and browse features.

NIAS Website

NIAS Website is being managed and updated by the Library. Recently the website of NIAS underwent an overhauling and was relaunched with a new design. Prof Sangeetha Menon oversaw the new design of the site as the content and graphic editor.

A blue-tinted photograph of a building with a tiled roof and a flagpole. The word "Administration" is overlaid in white text. The building has a prominent tiled roof and a flagpole in the center. There are some plants in the foreground.

Administration



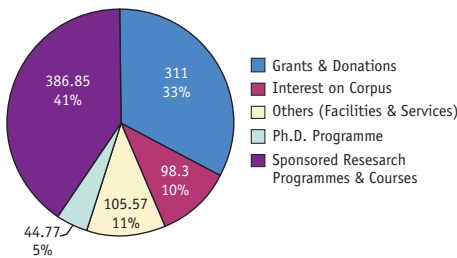
NIAS Campus

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 Dr. M. S. Swaminathan, is vested with full power and authority to do all acts, deeds, etc which are necessary for the promotion and fulfilment of the objectives set out in the Memorandum of Association. The Director, presently Prof VS Ramamurthy 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).

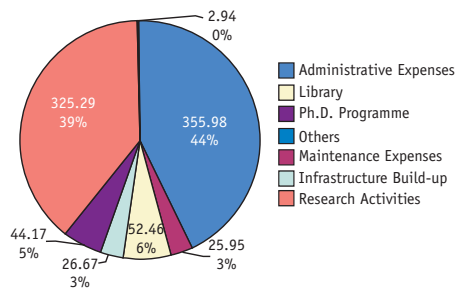
Besides management of all resources such as infrastructure, finance, human resources, estates etc., general administrative matters are also handled by Head (Admin. & Finance). Administration enables recruitment and deployment of staff, servicing their needs and empowering them to effectively contribute to the objectives of NIAS. It services the students programme in which twenty-five 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, 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 Manager's in the area of Administration and Accounts & Finance and other Secretarial / Office / Supporting Staff, in all numbering 29.

Finance management, accounting, auditing, resource mobilization and expenditure control are carried out systematically. Shri Srinivas Aithal is the Head of the Admin. & Finance. An overview of finances for the year 2010-11 is given below:

Cash Inflow (Rs. in lakhs)



Cash Outflow (Rs. in lakhs)



NIAS has a specified investment of Rs.1604.39 lakhs (exclusive of project funds) as on 31st March 2011.

During the year, the Institute has received 14 new research projects with a total value of Rs.298.96 lakhs. Total value of projects handled during the year including the projects sanctioned in the earlier years was Rs.1127.88 lakhs. Foreign exchange component included in this sum is Rs.231.21 lakhs.



Visitors



Mr Ravi Kant, Vice Chairman, Tata Motors Limited, Mumbai delivering talk on "The Making of the Nano" during 25th Course for Senior Executives (January 4, 2011)



Mr Nandan Nilekani, Chairman, Unique Identification Authority of India (UIDAI), New Delhi delivering Public Lecture on "Aadhaar and Its Role in the Transformation of Public Service Delivery" during 25th Course for Senior Executives (January 7, 2011)



Dr Murli Manohar Joshi, Honourable Member of the Lok Sabha and Former Union Minister, HRD, S&T and Ocean Development delivering talk on "Responding to Emerging Global Environmental Challenges" as part of Associates' Programme (June 26, 2010)

As in other years NIAS saw a stream of visitors in a variety of fields. These visitors play an important role in keeping the institute and indeed the city of Bangalore in touch with the latest intellectual and other trends across the country.

MEMORIAL LECTURES

Eleventh MN Srinivas Memorial Lecture

Prof Thomas E Weisskopf
Emeritus Professor of Economics, University of Michigan, USA
Reflections on Globalization, Discrimination and Affirmative Action
March 15, 2011

Sixth Raja Ramanna Memorial Lecture

Dr T Ramasami
Secretary, Department of Science and Technology, Government of India
and
Vidwan Sri Umayalpuram K Sivaraman
Chennai
Science for Musical Excellence
September 12, 2010



MN Srinivas Memorial Lecture



Raja Ramanna Memorial Lecture

PUBLIC PROGRAMMES

Documentary Film Screening "Living Like A Common Man"

A film by Sanderien Verstappen, Mario Rutten and Isabelle Makay (2011)
March 29, 2011

Prof Vladimir Burdyuzha

Astro-Space Center, Lebedev Physical Institute
Russian Academy of Sciences
Moscow, Russia
Why is it Impossible for Our Civilization to Cross a Bifurcation Point?
March 7, 2011

Dr Ioana Oltean

University of Exeter
Aerial and Satellite Remote Sensing in Archaeological Research: A View from Romania
February 24, 2011

Prof Bruce Bradley

University of Exeter
Archaeology at Exeter University
February 22, 2011

Prof Michael Goldman

University of Minnesota
Why the 'Urban Turn' in Global Policymaking?
February 18, 2011

Prof Eva V Teubal

David Yellin Teachers' College, Jerusalem, Israel
The Contribution of Various Graphic Texts to Children's Early Thinking, Communication and Learning
February 17, 2011

Mr Richard Foord

Exeter University, Exeter, UK
The Exeter International Summer School
February 2, 2011

Mr Siddharth Narrain

Alternative Law Forum, Bangalore

Dr V Krishna Ananth

Nehru Memorial Museum and Library, Chennai

Prof Nagaragere Ramesh

People's Democratic Forum, Bangalore
A Panel Discussion on Seditious or Prisoner of Conscience: State Power, Civil Liberties and the Case of Dr Binayak Sen
January 28, 2011

Prof Vikramaditya Prakash

University of Washington
Preservation and Uncertainty: The Modern City in the Age of Globalization
January 24, 2011

Dr Soumitri Varadarajan

RMIT University, Melbourne
Service Design for India
January 18, 2011

Dr Lakshmi Bandlamudi

The City University of New York
Dialogics of Self, The Mahabharata and Culture: The History of Understanding and Understanding of History
January 13, 2011

Mr Nandan Nilekani

Chairman, Unique Identification Authority of India (UIDAI), New Delhi
Aadhaar and Its Role in the Transformation of Public Service Delivery
January 7, 2011

Prof Anand Paranjpe

Simon Fraser University, Canada
Indian Psychology: What and Why?
January 7, 2011
(Sponsored by Indian Council of Philosophical Research)

Mr MS Sathyu

Film Director, Bangalore
Pioneering Cinema - 37 years after Garam Hawa Followed by Screening of the Film
January 3, 2011

Dr Sharada Srinivasan

NIAS
The Nataraja Bronze: Art, Science, Dance and Gender Perspectives
(Bharatanatyam recital and illustrated presentation)
November 25, 2010

Prof Anil Gupta

Indian Institute of Management, Ahmedabad
Grassroots Innovations and Science
November 23, 2010

Dr Meera Kosambi

Former Professor and Director, SNDT Women's University, Mumbai
Dharmanand Kosambi: The Life and Contribution of a Buddhist Socio-Political Thinker
November 18, 2010
(In collaboration with Indian Academy of Science)

Prof Patricia Uberoi

Dr S Radhakrishnan Visiting Professor, NIAS
Understanding the Family in India and China
October 13, 2010

Prof Ganesh Devy

Tribal Academy, Tejgadh, Gujarat
Inclusive Education: A View of Higher Education in India
September 27, 2010

Mr Ateeq Hussain Khan Bandanawazi and Troupe

Hyderabad
Qawwali
September 22, 2010
(In collaboration with SPICMACAY, Bangalore Chapter)

Prof Michael Dillon

Department of Politics and International Relations, University of Lancaster, UK
Transformation and War: Reconfiguration of the Military Real
September 22, 2010

Dr Sudhir Krishnaswamy

NUJS, Kolkata
Neither Market nor State: Preserving the Commons in Traditional Knowledge and Computer Software
September 9, 2010

Dr Sébastien Treyer

International Institute for Sustainable Development and International Relations, Paris
Future Scenarios for Sustainable Development: Identifying Critical Points in Development Pathways
September 2, 2010

