

Abstract Book
66th Orientation Programme

August 21 – September 18, 2017

UGC-Human Resource Development Centre
Jadavpur University



Abstract Book

**Summary of Lectures
Delivered at 66th Orientation Programme
August 21 – September 18, 2017**

**UGC-Human Resource Development Centre
Jadavpur University**

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Director's Note

The UGC-Human Resource Development Centre, Jadavpur University, is organizing the 66th Orientation Programme, the second among the four such programmes sanctioned by the UGC in the session 2017-18.

There are two notable highlights of the programme. First is a study tour at Sea Explorer, where the participants would get first-hand learning experience in disaster management, which they would thereafter document in terms of reports. My sincere thanks go to Mr. Tapas Chowdhury, for arranging such an important study tour for the participants of the 66th Orientation Programme.

Second highlight of the programme is survey-based group project for which the participants have been divided into seven groups and each group is given a particular topic to research and debate on. This would be part of the evaluation of the participants as well. Programme schedule allows for laboratory and library work to carry out these surveys and presentations. Finally, the lecture sessions though have been reduced in numbers but not in substance. While selecting topics, three criteria have been kept in mind: topics of current affairs of national as well as international importance (such as demonetization, GST, environmental preservation, biodiversity, climate change); topics of general interest for moral, psychological and professional development (such as lectures on human rights, anti-ragging, gender issues, stress management, research methodology, CAS/service matters, general financial rules, IQAC); and topics of cross-discipline and multi-discipline in nature (such as lectures on, globalization and development, philosophy and history of science, big data analysis, mathematical logic, new frontiers in sensor technology, communication and wireless network, developments in biotechnology, medical literacy, wonders of RNAi). On top of all these, there have been two sessions on performing arts with live demonstration.

This Abstract Book collates summary of most of these lectures delivered by experts and eminent researchers in the relevant fields both from within and outside West Bengal. The summary lectures are arranged thematically according to the above-mentioned perspectives. I hope that the participants of the 66th Orientation Programme would find this Abstract Book useful for ready references of what they have learnt through this programme.

I sincerely thank Professor Suranjan Das, Hon'ble Vice Chancellor Jadavpur University, who has always been a source of inspiration for all of us at HRDC. My sincere thanks go to the University administration for all their help. Last but not the least, I cannot but happily remember contributions made by all the staff at HRDC, without which this Abstract Book could not have been published.

At the end, I look forward to receiving suggestions from participants for improvement in endeavours like this. This Abstract Book is a small, though not insignificant, step towards documentation and dissemination of information regarding what we are doing at the HRDC, JU. With suggestions and feedback from all stakeholders we can make projects like this even bigger and significant.

August, 2017

Rajat Acharyya

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**Schedule for 66th Orientation Program
(August 21 – September 18, 2017)**

Date	10:30 AM – 12:00 Noon	12:00 Noon – 1:30 PM	2:15 PM – 3:45 PM	3:45 PM – 5:15 PM
August 21	Inauguration Session: 11:00 am: Welcome Address by Prof. Rajat Acharyya , Director, UGC-HRDC, JU 11: 15 am- 12: 45 pm : Inaugural Address by Prof. Sugata Marjit , RBI Professor of Industrial Economics, CSSSC 12:45 pm – 1:15 pm: Overview of the Programme by Dr. Nandan Bhattacharya , Assistant Director Vote of Thanks by Prabir Chatterjee , Section Officer, UGC-HRDC		Soumyen Sikdar Indian Institute of Management Calcutta <i>Globalization and Development</i>	
August 22	Pradip K. Ghosh Pro Vice Chancellor, JU <i>Philosophy of Science</i>	Indrani Choudhuri Dutt Director, IQAC, Lady Brabourne College <i>IQAC</i>	Debi Chatterjee Retired Professor, Department of International Relations, JU <i>Human Rights</i>	
August 23	Sudeshna Banerjee Department of History, JU <i>Gender</i>	Rajat Ray Dean of Students, Jadavpur University <i>Anti-ragging</i>	Kaushik Roy Department of History, JU <i>Dragon against the Peacock: A Strategic Analysis</i>	
August 24	Achin Chakraborty Director, IDSK Kolkata <i>Methodological/epistemological issues in social research</i>		Vivekananda Mukherjee Department of Economics, JU <i>Goods and Service Tax in India</i>	Pulok K. Mukherjee Director, School of Natural Product Studies, JU <i>Publication in Impact Factor Journals</i>
August 25	Samir K. Saha Retired Professor, Department of Mechanical Engineering, JU <i>History of Science</i>		Ayanangshu Banerjee Sr. Director, TCG Digital <i>e-governance</i>	Lab Work/Library Work
August 26	Nabanita Chattopadhyaya Secretary, WB Board of Secondary Education <i>CAS/Service Matters</i>	Priyadarshini Mallick D C Halder College, South 24 Parganas <i>Intellectual Property Rights: An Introduction and Overall Perspective</i>	Gour Krishna Pattanayak Finance Officer, JU <i>General Financial Rules</i>	Lab Work/Library Work

Lunch Break: 1:30 P.M. – 2:15 P.M.

**Schedule for 66th Orientation Program
(August 21 – September 18, 2017)**

Date	10:30 AM – 12:00 Noon	12:00 Noon – 1:30 PM	2:15 PM – 3:45 PM	3:45 PM – 5:15 PM
August 28	<p style="text-align: center;">Sudipa Bandyopadhyay Principal, Vidyasagar College <i>Antient Indian Surgery</i></p>		<p style="text-align: center;">Survey based Group Project & Discussion Evaluators: Sarmistha Raychaudhuri Department of Biophysics, Molecular Biology and Bioinformatics, CU Tapas Ranjan Mirdya Department of Physics, JU</p>	
August 29	<p style="text-align: center;">Dalia Chakraborty Department of Sociology, JU <i>Visual Sociology</i></p>		<p style="text-align: center;">Sampa Chakrabarti Head, Department of Chemical Engineering, CU <i>Solar Energy for Environmental Application</i></p>	
August 30	<p style="text-align: center;">Mihir K. Chakraborty Department of Mathematics, CU <i>Mathematical Logic</i></p>		<p style="text-align: center;">Amitava Datta Department of Power Engg. & Director, IQAC-JU <i>Efficient Operation of LPG Cook-stoves in Domestic Households</i></p>	<p style="text-align: center;">Submission of Group Project Report & Lab Work/Library Work</p>
August 31	<p style="text-align: center;">Manjusha Majumder Department of Mathematics, CU <i>History of Development of Modern Differential Geometry</i></p>		<p style="text-align: center;">Shankar Nath Former Prof., R.G.Kar Medical College <i>Food and Cancer</i></p>	
September 1	<p style="text-align: center;">Evaluation of Reports on Group Project Sarmistha Raychaudhuri Department of Biophysics, Molecular Biology and Bioinformatics, CU</p>	<p style="text-align: center;">Study Tour at Sea Explorer</p>	<p style="text-align: center;">Study Tour at Sea Explorer</p>	
September 2	HOLIDAY			

Lunch Break: 1:30 P.M. – 2:15 P.M.

**Schedule for 66th Orientation Program
(August 21 – September 18, 2017)**

Date	10:30 AM – 12:00 Noon	12:00 Noon – 1:30 PM	2:15 PM – 3:45 PM	3:45 PM – 5:15 PM
September 4	Joyashree Roy Department of Economics, JU <i>Recent Issues in Climate Change</i>		Sruti Bandyopadhyay Department of Dance, Viswa Bharati <i>Performing Arts: Manipuri Dance</i>	
September 5	Goria Sucharcha Participatory Theatrical Performance Raktakarobi	Suddhasatwa Chakraborty Department of Electrical Engineering, JU <i>Let's Light: A Journey Towards Enlightenment</i>	Salil Kumar Sanyal Department of ETCE, JU <i>Communication and Wireless Network</i>	
September 6	Chandan Mazumdar Department of Computer Science & Engg., JU <i>Big Data Analysis</i>		Lopamudra Choudhury Department of Philosophy, JU <i>Reasoning with Diagrams</i>	
September 7	Interactive Session (Submission of Topics of Seminar Presentations for evaluation) & Lab Work/Library Work	Evaluation of Participants' Reports on Study Tour at Sea Explorer Evaluator: Tapas Ranjan Midya Department of Physics, JU	Shankar Acharya Department of Agricultural Extension, BCKV <i>Research Methodology</i>	
September 8	Pranabesh Sanyal School of Oceanographic Studies, JU <i>Biodiversity</i>		Sadhan Chakraborty Hon'ble Vice Chancellor Kazi Nazrul University <i>Counseling & Stress Management</i>	
September 9	Amitava Gupta Department of Power Engineering JU <i>Sensing Beyond Senses - New Frontiers in Sensor Technology</i>		Santanu Tripathi Professor & HoD, Department of Clinical Pharmacology, Tropical Medicine, <i>Medical Literacy</i>	Lab Work/Library Work

Lunch Break: 1:30 P.M. – 2:15 P.M.

**Schedule for 66th Orientation Program
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Date	10:30 AM – 12:00 Noon	12:00 Noon – 1:30 PM	2:15 PM – 3:45 PM	3:45 PM – 5:15 PM
September 11	<p style="text-align: center;">Keshab Mondal Department of Biochemistry, VU <i>Recent Status of Biotechnology in India</i></p>		<p style="text-align: center;">Prof. Sunil Mukherjee Delhi University <i>Wonders of RNAi</i></p>	<p style="text-align: center;">Prof. Sunil Mukherjee Delhi University <i>Third generation RNAi for virus resistance in tomato</i></p>
September 12	<p style="text-align: center;">Somnath Gangopadhyay Department of Physiology, CU <i>Ergonomics</i></p>		Lab Work/Library Work	
September 13	Seminar Presentation and Evaluation	Seminar Presentation and Evaluation	Seminar Presentation and Evaluation	Seminar Presentation and Evaluation
September 14	Seminar Presentation and Evaluation	Seminar Presentation and Evaluation	Seminar Presentation and Evaluation	Seminar Presentation and Evaluation
September 15	Seminar Presentation and Evaluation	Seminar Presentation and Evaluation	Micro-teaching & Evaluation Muktipada Sinha Department of Education, JU	
September 16	Micro-teaching & Evaluation Muktipada Sinha Department of Education, JU		MCQ Based Evaluation	Written Feedback Session
September 18	<p style="text-align: center;">Valedictory Session 11 am – 12:30 pm: Valedictory Lecture by Prof. Amitava Raychaudhuri, Professor Emeritus, Department of Physics, Calcutta University <i>'Misconduct in Teaching and Research'</i></p>		Interactive Session	Administrative Slot 1. Disbursement of Payment 2. Certificate Distribution

Lunch Break: 1:30 P.M. – 2:15 P.M.

