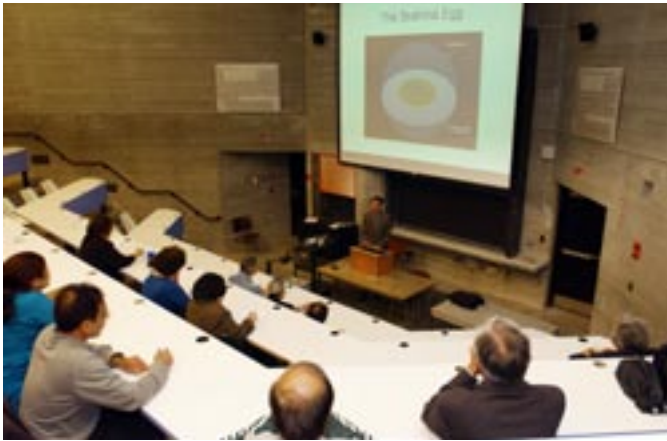




# Bhagirathi



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Cornell mathematician Dr. Richard Thompson spoke at the Third Annual Patanjali Lecture Series at UMass Dartmouth in May of 2004.



## Ancient Sanskrit text reveals surprising depth of cosmological knowledge

The Center for Indic Studies presented Dr. Richard Thompson, an expert on probability theory and mathematical modeling, as the speaker for two lectures.

Thompson, a Ph.D. in mathematics from Cornell University, is a prolific author of many peer-reviewed articles on mathematical and computer modeling. He has written several books, including *Computer Simulations of Self-Organization in Biological Systems*; *Forbidden Archeology: The Hidden History of the Human Race*; and *Mysteries of the Sacred Universe*.

Dr. Thompson gave a well-received lecture on "The Encoding of Astronomical Knowledge in an Ancient Sanskrit Text" in May of 2004.

"From the flat earth to the Sun's chariot, traditional spiritual texts seem wedded to outmoded cosmologies that show, at best, the scientific limitations of their authors," said Dr. Thompson. One of the classical texts in India, it reveals unex-

pected depths of knowledge in ancient cosmology. This knowledge is encoded in the form of multiple interpretations of the text, each of which is supported by a series of textual statements.

Dr. Thompson presented a more technical lecture in the Patanjali series: "An Accurate Map of the Solar System in an Ancient Sanskrit Text."

In this lecture, Dr. Thompson described a system of cosmic geography based on the *Bhagavata Purana*, using ring-shaped features labeled as oceans and islands.

"This system looks like an elaborate account of a flat earth, with precise dimensions of geographical features given in terms of a unit of distance called the *yojana*. However, when these dimensions are carefully examined, they reveal a map of the solar system out to Uranus, with accurate values for the closest and greatest distance of each planet from the earth."

## Upcoming Events

### March 2005

Premiere screening of a documentary on *The Color of Spring—Holi*, a festival of color celebrated throughout India.

### May 2005

Patanjali Lecture sponsored by Indic Center faculty and given by a prominent scholar on a topic intrinsic to Indic thoughts and culture and relevant to

### *Bhagirathi*

Our newsletter's name comes from that commonly used for the holy river Ganges in India, which is called *Bhagirathi* after King Bhagirath, whose efforts for peace succeeded in bringing Ganga through the Himalayan mountains to the plains of India. As is true for the holy Ganga waters, we hope *Bhagirathi* will flow with information and knowledge for the betterment of humanity.



## India's Foreign Ministry Secretary, C. M. Bhandari, addresses UMass Dartmouth Indic Studies Seminar

The Center for Indic Studies hosted a special seminar conducted by Mr. C. M. Bhandari, the Joint Secretary for the Ministry of External Affairs in the federal government of India. Bhandari was returning from South America, where he represented India at the G-15 Economic Summit. Bhandari has been a brilliant scholar of science and philosophy throughout his career. He joined the Indian diplomatic service in 1974, serving in Bangkok, Oslo, Lagos, and Canberra. He also served as India's Ambassador to Cambodia, and as Consul General in Toronto. Throughout his career in the Indian public service, Bhandari has held several important assignments at the Ministry of External Affairs. Currently he supervises India's foreign policy relations in multilateral organizations like the United Nations and the World Trade Organization. Bhandari is author of three books, *Saving Angkor*, 1996; *A Journey to Heaven*, 1998; and *Yoga Shakti*, 2002.