Mr Avinash Chander

Advanced Systems Laboratory, Hyderabad
The Indian Missile Programme
August 13, 2010

Dr Amit Basole

University of Massachusetts, Amherst
Exploitation of Knowledge in the Informal Economy
July 9, 2010

Prof Gautam Sen

Indian Institute of Education, Pune
Strategic Affairs and Public Policy Making
June 28, 2010

Prof Mario Rutten

University of Amsterdam, Netherlands
Globalisation as Mirror Image Westernisation in India, Easternisation in Europe
June 25, 2010

Dr Monica V Ogra

Gettysburg College, USA
Narrowing the Focus: Bringing Gender Analysis into Studies of Wildlife Conservation
June 24, 2010

Prof Wing-Shing Tang

Hong Kong Baptist University, Hong Kong
The Hong Kong Section of the Guangzhou-Shenzhen-Hongkong Express Rail Link: Another Mega Project under Post-Fordism or What?
June 7, 2010

Prof Vikram Soni

National Physical Laboratory, New Delhi
Floodplain Aquifers
May 25, 2010

Prof Rajaraman

Jawaharlal Nehru University, New Delhi
Nuclear Happenings in the USA and Its Relevance to India
May 20, 2010

Prof BV Sreekantan

Visiting Professor, NIAS
LHC, God Particle, Big Bang and Black Hole
May 6, 2010

Mr Praveen Swami

Associate Editor, The Hindu
India's New Security Architecture: Light at the End of the Tunnel or Another False Dawn?"
April 16, 2010

Prof Padmini Swaminathan

Madras Institute of Development Studies, Chennai
Regulating Industrialization through Public Action and Legal Intervention: Interpreting an On-going Experiment in Tiruppur
April 8, 2010

WEDNESDAY DISCUSSION MEETINGS

NIAS Wednesday Discussion Meeting 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.

Prof BV Sreekantan

Reality, Oneness and Consciousness

March 30, 2011

Dr Rajesh Kasturirangan

Technology and the Future of the Humanities

March 23, 2011

Dr MG Narasimhan

From Our Knowledge of Evolution to Evolution of Our Knowledge

Subtitle: From Epistemology of Evolution to Evolutionary Epistemology (Part-II)

March 16, 2011

From Our Knowledge of Evolution to Evolution of Our Knowledge

Subtitle: From Epistemology of Evolution to Evolutionary Epistemology (Part-I)

March 9, 2011

Prof S Gopal

China and the Indian Ocean – Recent Developments

February 23, 2011

Dr Sanjay G Reddy

The New School for Social Research, New York
Failures of Measurement as Failures of Evaluation: The Example of the Poverty Debate in India and in the World

February 9, 2011

Prof Sehdev Kumar

University of Toronto, Canada

Bioethics: At the Crossroads of Life, Law and The Human Destiny

February 2, 2011

Dr M Amarjeet Singh

Issues and Perspectives on Migration and Conflict

January 12, 2011

Dr Chidambaran G Iyer

The MGNREGS in Karnataka

December 22, 2010

Dr Chandan Gowda

Birmingham in Mysore: The Cultural Logic of a Developmental State

December 8, 2010

Prof SS Meenakshisundaram

Women in Governance – The Case of Local Governments in India

November 24, 2010

Prof Narendar Pani

Gandhi and the Mahatma Trap

November 10, 2010

Dr Soumya James

The Role of Goddesses in Ancient Khmer Religion: An Art Historical and Anthropological Study

November 3, 2010

Prof Rajaram Nagappa

Strategic Weapon Delivery Systems

October 27, 2010

Prof Malavika Kapur

The Scientist in the Crib: The Science of Childhood

October 13, 2010

Prof AR Vasavi

Suicides and the Predicament of Rural India

October 6, 2010

Dr S Krishnamurthy

Glorious Waterfalls of Karnataka

September 29, 2010

Prof N Balakrishnan

Role of Science and Technology in National Security

September 22, 2010

Dr Manabrata Guha

The Assassin's Mace

September 15, 2010

Prof Carol Upadhya

Provincial Globalization: Transnational Mobilities and Regional Transformations in India

September 8, 2010

Ambassador Sourabh Kumar (Retd)

Turning the Recession and Crisis in the Global Economy into an Opportunity: Fostering Rural Industrialization in the Developing World to the Common Advantage of All Nations
September 1, 2010

Dr BK Anitha

Life Cycle of Indian Women Scientists
August 25, 2010

Dr Solomon Benjamin

'Subaltern' Globalization: Intersects between Indian and Chinese Urbanisms
August 11, 2010

Dr Harini Nagendra

Conservation in Forests and Cities: Challenges of Collective Action
August 4, 2010

Dr SG Kulkarni

Relevance of Philosophy in Science
July 28, 2010

Dr Sharada Srinivasan

Pioneering Metallurgy of Iron and Steel in Southern India: Some Explorations
July 21, 2010

Prof K Ramachandra

What a Child at School Can Do and What is a Serious Problem of Theory of Numbers
July 14, 2010

Prof Dilip R Ahuja and Prof DP Sen Gupta

Modifying Indian Standard Time to Conserve Energy
July 7, 2010

Dr Rajesh Kasturirangan

Sociocognitive Science
June 30, 2010

Mr P Vinay Acharya

Idealism and Realism in Indian Context
June 23, 2010

Prof Arindam Chakrabarti

Imagination as a Pramana
June 16, 2010

Dr MG Narasimhan

Between Scylla and Charybdis: An Analytical Overview of the Debate on the Design Problem in the Theory of Evolution
June 2, 2010

Prof Anindya Sinha

Jekyll and Hyde on the March: Can Genes Promote Ecological Success in Macaques?
May 19, 2010

Prof S Settar

Kumara Vyasa Bharata – A Documentary
May 12, 2010

Prof S Ranganathan

Imagining and Images of Nanoscience: Richard Feynman Lecture Fifty Years on
May 5, 2010

Lectures by Doctoral Students

Mr Kishor G Bhat

Moral Philosophy in the Ancient World: An Overview of Ethics in Classical Indian, Chinese, Hellenistic and Middle Eastern Thought
December 15, 2010

Mr Sailen Routray

Beyond Depoliticisation: Experiences from a Watershed Development Project in Kalahandi, Odisha, India
October 20, 2010

Mr Kishor G Bhat

A Mathematician's Prologue
May 26, 2010

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 130 distinguished personalities as our Associates. Prof S Settar is the Coordinator for Associates' Programme.

Following are the Associates' Programme which was held in NIAS during the year:

The Nrityagram Dance Ensemble

Bangalore
Śriyaḥ – A Decade of Dance Making
January 5, 2011

Prof VS Ramamurthy

Director, NIAS
Release of Kannada versions of Dr Mani Bhaumik's books translated by Dr K Puttaswamy
Devaru Emba Sankethanaama (Code Name God)
& *Cosmetic Detective (The Cosmetic Detective)*
Followed by a folk-Play
From Bahuroopi Nomadic Troupe (Hospet), The Street on the Stage, a Folk Version of Ramayana
November 29, 2010

Vidwan V Raghurama Ayyar and Vidhushi

Revathi Sadasivam
Chennai
Veena Recital
September 20, 2010

Dr Murli Manohar Joshi

Honorable Member of the Lok Sabha
Former Union Minister, HRD, S&T and Ocean Development
Responding to Emerging Global Environmental Challenges
June 26, 2010

LITERARY, ARTS AND HERITAGE FORUM

The NIAS Literary, Art and Heritage Forum aims to facilitate the appreciation, promotion and study of these crucial cultural and artistic aspects. Apart from lectures and book readings the forum aims to hold screenings of films and to promote art appreciation related to exhibitions.