**UGC – Human Resource Development Centre
Jadavpur University**

**66th Orientation Program
(August 21st - September 18th, 2017)**

1. Time slot of Presentation on survey based Group Project: **28.08.2017 at 2:15 P.M. – 5:15 P.M.**
2. Group Presentation shall be made for **10 Minutes** followed by interaction for **10 Minutes**.
3. Group Presentation shall be made according to the following order.
4. Group Project Report must be submitted on or before **30.08.2017 (5:00 P.M.)**.

Evaluators: Prof. Tapas Ranjan Middya, Retired Professor, Department of Physics, Jadavpur University.
Prof. Sarmistha Raychaudhuri, Department of Biophysics, Molecular Biology and Bioinformatics, University of Calcutta.

Distribution of Survey based Group Project topic for participants

Group	Topic	Name
Gr. A	Gene Mapping: Where are we heading to	Swatilekha Maiti
		Papia Das
		Jayati Chakraborti
		Samir Mandal
		Shantanabha Das
		Puja Pal
Gr. B	Validity of Science lies in its Power to Predict	Sujata Roy Moulik
		Arnab Ganguli
		Ajoy Mallik
		Rahi Soren
		Waliza Ansar
		Tarikul Islam Golder
Gr. C	ICT - A Boon or Bane	Sarbajit Manna
		Anasua Sarkar
		Debaditya Barman
		Anisha Halder Roy
		Sk. Golam Sarowar Hossain
Gr. D	Astrology and Astronomy	Sagar Biswas
		Pradip Thakur
		Somnath Middya
		Chaitali Hansda
		Arijit Ghosh

Gr. E	Mathematics is the music of reason.	Angsuman Das
		Samir Kumar Bhandari
		Sudipta Das
		Barun Kumar Pal
		Nilangshu Acharya
		Sankar Narayan Patra
Gr. F	Non conventional energy is the future of mankind	Jadab Chandra Halder
		Kaushik Bhattacharya
		Avik Kumar Choudhury
		Rajib Panchadhayee
		Pulak Chandra Mandal
		Joykrishna Maity
Gr. G	The science of today is the technology of tomorrow	Supia Khatun
		Kalyan Kumar Mandal
		Santosh Kumar Das
		Koushik Das
		Bijon Biswas
		Sudipta Dutta

**Abstract
of
Lectures Delivered**

Inaugural Lecture

Demonetization

Sugata Marjit

RBI Professor of Industrial Economics, CSSSC

Date & Time: 21.08.2017 ; 11:15 AM – 12:45 PM

This lecture deals with the causes, implementation mechanisms and consequences of the most radical and unconventional monetary policy pursued in recent ,or for that matter in the entire history of modern India. As estimated more than 85% of circulating currency was withdrawn overnight as an unanticipated shock. We shall discuss the problem in three stages.

First what are the relevant economic and political objectives? , since in India we can never isolate economic policies from its political counterpart. But definitely the economic objectives are more diverse and need careful assessment.

Second, the operational part of the implementation process has raised a lot of issues related to corrupt governance and impact on the informal economy. We shall highlight a pilot study that we undertook in Bengal in a few districts covering a variety of occupations. Also at a macro level, the ability of illegal cash holders to bypass the regulation has far reaching implication on tax collections.

Third, we have to discuss the growth impact and associated aggregate revenue implications of the policy, data for which are not available yet. We need to distinguish between its impact on the number of tax returns filed and actual tax collection. How far the policy is capable of mitigating the structural problems of tax collection by broadening the tax net is also of serious concern. Digitization of financial transactions and its implications for various social classes will be a key area of research in future.

There are many open ended issues for which information will trickle through time, but whether the policy will be regarded as a big event with insignificant economic consequence or whether the political return will outperform long term benefits must be carefully looked at.

**CAS/
Service Matters/
IQAC**

IQAC: ROLE IN ASSESSMENT AND ACCREDITATION

Indrani Choudhuri Dutt

*Professor of English, IQAC Coordinator & NAAC Coordinator, Lady Brabourne
College*

Date & Time: 22.08.2017 ; 12:00 Noon – 1:30 PM

The presentation proposes to talk about the structuring and responsibilities of the IQAC (Internal Quality Assurance Cell) as advised by the UGC. It identifies the broad areas of concern and focus in terms of the first PPT presentation.

Since the primary responsibility of the IQAC is to act as an instrument of vigilance to

- a) Locate areas having indifferent standards and prone to underachievement
- b) Overcome challenges unique to the problem zones
- c) Set up levels of organization and ensure high grade performance
- d) Set up mechanisms for sustaining achieved level and motivate further progress

The presentation will attempt to look closely at the nature of 'data' relevant to the IQAC. It will try to impress that knowing the character of required data helps in its collection. The point of reference will be the second PPT presentation. The talk will also discuss the process of using this data to know the institution in a real-time sense. It will then show how the data should be presented underlining another seminal responsibility of the IQAC. By way of natural progression the presentation will then focus on how the IQAC prepares the AQAR (Annual Quality Assurance Report) and the SSR (Self Study Report) and ready the College for evaluation by NAAC (National Assessment and Accreditation Council). The talk proposes to end with an advisory on handling the Peer team visit.

Basic Financial Rules and Service Related Rules
Applicable for the College and University Teachers

Gour Krishna Pattanayak

Finance Officer, Jadavpur University

Date & Time: 26.08.2017; 2:15 PM – 3:45 PM

General Financial rules normally includes sanction process, budgeting, spending norms, purchase rules, service benefits, pay and promotion issues and taxation matters, to name a few. The present lecture primarily focuses on these aspects.

Budgeting is essentially estimates for the future period based on past experiences, and flow of funds and expectations thereof. The principle of budgeting is essentially setting some benchmarks for future plan of growth and development. For academic institutes, the main source of funds is funding by the State and Central Governments and other agencies. In addition, there are incomes/revenues generated through fees, testing and consultancy, sale of publications, alternative use of properties and assets, and disposal of junk and other materials.

Purchase and expenditure thereof are primarily intended for academic and research activities and primarily within budgetary allocations and/or sanctions. The purchase of materials, equipment and furniture are now governed by GO No.: 5400-F(Y) dated 25.6.2012 of Government of West Bengal.

Accounting, reporting and auditing are the other crucial elements of general financial rules. In this context, introduction of GST has added another dimension to accounting of purchases. The present lecture shall briefly touch upon the scope, applicability, rationality and impact of GST.

The lecture also elaborate upon Service Rules, particularly pay fixation and promotion, promotion under CAS, retirement benefits and the new Pension Scheme introduced by the GoI with effect from 01.01.2004. Salient features of this pension scheme are as follows:

- This is a contributory Pension scheme, introduced w.e.f. 2004; 10% of Basic Pay as subscription and matching equal contribution by the employer will be provided monthly.
- A Pension fund will be maintained by a Fund Manager, where monthly the subscription and contribution need to be send by a employer.

- The employer shall have no liability for Pension of the employees under the scheme.
- The Fund manager shall release Pension monthly, based on the income on the accumulated funds with them.
- Such Pension would not have any DA or Pay-revision benefits.
- The employer has no financial liability for pension after the retirement.
- The fund manager receiving the funds will pay monthly pensions.
- There is a permanent Retirement Account number [PRAN], which is transferable.
- The scheme is controlled by PFRDA.

Value, Ethics and Human Rights

Gender and the Nation: An engagement with the concepts from a historical perspective

Sudeshna Banerjee

Department of History, Jadavpur University

Date & Time: 23.08.2017; 10:30 AM – 12:00 Noon

The nation – a concept persistently under critical scanner since the late twentieth century – has now been more or less recognized among critical scholars in the social sciences and literary studies as an ‘imagined community’, rather than as something that is objectively given. In imagining a nation, its authors do derive cultural symbols from the actual lived experience of their community, but the way in which the motifs are essentialised and/or selectively packaged into a hegemonic representation of the nation is a product of the of the mind that tends to imagine the nation from its own socio-cultural location of dominance, marked by race, class and so on. Gender, in its own turn, is the patriarchal politics of disciplining society through a differentiation and hierarchisation of the sexes based on the cultural constructions of masculinity and femininity (in colonial contexts, on the notion effeminacy, too) as ‘appropriate’ social roles. The proposed presentation critically opens up the concept of the nation to demonstrate the ways in which gender is integral to its imagining; in other words, to demonstrate how the notion of the nation is implicitly gendered. There is a crucial sense in which the conceptualization of the nation is ideologically posited on women’s bodies as the site of national ‘honour’, as this lecture would highlight, among other things.

The presentation is divided into two parts. The first is concerned with the conceptual aspect of the interrelationship of the notion of the nation and the politics of gender. The second uses a historical perspective to examine the culturally specific ways in which the discourse of nationalism in colonial India was deeply implicated in gendered ways of thinking.

Intellectual Property Right (IPR)

Priyadarshini Mallick

*Head of the Department & Department of Microbiology
Dhruba Chand Halder College, (University of Calcutta)*

Date & Time: 26.08.2017; 12:00 Noon – 1:30 PM

Intellectual Property Right (IPR) is a specific type of protection granted by law for patents, copyrights and trademarks, which encourage people to earn recognition or financial benefit from what they have invented or created using their intellect.

IP deals with the following branches:

1. Copyright is a legal term used to describe the rights that creators have over their literary and artistic works. Works covered by copyright range from books, music, paintings, sculpture and films, to computer programs, databases, advertisements, maps and technical drawings.
2. Patent is an exclusive right granted for an invention. In actual sense, a patent provides the patent owner with the right to decide how - or whether - the invention can be used by others. In exchange for this right, the patent owner makes technical information about the invention publicly available in the published patent document.
3. Trademark is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises. Trademarks date back to ancient times when craftsmen used to put their signature or "mark" on their products.
4. Industrial designs constitute the ornamental or aesthetic aspect of an article. A design may consist of three-dimensional features, such as the shape or surface of an article, or of two-dimensional features, such as patterns, lines or color.
5. Geographical indications and appellations of origin are signs used on goods that have a specific geographical origin and possess quality, a reputation or characteristics that are essentially attributable to that place of origin. Most commonly, a geographical indication includes the name of the place of origin of the goods.

