

Advisory Committee (Alphabetical Order)

- Prof MM Salunkhe, Vice Chancellor, Central University Rajasthan
- Prof Ramakrishna Ramaswamy, Vice Chancellor, University of Hyderabad
- Prof RK Mishra, Director & Member Secretary, Institute of Public Enterprise
- Prof S Deman, Hon Director, Centre for Economics & Finance, London, and Visiting Professor, Central University of Rajasthan
- Prof SB Rao, Director, CR Rao Advanced Institute of Mathematics, Statistics & Computer Science, AIMSCS

Program Committee - International (Alphabetical Order)

- Prof Alpano Urbano Salvador, Universidad de Valencia, Valencia, Spain.
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- Prof Ariel Rubinstein, The Hebrew University of Jerusalem, Israel and New York University, USA.
- Prof Douglas Gale, Department of Economics, New York University, USA.
- Prof Ehud Kalai, Editor, Games & Economic Behaviour, Department of Economics, NWU, USA.
- Prof Françoise Forges, Université Paris-Dauphine, Ceremade, Paris, France.
- Prof Georges Zaccour, Chair in Game Theory & Management, HEC Montréal, Québec, Canada.
- Prof Giacomo Bonanno, Department of Economics, University of California, Davis, USA.
- Prof HD Vinod, Director, Institute for Economic Ethics and Policy, Fordham University, USA.
- Prof Imma Curiel, Department of Statistics & Mathematics, University of Netherlands.
- Prof Jerome Renault, Department of Mathematics, Université Toulouse, France.
- Prof Mamoru Kaneko, Institute of Policy & Planning Sciences, Tsukuba University, Japan.
- Prof Marilda Sotomayor, Departamento de Economia, Cidade Universitária, São Paulo, Brazil.
- Prof Michael J Fishman, Kellogg School of Business, North-Western University, USA.
- Prof Praveen Kumar, Chair, Department of Finance, University of Houston, USA.
- Prof Steve Alpern, Department of Mathematics, London School of Economics, UK.
- Prof S Deman, Hon Dir Centre for Econ & Finance, London and CURaj, India.
- Prof Tridib Sharma, ITAM Centro de Investigación Económica, ITAM, Mexico.
- Prof TS Arthanari, Info Sys & Operations Management, University of Auckland, New Zealand.
- Prof Y Asami, Department of Urban Engineering, The University of Tokyo, Japan.

Program Committee – National (Alphabetical Order)

- Prof Arunave Sen, Indian Statistical Institute, New Delhi.
- Dr RB Barman, Former Executive Director, Reserve Bank of India.
- Prof DM Diwakar, Director, AN Sinha Institute, Patna, India.
- Prof Hansa Jain, Department of Economics, Central University of Rajasthan.
- Dr Jayasree Raveendran, Institute of Public Enterprise, Hyderabad.
- Prof Naresh Sharma, Department of Economics, University of Hyderabad, Hyderabad.
- Prof Partha Sen, Director, Delhi School of Economics, Delhi.
- Prof Probal Roy Chowdhury, ISI, New Delhi and Member, Governing Council, CR Rao AIMSCS.
- Prof RC Sharma, Head and Dean, Faculty of Management, Devi Ahilya University, Indore.
- Prof RN Rattihalli, Department of Statistics, Central University of Rajasthan.
- Prof T Parthasarathy, Indian Statistical Institute, Chennai.
- Prof TK Krishan Kumar, ISI (Retired) & Adjunct Professor, IIM-Bangalore.
- Dr U Yugandhar, Member, Governing Council, CR Rao AIMSCS.
- Prof VB Upadhyaya, Indian Institute of Technology, New Delhi.

A sightseeing tour of Hyderabad for the delegates has been organized by the Conference Hosts on 14 December 2011.

Expert Talks on 'Game Theory: Teaching and Applications' will be hosted by Central University of Rajasthan on 15 December 2011.

Who May Participate

- Regulators and policymakers
- Economists and econometricians
- Professionals in banking, insurance and financial services
- Academicians / researchers in Mathematics, Statistics, Economics, Finance, Management

Registration Fee

- For individuals: ₹ 2,500 (US\$ 250 from USA / Canada / Europe and US\$150 from rest of the world)
- For institutions and businesses: ₹ 10,000 per delegate
- For students: ₹ 1000 (US \$100 for overseas students)

Fee includes conference kit, conference volume, lunch and tea for two days (stay not included). Payment is to be made in favor of 'Institute of Public Enterprise, Hyderabad'.