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

Dr. Anna A Ślęcicka

Curator, Rijksmuseum, Amsterdam
Temple Consecration Rituals in temples of South and Southeast Asia: A Study of the Textual and Archaeological Evidence
February 28, 2011

Mr Hilary Smith

Art Historian, UK
A Ganges Salmagundi
February 3, 2011

Mr Joshua Muiyiwa and Mr Sailen Routray

A Poetry Reading: Lovers Don't, Poems Return
November 12, 2010

Prof Vijay Tiruvady

Green Bangalore: Some Reflections
June 14, 2010

NIAS
Backgroundler

Sindhu Radhakrishna
and
Anindya Sinha

LIVING WITH ELEPHANTS
THE CHALLENGE OF HUMAN-ELPHANT CONFLICT IN INDIA

NIAS
Backgroundler

M. Amarjeet Singh

CONFLICTS IN ASSAM

NATIONAL INSTITUTE OF ADVANCED STUDIES

NIAS
Backgroundler

M. Amarjeet Singh

CONFLICTS IN MANIPUR

NIAS
Backgroundler

Madhusoodhanan C.G.
and
Sreenja K.G.

THE MULLAPERIYAR CONFLICT

Publications

WP1-2010

NIAS
Working Paper

Sangeetha Menon

BRAIN-CHALLENGED SELF AND
SELF-CHALLENGED BRAIN
THE CENTRAL IMPASSE IN CONSCIOUSNESS STUDIES

NIAS
Backgroundler

SS Meenakshisundaram
Priya Raghavan
M Amarjeet Singh

THE CAUVERY CONFLICT

NATIONAL INSTITUTE OF ADVANCED STUDIES

NATIONAL INSTITUTE OF ADVANCED STUDIES

BOOKS

Kapur M (2011) *Counselling Children with Psychological Problems*. New Delhi: Pearson Publications.

Narasimha R and **S Menon** (eds.) (2011) *Nature and Culture* (Volume XIV Part 1). New Delhi: PHISPC and CSC.

PAPERS

Bandyopadhyay R (2011) 'Primitive Accumulation of Capital and Decommoning: Three Moments in the History of Capital', in Edwin and A. Cheria (eds) *Vocabularies of Commons: An Interdisciplinary Perspective*, pp 27-42, FES Publications, 2011.

Bandyopadhyay R (2010) 'In the Shadow of the Shopping Mall: Hawkers in Global Calcutta', in G. L. Riberico, C. A. Vega and G. Mathews (eds) *Economic Globalization from Below*, London: Routledge 2011. pp 93-110.

Bandyopadhyay R (2010) 'Politics of Archiving: Hawkers and Pavement Dwellers in Calcutta', *Dialectical Anthropology* (Springer, DOI 10.1007/s10624-010-9199-1, 2010). (<http://www.springerlink.com/content/41rk00157lh771j2/>).

Benjamin S (2011) 'Commoning contests the 'Urban Commons': Some thoughts on the de-commoning of Bengaluru' in *Vocabulary of Commons Foundation for Ecological Security*. Bangalore: WQ Judge Press. pp 295-312.

Benjamin S (2010) 'Aesthetic(s) of 'The Ground Up' city: Some insights from Bangalore', *Seminar* 612: 33-38.

Benjamin S (2010) 'The nomadic city appropriates the street', *Cluster* (<http://www.cluster.eu/the-nomadic-city-appropriates-the-street/>)

Benjamin S (2010) 'Manufacturing neoliberalism: Lifestyling Indian urbanity' in *Accumulation by Dispossession: Transformative Cities in the New Global Order* (ed. Swapna Banerjee-Guha). New Delhi: Sage Publications.

Chakraborty S, D Chakraborty, O Mukherjee, S Jain, U Ramakrishnan and **A Sinha** (2010) 'Genetic polymorphism in the serotonin transporter promoter region and ecological success in macaques', *Behavior Genetics* 40: 672-679.

Chakraborty S, D Chakraborty, O Mukherjee, S Jain, U Ramakrishnan and **A Sinha** (2010) 'Genetic polymorphism in the serotonin transporter promoter region and ecological success in macaques', *Behavior Genetics* 40:672-679. DOI 10.1007/s10519-010-9360-2.

Huffman MA and **A Sinha** (2011) 'Nature and culture in the wild: Biological foundations of behavioural traditions in non-human primates', in *Nature and Culture* (eds. R Narasimha and S Menon) Volume XIV, Part I. New Delhi: PHISPC and CSC, pp 367-389.

Karmakar S and **R Kasturirangan** (2011) 'Space and time in language as a pattern in general fictivity', *Current Science* 100(5): 627-628.

Kasturirangan R, N Guha and C Ram-Prasad (2010) 'Indian cognitivism and the phenomenology of conceptualization', *Phenomenology and the Cognitive Sciences* 9(4): 605-618.

Kumara HN, M Singh, S Kumar and **A Sinha** (2010) 'Distribution, abundance, group size and demography of dark-bellied bonnet macaque *Macaca radiata radiata* in Karnataka, south India', *Current Science* 99: 663-667.

Kurup A and **R Maithreyi** (2011) 'Beyond family and societal attitudes to retain women in science', *Current Science* 100(1): 43-48.

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Faculty



The Faculty at NIAS reflects the multidisciplinary character of the Institute. Coming from specializations as diverse as satellite technology and heritage they are held together by their focus on multidisciplinary work, and a willingness to engage with the larger community. This is captured by this list of awards received by them, the lectures delivered, and the papers presented in conferences during the year.

HONOURS AND AWARDS

Prof DP Sen Gupta was presented the SN Bose Award by the Government of West Bengal on February 28, 2011 for the year 2010, for *Bignaner Galgolpo* adjudged to be the best book for Science popularization for children up to the age of eighteen years.

Prof Malavika Kapur was elected the President of the Indian Association of Clinical Psychologists.

Dr Anitha Kurup was selected for the Fulbright Senior Research Fellowship 2011-2012 hosted by University of California, Davis. She is permanent invitee, member for the Working Group on Literacy and School Education, Karnataka Knowledge Commission, (KKC). She is member of Research Advisory Committee, Institute of Ayurveda and Integrative Medicine, I-AIM, (formerly FRLHT) IIAM, Bangalore and also member of Board of Studies, Women and Gender Department, IGNOU. She is adjunct faculty, MIC, Manipal University; founding member and Convener of Programme Academic Committee, EDGE Forum and executive member of Mahila Samakhya, Karnataka.

Dr Rajesh Kasturirangan was selected to be part of a distinguished group of scholars who had a public dialogue with the Dalai Lama as part of the Mind and Life conference in November 2010. He has been invited to participate in the fourth annual *Indo-American Kavli Frontiers of Science* symposium on April 18 to 20, 2011. The symposium is sponsored by the Indo-US Science and Technology Forum in partnership with the US National Academy of Sciences. This symposium series is the Academy's premiere activity for distinguished young scientists.

Prof N Shantha Mohan is Core Group Member and Vice-President of the Executive Board, South Asia Consortium for Interdisciplinary Water Resources Studies, Hyderabad. She is Joint Secretary of India Water Partnership, New Delhi, India. She is member of National Resource Group, Mahila Samakya, Ministry of Human Resource Development, Government of India; member of the Governing Board, Best Practices Foundation, Bangalore and member of the committee constituted for addressing Sexual Harassment of Women at the Workplace, ISAC, ISRO, Bangalore. She is executive member of Mahila Samakya, Karnataka.

Dr MG Narasimhan was one of the four Philosophers of Science in the Australasian region invited to take part in an International Survey related to recent advances in my field. Currently he is nominated member of the Bangalore District Committee of KRVP, a well known organisation engaged in Popularisation of Science in Karnataka in the year 2010.

Prof Narendar Pani is member of the Working Group of the Planning Commission to suggest reforms to the Mahatma Gandhi National Rural Employment Guarantee Act. He is also member of the committee set up by the Planning Commission to monitor the evaluation by the Programme Evaluation Organisation of the Mahatma Gandhi National Rural Employment Guarantee Act.

Dr Sindhu Radhakrishna received the ASIAN-HOPE Fellowship, sponsored by the Japan Society for the Promotion of Science (JSPS) to attend the 23rd Congress of the International Primatological Society, held in Kyoto, Japan in September 2010.

Prof S Ranganathan is invited member of the National Commission for History of Science at the Indian National Science Academy, New Delhi for the period 2011-2013. He is also member of the Committee for Identification of the Literature on the History of Science and Technology in India, Interpretation of India's Cultural Expressions and their Development in a Scientific and Technological Perspective by the Ministry of Culture, Government of India, New Delhi.