Evolution of Human Rights and Some Conceptual Issues

Debi Chatterjee

Retired Professor, Department of International Relations, Jadavpur University

Date & Time: 22.08.2017 ; 2:15 PM – 3:45 PM

(Outline of Lecture on Human Rights –1, to be delivered on 23rd August 2017 on the occasion of the 66th Orientation Programme for teachers and librarians of universities and colleges. Jadavpur University)

The human rights discourse has today come to occupy center stage in international politics. The oft expressed concerns range over a wide area including spheres of politics, economics, ethnicity, religion, education, science and technology, civil society as well as a variety of ethical and other questions. Central to the idea of human rights is the idea of human dignity which inevitably calls for an acknowledgement of the indivisibility and interdependence of different economic, social, cultural, civil and political rights. As such, it goes beyond the understanding of

individual rights, per se. We would in the course of the lecture, look into the transition from the focus on rights to human rights.

Between 1948 to the present , numerous Conventions were adopted by the UN by way of expanding and realizing the principles of human rights. Over the years , the UN has taken upon itself the leading role in standard setting, promotion and protection of human rights. Beginning with a predominantly Euro-centric focus, the human rights discourse has widened over time incorporating diverse inputs from the socialist world and the developing countries. In course of time, most countries, ratified a series of binding treaties committing themselves to respect key civil, political , social and economic rights. The UN's human rights machinery too came to be strengthened.

Ironically, alongside such developments, however, the world has come to witness an intensification of violence in the name of human rights protection. Following the collapse of the Soviet Union and the end of the Cold War, there came about a proliferation of western military interventions from Iraq to Bosnia, to Kosovo and back to Iraq, all in the name of human rights and democracy. Such developments have been taking place in a manner unthinkable in the Cold War years. All these bring into question and generate criticisms of the dominant human rights discourse as its western capitalist moorings become increasingly visible. Pertinent queries revolve around issues of logic, feasibility and desirability of seeking to 'universalize' human rights and questions of humanitarian interventions.

In the wake of these developments, a careful assessment of the human rights discourse and understanding its limitations in the contemporary world becomes urgent.

We shall, in the course of the lecture, explore some of the many controversies that plague the human rights discourse today.

In our discussion , we shall, inter alia, examine some of the controversial areas such as –

- The universalist - cultural relativist debate
- Are human rights political, moral or legal entities (or all three at the same time)?
- Is there, or should there be a hierarchy of human rights?
- Do human rights impede state sovereignty?
- Should human rights be used as a context for economic or military intervention? (Often leading to a worsening of the human rights situation in the target country)
- How far have the processes of globalization been conducive to, or violative of human rights.
- In a world of unequal sovereign states how genuine are the human rights concerns ?

Understanding The Human Rights Scenario In India

Debi Chatterjee

Retired Professor, Department of International Relations, Jadavpur University

Date & Time: 22.08.2017 ; 3:45 PM – 5:15 PM

(Outline of Lecture on Human Rights – 2, to be delivered on 23rd August 2017 on the occasion of the 66th Orientation Programme for teachers and librarians of universities and colleges. Jadavpur University)

India's professed commitment to human rights is evident from the fact that she is a signatory to a large number of human rights Declarations and Conventions. The Constitution clearly reflects the tone of the Universal Declaration of Human Rights of 1948 in guaranteeing the protection of a vast array of Fundamental Rights of the citizens and promising attention to a still wider range under the caption of Directive Principles of State Policies. Universal adult suffrage and democratic vocabulary underline the discourse on human rights. Alongside the Constitutional safeguards for the protection of human rights there are numerous statutory laws; special mention may be made of the Protection of Human Rights Act, 1993 which inter alia led to the setting up of the National Human Rights Commission, relevant judicial pronouncements, and the code of conduct for the police.

Yet, India's record of protection of human rights is far from satisfactory. Many remain vulnerable to gross human rights violations.

Vulnerability in the field is closely linked to marginal positioning in society evident in social, economic and political spheres. The vulnerable include groups like the low castes, tribes, minority religious communities, women and children, the economically poor and those who stand in opposition to the ruling party. Vulnerability, drawing from marginal positioning of people in society, is thus clearly the result of deliberate processes of marginalization.

By and large, dominance themes prevalent in the state continue to define the parameters of the rights discourse. Structural factors give a unique pattern to the human rights vulnerability in India.

Brahminical and patriarchal values lie at the core of the perpetration of human rights violations that many suffer.

Elsewhere, historical and political considerations set the scene.

Further, it may be noted that, the 1990s has opened the doors for increased marginalization of the already marginalized people. The vulnerability of the Scheduled Castes and tribes, women, children and minorities has significantly increased. Opening of the markets, privatization and withdrawal of the state from key areas have been adding to their problems. The demands of rapid 'development' have

left many homeless and deprived of their traditional sources of livelihood. Trafficking, sex tourism, environmental degradation and the alarming spread of diseases like HIV-AIDS are posing newer dangers to human rights.

As such, tackling the human rights problems in India today require an understanding of the structural causes of human rights vulnerability as also those realities, seen and comprehended against a historical backdrop.

Ragging and its Prevention in Educational Institutions

Rajat Ray

Dean of students, Jadavpur university

Date & Time: 23.08.2017 ; 12:00 Noon – 1:30 PM

Ragging is a practice similar to hazing in educational institutions. The word is mainly used in India, Pakistan, Bangladesh, Sri Lanka and Malaysia. Ragging involves existing students baiting or bullying new students. It often takes a malignant form wherein the newcomers may be subjected to psychological or physical torture.^{[1][2]} In 2009 the University Grants Commission of India imposed regulations upon Indian universities to help curb ragging, and launched a toll-free 'anti ragging helpline'.

In view of the increasing incidents of ragging in colleges and elsewhere that reached proportions unbecoming of a civilised society the Hon'ble Supreme court admitted and heard the SLP No (s) 24295 of 2006 University of Kerala Vs Council, Principals', Colleges, Kerala & Ors (with SLP(C) No.24296-99/2004 & W.P. (Crl) No. 173/2006 and SLP(C) No.14356/2005).

Pursuant to an order of Hon'ble Supreme Court of India dated November 27, 2006, the Ministry of Human Resource Development has constituted a Committee under the Chairmanship of Shri R.K. Raghavan (former Director, CBI) to look into the issue of ragging and suggest means of prevention of ragging in educational institutions.

The Committee primarily examined the following broad aspects of ragging:

- (a) Means and methods of prevention of ragging.
- (b) Possible action that can be taken against persons indulging in ragging.
- (c) Possible action that can be taken against college/university authorities in the event of ragging.

The Committee had carried out a very detailed study with the help of voluntary organizations including CURE (Coalition for Uprooting Ragging from Education) and

SPACE (Society for Peoples Action Change and Enforcement) and collected voluminous public opinion on the various factors contributing for ragging. Noted psychologists and educationists assisted the committee. The National Informatics Centre at the Ministry of Human Resources hosted a guest book in their website. Nearly eleven press releases were made during this period of evaluation and committee visited several cities in the country. A subcommittee of the Medical Council of India was also constituted for this purpose. A questionnaire was prepared that elicited over 12500 responses. In short a wide cross-section of the society provided the necessary background information, data and suggestions on tackling ragging in the country for consideration by the esteemed committee.

Subsequently the committee submitted a detailed report with suitable recommendations and measures required to effectively curb the menace. The recommendations of the Committee were duly accepted and the following directives have been issued to all the educational institutions for necessary implementation by the Hon'ble Supreme Court on 16 May 2007.

I. The following factors need to be focused to tackle with the problem:

- (a) Primary responsibility for curbing ragging rests with academic institutions themselves.
- (b) Ragging adversely impacts the standards of higher education.
- (c) Incentives should be available to institutions for curbing the menace and there should be disincentives for failure to do so.
- (d) Enrolment in academic pursuits or a campus life should not immunize any adult citizen from penal provisions of the laws of the land.
- (e) Ragging needs to be perceived as failure to inculcate human values from the schooling stage.
- (f) Behavioural patterns among students, particularly potential 'raggers', need to be identified.
- (g) Measures against ragging must deter its recurrence.
- (h) Concerted action is required at the level of the school, higher educational institution, district administration, university, State and Central Governments to make any curb effective.
- (i) Media and the Civil Society should be involved in this exercise.

II The Committee has made several recommendations. A few of them mentioned below:

- (1) The punishment to be meted out has to be exemplary and justifiably harsh to act as a deterrent against recurrence of such incidents.
- (2) Every single incident of ragging where the victim or his parent/guardian or the Head of institution is not satisfied with the institutional arrangement for action, a First Information Report (FIR) must be filed without exception by the institutional authorities with the local police authorities.

Any failure on the part of the institutional authority or negligence or deliberate delay in lodging the FIR with the local police shall be construed to be an act of culpable negligence on the part of the institutional authority.

SUMMARY OF THE JUDGMENT OF THE HON. SUPREME COURT DELIVERED ON THE 8th MAY 2009.

1. The Hon. Supreme court ordered that a number of recommendations made by the Raghavan Committee be implemented immediately. These included
 - Confidence building measures such as appointment of counsellors, arrival of senior students a week or two weeks after the Juniors have arrived; joint sensitization programmes; joint orientation programme of 'freshers' and 'seniors' to be addressed by the principal/Head of the institution; organization on large scale of cultural, sports and other activities; make provisions for faculty members to dine with the hostel residents in their respective hostels etc.
 - Every institution must have an Anti-Ragging Committee and an Anti - Ragging Squad. There should be a Monitoring Cell on Ragging at the University Level that would coordinate with the affiliated colleges and institutions under its domain. There should be a Monitoring Cell at the level of the Chancellor of the State Universities.
 - In the, light of the increasing number of private commercially managed, lodges or hostels outside campuses, such hostels and management must be registered with the local police authorities and permission to start such hostels or register them must necessarily be recommended by the Heads of educational institutions. It should be mandatory for both local police, local administration as well the institutional authorities to ensure vigil on incidents that may come within the definition of ragging.
 - Wardens must be accessible at all hours and therefore it is important that they, be available on telephone and other modes of communication. Similarly, the telephone numbers of the other important functionaries - Heads of institutions, faculty members, members of the anti-ragging committees, district and sub-divisional authorities and state authorities where relevant, should also be widely disseminated for the needy to get in touch or seek help in emergencies.
 - Brochures or booklet/leaflet distributed to each student at the beginning of each academic session for obtaining undertaking not to indulge or abet ragging, shall contain the blueprint of prevention and methods of redress."