About the Conference Hosts



Institute of Public Enterprise

The Institute of Public Enterprise is devoted to education, training, research and consultancy for business enterprises. A B-school of national repute, it is also recognized as a 'Centre of Excellence' for doctoral studies by ICSSR, with its PhD program being one of the largest in social sciences. A founder member of Association of Indian Management Schools, it offers PGDM courses in International Business, Retail & Marketing, Biotechnology, Banking, Insurance & Financial Services, as well as an Executive PGDM program and an MBA (PE) course.



Central University of Rajasthan

Established by an Act of Parliament as a central university, the Central University of Rajasthan addresses the challenges of knowledge explosion in higher education, and inculcates / sustains quality in regional / global dimensions of higher education, viz., teaching, learning, research, extension and governance.



AIMSCS

CR Rao Advanced Institute of Mathematics, Statistics & Computer Science (AIMSCS) brings together experts in Mathematics, Statistics and Computer Science. It provides an environment of cooperation and synergy in problem solving by promoting advanced studies in these areas.



University of Hyderabad

Set up by an Act of Parliament as a central university, the University of Hyderabad is a PG teaching and research institute, which also offers distance learning programs. It is a member of AIU, ACU and ICDE. Its Academic Staff College runs orientation / refresher courses for other colleges / universities.

For Conference details contact: **Dr Jayasree Raveendran** (rjayasree@ipeindia.org)

For academic enquiries contact: **Dr Suresh Deman** (s_deman2000@yahoo.co.uk)



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International Conference

(In Honor of Prof CR Rao)

Applications of Game Theory in Policies and Decisions

12-13 December 2011

Hotel Marriott & Convention Center
Hyderabad

Hosted by



Institute of Public Enterprise



Central University of Rajasthan



CR Rao Advanced Institute of
Mathematics, Statistics & Computer Science



University of Hyderabad

Nobel Laureates Invited

Prof John Nash, Jr. ■ Prof Robert Aumann ■ Prof Thomas Schelling



About Prof CR Rao

Born on 10 September 1920, Prof CR Rao, a Fellow of the Royal Society, is an Indian statistician, currently Professor Emeritus at Penn State University and Research Professor at the University of Buffalo, USA. Prof Rao has been honored by numerous colloquia, honorary degrees, and festschrifts and was awarded the USA National Medal of Science in 2002. Among his best-known discoveries are the Cramér–Rao bound and the Rao–Blackwell theorem, both related to the quality of estimators and Score Test used in Econometric Research. His other contributions include the Fisher–Rao Theorem, Rao distance, and Orthogonal Arrays. He also worked on multivariate analysis, estimation theory, and differential geometry.

Prof Rao has received over 34 honorary doctoral degrees from universities in 19 countries around the world and numerous awards and medals for his contributions to statistics and science. He is a member of eight National Academies in India, the UK, the USA and Europe.

Research Contributions

- Estimation Theory
- Statistical Inference and Linear Models
- Multivariate Analysis
- Combinatorial Design
- Biometry
- Statistical Genetics
- Generalized Matrix Inverses
- Functional Equations

Awards and Honors

- Guy Medal in Gold (2011) from Royal Statistical Society, UK.
- India Science Award 2010 (the highest award in science from the Government of India).
- International Mahalanobis Prize (2003) from International Statistical Institute.
- Srinivasa Ramanujan Medal (2003) from Indian National Science Academy.
- National Medal of Science, the highest award in the USA in the scientific field, with the citation, "prophet of the new age, for his pioneering contributions to the foundations of statistical theory and multivariate statistical methodology and their applications, enriching the physical, biological, mathematical, economic and engineering sciences."
- Padma Vibhushan (2001) from the Government of India.
- Mahalanobis Centenary Gold Medal (1993) from Indian Science Congress.
- Wilks Memorial Award (1989) from American Statistical Association.
- Megnadh Saha Medal (1969) from Indian National Science Academy.
- Guy Medal in Silver (1965) from Royal Statistical Society, UK.
- SS Bhatnagar Award (1963) from Council of Scientific and Industrial Research.
- JC Bose Gold Medal from Bose Institute.
- Gold Medal from University of Calcutta.
- Pennsylvania State University has instituted CR and Bhargavi Rao Prize in Statistics.
- CR Rao Advanced Institute of Mathematics, Statistics and Computer Science.
- National Award in Statistics, set up by Ministry of Statistics and Program Implementation, Government of India.