Prof Sangeetha Menon is a Board member of the *International Association for Transpersonal psychology* and *Asia Consciousness Society*. She is Nominated member of the *International Society for Science and Religion*. She is an Adjunct faculty at Gitam University, Vishakapatnam. She is an Academic Advisory Committee member of the *Centre for Traditional Knowledge Systems*, IGNOU, New Delhi. She was an advisory committee member of the Cortona-India Programme, ETH-Zurich.

Prof PK Shetty was appointed as a member of Advisory Board, Dr Raja Ramanna Children Science Association (R), Bangalore, July 5, 2010.

Prof Anindya Sinha was nominated Leader of the Indian Team and Member of the International Sub-Jury, Twenty-First International Biology Olympiad, Changwon City, South Korea, July 10 to 17, 2010. He was nominated International Advisor to the Science Committee, National Organizing Committee, Twenty-First International Biology Olympiad, Changwon City, South Korea, July 10 to 17, 2010. He was invited to deliver an International Colloquium on Primate Social Cognition at the School of Humanities, Arts and Social Sciences, Nanyang Technological University, Singapore, November 9, 2010.

Dr Sharada Srinivasan is Fellow of the World Academy of Art and Science (WAAS) (International body that grew out of the interest of eminent thinkers including Albert Einstein). She was appointed member of Advisory Committee for Centre for Traditional Knowledge Systems at IGNOU, Delhi.

Prof Carol Upadhya was Senior Visiting Fellow, Max Planck Institute for the Study of Religious and Ethnic Diversity, Goettingen, Germany, April 15 to May 24, 2010.

LECTURES

Prof VS Ramamurthy, Director
Challenge of Science Communication, IISc Alumni Association Science Forum – Popular Lecture Series, IISc, Bangalore, March 12, 2011.

International Cooperation in the Development and Deployment of Technologies, Keynote Address at the Science Business Forum, Indo Korea Science and Technology Centre, IISc, Bangalore, March 7, 2011.

International Cooperation in Education and Research, AAAS Annual Meeting of the special one-day Round Table on 'Science Co-operation in the Asia-Pacific', American Association for the Advancement of Science, Washington DC, USA, February 16, 2011.

Science Diplomacy in Indo-US Relations: Past, Present and the Future, Indo-US Workshop on Science, Diplomacy and Policy, NIAS, January 13, 2011.

Global Partnership in Scientific Research and International Mega-Science Projects, The Meghand Saha Medal Lecture, 76th Anniversary General Meeting, Indian National Science Academy, December 28, 2010.

The Excitement of Science, Science Forum of Christ Junior College for Intercollegiate Science Fest COSMOS, Bangalore, October 29, 2010.

Re-Engineering Publicly funded R&D Laboratory for the 21st Century, CSIR Foundation Day, Advanced Materials and Processes Research Institute (AMPRI), Bhopal, September 26, 2010.

Challenges of Science and Technology Communication in the 21st Century, Inaugural Address, Workshop on Creation and Dissemination of Knowledge, Centre for Management of Innovation and Technology, International Management Institute, New Delhi, August 25, 2010.

Access, Equity and Excellence in Education: Opportunities for Public Private Partnership, eINDIA2010, Keynote Session II, digitalLEARNING Higher Education INDIA 2010 Track, India Largest ICT Event, Hyderabad International Convention Centre, Hyderabad, August 4, 2010.

Challenges of Science Communication, 33rd Annual Science Festival – 2010, Bangalore Science Forum, National College Buildings, Bangalore, July 29, 2010.

10th Convocation Address, International Institute of Information Technology Bangalore, July 10, 2010.

Prof Dilip R Ahuja

Energy Mix for the Future, Plenary Session, 3rd Emerging Technologies Conference, EmTech India 2011, Bangalore, March 23, 2011.

The Project on Adjusting IST – Methodology, Results and Recommendations, presentation made to the Inter-Ministerial meeting at the Ministry of Power, Shram Shakti Bhawan, New Delhi, December 15, 2010 (along with Prof DP Sen Gupta).

Presentation made to the Second Meeting of the Expert Advisory Committee, New Delhi, July 16, 2010 (along with Prof DP Sen Gupta).

Presentation made to the Review Committee, Bureau of Energy Efficiency, New Delhi, June 2, 2010.

Dr Solomon Benjamin

Fearing the Unruly City, international conference on the 21st Century Indian City: Developing and Agenda for Urbanization in India organised by Center for South Asian Studies, International and Area Studies, University of California Berkeley at Delhi, March 24, 2011.

Imperfect Cities - Disruptive Regions, conference on India and China Rising Powers: Oxford University's Compass Group, Goldsmith College London, CSDS in Delhi, February 11, 2011.

Dissent, Debate, (and Disconnected?), city panel of the 'The Delhi Platform' CHS-SARAI-CPR Public Discussion Series, Delhi, November 21, 2010.

Urban Planning: Contested Governance, Development and Poverty in Bangalore, Keynote Presentation on panel on Urban Governance in 'Infrastructure, Sustainable Transportation, and Urban Planning' International Conference at CiSTUP, IISc, Bangalore, November 18, 2010.

Intersects between Indian and Chinese Vernacular Urbanisms, MMG Institute Colloquium, Gottingen, September 22, 2010.

Reading Bangalore's Contestations, Department of Geography, HK Baptist University, July 26, 2010.

Cities Within and Beyond the Plan: Reading Bangalore's Multiple Contesting Terrains in The City in South Asia, 'Minipaku' National Museum of Ethnology, Osaka Japan, July 18, 2010.

An Urban Geography of Fear: Planners, Squatters, Hawkers, and Occupiers in 'Emotion and Space', NIAS, June 14, 2010.

Dr Samir Karmakar

Cognitive Processes Underlying the Meaning of Complex Predicates and Serial Verbs from the perspective of individuating and ordering situations in Bāṅlā,” at the first international conference on Intelligent Interactive Technologies and Multimedia (IITM 2010) in Allahabad, December, 2010.

Perspectivizing Space in Bāṅlā Discourse, 32nd Annual Conference of the Cognitive Science Society in Portland, Oregon, USA, August, 2010.

Dr Rajesh Kasturirangan

A Feeling for the Truth, International Workshop on Creativity, Experience and Consciousness at IIT-Gandhinagar, October 30, 2010.

Dr Manabrata Guha

Emergent War Scenarios: An Appraisal, invited remarks at the Round-Table Meeting on “Emergent War Scenarios” (Chaired by the Hon'ble Minister of State for Defense, Government of India) at the 35th Annual Directors' Conference, Defense Research and Development Organization, New Delhi, March 27, 2011.

Perspectives on Future War, Centre for Joint Warfare Studies (CENJOWS), Integrated Defense Staff (IDS) HQ, Ministry of Defense, New Delhi, March 4, 2011.

Re-thinking Indian Military-Strategy in “emergent” contexts, National Strategy Workshop at the Institute of Defense Studies and Analysis (IDSA), New Delhi, December 22 and 23, 2010.

Intensive War: Without Beginning, Middle, or End, International Keynote Lecture at University of Western Ontario, Canada, May 6, 2010.

Prof DP Sen Gupta

Life and Science of Sir JC Bose, to school children of Bangalore arranged by the Museum, Bangalore, November, 2010.

Sir JC Bose, HRBR Institute, Bangalore, September 4, 2010.

What is Energy?, to children of an Anganavadi School at Muddannahalli, July 21, 2010.

Prof Malavika Kapur

Bridging the Gap between Developmental Psychology and Education, presidential address at the national annual conference of the Indian Association of Clinical Psychology, Ahmedabad, Gujarat, January 21, 2011.

Presidential address during the inauguration of the Seminar on Effective Parenting, Department of Psychiatric Social Work, NIMHANS, Bangalore, December 18, 2010.

Education, invited lecture during the seminar on Creative Ideas for Change and Development of Socio-economic Conditions of the People of Bodoland, Kokrajhar, Assam, November 20 and 21, 2010.

Child and Adolescent School Mental Health, Institute of Human Behaviour and Allied Sciences, New Delhi, September 5, 2010.