- The educational institutions shall ensure that each hostel should have a full-time warden who resides within the hostel, or at the very least, in the close vicinity thereof.
2. The Hon. Supreme Court acknowledged that The Ministry of Human Resource Development, Government of India, in consultation with UGC, MCI, AICTE and other similar regulatory bodies was in the process of setting up a central crisis-hotline and anti-ragging database in the manner suggested by Dr. Raj Kachroo. The Hon. Court, however, added that
 - The task of monitoring the database be given to a nongovernmental agency, to be immediately nominated by the Union of India to build confidence in the public and also to provide information of non compliance to the regulatory bodies and to the Raghavan Committee.
 - The database shall be created out of affidavits affirmed by each student and his/her parents/guardians, which affidavits shall be stored electronically, and shall contain the details of each student.
 - The database shall also function as a record of ragging complaints received, and the status of the action taken thereon.
 3. The Hon. Supreme Court ordered that Regulations on Curbing the Menace of Ragging, formulated by the UGC, must be adopted by all other regulatory bodies, such as AICTE, MCI, DCI, NCI etc.;
 4. The Hon. Supreme Court acknowledged that the incident involving the death of Aman Kachroo clearly indicated that the formulation of guidelines and regulations was not sufficient. Hence, the Hon. Court ordered that such regulations shall have to be enforced strictly, and penal consequences for the heads of the institutions/administration of the institution who do not take timely steps in the prevention of ragging and punishing those who rag. In addition to penal consequences, departmental enquiries be initiated against such heads institutions / members of the administration / faculty members / non-teaching staff, who display an apathetic or insensitive attitude towards complaints of ragging;
 5. The Hon. Supreme Court said that not only the students, but also the faculty must be sensitized towards the ills of ragging, and the prevention thereof. Non-teaching staff, which includes administrative staff, contract employees, security guards etc., have also to be regularly sensitized towards the evils and consequences of ragging;
 6. The Hon. Supreme Court ordered that the Principal or Head of the Institution/Department shall obtain an undertaking from every employee of the institution including teaching and non-teaching members of staff,

contract labour employed in the premises either for running canteen or as watch and ward staff or for cleaning or maintenance of the buildings/lawns etc. that he/she would report promptly any case of ragging which comes to his/her notice. A provision shall be made in the service rules for issuing certificates of appreciation to such members of the staff who report ragging which will form part of their service record.

7. The Hon. Supreme Court said that it was necessary that parents/guardians of freshers assume responsibility for promptly bringing to the notice of the Head of the Institution any instance of ragging.
8. The Hon. Supreme Court said that the SHO/SP, within whose jurisdiction a particular college falls, shall be responsible for ensuring that no ragging takes place on the campus of the concerned college, and to effectively deal with incidents of ragging, should, any such incidents take place. Once a central database/crisis hotline is made operative then as soon as SHO/SP, within whose jurisdiction a particular college falls, is contacted by the crisis hotline staff, then such SHO/SP shall deal effectively with the incident and cooperate and communicate with the crisis hotline staff and/or the independent monitoring agency. This will build confidence and encourage people to report incidences of ragging without fear or delay;
9. The Hon. Supreme court said that once the database/crisis hotline is operative, State Governments shall amend their anti-ragging statutes to include provisions that place penal consequences on institutional heads

Methodology

Methodological/epistemological issues in social research

Achin Chakraborty

Director, IDSK Kolkata

Date & Time: 24.08.2017; 10:30 PM – 1:30 PM

1. There are different types of research inquiries. When a study is designed primarily to describe what is going on or what exists, without entering into the analysis of underlying relationships or causal connections that are not so apparent, it is *descriptive*. However, there is no such thing as ‘pure description’, as description involves conscious methodological choice. If we establish some association between entities, it is *associational* or *relational*, not necessarily *causal*. Most policy discussions, however, are based on some understanding of the causes and their effects on various outcomes. Therefore most inquiries try to establish some causal connections between choices or actions of agents (individual, group, government, MNC etc) and outcomes. Yet another altogether different kind of inquiry is *evaluative*. For an evaluative inquiry one applies certain normative criteria to judge states of affairs. Amartya Sen often makes this distinction between evaluative exercises and descriptive-analytic exercises.
2. To establish any connection between specific ‘causes’ and ‘effects’ there is no simple formula. Three basic ingredients of social research are (i) some *ideas* about how things are or how change takes place, (ii) *data* or observations on ‘facts’, (iii) *methods* that integrate ideas and observations. Ideas are obtained from various theories. They may often look like commonsense. But if they are part of a theoretical framework one can expect logical coherence in the ideas, which commonsense does not guarantee.
3. What is theory? I think it can be defined only within a *paradigm*. Broadly speaking, a paradigm is a set of underlying beliefs about the ways things are. For many of us who work in what is loosely called ‘development research’, a kind of *positivism* seems to be the underlying paradigm. In this version of positivism the core belief is that reality is out there and by gathering ‘facts’ it is possible to find out what is happening in reality. The researcher is assumed to stand apart from the observed and produce objective knowledge. How does she go about it? First, the researcher identifies separate aspects of reality and expresses them as ‘variables’. Then she goes on examining the relationships between variables. This involves both observation and reasoning.
4. Do “facts speak for themselves”? Surely, they do not. One needs to sort out relevant from irrelevant facts at the outset. Without some prior idea about the nature of the phenomena, without some propositions, assumptions etc, there is no way this can be done, according to a positivist. Deciding that observation X, or Y, is relevant marks the start of a theory. In this paradigm, theory means a logically valid chain of reasoning starting from certain premises called postulates. Postulates contain certain terms that are representatives of persons, organizations,

things, actions, states etc. found in the world of experience. A meaningful analysis presupposes that the terms are unambiguously defined.

5. By *method* we mean a tool or a technique informed by an approach which is applied in a research inquiry. But *methodology* is concerned with the framework within which particular methods are appraised. In other words methodology deals with the broader question of 'how do we know what we know?'
6. Till this point we have taken the position that there is an underlying reality which research can find out more and more about. With effort and technique we can achieve greater precision in our understanding. However, an alternative belief could be that different accounts or pictures of reality are simultaneously possible based on different perspectives and interests. 'Qualitative' research methods are usually associated with this *constructivist* view. The researcher tries to bring out and record different accounts from different viewpoints and then construct what appears to be a complex story. But the problem with this view is that one does not have a sure way of deciding on what the best story among several possibilities is.
7. In some areas of social research, the qualitative-quantitative distinction has led to protracted arguments with the proponents of each arguing the superiority of their kind of method over the other. The quantitative side argues that it is 'rigorous', 'hard', 'scientific', and so on. The qualitative approach, as claimed by its proponents, is 'superior' because it is 'sensitive', 'nuanced', 'contextual', and so on. Both qualitative and quantitative research rest on rich and varied traditions that come from multiple disciplines and both have been employed to address almost any research topic one can think of. There is no reason to give primacy to one over the other. Different methods are required to tackle different problems, and a combination of techniques will frequently yield greater insight than either one used in isolation.
8. Two things have to be separated in this context. As far as types of data are concerned, there is little difference between qualitative and quantitative data. All qualitative data can be *coded* and expressed in numeric form. The difference perhaps lies in the assumptions about reality and about the way one should acquire knowledge about reality. For instance, many researchers who follow the qualitative approach believe that the best way to understand any phenomenon is to view it in its context. Some in the qualitative tradition believe that the researcher cannot stand apart from the process and produce objective knowledge. This can go on.

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Big Data Analytics and Its Applications: An Introduction

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Date & Time: 06.09.2017 ; 10:30 AM – 1:30 PM

“Big-Data-Analytics” has become a buzz-word now. People from almost all walks of life use the term most of the time even without understanding the mechanisms and the effects it may have. During the last two decades, because of the progress in processor technology, storage technology, network technology and sensor technology coupled with the convergence of such technologies, huge volume of data are being generated in various fields. These data have mind boggling variety, and the velocity with which they are generated and transmitted are also very high. Of course, in some cases the correctness and completeness are in question. Nevertheless, judicious analyses of this huge volume of data and usage of the analysis results have the potential to change the way we think and the way we behave. This may lead to an irreversible change in the society and culture.

In the first part of this talk, the myth about Big Data will be discussed with real life examples. The standard Technology of Big Data, namely, Map-Reduce will be introduced. The significant problems of handling Big Data will be discussed. A number of analytics problems will be highlighted.

The second part will be devoted to the applications of Big Data Technologies and concepts to different fields like e-commerce, economics, physics, etc. This part will be more participatory in nature.

Publishing Research in Impact Journals - Big research and better writing

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Date & Time: 24.08.2017 ; 3:45 PM – 5:15 PM

Journals are the custodians of scientific endeavour and advancement. They aim to publish sound research with enduring conclusions that will stand careful scrutiny and validation. Publishing research papers is an essential aspect of research work. They are your passport in the scientific world. New advances in human knowledge are communicated throughout the world through publications. Scientific success is not only measured by how skilled or efficient you are in the lab but also by the number and quality of articles published in scientific journals. Good publications are helpful for a career standpoint which can be useful for chance of winning the fellowship, research grant, faculty job, or other scientific prizes. It is effective to disseminate knowledge, which is accurate, valid, reproducible and useful. It is essential to follow the basic principles of scientific research and publishing criteria in important journals. Several important aspects for publishing the articles in the high impact journals need to be highlighted. Title of the manuscript should be very specific to the present work. The abstract should be structured properly as per the guidelines of the particular journals in which authors want to publish their work as research or review article. The abstract should be highlighted on different aspects including the aim of the study, materials and methods, results and conclusions. The text should not exceed fixed word limit of the journal.