Prof CR Rao and Game Theory

Prof CR Rao has a longstanding association with Game Theory, as early as the mid-1940s. Prof John Nash, a pioneering figure gave insight into the thinking that continues to define Game Theory, an applied mathematical science founded some 60 years ago that studies strategic interaction in competitive and cooperative environments. Game Theory's influence and applicability have extended broadly across areas ranging from mathematics and computer science to various social and biological sciences.

Given the importance of the subject matter and relevance in addressing some of the real world problems since 1994 Nobel Prizes have been given to Profs John Nash, Reinhard Selten, John Harsanyi, Robert Aumann and Thomas Schelling. Prof Rao also thought Von Newman & Morgenstern's book made an important contribution to economics and the authors would get a Nobel Prize one day. That book inspired Prof Rao to develop research in game theory at the Indian Statistical Institute. He encouraged two of his research students,

T Parthasarathy (1967) and TES Raghavan (1968), to choose Game Theory topics for their PhDs based on Neumann and Morgenstern's work when Game Theory had not emerged as an institution even in the USA.

Hence, thinking of Game Theory as similar to probability and statistics makes the relationship to other sciences more explicit. First, like probability theory, a well developed Game Theory is the foundation stone in any subject that deals with interaction. Second, in practical applications that involve strategic interaction, there is no way to avoid using Game Theory. However, following the practice of statistics, it may be necessary to have several different Game Theory models, with the user choosing the appropriate model for the application, particularly when the reasoning is required to be done under uncertainty.



Prof CR Rao with Nobel Laureate Prof John Nash at Penn State University

In the above background Prof Rao's contribution at the interface of Statistics and Science is equally relevant to Game Theory, and today there is hardly any theoretical research published in leading Game Theory journals in which his

contributions to mathematical statistics is not relevant. In fact, Prof Rao was the first Indian to publish two papers in *Econometrica* in 1947 and 1949, which set probabilistic foundations for linear structural economic relations, solving a problem suggested by Frisch.

About the Conference

An International Conference and Workshop with contributions of scholars from all over the world from various fields would make a valuable contribution to Game Theory teaching and its applications to various fields of economic science. This is particularly so with applications to environment, development, industry, management, finance and accounting, where it has not fully realized its potential. Such a conference and workshop will also pay a tribute to all the Nobel Laureates and leading Game Theorists who have been invited to grace the occasion.

Plenary Session: Prof CR Rao's Contribution (Alphabetical Order)

- Prof Françoise Forges, Université Paris-Dauphine, Ceremade, Paris, France
- Prof HD Vinod, Director, Institute for Economic Ethics and Policy, Fordham University, USA
- Prof RK Mishra, Director & Member Secretary, Institute of Public Enterprise
- Prof Suresh Deman, Center for Economics & Finance, London, and Central University of Rajasthan
- Prof TK Krishan Kumar, ISI (Retired) & Adjunct Professor, IIM-Bangalore

Key Speakers (Alphabetical Order)

- Prof Abraham Neyman, Leading Professor of Economics, SUNY, Stony Brook, USA and Department of Mathematics, The Hebrew University of Jerusalem, Israel.
- Prof Mamoru Kaneko, Institute of Policy & Planning Sciences, Tsukuba University, Japan.
- Prof Marina Nunez Oliva, Departament de Matematica Economica, Financera i Actuarial, Universitat de Barcelona, Spain.
- Prof Myrna Wooders, Professor of Economics, Vanderbilt University, USA.
- Prof Pradeep Dubey, Leading Professor of Economics, SUNY, Stony Brook, USA.
- Prof Sergiu Hart, Centre for Rationality, Institute of Mathematics, The Hebrew University of Jerusalem, Israel.
- Prof Shmuel Zamir, Head, Department of Statistics, The Hebrew University of Jerusalem, Israel.
- Prof Shubhashis Gangopadhyay, Research Director, India Development Foundation, India.
- Prof S Deman, Hon. Director Centre for Economics & Finance, London and CURaj, India.
- Prof T Parthasarathy, Indian Statistical Institute, Chennai, India.
- Prof TES Raghavan, Department of Statistics & Mathematics, University of Illinois, USA.
- Prof Yair Tauman, BTW Professor, Dean, Arison School of Business, SUNY, Stony Brook, USA and Recanati School of Business, Tel Aviv, Israel.