Myth of Mental Illness, lecture during the 8th Annual NIAS-DST Training Programme on Multidisciplinary Perspectives on Science and Technology, August 3, 2010.

Developmental Psychology and Child Care in Ancient India, Department of Psychology, Widener University, Philadelphia, June 8, 2010.

Child Development at the Widener University Philadelphia, USA, June 8, 2010.

Gender Behaviour – Psychological Perspective, invited lecture during the national seminar on International Women's Day: A Ritual or An Achievement, Centre for Women's Studies, Bangalore University, Bangalore, May 17, 2010.

Demystifying Development and Unlocking a Child's Potential through Play and Art, keynote address during the interdisciplinary seminar on Psychology and Education, during the occasion of the inauguration of the Child Guidance Centre at the Sahyadri Hospitals, Pune, May 16, 2010.

Dr Chidambran G Iyer

Some Aspects of the Indian Economy at the Discussion on Challenging Socio Economic Paradigm, organised by Greenpeace India, at Bangalore, March 14, 2011.

Dr M Mayilvaganan

India and Its Neighbours, Manidha Neyam Institute, Chennai, January 24, 2011.

Prof SS Meenakshisundaram

Values and Ethics in Governance for elected presidents of Zilla Panchayats in Karnataka, State Institute for Rural Development, Mysore, March 23, 2011.

Inclusive Growth and the Indian Planning Process: Inclusive governance – The case of Local Governments in India, Gandhigram Rural Institute (Deemed University), Gandhigram, December 13 and 14, 2010.

Public Provisioning of Health in the context of Decentralization, Gujarat Institute of Development Research, Ahmedabad, July 31, 2010.

Public Administration in Karnataka for the IAS Probationers of 2009 batch, Administrative Training Institute, Mysore, July 3, 2010.

Prof Sangeetha Menon

Consciousness Studies and Interdisciplinarity in Research, Doctoral Course Guest Lecture, Centre for Research, Christ University, Bangalore, March 22, 2011.

Qualitative Approaches for Research in Psychology and Mental Health, Doctoral Course Guest Lecture at Centre for Research, Christ University, Bangalore March 22, 2011.

Self and Its Identity in Experience, A dialogue with Buddhist scholars at a meeting in Nava Nalanda Mahavihara, Nalanda on Individuality, Identity and Constitution, with focus on Self in Brain Sciences February 25 to 27, 2011.

Bhagavad Gita, and The Place of Value in Consciousness Studies, Special Lecture at Ramakrishna Mission Institute of Culture, Golpark, Calcutta at the national Seminar on *Bhagavad Gita*, January 8, 2011.

Self and Subjectivity in Brain Studies: Psychological and Philosophical Implications Extension Lecture at Suvidya College Institute for Philosophy and Religion, Bangalore December 10, 2010.

Puzzles that Self and Brain give for Consciousness, Resource-person and lecture for the Cortona-India Programme, ETH-Zurich "Science and the Spiritual Heritage of India", Hyderabad, November 24, 2010.

Self and Immortality: Nachiketa, the Young Student's Dialogue in the Katha Upanishad Resource-person and lecture for the Cortona-India Programme, ETH-Zurich "Science and the Spiritual Heritage of India", Hyderabad, November 22, 2010.

Brain Studies, Consciousness and Spiritual Psychology, Valedictory address for the national seminar organised by Dept of Psychology, Aligarh Muslim University, October 30, 2010.

Truth, Beauty and Goodness: A discussion on the time-tested virtues, AMU University Extension Lecture, Aligarh Muslim University, October 29, 2010.

Self-exploration: Reason, Experience and Spiritual Moorings, For the IRS Officers at NADT (National Academy of Direct Taxes) for their programme on *Experience Analysis and Building*, Nagpur, October 4 to 7, 2010.

The Place of Self in Neuroscience, Seminar on Self and its Emotions, National Institute of Advanced Studies, Bangalore, June 14, 2010.

Prof Rajaram Nagappa

Aerospace Propulsion in India, keynote address at the inaugural function of the National Workshop on Recent Trends in Aerospace Propulsion, MIT, Anna University, Chennai, March 16, 2011.

Update on Pakistan's Ballistic and Cruise Missiles – invited talk to the Scientists of Terminal Ballistics Research Laboratory, Chandigarh, February 7, 2011.

Dr MG Narasimhan

Subjectivity and / in Science, national seminar on Thinking Subjectivities, Christ University, Bangalore, February 9, 2011.

The Use and Abuse of Genetic Information, seminar on the Human Genome project, under the title 'Shifting Parameters: Social and Ethical Implications of Human Genome Research' jointly organised by NIAS and the Indian Institute of Advanced Studies, Shimla, November, 2010.

Ethics and Cognitive Science - Is there a Universal Moral Grammar?, 4th Indo-US Round Table on Cognitive Science, Indian Institute of Science, Bangalore, September 23, 2010.

Prof Narendar Pani

Malayala Manorama Budget Lecture at Kochi on March 3, 2011.

Keynote paper at the conference on Infrastructure, Sustainable Transportation and Urban Planning at Indian Institute of Science, Bangalore, October 19, 2010.

Dr Sindhu Radhakrishna

Living in Human-dominated Landscapes: Boon or Bane for the Slender Loris, ASIAN-HOPE 2010: Pre-Congress Symposium and Workshop, Twenty-third Congress of the International Primatological Society, Inuyama, Japan, September 7, 2010.

Distribution and Conservation of the Slender Loris in India, twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 15, 2010.

Lessons from Lorises, Postgraduate Program in Wildlife Biology and Conservation, National Centre for Biological Sciences, Bangalore, January 11, 2010.

Prof S Ranganathan

Heritage Science Initiative at NIAS, National Metallurgical Laboratory, Jamshedpur, February 28, 2011.

Crucible Steel from India: A Major Metallurgical Accomplishment in Antiquity, Vistas in Science, St Joseph's PG College & Research Center, Bangalore, February 25, 2011.

Experimental Archaeology: Indian Perspectives, UKOERI Sessions and Practicals in Experimental Archaeology, NIAS, February 23 to 25, 2011.

Two Celestial Alloys from India, Department of Metallurgical Engineering, Banaras Hindu University, February 21, 2011.

Crucible Steel from India: A Major Metallurgical Accomplishment in Antiquity, Indian Institute of Metals, Delhi Chapter, September 24, 2010.

Splendours of Indian Bronzes: The Celestial Alloys, Thirty Third Annual Science Festival, The Bangalore Science Forum, Bangalore, July 16, 2010.

Splendours of Indian Bronzes, Nightingales Centre, Bangalore, April 9, 2010.

Materials Heritage of India, Department of Sanskrit, SCSVMV University, Enathur, Kanchipuram, April 2, 2010.

Prof PK Shetty

Science and Human Welfare, Annual Day Celebration of Blossoms School, Bagalgunte, Bangalore, February 12, 2011.

Recent Developments in Science and Technology, valedictory address, 2nd Anniversary of Dr Raja Ramanna Children's Science Association and Children's Day at Vivekavardhini Education Society, Bangalore, November 14, 2010.

Smart Grid and Renewable Energy, workshop on Challenges in Smart Grid and Renewable Resources, organized by IEEE Bangalore Section, Infosys Campus, Mysore, May 13 to 15, 2010.

Prof S Settar

Inaugural Address, National Level Tourism Seminar, Nijalingappa College, Bangalore, February 26, 2011.

Inaugural Address, Seminar on Religion and Society in Peninsular India, Central University, Pondicherry, February 24, 2011.

Late SC Sharma Memorial Annual Lecture, Jnana Pravaha, Varanasi, February 9, 2011.

Release of two books 'Purvalokanam' and 'Nammadu Itihasa' followed by a lecture, Sahitya Bhavan, Bangalore, January 25, 2011.

Inaugural Address, Seminar of Anthropologist of Indian Universities, Indira Gandhi Manava Samgrahalaya, Bhopal, October 23, 2010.