The presentation of the article is an important aspect for publishing in the high impact journals. The essence of a good publication is always good science however good science alone does not guarantee publication in a high impact journal. You can undermine good science and your chance at being published by a poor presentation. Presenting data in a clear and accurate manner and putting them into context require skills you can only learn from experience or from people with experience. Citation analysis is the one of the most objective way to measure the impact, importance or peer recognition of articles through several citation data sources such as Science citation index (SCI), Social sciences citation index (SSCI), Journal citation reports (JCR), Google Scholar and Scopus. h-index reflects both overall publications and the level of citation of the publications. i10-index refers to the number of paper with 10 or more citations. g-index accounting the final score for highly cited articles. The impact factor is a measure of the frequency with which the "average article" in a journal has been cited in a given period of time. The impact factor is helpful to evaluate a journal's relative importance, especially when you compare it to others in the same

field. Author should have specific publication strategy for publishing their work in high impact journals. The strategies should be based on the selection of the Journal, manuscript organization, quality, originality, writing the manuscript, ethical issues, finalizing etc. By giving appropriate acknowledgement to the sources you have used and to ideas that you have developed other than your own, you will avoid plagiarism, which passes off the work of others as your own. It is very important to researchers to give value to their work and explore the opportunities by publishing in impact journal which will not only increase the credential of the author but also the importance of the institution where you are working.

Environment

Sunlight For Remediation of Polluted Environment

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Date & Time: 29.08.2017 ; 2:15 PM – 5:15 PM

The day when the prehistoric man invented fire, the demand of energy started; at the same time environmental pollution also started from that day since combustion of fuel generates undesirable greenhouse gas. With the advent of civilization, both energy-crisis and anthropogenic pollution increased. Consequently the conventional resources for energy generation are depleted and at the same time environment deteriorates. There are several remedial solutions for environmental problems using advanced technologies, but most of them, once again, need huge energy. For example, to get rid of the pathogens present in water, we have to boil water or have to switch on UV lamps – both processes need energy. Similarly in an effluent-treatment plant there are pumps and other equipment that need energy. This is therefore a vicious cycle and to break the cycle, we must use renewable energy for environmental remediation.

Solar energy radiates outward in all directions and the earth receives only a tiny fraction of the huge amount of radiation. India is a tropical country and the daily average solar energy incident over India varies from 4 to 7 kWh/m² with about 2300 - 3200 sunshine hours per year, depending upon location. In a tropical country like India, it is thus especially desirable that environmental remediation problems in India may be addressed economically with the help of solar energy rather than employing a relatively costly power generated from fossil fuel.

We need energy for the treatment of solid, liquid or gaseous wastes. Advanced oxidation techniques, nowadays used for treatment of polluted environment, require energy for exciting electrons to generate reacting species. If we can use solar energy for the mentioned purposes, we shall be able to improve the quality of environment without polluting it in some other way. However there are a few problems for using sunlight.

Advanced oxidation Processes (AOP) are characterized by generation of hydroxyl radical (OH•) that attacks organic pollutants. It may be produced by several means like catalytic dissociation of hydrogen peroxide or excitation of semiconductors. The former is demonstrated by Fenton/photo-Fenton reaction and the heterogeneous semiconductor photocatalysis is the example of the later.

Fenton and photo-Fenton processes involve the decomposition of H₂O₂ into hydroxyl radicals by the catalysis of Fe²⁺ ion in water. The rate of generation of •OH radical can be further increased by sunlight.

The electronic structure of a semi-conductor catalyst is characterized by a filled valence band and an empty conduction band. A high energy radiation in the visible or UV range excites an atom to eject a valence band electron (e-) to the higher energy level of the conduction band leaving a 'hole' (h+) behind. In an appropriate environment, a 'hole' may 'react' with a hydroxyl ion in an aqueous solution to yield a hydroxyl radical ($\bullet\text{OH}$) or a superoxide radical ($\text{O}_2\bullet$) having a high oxidation potential that can attack an organic compound and decompose the same to carbon dioxide and water. Similarly the photogenerated electrons react with the reducible molecules to generate respective products. For this, the electron and the hole should respectively be scavenged by suitable reagents as required. In fact nature is a big photo reactor with sun as its source of energy. In all cases sunlight enhances the rate of generation of the oxidizing species and facilitates remediation of the polluted environment.

Sunlight can help to abate the pollution in all forms – solid, liquid and gas. Pollution as plastic waste (solid), industrial wastewater and biologically contaminated water (liquid) and toxic gases in air (gas) can be controlled with the help of sunlight. The next generation fuel, hydrogen, can also be obtained from water split using sunlight. In all cases, generation of hydroxyl radical is the key step.

Solar photovoltaic, on the other hand, is a widely-researched discipline and is out of scope of this discussion though the direct current (DC) generated by solar photovoltaic can indirectly protect the environment by decreasing the use of fossil fuel and generation of green house gas.

Keywords: Advanced oxidation, sunlight, photocatalysis, pollution control

Efficient use of LPG Cook-stoves in Domestic Households

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Date & Time: 30.08.2017 ; 2:15 PM – 3:45 PM

Liquid Petroleum Gas (LPG) is the most widely used fuel in Indian urban households for the purpose of cooking. It is favoured widely because of its safe, less polluting and easy to use option. Presently, Govt. of India has taken up an initiative to extend the LPG supply in rural households and to families who live below the poverty line, using the Pradhan Mantri Ujjwala Yojana. LPG is primarily a blend of propane and butane gases and is obtained either from the gas fields or more commonly during crude oil refining. Due to the limited reserve of fossil fuel in general and crude oil in particular it should be a concern to utilize this fuel in an efficient manner for the sake of

sustainability. Moreover, efficient use of LPG helps the consumer to spend less over fuel in their monthly bill. Therefore, it should be the duty of every household to utilize LPG gas the most efficiently.

In a LPG cook-stove, the fuel gas burns in air producing a flame at the burner. The heat released in combustion is then transferred to the load, which is placed upon the burner. The overall efficiency of the cook-stove can be expressed as the product of the combustion efficiency and the heat transfer efficiency.

LPG burns in the stove as a partially premixed flame with the burner configuration similar to the commonly used Bunsen burner. The ingress of primary air and the premixing of it with the fuel inside the burner affect the combustion efficiency. A good amount of primary air helps to complete the burning in the premixed flame front. However, as the primary mixture gets richer, the burning at the premixed flame becomes incomplete thus generating incomplete products of combustion. The incompletely burnt species complete their oxidation in a non-premixed flame with the air from the surrounding atmosphere. Non-premixed flames can be more sooty resulting radiative loss from the flame. Soot also has adverse effects when deposited on burners and utensils.

Heat transfer efficiency can be improved as the heat loss in the hot gas is reduced. This depends on the height of the load from the burner top, relative dimension of the load to the burner, flow rate of LPG etc. A clear knowledge of the impact of all factors can help in optimizing the performance of the cook-stove.

Safety in usage is another important aspect on which the consumers should have a clear idea. The use of good quality hose, proper regulator and clean burner ensure safety in operation. The cylinder pressure should be properly maintained during filling and any leakage of gas should be immediately brought into the notice of the authority.

Post Paris Climate Action : challenges and opportunities

Joyashree Roy

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Date & Time: 04.09.2017 ; 10:30 AM – 1:30 PM

It is beyond debate now that future ‘global’ stabilization target is fundamental in managing climate change, impacts and associated risks. Mainstream debate is around the nature of coordination among the national goals with global target of limiting the average temperature increase to 1.5 or below 2 degrees centigrade above the pre-

industrial level. National autonomy argument in fragmented world is dominating the process of coordination. Pledges and efforts are at the national levels. Greenhouse gas emission reduction does not automatically follow the ratification of an international accord/pledges/NDCs because action has to come from each individual/groups of individual residing in nation states. Alignment of national action to global goal is crucial but sub-national alignment is equally important, if not more crucial. Climate action also needs to be seen within larger challenge of Sustainable development goals and targets which nation states have accepted. How these transitions can be managed to achieve the transformational changes opens up the scope for new opportunities.

Current Affairs

Globalization and Development

Soumyen Sikdar

Indian Institute of Management Calcutta

Date & Time: 21.08.2017 ; 2:15 PM – 5:15 PM

Globalisation is a move from economic isolation to greater integration with the rest of the world, an increase in openness of the economy.

Two types of openness: (1) Current account openness- free movement of currently produced goods and services .One measure- $X+M / GDP$ (2) Capital account openness- free movement of financial funds or free trade in financial assets.

The world was fairly well integrated prior to the First World War, international links were not strong during the interwar years and broke down completely during the Second World War. The Bretton Woods Agreements for post-war reconstruction strongly advocated (1), but did not insist on (2). Very strong boost for openness and reform emerged after the fall of the USSR in the form of the Washington Consensus. The result was sweeping economic reforms across the globe, both internal (deregulation and privatization) and external (removal of barriers to current and capital account trade). IMF began to put sustained pressure for complete elimination of capital controls as soon as possible. Many developing countries succumbed, but India and China did not. The Tarapore Committee laid down a roadmap for full capital convertibility of the rupee by 2011 in a phased manner, but the process is still not completed. It should be noted that after the East Asian Crisis of 1997-98, IMF also has softened its stand on the abolition of all capital account restrictions.

Types of capital flows: Long term FDI and short term FPI. FDI, based on estimates of long term earning capacity of projects, is stable, whereas FPI, driven mostly by prospect of capital gains, is volatile. Such volatility will cause volatility in the value of the country's exchange rate by altering demand and supply of currencies in the foreign exchange market.

A low ratio of short term FPI to FDI is good for a developing economy. Unfortunately, it is very high for India, much higher than that of China. India with its low quality infrastructure and poor prospects of manufacturing exports is not an attractive destination for long term FDI.

Reasons for Anti-globalisation Backlash

1. Rising inequality of income and wealth following deregulation of industry and trade and the retreat of the Welfare State which had redistribution through taxation as one of its primary objectives in the post-war world.
2. Jobless growth. Globalisation has failed to create enough jobs, particularly at the lower end of the skill spectrum, to keep pace with rising national income. Labour market reforms are invariably pro-capital and anti-labour, taking away

job security and many other benefits previously enjoyed by workers. Technical progress has moved steadily in the direction of intensive use of skilled labour at the cost of unskilled or semi-skilled workers.

3. Series of crises since the 1990s generated by financial deregulation, the latest and the worst being the Global Meltdown of 2008, which had its genesis in the failure of the Fed to supervise and regulate potentially harmful developments in the US banking sector. India did not suffer much precisely because of strict supervision by RBI, which did not allow our citizens and banks to purchase 'toxic assets' like mortgage backed securities or credit default swaps.