Inviting Papers

Research papers are invited from faculty and researchers in Game Theory, economists, statisticians, mathematicians, financial modelers and others who use or work in game theory, on the topics (but not limited to) listed below.

- **Advances in Game Theory:** Cooperative, Non-Cooperative, Dynamic Games, Foundational Issues in Game Theory, Epistemic Logics, Inductive Game Theory.
- **Game Theory and Money, Finance, Investment and Insurance:** Currency War & Ideal Money, Trading Strategies, Asset Pricing, Mergers & Acquisitions, Investment Decisions Under Uncertainty, Market Structure, Signaling Theory, Bankruptcy, Risk Management Strategies With Derivatives, etc.
- **Game Theory and Economics Applications:** Development: Land Acquisition, Rural Development - Landlords & Tenants, Fragmented Markets & Credit Management, Micro-Financing, Environment & Development, etc.
- **Game Theory and Information and Risk:** Uncertainty and Information, Cheap Talk Models, Imperfect Information, Sharing of Risk, Paying to Reduce Risk, Manipulating Risk, Asymmetric Information, Risky and Safe Choices in Zero Sum Games, Implicit Contracts and Risk Aversion, Shapley Value.
- **Game Theoretical Applications in Operations Research:** Mixed Vs Behavioral Strategies, Optimization Problems, First Order Conditions, Lagrange Method, Uncertainty and Chance, Algorithms for Finding the Nucleolus of Structured Cooperative Games.
- **Mathematical Models and Risk:** Probability Aspects of Risk, Markov Processes, Weighted Risk, Risk Premium, Risk Management Strategies, Operations & Supply Chain Management.
- **Game Theory and Negotiations:** Currency War & Ideal Money, Trade Negotiations, Job Negotiations, Negotiating Pay Rise, Debt Negotiations, Negotiations and Group Decisions.
- **Marketing & Accounting Applications:** Pricing and Advertisement Decisions, Shelf Space Allocations, Differential Games in Marketing, Edgeworth Promotional Cycles in the Loyal / Switcher Game, Strategic Implications of Long-Run Effects of Promotions on Channel Decisions, Distribution of Services and Role of Agent, Unified Accounting, Environment & Compliance.
- **Game Theory and the Unification of Behavioral Sciences:** Search Games and Applications to Animal Behavior, Corruption, Limitations of the Decision Maker and Departure from Rationality, Biases and Heuristics, Cognitive Limitations, Prospect Theory and Framing Effects, Mental Accounting, Preference Reversals, Experience Weighted Attraction (EWA), Weighted Fictitious Play (WFP).

Submission Guidelines

Papers should not exceed 20 pages. Times New Roman Font 12 with 1.5 spacing to be followed. Author(s) details viz., name, affiliated institution with address, e-mail and phone number to be clearly indicated on the first page of the paper. The full papers should be submitted by **15 October 2011**. Acceptance will be conveyed by **30 October 2011**. Accepted papers will appear in the Conference Volume and will be given at the time of Registration.

International Coordinators / Submissions

Theory & Methodology (OR & Mathematics): Prof Mamoru Kaneko (Institute of Policy and Planning Sciences, University of Tsukuba, Ibaraki, 305-8573, Japan, email: kaneko@sk.tsukuba.ac.jp)

Mathematics & OR: Prof Pradeep Dubey (Leading Professor Game Theory, SUNY, Stony Brook, USA, email: pradeepk.dubey@yahoo.com)

Finance, Insurance Management & Others: Prof Praveen Kumar (El Paso Corporation - JP Morgan Chase Bank Professor, Chair, Department of Finance, Executive Director, Global Energy Management Institute, CT Bauer College of Business, University of Houston, email: pkumar@uh.edu)

General: Prof Shubhashis Gangopadhyay (Director, India Development Foundation, Malmsten Guest Professor, University of Gothenburg, India / Sweden, email: shubgang@gmail.com)

Applications: Development, Land Acquisition, Real Estate, Mergers & Acquisitions
Prof S Deman (Hon Director, Centre for Economics & Finance, London, and Visiting Professor, Central University of Rajasthan (UK / India), email: s_deman2000@yahoo.co.uk)

A copy of all paper submissions must be marked to Dr Jayasree Raveendran (email: rjayasree@ipeindia.org) to enable tracking in technical sessions.

All submissions within India must be marked to Prof T Parthasarathy, Indian Statistical Institute, Chennai, email: pacha14@yahoo.com