Dr M Amarjeet Singh

Transformation Processes of Armed Groups into Mainstream Political Actors: Case of Northeast India, national seminar on Gandhian Strategies for Sustainable Communal Harmony and Development, Centre for Gandhian Studies, Thodupuzha, March 3 to 4, 2011.

Conflicts, Institutions, and Peace Building in Northeast India, consultative programme on Why a Specialized Institute of Social Work for Peace Building and Human Security, Imphal, August 2 and 3, 2010.

Prof Anindya Sinha

Primate Minds: From Individual Mental Representations to Distributed Social Cognition, lecture-workshop on Cognitive Neuroscience – An Interdisciplinary Approach to Understanding Behaviour, Sophia College, Mumbai, January 11, 2011.

An Adaptation to Change? Stress, Sociality and Animal Personality, national conference and Workshop on Stress and Metabolic Syndrome, National Institute of Science, Education and Research, Bhubaneswar, December 14, 2010.

A Beautiful Mind: Social Cognition in Wild Bonnet Macaques, School of Humanities, Arts and Social Sciences, Nanyang Technological University, Singapore, November 9, 2010.

Scio Ergo Sum: Experience and Cognitive Knowledge in a Nonhuman Primate Species, international conference on Cognition, Experience and Creativity, Indian Institute of Technology, Gandhinagar, October 29, 2010.

Asian Macaques: Diversity and Evolution, the first international symposium on Human and Monkey Malaria in Vietnam, Kyoto, Japan, September 18, 2010.

Of Frugivory and Fallback Foods: Foraging ecology of the High-Altitude Arunachal Macaque in Northeastern India, twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 16, 2010.

True Lies! Generalisation in Tactical Deception in Wild Bonnet Macaques, twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 15, 2010.

Primate Wars: Human-Macaque Conflict in India, panel discussion on Human-Wildlife Conflict, First Student Conference on Conservation Science, Bangalore, June 18, 2010.

Prof BV Sreekantan

Modern Astronomy, workshop on Indian Mathematics and Astronomy, Bhavan's Gandhi Centre Science and Human Value, Bangalore, January 22, 2011 and World Science Day, Sri Sharada Vidyaniketan Public School, Bangalore, March 18, 2011.

Outerspace and It's Mystery: A Exposition, Karnataka Haridasa Scientific Research Centre, Bangalore, December 20, 2010.

21st Century Perspective on Cosmology, Perspective of the Universe: Global Conference on Cosmologies, Srinivasa Jyothish Vigyan Research Foundation, Tiruchirappalli, December 2, 2010.

Experiments in Progress in the Frontiers of Physics and Astronomy of Relevance to Philosophy, international conference on CORTONA-INDIA, Hyderabad, November 21, 2010.

Science and Quest for "Reality", National Workshop on "Spiritual Research Methodology", MLR Brigade Convention Center, J.P. Nagar, Bangalore, August 15, 2010.

The Role of Cosmic Ray Research in Ushering in the Era of High Energy Physics, Elementary Particles Physics and Ultra-High Energy Astronomies, workshop on Radicals in Science: Nature or Nurture?, Raman Research Institute, Bangalore, August 10, 2010.

Dr Sharada Srinivasan

Vijayanagara Bronzes and Digital Heritage, DST-IDH Hampi Project Launch, March 25, 2011.

Cosmology and Indian Art, Perspectives of the Universe, global conference on Cosmologies, organised SJV Research Foundation at NIAS, December 2 to 4, 2010.

Vijayanagara Bronzes and Digital and Analytical Approaches, GeoICT PAMC Meeting, IIT Madras, organized by DST, September 14, 2010.

High-tin Bronzes from Indian Antiquity, national workshop on Archaeological Sciences, organized by Archaeological Survey of India, New Delhi, July 17 and 18, 2010.

Archaeometallurgical Insights on Wootz / Damascus Steel, Centre for Materials Processing and Tribology Seminar, Purdue University, USA, May 14, 2010.

Art and Science of Chola Bronzes, organized by Interdisciplinary Archaeology Workshop & TAPSA, University of Chicago, May 13, 2010.

The Dancing Shiva Nataraja: Art-science Insights, Department of South Asian Studies, University of Berkeley, California, USA, May 6, 2010.

Wootz Steel: Pioneering Metallurgy from Southern India, CISAC, Stanford University, USA, May 3, 2010.

Cosmic Dance of Shiva, Norton Simon Museum, Pasadena, California, April 30, 2010.

Prof Carol Upadhy

Provincial Globalisation: The Impact of Reverse Transnational Flows in India's Regional Towns – A Research Agenda, South Asia Update, International Institute of Asian Studies, University of Amsterdam, November 24, 2010.

A New Research Agenda: The Impact of Reverse Transnational Flows in India's Regional Towns (with Prof Mario Rutten) in the international seminar on Global Relationships in Indian Perspective, Institute for Social and Economic Change, Bangalore, June 22 and 23, 2010.

Prof AR Vasavi

Four Emblematic Figures and the Making of a New India, public lecture at the Department of Sociology, Delhi University, February 4, 2011.

Four lectures on various topics to graduate students as part of the Visiting Faculty responsibilities, Delhi School of Economics, Delhi University, February 1 to 13, 2011.

Marginalities introduction to the IASS Congress meet, Guwahati, December 30, 2010.

Inaugural lecture for the inauguration of the SC and ST Cell at the Guruvayur Aiyappan Government College, Kozhikode, Kerala, December 9, 2010.

Understanding Ruralities to the Conservation Education Network, Kothagiri, October 28, 2010.

Individualisation of Agriculture: Risks and the Burden of new Productivity, IIAS, Shimla, June 30, 2010.

PAPERS PRESENTED IN CONFERENCES

Prof S Chandrashekar

India and the Peaceful Uses of Outer Space, presented at a workshop on Space Science and Security: The Role of Regional Expert Discussions conducted by SIPRI, Secure World Foundation, ORF and JNU at ORF, New Delhi, January 19 to 21, 2011.

Prof S Gopal

China and the Indian Ocean States, paper presented at the national seminar on Rise of China and Implications for Asian Neighbours, organized jointly by the Centre for South Asian Studies and the Chennai Centre for China Studies, Chennai, December 17 to 20, 2010.

Counter-terrorism technologies, paper presented at the national seminar on Role of Technology in maintaining India's National Security, organized by Department of Geopolitics, Manipal University, September 7 and 8, 2010.

Role of JVP in Sri Lankan Politics with special reference to ethnic question, paper presented at the national seminar on Ethnic Reconciliation and Economic Reconstruction and Nation Building in Sri Lanka.

Dr Puja Guha

Selected as finalist for the GDN Medals for Outstanding Research and presented her research paper *Macroeconomic Transmission Channels of International Remittances: The Micro to Macro Level Adjustments*, in the 12th Annual GDN Conference held in Bogota, Colombia, January 13 to 15, 2011.

Impact of Remittances on Indian States: The Utilization Pattern and Economic Development, presentation to Indian Council of Overseas Employment, Ministry of Overseas Indian Affairs, New Delhi, December 7, 2010.

Presented paper on *Remittances and Inter-sectoral Labour Adjustments: Unravelling the Dutch Disease Channel* in the international seminar on Global Relationships in Indian Perspective, Institute for Social and Economic Change, Bangalore, June 22 and 23, 2010.

Dr Nabeel Mancheri

India's Trade in Services with Select FTA and non-FTA Partners: Paper presented in the International Conference on Changing Structure of International Trade and Investment: Implications for Growth and Development, organized by Department of Economics, Jamia Milia Islamia and Centre for WTO Studies, New Delhi, March 2 and 3, 2011.

Prof SS Meenakshisundaram

Public Distribution System-Need for Policy Reforms, Jamia Milia Islamia, New Delhi, February 24, 2011.

Innovative Approaches and Practices in Local Governance, Rajiv Gandhi National Institute of Youth Development (Deemed University) Sriperumbudur, November 27, 2010.

Challenges in Rural Housing (In the Group Conference of BASF International Executives), Lufthansa Training Centre, Frankfurt, October 22, 2010.

Indicators for Measuring Governance Performance in the Health Sector, Indian Institute of Public Administration, New Delhi, September 24, 2010.