Governments in the developing world must recognize the limitations of unbridled globalization and must learn to strike the right balance between deregulation and effective supervision. The debate is not one of market versus the state, it is more about the state governing the market in the best interests of the society. This crucial point has always been repeatedly stressed by economists such as Keynes, Samuelson, Stiglitz and Krugman, just to name a few very prominent ones.

Dragon against the Peacock: A Strategic Analysis

Kaushik Roy

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Date & Time: 23.08.2017 ; 2:15 PM – 5:15 PM

The People's Republic of China from its inception till this date has not accepted the McMahon Line (India-China border). Beijing slowly but continuously is chipping away at the territories along the Indian side of the border. In fact, the hardliners in China claim that Arunachal Pradesh, Bhutan, Sikkim, parts of Uttarkhand and Himachal Pradesh are all parts of China. After 1962, India has always backed down before a military confrontation with China. This is because of the gross disparity of military strength between China and India. And with the passage of time, this disparity is widening.

Goods and Service Tax (GST) in India

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Date & Time: 24.08.2017 ; 2:15 PM – 3:45 PM

The Goods and Service Tax (GST) has recently been introduced in India with adulations from one quarter and criticisms from the other. The lecture critically reviews the issues related to GST from an academic point of view. It talks about the justification of introduction of such a tax, optimality of the tax design and its likely impact on the economy. In the way it also answers some of the frequently asked questions about GST.

Stress Management and Counselling

Stress and Health

Sadhan Chakraborty

Hon'ble Vice Chancellor, Kazi Nazrul University

Date & Time: 08.09.2017 ; 2:15 PM – 5:15 PM

What is psychological stress? In psychology stress is taken to be a feeling of strain or pressure. Stress is not always harmful. In certain cases stress is beneficial: it helps improve performance. Stress in such cases is called positive stress. In other cases stress is detrimental to our wellbeing: it leads to distress. In this article I shall use the term 'stress' in the sense of causing distress or harm. To what extent stress remains positive, the extent beyond which it turns out to cause distress, varies from person to person depending on the individual's ability to cope with it.

Stress is detrimental to health. This statement needs little elaboration. What is health? World Health Organization (WHO) characterizes health as 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. It is evident from this characterization of health that we cannot say that a person is healthy merely because the person does not have any disease or infirmity. The concept of health is a positive concept. Positively speaking health is a state of well-being. This state of well-being has three aspects – physical, psychological and social. Any of the state of physical well-being or psychological well-being or social well-being can be attained by an individual either partially or completely. Health is characterized as a state of complete physical, psychological and social well-being. The concept of health is a limiting concept. Health is the final goal we all strive for. With a view to sharpening our understanding of health we may consider the following continuum.

Illness

o.....o Health

The health condition of any individual can be located at some point or other of this continuum. Everybody feels happy if s/he can move towards health from her or his current position in the health-illness continuum, and movement towards illness from the current position makes her or him unhappy.

Our understanding of health as a state of complete physical, psychological and social well-being cannot be precise unless the meaning of 'well-being' is specified. There are different interpretations of the word 'well-being'. An overwhelming majority of mental health professionals use the word 'well-being' in the sense of functionality.

The more functional an individual the healthier the individual is considered to be. Functionality pertains to all the three aspects of an individual – physical, psychological and social. If the physical systems of the body of an individual function properly then the individual is said to be physically well: the individual is said to be in possession of physical wellbeing. Similarly if the faculties of an individual's mind, viz. reasoning, attending, memory etc. function well then the individual is said to be in possession of psychological wellbeing. The social aspect of an individual consists in various relationships an individual has with people in different social spheres. These relationships include family relationship, special relationship, official relationship, teacher-student relationship and political relationship. If a person can develop and maintain these relationships well then the person is said to be in possession of social well-being. WHO speaks of degrees of well-being. The highest degree of physical, psychological and social well-being of an individual constitutes, according to the characterization of WHO, the health of the individual.

Stress is said to be detrimental to health. It does not facilitate in moving towards health, rather it makes a person move towards illness. The health condition of an individual deteriorates if stress is operational in an individual. Stress is a silent killer: it adversely affects the health condition of a person unbeknownst to the person in most of the cases. We are not much aware of the vicissitudes of life caused by stress.

Governance

E-Governance – Touching our Everyday Life

Ayanangshu Banerjee

Sr. Director, TCG Digital, e-governance

Date & Time: 25.08.2017 ; 2:15 PM – 3:45 PM

e-Governance is associated with carrying out the functions and achieving the results of governance through the utilization of ICT (Information and Communications Technology). However, this would require the government to change itself – its processes, its outlook, laws, rules and regulations and also its way of interacting with the citizens. It would also require capacity building within the government and creation of general awareness about e-Governance among the citizens.

The lecture will focus primarily on how e-services are delivered to citizens, Indian Government objectives and architecture of NeGP and Digital India, the important e-Government initiatives in India as well as West Bengal and how it is impacting our everyday life and transforming our country into a digitally empowered society and knowledge economy.

Sociology

Visual Turn in Sociology

Dalia Chakraborty

Dept. of Sociology, Jadavpur University

Date & Time: 29.08.2017 ; 10:30 AM – 12:00 Noon

Visuals have now become integral to every communication - formal or informal, face-to-face or distant. Gone are the days of words-only letters, now we text *smilies* to express our feelings, store visual profiles for virtual communication, or simply see each other in Skype and WhatsApp. Even the impersonal communication for target audience, for example, ad for a consumer item, invariably contains visuals, still as well as moving. Hence students of social sciences should know how and why it is created, what it encodes, what is its impact, intended as well as unintended, and how underlying the appearance or form of objectivity of an image, there is a deep structure of meaning/s, which are essentially subjective in nature. Furthermore, the reproducibility of visual images, its accessibility across social strata, direct impact on viewers, and most importantly, its reconstructive power make it useful to record, illustrate and evaluate events and issues. This may eventually empower all those exposed to visuals either in course of creating it or just as a viewer, to bring about social change in a desired direction or to resist any attempt to harm them or others. Yet it is only since the 1990s that the use of visuals has started gaining ground in social sciences.

Visuals are used in multiple ways in Sociology. Sociologists categorize parts of the world, thus creating data (the scientific mode); sociologists use their own subjective experience as a source of data (the phenomenological mode); sociologists structure their data into accounts (the narrative mode); sociologists build data from the point of view of their subjects (the reflexive mode). Images may be scientific, narrative, phenomenological or reflexive depending on how they are constructed, presented and viewed (Harper 1988: 61).

Unfortunately, the founding fathers of sociology did not use visuals and produced abstract images of society. Since 1930s, with the rise of photojournalism sociologists started looking down upon images as a mere part of mass communication. By the post-World War era positivistic insistence on objectivity, and dominance of

quantitative method made the exclusion of visuals almost complete. Only in 1960s when West was facing crisis over issues of war, race, class, gender, etc. radical departure from mainstream became a reality in a few photographic studies of social movements. Furthermore, extensive photographic documentation of mass movements in America of 1960s, in a way, forced sociologists to take note of it. From the 1960s to the early 1980s, methodological debates centre on the question whether visual images and recordings can usefully support the positivistic project of social science. A photograph can be taken as an objective record of facts. But the critiques of positivism focus upon the impossibility of 'true' visual record, and the constructedness of the stories of films and videos. The post-modern approach points out that the meaning of the photograph is constructed by both the maker and the viewer, and both carry their social positions and interests to the photographic act.

Doing Visual Sociology

Dalia Chakraborty

Dept. of Sociology, Jadavpur University

Date & Time: 29.08.2017 ; 12:00 Noon – 1:30 PM

For doing visual sociology we should know how to use visual methods of social research. Data collection or generation in visual method is possible through : i) making visual representations; ii) examining pre-existing visual representations; and iii) collaborating with social actors in the production of visual representations. Visual method is often participatory in nature when the subjects are allowed to participate in creating visual data and/or analyzing it. Two commonly used methods are photo-elicitation interview and shooting scripts. Semiotics is the most popular approach among scholars in cultural studies for analysis of visual images. Another way of analysing visuals is through a discursive approach. In this presentation I would like to take up both semiotic and discursive analysis of different genres of images like medical advertisements, cartoons, action photographs of protest movements etc. Making sense of social reality is often more urgent than measuring the same and visuals significantly contribute to make sense of human emotions and social actions, thereby fulfil the primary objective of doing Sociology.

Mathematics

An introduction to Propositional Logic

Mihir Kumar Chakraborty

Department of Mathematics, Calcutta University

Date & Time: 30.08.2017 ; 10:30 AM – 1:30 PM

Mathematical Logic

The motivation of the subject and " What is Logic ?"
Formal language and the language of Propositional logic.
The notions of semantic and syntactic consequence in Propositional logic.
The notions of consistency and completeness.
Soundness of the Propositional logic system.
Completeness of the Propositional logic system.
Connection with Boolean algebra.
Modal Propositional logic.
Many-valued logic and Fuzzy Set theory.
Concluding remarks : Soft computing , Is human brain a machine ?

History of Development of Modern Differential Geometry

Manjusha Majumdar (Tarafdar)

Professor, Department of Pure Mathematics, University of Calcutta

Date & Time: 31.08.2017 ; 10:30 AM – 1:30 PM

The History of Geometry may be roughly divided into four periods. Euclid wrote a book, named ELEMENTS about 300 B.C. There was a lack of perfection in the definition of "point" and "line". Mathematicians were not willing to accept V as an axiom, as stated by Euclid. For 2000 years, they tried to prove it. Their failure, led to the invention of NON-EUCLIDEAN GEOMETRY. In the early part of 17th Century, a new approach of geometry was developed by the famous French mathematician Rene Descartes. It is due to him that such type of geometry is called CARTESIAN GEOMETRY. DIFFERENTIAL GEOMETRY is (loosely speaking) the study of Geometry with the help of Calculus. Modern Differential Geometry requires the knowledge of TOPOLOGY. The concept of a manifold generalises the concept of a curve or a surface in \mathbb{R}^3 .

Reasoning with Diagrams

Lopamudra Choudhury

Department of Philosophy, Jadavpur University

Date & Time: 06.09.2017 ; 2:15 PM – 5:15 PM

We begin by clarifying the meaning of diagram for our purpose. Cognitively, diagram's role in representation is a much discussed topic. We would briefly touch upon the point and finally consider the formal diagram system venn-i.

There has been continuous effort for past three hundred to use diagrams as tools of reasoning. Beginning with Euler 1768, Venn 1881, Carroll 1896, Peirce 1933, Zeman 1964, Roberts 1973, Shin 1992, attempts were made to capture reasoning with diagrams.

1992 onwards the area of diagram studies have drawn attention of scholars all over the world from various disciplines who have actively formed the diagram community and are organizing International Diagram Conferences, workshops as well as winter Schools in alternative years. Jadavpur University is proud to host the first and second Winter School on diagram logics.

Medicine

Surgery in Ancient India as Revealed in Suśruta-Samhitā

Sudipa Bandyopadhyay

Associate Professor, Department of Sanskrit, Vidyasagar College &

Guest Faculty, Department of Sanskrit, University of Calcutta

Date & Time: 28.08.2017 ; 10:30 AM – 1:30 PM

Glorious civilization of ancient India, develops its medicinal practices, eventually leading to a medical system called the Āyurveda—a system that attracted the attention of even foreign lands both in the west and east from the very beginning of human civilization. Along with other seven branches of the Āyurveda, Śalyatanta had reached zenith of achievement at an early stage of Indian history.

In this point of view it is said that in spite such developments of surgical treatment the credit of providing a systematized approach goes Suśruta since he was the earliest to make elaborate efforts to keep it on a sound footing so far as his age is concerned in practice and of imparting practical knowledge. Instrumentology also developed during his time since this has a greater potential for success in this field. The plastic surgery and rhino-plasty described by Suśruta have been acclaimed even today as the greatest of the surgical techniques and they may be treated as important landmarks in the fields of surgery.

The eight branches of Āyurveda have been detailed in the Suśruta-samhitā the main caliber of the book lies in the description of surgical concepts and procedure. The entire compilation has been divided into six sthānas (volumes)

I. Sūtrasthāna: Deals with fundamental concept of surgery and also includes knowledge about various herbs and drugs used as medicine.

II. Nidānasthāna: deals with the diagnostic aspects of different diseases surgical and Parasurgical.

III. Śārīrasthāna: deals with the anatomical, physiological and also embryological aspects including obstetrics, pre and post natal care of the mother and child care.

IV. Cikitsāsthāna: deals with treatment, both medical and surgical, including operative techniques, prognosis and complication of various diseases amenable to surgery or Para-surgery. It also provides an account of preventive medicine, the science of nutrition and geriatrics (rasāyana), reproduction and virility (vājīkarana), therapeutics (pañcakarma i.e five measures for cleaning the system from morbid factors to achieve homeostasis).

V. Kalpasthāna: deals with poisons.

VI. Uttarasthāna (or Tantra): deals with the rest of the eight specialties or Āyurveda as follows:

Śālākya (ophthalmology and Oto-rhino-laryngology)

Kaumārabhrtya (Pediatrics and Gynecology)

Bhūtavidyā (Psychotherapy) and

Kāyacikitsā (Internal medicine, personal and social hygiene including dietetics)

In the Suśruta-samhitā, the dressing of a wound has been described in detail. Bandages and their indications as well as the materials to be used for stitching a traumatic wound, have been well documented.

According to Suśruta each surgical procedure was a phased programme (trividhakarma) of three stage Pre-operative measures (Pūrvakarma), Operative measures (Pradhānakarma), Post-operative measures (Paścātkarma)

Pre-operative measures (Pūrvakarma): Preparation of a patient keeping ready of the instruments are partly similar to the measures that are essential for safe operation and uneventful recovery.

Operative measures (Pradhānakarma): Suśruta has provided detailed description of the main surgical procedures which are eight in number encompassing all types of surgical maneuvers. According to the necessity and choice of a surgeon, more than one technique could be followed in the procedure. The eight types of surgical procedures are as follows- Chedanam (excision), Bhedanam (incision), Lekhanam (scraping), Esanam (probing), Āharanam (extraction), Vyadhanam (puncturing), Visravanam (drainage), Śivanam (suturing).

Post-operative measures (Paścātkarma): After the completion of a surgical procedure and till the patient is completely cured of the diseases, a careful and minute follow-up regarding appropriate bandaging antiseptic fumigation, dietetics and rest, should be undertaken as post-operative measures.

Thus, it is realized that the treatise of Suśruta laid emphasis on the study of a every sphere of medical and surgical fields along with embryology, biology, cosmology, physiology, toxicology and number of subjects which have relevance to the study of medical science.

Science & Technology

Philosophical View of Science: A Brief Understanding

Pradip Kumar Ghosh

Pro-Vice-Chancellor & Registrar (Acting), Jadavpur University

Date & Time: 22.08.2017 ; 10:30 AM – 12:00 Noon

In general idea we know that Physics, Chemistry and Biology constitute science with Mathematics. In literature science viewed as: “Systematized knowledge covering general truths or the operation of general laws, esp. as obtained and tested through scientific method.” One of the key problems in Philosophy of science is to understand how techniques such as experimentation, observation and theory construction have enabled scientists to unravel so many of nature’s secret. The study of the most general and abstract features of the world and the categories with which we think. In philosophy the concepts with which we approach the world themselves become the topic of enquiry.

Though History of science usually not embedded in the curriculum and while science is taught rather in a historical way, it is argued that close attention to the history of science is indispensable for doing good philosophy of science.

It may be recalled that rapid scientific development occurred in Europe between the years 1500 and 1750. There were scientific investigations in ancient and medieval times- The dominant world was Aristotelianism. According to him all earthly bodies composed of just four elements: earth, fire, air & water.

Ptolemy’s earth centric model of universe was uprooted by Copernican model of Sun centric universe. In fact the whole system of mechanics, explanation of fall of apple and planetary motion was finally solved through Newton’s law of gravity. In leading to the conclusion we saw how the collection of data based on observation by Tycho Brahe and predicting the formula of planetary motion by Kepler helped the discovery of most natural force exist in Universe- “The force of Gravity”.

The scientific views established on Newton’s deterministic science upto late part of nineteenth century saw development science through number of discoveries and theoretical explanation. Concept of Atom by Dalton advanced many ways the physical science which we generally termed as Physics and Chemistry while “Theory of Evolution” by Darwin gives a better understanding of living being.

The entire scenario of science changed dramatically after discovery of Electron by Sir J.J. Thomson and quick theoretical advance in developing atomic structure and introduction of Quantum Mechanics on one hand and introduction of theory of relativity by Albert Einstein on another hand. Their emergence caused considerable conceptual upheaval not only in physics but in other branches of science. Finally yet incomplete revolution in biology took place in 1953 by Watson & Crick through the

discovery of the structure of DNA. It leads to development of molecular biology, Understanding of Heredity & process of building organisms.

Scientific theories established through imagination, observation & experimentation. Both observation & experimentation on a system cannot be done infinite times. Then, how we can say that it still become effective in next experiment or observation. Here lies the question why?

Twentieth century Philosopher Karl Popper's Theory of Falsification, Lakatos' observation and Hempel's covering model are discussed to know how science and philosophy are embedded. How deductive inference and inductive inference plays role in understanding the philosophical aspect of science and its theory is looked through Hume:

- Use of induction cannot be rationally justified.
- Whenever we make inductive inferences the presupposition is "Uniformity of nature".

Causality, conflict between Realist and Anti Realist are also discussed.

Finally we discuss how Thomas Khun arrived at paradigm concept. According to him a paradigm, therefore, determines not only a set of beliefs about the world. It also defines what counts as good science, and even determines what counts as a scientific fact. It is a conceptual framework that determines how the world looks to those who have accepted it. It defines not only the scientific outlook for practitioners of a particular science, but also the scientific "form of life."

In the conclusion it may be referred that in this lecture we have discussed about Induction, Explanation, Realism and Scientific change which are within the purview of General Philosophy of Science. There are scopes of issue based philosophical questions specific particular sciences. Conflict in physical science, Biological Science and human mind are dealt with examples.

Finally a short review of criticism on overdose of "Scientism" and idealistic difference between Science and Religion is made.

History of Science

Samir Kumar Saha, Ph. D, FIE

Former Professor, HOD, Dept.of Mechanical Engineering Jadavpur University

Date & Time: 25.08.2017 ; 10:30 AM – 1:30 PM

Topics to be covered

1. Why study History of Science?
2. What is Scientific Method?
3. Origins of Science - Globally
 - i) Babylon, Mesopotemia
 - ii) Greeko – Roman
 - iii) India, China
 - iv) Arab
 - v) Western Science Europe, Renaissance
 - vi) Modern Science
4. History of some major disciplines at a glance
 - i) The milestones
 - ii) The interconnectivity
 - iii) The applications will be shown
5. A brief outline of Science in India

References :

1. Fara, Patricia- Science a four thousand year history,
Oxford University Press, 2009
2. Bose, Sen & Subbarayappa- A concise History of Science in India,
2nd ed., 2009, INSA

Let's Light: A Journey Towards Enlightenment

Suddhasatwa Chakraborty

Department of Electrical Engineering, Jadavpur University

Date & Time: 05.09.2017 ; 12:00 Noon – 1:30 PM

The definition of light as particle as well as wave has been established a long ago in physics. But there is a fine line exists between light & lighting which is not well defined still today. Lighting is apparently not to deals with physics only but the application of light to illuminate a space. There is a myth that light source takes the most vital role in lighting design, but real story says something more. The lighting designs encapsulate the selection of luminaries, light source, the placement of the luminaries moreover the energy efficient design. The classical tools of lighting design are becoming outdated today, because of two revolutionary steps in field of lighting design. The lighting design is now no longer restricted with the energy efficient solutions rather a new dimension has been included, which is called future of lighting, the “Human Centric Lighting”, which is really a revolutionary change in lighting. The “Internet of Things (IoT)” is also a remarkable footstep towards future lighting, where, internet can be used to control the level, color, intensity of light in any space in concurrence the general harmony between human centric lighting requirements and energy efficiency.