Impact of Elite Capture in Local Governance, ISEC, Bangalore, June 28, 2010.

Prof Sangeetha Menon

Self at the Edge: Brain and the Recent Neuropsychiatric Narratives, invited lecture for the National Seminar at Indian Institute of Technology, Gandhinagar, Ahmedabad, in collaboration with the Balvant Parekh Centre for General Semantics and Other Human Sciences on "The Enigma of Health: Maladies and the Politics of Healing" March 25 to 27, 2011.

Brain, Self and their Interrelations in Understanding Consciousness, plenary lecture for international conference at Dayalbagh Educational Institute, Agra, November 11 to 14, 2010.

Consciousness--Is it housed in the Self, Brain or Both?, lecture for the International Conference on Transpersonal Psychology, Hotel Ismailovo, Moscow, June 24, 2010.

Prof N Shantha Mohan

Presented a paper titled *Inter-State Transboundary Water Sharing Arrangements in India: Conflict and Co-operation* at the policy oriented round table on Natural Resource Management in South Asia organised by The Observer Research Foundation and the Rosa Luxembourg Foundation, Germany at New Delhi on March 8, 2011.

Prof Rajaram Nagappa

Emerging Space Technologies: Their Impact on National Security, paper presented at the IDSA Conference on Space and International Security, Institute for Defence Studies and Analysis, New Delhi, March 30 to 31, 2011.

India's Space for Security – paper presented at a workshop on Space Science and Security: The Role of Regional Expert Discussions conducted by SIPRI, Secure World Foundation, ORF and JNU at ORF, New Delhi, January 19 to 21, 2011.

Strategic Weapons Delivery Systems, Paper presented at the National Seminar on Role of Technology in Maintaining India's National Security, organised by Department of Geopolitics, Manipal University, September 7 and 8, 2010. (Co-authors: S Chandrashekar, Lalitha Sundaresan and N Ramani).

Prof S Ranganathan, Dr Sharada Srinivasan and Team

Indian High-tin Bronzes: A Continuing Tradition from Ancient to Modern Times, (S Ranganathan, S Srinivasan, I Glover), Asian High-tin Bronzes, Japan Society for Promotion of Science, November 20 and 21, 2011.

Mamayee Festival in the Northern Telengana Region: Insights of a Fading Tradition, (T Neogi, S Srinivasan, S Ranganathan, G Juleff, B Gilmour, J Sriperumbudur), Third SOSAA Congress of the Society for South Asian Archaeology, University of Kelaniya, Sri Lanka, August 20 to 22, 2010 .

Survey of Iron and Steel Production in Northern Telengana, Andhra Pradesh, India and Typological Classification of Archaeometallurgical Remains, (H Thakur, S Srinivasan, S Ranganathan, G Juleff, B Gilmour, J Sriperumbudur), Third SOSAA Congress of the Society for South Asian Archaeology, University of Kelaniya, Sri Lanka, August 20 to 22, 2010.

Application of Geographical Information System in Archaeometallurgy: A Case Study of Telengana Wootz Production, (NS Nalini, MB Rajani, S Srinivasan, S Ranganathan, Gill Juleff, Brian Gilmour, J Sriperumbudur), Third SOSAA Congress of the Society for South Asian Archaeology, University of Kelaniya, Sri Lanka, August 20 to 22, 2010.

Prof Anindya Sinha, Dr Rajesh Kasturirangan, Dr Sindhu Radhakrishna and Team

An Adaptation to Change? Stress, Sociality and Animal Personality. National Conference and Workshop on Stress and Metabolic Syndrome, National Institute of Science, Education and Research, Bhubaneswar, December 14, 2010 (Chakraborty S and Sinha A).

Rhesus Macaque-Human Conflict in Northern India: Attitudes and Perceptions. YETI 2010: Young Ecologists Talk and Interact, Indian Institute of Science, Bangalore, October, 2010 (Saraswat R, Sinha A and Radhakrishna S).

*Minding Others' Business: The Cognitive Capacity for Tactical Deception in Wild Bonnet Macaques *Macaca radiata**. YETI 2010: Young Ecologists Talk and Interact, Indian Institute of Science, Bangalore, October, 2010 (Ghuman SS, Datta Roy A, Kasturirangan R and Sinha A).

Scio Ergo Sum: Experience and Cognitive Knowledge in a Nonhuman Primate Species. International Conference on Cognition, Experience and Creativity, Gandhinagar, October 29, 2010 (Sinha A).

Behavioural Dispositions: How Can We Study Animal Personality in the Wild? YETI 2010: Young Ecologists Talk and Interact, Indian Institute of Science, Bangalore, October, 2010 (Chakraborty S and Sinha A).

Social Behaviour of the Western Hoolock Gibbon Hoolock Hoolock in a Lowland Rainforest Fragment of the Upper Brahmaputra Valley, Northeastern India. Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 16, 2010 (Sankaran S, Rawat GS, Kumar RS and Sinha A).

Of Frugivory and Fallback Foods: Foraging Ecology of the High-Altitude Arunachal Macaque in Northeastern India. Symposium on the Ecology of Temperate Primates, Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 16, 2010 (Mendiratta U, Kumar RS, Mishra C and Sinha A).

In Their Genes: Genetic Polymorphism in the Serotonin Transporter Promoter Region and Ecological Success in Macaques. Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 16, 2010 (Chakraborty S, Chakraborty D, Ramakrishnan U and Sinha A).

Of Monkeys and Men: Human-Rhesus Macaque Conflict in Northern India. Symposium on Human-Macaque Interactions: Traditional and Modern Perspectives on Cooperation and Conflict, Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 15, 2010 (Chaudhury S and Sinha A).

Gouging Plants for a Living: Exudativory in the Bengal Slow Loris Nycticebus Bengalensis. Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September, 15, 2010 (Swapna N, Radhakrishna S, Gupta AK and Kumar A).

Distribution and Conservation Status of the Slender Loris in India. Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 15, 2010 (Radhakrishna S, Kumara HN and Sinha A).

Coexistence and Conservation of Sympatric Primates in the Fragmented Habitat of the Hollongapar Gibbon Wildlife Sanctuary, Assam, Northeastern India. Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 14, 2010 (Sharma N, Madhusudan MD and Sinha A).

Quo Vadis? Dual Sex Emigration in a Female-Bonded Cercopithecine Species, the Bonnet Macaque, in Bandipur National Park, Southern India. Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 14, 2010 (Mukhopadhyay K and Sinha A).

Population Genetic Structure and Recent Bottlenecks in a Wild, High-Altitude, Macaque: Strong Effects of Geography and Anthropogenic Factors. Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 14, 2010 (Chakraborty D, Ramakrishnan U and Sinha A).

Macaques of a Feather? Do Mixed Species Associations Induce Behavioural Changes in One of the Participating Macaque Species? Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September 13, 2010 (Kumar R and Sinha A).

True Lies! Patterns of Generalisation in Tactical Deception by Wild Bonnet Macaques Macaca Radiata. Twenty-third Congress of the International Primatological Society, Kyoto, Japan, September, 2010 (Ghuman S S, Kasturirangan R and Sinha A).

Cognitive Capacity for Deception in a Wild Primate Species. CogSci 2010: Annual meeting of the Cognitive Science Society, Portland, USA, August, 2010 (Ghuman S S, Kasturirangan R and Sinha A).

Acchha: A case study of the perlocutionary force of gestures in Bengali. Fourth conference of the International Society for Gesture Studies, Europa-Universität Viadrina Frankfurt (Oder), Germany, July 27, 2010 (Das R, Kasturirangan R and Sinha A).

Prof Carol Upadhyia

A New Research Agenda: The Impact of Reverse Transnational Flows in India's Regional Towns (with Dr Mario Rutten), presented at international seminar on Global Relationships in Indian Perspective, Institute for Social and Economic Change, Bangalore, June 22 and 23, 2010.

The Moral Economy of Outsourcing: Gender and Class Through the Prism of the Indian IT Industry, paper presented to workshop on The Culture of Work in India: Gender, Class and Caste, Max Planck Institute for the Study of Religious and Ethnic Diversity, Goettingen, Germany, May 4, 2010.