Sensing beyond Senses

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Date & Time: 09.09.2017 ; 10:30 AM – 1:30 PM

In the recent past electronic sensing has changed the way man has been seeing and analyzing the world around- be it trying to feel the pulse of gravity, looking out for Tsunami, probing the deep-space or even for prosaic and mundane realities of life like running a modern factory. The talk starts with principles of sensing through introduction of basic principles behind sensing of physical parameters and proceeds to enhancements achieved through wireless sensing. Having explained the different basic principles, the talk proceeds to show how requirements of different challenging

applications are met by harnessing the power of some of the tiniest things mankind has ever produced.

The first application in this series is sensing of gravitational waves using Laser interferometry. The principles of gravity and gravitational waves are first introduced through a video and then the detection principle is presented starting from principles of laser interferometry. The next application introduced in this series is a Tsunami detection system using a related concept of gravity (and not gravitational) waves. While these measurements more or less rely on physical parameters , the challenge lies in engineering the measurement systems for precise and accurate measurements associated with them.

A major consideration in modern sensors is sensing accuracy in presence of noise and disturbance. And this is perhaps most important in cases like deep-space applications involving, for example, landing of a space craft on a planetary surface or sensing finger movement of a surgeon performing a transatlantic surgery or for that matter , detection of contraband radioactive material from a distance. These push sensor technology beyond its extreme limits often to sci-fi dimensions. These applications are introduced and the engineering principles behind the sensor technology associated with each is analyzed.

The talk ends with another application- sensing life outside the green planet. It introduces the search principles , signals and systems associated with it, and deliberates on the famous WOW signal that had once caused quite a sensation across the world.

Third generation RNAi mediated virus resistance in tomato

Sunil Kumar Mukherjee

INSA Sr. Scientist, Division of Plant Pathology, IARI, New Delhi

Date & Time: 11.09.2017 ; 2:15 PM – 3:45 PM

Tomato is considered to be poor person's apple and its red lycopene is a very strong antioxidant. However, its yield in farmers' field is seriously threatened by a geminivirus that causes leaf curl disease resulting in production losses of almost 100% in some events. This family of viruses is generically called as Tomato Leaf Curl Virus (ToLCV) and consists of at least sixteen different species within India. Because its economic importance, ToLCV need to be routed out of the farmers' field. Plants have been engineered to fight RNA and DNA viruses using the principles of

RNAi. Pathogen derived resistance (PDR, 1st generation RNAi) has been successfully employed for many RNA viruses. The DNA virus, namely, Bean Golden Mosaic Virus (BGMV) has been successfully inhibited in transgenic pinto bean in South America and this bean harboring the second generation RNAi construct is now available for commercial cultivation. However, these principles are not suitable to battle out ToLCV because of two main reasons. First ToLCV genomes are biodiverse and each of them encodes at least three RNAi suppressors to foil RNAi mediated engineering approaches. We along with other workers in the field found that the ToLCV encoded RNAi suppressors are the most pathogenic factors in tomato. We mapped the conserved regions of these suppressors and developed transgenic tomato overproducing small RNAs like artificial microRNAs and tasiRNAs (Third generation RNAi effectors). These small RNAs were designed to silence the RNAi suppressors of ToLCV in a broad range fashion. Data will be presented to show that some of these transgenic tomatoes silenced viral pathogenic factors following virus infection and resisted broad range ToLCV in a robust manner.

Wonders of RNAi

Sunil Kumar Mukherjee

INSA Sr. Scientist, Division of Plant Pathology, IARI, New Delhi

Date & Time: 11.09.2017 ; 3:45 PM – 5:15 PM

The serendipitous discovery of RNAi took place with the observation of loss of flower color in transgenic petunia in the year 1990. The loss of color metabolite was traced to cytoplasmic instability of the transcripts of both the transgene and endo-gene Chalcone Synthase (CHS). Between the years 1990-1998, similar losses were reported in fungus, nematode and a few other organisms. However, the first mechanistic insight, i.e., the trigger of the phenomena, came from the reports of A. Fire et al where they showed in 1998 that the loss or instability of the transcripts in *C.elegans* was essentially due to the formation of double stranded RNA (dsRNA) inside the cell. This finding won the Noble prize about eight years later but opened the floodgate of a new paradigm of molecular biology. Since then the ubiquitous feature of RNAi and the associated mechanism have been established although there are many gaps in the mechanistic understanding that still need to be plugged in. The present mechanistic understanding will be discussed. The structure and function of a few of the main effector proteins of RNAi, namely DICER, ARGONAUTE, RNA dependent RNA polymerase (RdRP) etc. will be discussed. The wonderful applications of RNAi will be presented at the end.

Introduction to Design Ergonomics

Somnath Gangopadhyay

Professor, Occupational Ergonomics Laboratory

Department of Physiology, University Calcutta

Date & Time: 12.09.2017 ; 10:30 AM – 1:30 PM

Ergonomics can be defined as “Science, Technology & Art of Man at Work”. The subject is related with the definite aim on the enhancement of human performance. In other word, application of ergonomics is “the improvement of individual and group productivity”.

The subject seeks to change the things to better match capabilities, limitations & needs of people.

Ergonomics is the application of the human biological sciences in conjunction with the engineering sciences to the worker and his working environment, to obtain maximum satisfaction of the worker which at the same time enhances productivity

On the basis of its application it can be divided in three categories: Physical, Organizational and Cognitive ergonomics.

Cognitive ergonomics is the subfield of cognitive science. It concerns with the human task oriented activities and deals with processing and decoding of information and finally plays a definite role in understanding. It has a direct contribution in the design of product. Through this way, ergo design term has recently been coined.

By application of cognitive science, ergonomics and anthropometry, product is now becoming more easy to use with maximum comfort. Simplification in gadgets and proper application of anthropometry in it makes the tools more user-friendly.

Some Aspects of Communication and Wireless Networks

Dr. Salil Kumar Sanyal

Retired Professor, Department of Electronics and Telecommunication Engineering,

Jadavpur University, Kolkata

Date & Time: 05.09.2017 ; 2:15 PM – 5:15 PM

This lecture begins with the technological developments of Communication and Computer Engineering scenario starting from pre-2 nd World War era to the current

state of the art. Starting from the conventional Telegraph and Telephone networks, emphasis has been given to the development of Computer Technologies with societal applications to make the life of human being more comfortable at affordable price. Different technological issues related to Computer Data Networks have been covered in a lucid manner so as to impart practical knowledge to the common people having little background on this vast technological domain. Several implementation aspects of Computer Communication Network have been incorporated. The same trend is being followed in the Wireless Networks also to figure out the fundamental basis of Wireless Cellular Communication. The chronological development, access technologies, control and data mechanisms associated with Wireless Communication have been included.

Recent Status of Biotechnology in India

Dr.Keshab Chandra Mondal

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Email: mondalkc@gmail.com

Date & Time: 11.09.2017 ; 10:30 AM – 1:30 PM

Biotechnology is the technological application which utilizes biological entities, living organisms or biological derivatives. The origin of biotechnology arose in ancient age. The biotechnological revolution in the second half of the last century– which India joined somewhat late.

Basically biotechnology classified in to four major categories -

- Green biotechnology: It is the technology applied to agricultural processes.
- Red biotechnology: It is the technology used in medical applications.
- Blue biotechnology: Blue biotechnology is the term used to describe aquatic and marine applications of biotechnology.
- White biotechnology: It is the technology used to industrial processes.

Modern biotechnology is a term adopted by international convention to refer to biotechnological techniques for the manipulation of genetic material and the fusion of cells beyond normal breeding barriers and it also refers to the intentional modification and manipulations living organisms and organic matter. The main techniques that gave birth to modern biotechnology are:

- Genetic engineering: This technique involves the change of nature of genetic matter of a living organism and to introduce in to host organism to alter the nature of host organism.
- Biochemical engineering: This technique involves the maintenance of sterile conditions of a desired microorganism in biotechnological processes to get the products.

Salient features of the present status of biotechnology wealth of India are -

- India is among the top 12 biotech destinations in the world and ranks third in the Asia Pacific.
- The bio-pharmaceutical sector accounts for the largest share of the biotech industry with a share of 62% of total revenues in 2015, followed by bio-services (18%), bio-agri (15%), bio-industrial (4%) and bio-informatics (1%).
- India has the second highest number of United States Food & Drug Administration(USFDA) approved plants. Supported 104 new start-ups, 346 companies, 509 projects including 115 collaborative projects through BIRAC, a Public Sector Unit of Government of India.
- No.1 producer of Hepatitis B vaccine recombinant. India constitutes around 8% of the total global generics market, by volume indicating a huge untapped opportunity in the sector.
- The Indian biotech industry is expected to grow at 30.46 percent CAGR to reach USD 100 billion by 2025.
- India has the potential to become a major producer of transgenic rice and several genetically modified (GM) or engineered vegetables.

Performing Arts

Indian Dance: Philosophy and Practice

Sruti Bandyopadhyay

Department of Dance, Visva Bharati

Date & Time: 04.09.2017 ; 2:15 PM – 5:15 PM

This deliberation aims to unfold the evolution of Indian dances in the ancient, medieval and modern times through its various categories like the traditional, folk and classical. The relation of dance with sculpture, paintings and architecture is seen. Different regional influences shape the dances.

Taking off from the Natyashastra, the text on Indian dramaturgy that serves as the root to all the dances of India, the paper covers the nuances of the eight classical dances of India- Kathak, Bharatnatyam, Manipuri, Kathakali, Odissi, Mohiniattam, Kuchipudi and Satriya- their development, their specialties. The different personalities of these dances and their contributions are also featured.

The journey of the dances from the temples and court to the stage is a phenomenal issue. The middle class girls joining in dance training and coming into the limelight with a professional intention turned the performance into a new pathway. The classical dances achieved respect as art. Dancers and visionaries like Udayshankar and Rabindranath Tagore introduced the modern dance era here. Contemporary themes and new idiom of dances enriched the dance scenario. On the whole the variety, verve and beauty of Indian dances are the primary considerations of the paper.

Valedictory Lecture

Misconduct in Teaching and Research

Amitava Raychaudhuri

Date & Time: 18.09.2017 ; 11:00 AM – 12:30 PM

Brief Summary: Teachers and researchers around us are, by and large, carrying out their responsibilities with devotion and diligence. Nonetheless, the occasional slippages and misconduct of a few amongst us bring a black mark to the entire community. Though uncommon, incidents such as plagiarism, data-fabrication, misappropriation of ideas, etc. do come to light from time to time. In this lecture I plan to discuss, with examples, some of these failings and ways by which we may wish to address them.

The UGC-HRDC Team

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