Prof AR Vasavi

Outer Promises, Inner Denials: Marginality and Education Deprivation at the University of Michigan Conference on Inequalities, Mumbai, March 2, 2011.

CONFERENCES ATTENDED

Prof Dilip R Ahuja

Delhi International Renewable Energy Conference (DIREC), November 2010.

Prof Malavika Kapur

Invited by the Department of Applied Psychology, University of Calcutta as a resource person at the UGC sponsored programme on Community Mental Health: Issues and Challenges and conducted a workshop on Promotion of Child Mental Health and Development through Play and Art therapies in Calcutta, March 30 and 31, 2011.

Invited as the President of Indian Association of Clinical Psychologists for the National Consultation on Mental Health Act organised by the Ministry of Health and Family Welfare, New Delhi, March 22, 2011.

Resource person for the live telecast of the programme *How to Face Exam Fear?* sponsored by the Karnataka State Mental Health Authority on Chandana programme of Doordarshan, March 14, 2011.

Research Committee meeting of the ICSSR, Indian Council of Social Science Research, New Delhi, February 11, 2011.

ICSSR Council Meeting, Indian Council of Social Science Research, New Delhi, February 11, 2011.

Live phone in programme of Akashvani, Bangalore, on Emotional and Behavioural Disorders in Children, sponsored by the Karnataka State Mental Health Authority, January 15, 2011.

Meeting of the *Working Group on Classification of Mental and Behavioural Disorders in Children and Adolescents*, International Advisory Group for the Revision of ICD-10 Mental Health Disorders, Geneva, Switzerland, November 30 and December 1, 2010.

155th meeting of the Research Committee of the Indian Council of Social Science Research, New Delhi, November 30, 2010.

Chaired three sessions including the inaugural session at the IAEUG Jiva International Conference, Bangalore, October 8, 9 and 10, 2010.

Chairperson of the Expert Committee Meeting of Psychology and Education, Indian Council of Social Science Research, New Delhi, September 7, 2010.

Resource person at the 3rd National Translation Mission Subcommittee on Knowledge Books to be translated, New Delhi, September 3, 2010.

Conducted five sessions training programme in Child Developmental and Child Mental Health under the auspices of Prasanna Counselling Centre, Bangalore, July to September 2010.

Research Committee Meeting of the Indian Council of Social Science Research for Northeast in Shillong, May 5, 2010.

Prof N Shantha Mohan

Chaired the session on *Checking and Preventing Abuse of Women at the Workplace* at the national seminar on Women: Use, Abuse and Misuse organized by Bangalore University, March 29, 2011.

Participated in the meeting of the Joint Review Mission for Mahila Samakhya organized by the Ministry of Human Resource Development, Government of India, New Delhi, February 24, 2011.

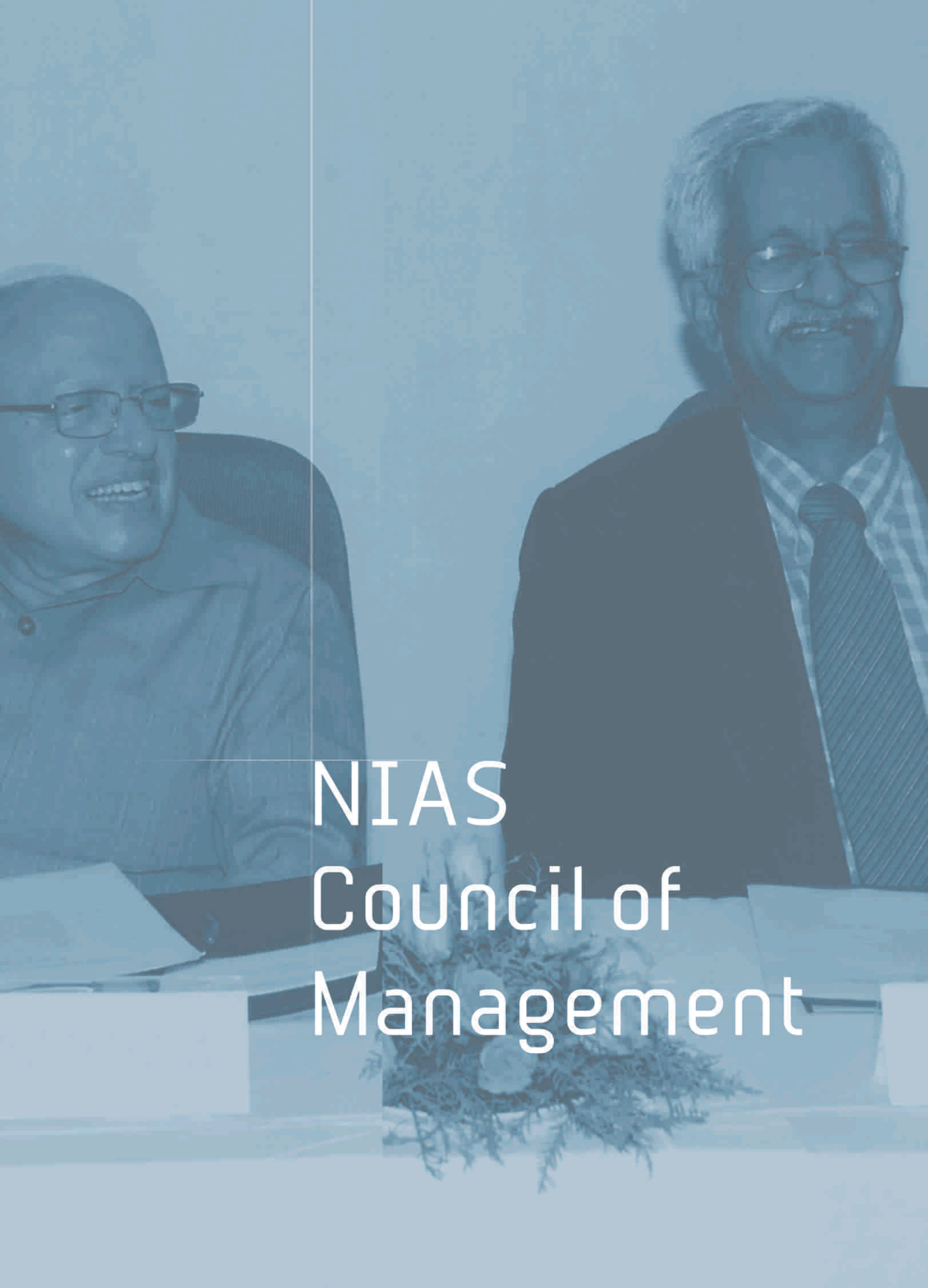
Chaired the session on *Water and Climate Change: Agenda for Future Research and Action* at the international conference on Interdisciplinarity in Water Education: Challenges, Perspectives and Policy Implications for South Asia, organized by SaciWATERS, Kathmandu, Nepal, October 3 to 6, 2010.

Dr M Amarjeet Singh

Invited to the Publication Review Meeting of the Delhi Policy Group, New Delhi, March 21 and 22, 2011.

Prof Carol Upadhya

Workshop on *India's Challenge In A Globalizing Healthcare Economy: Social Science Directions*, Centre of Social Medicine and Community Health, Jawaharlal Nehru University, New Delhi, November 3 and 4, 2010.



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A large, leafy tree with a wooden structure in the foreground, overlaid with a blue tint. The tree's branches are thick and spread out, with dense foliage. The wooden structure appears to be a roof or a frame, possibly for a greenhouse or a covered walkway. The overall image has a monochromatic blue color scheme.

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The NIAS emblem can be traced back to a remarkable Sanskrit work called the *Sulva-Sutras*, literally 'The rules of the cord'. The text is a handbook of ritual geometry, and describes a series of geometric 'constructions' or procedures (using only strings and pegs) for the layout of fire altars of various shapes and dimensions, usually specified with extraordinary precision. To this day a cord is a part of the basic equipment carried by an Indian mason, to be used in surveying or in laying out a structure in any construction activity.

Scholars are not agreed on the precise dates of the *Sutras*, but the text clearly pre-dates Panini and must have been composed before the 6th century BC. The text acknowledges that the procedures it describes were even older.

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