In March, Secretary Bhandari gave a lecture at UMass Dartmouth which addressed the politics and realities associated with business outsourcing by companies in the United States and other nations.

In his opening remarks, Bhandari outlined India's remarkable growth in many sectors, including automobiles (36.5% increase, with \$2 billion in exports), Pharmaceuticals (20% growth rate, with

\$2.5 billion in exports), healthcare (1.3 million medical travelers to India last year, \$1 billion), and biotechnology. He pointed out India's strength in education and business culture, and the current wave of economic liberalization as major reasons for these growths.

He said that thousands of businesses in India have closed because they were rendered uncompetitive after the opening of the Indian economy in 1991. For example, India's traditional textile sector employed hundreds of thousands of people. Today, state-of-the-art textile mills with gigantic technological capacity have replaced the older, less productive mills, thus eliminating thousands of jobs. As the world increasingly moves toward globalization in a free and fair market economy, business outsourcing is more popular than ever and India has become a prime location for that activity.

He narrated a story from his own experience as Indian Consul General in Toronto to emphasize the point that economic

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**Today, all the major auto manufacturers of the world, including Ford, General Motors, Mercedes and others, buy auto components from India.**

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globalization is not just one-way traffic:

"I am reminded of a paper pulp mill in the New Brunswick province of Canada in the 1920s that had become economically unviable by the early 1970s. The government invested several million dollars in technology upgrades but could not revive it. It was closed in the early 1990s. The 300 workers were laid off, dependent on social security. The Birlas from India looked at it and decided to convert it into a rayon pulp mill. They needed the pulp for their factories in India, Indonesia, and Thailand. The plant is now running full capacity and the entire

work force has been reemployed. A mill that had become obsolete for paper pulp for the North American market could be made competitive for a different product for the Asian market."

He said the moral of the story is not to play politics with principles of economy. "We in India suffered for over two decades because of over protection."

He further made the following remarks: "We have to create win-win situations for all stake holders—governments, producers, financiers, employees, and above all, the consumers.

"The high tariff rates protected Indian industry from outside competition, but rendered it outdated, inefficient and complacent. The consumers had to pay a much higher price for a relatively sub-standard product.

"For decades, the Indian public had to wait for years to buy a sub-standard car and pay a high price for the inefficiency of the industry. Today, the consumer can get anything off the shelf and at very attractive prices."

Bhandari said that business out-sourcing resembles purchasing components. Today, all the major auto manufacturers of the world, including Ford, General Motors, Mercedes and others, buy auto components from India. Why should anyone treat the BPO (Business Process Outsourcing) any differently? If they do, they would only be rendering their businesses noncompetitive.

"The BPO revolution has spread in India because it is not capital intensive. It is knowledge intensive and there is no lack of knowledge in India," said Bhandari. "In the past, India did not catch up with the rest of the world in industrialization because it lacked capital and initially even the technology to be competitive."

Introducing Bhandari, Dr. Louis Esposito, vice chancellor for academic affairs at UMass Dartmouth, said, "There is major interest in this country to learn about India. The two million Indian-Americans, and their business connections to India,

play a significant role in American society.” At the end of the seminar, he added, “This was a very informative seminar. I learned a lot about the Indian economy and business environment.”

Dr. Bal Ram Singh concluded by saying,

“In the 56 years since its independence, India has developed abundant technology and also sufficient capital resources. It has therefore been possible for India to exercise required changes in its economy in a bid to become internationally more

competitive. Given the strategic alliance being forged between India and the United States based on their common interest and value of democracy, it is important for the two nations to join hands in creating opportunities for their people.”

## PEARLS FROM INDIC CULTURE

Startin

not to exceed 700 words—from our members and readers. Please email articles to [bsingh@umassd.edu](mailto:bsingh@umassd.edu) 85 Old Westport Rd., North Dartmouth, Ma 02747 c/o either Dr. Bal Ram Singh or Dr. K. Srinagesh.

e are soliciting articles—

### On Teaching and Learning in Ancient India

By Prof. K. Srinagesh

There is a saying in India echoed from our ancient past. Like many Sanskrit sayings, it is crisp and esoteric. Maatha Pitru Guru Daiva—literally it means mother, father, teacher, God. It is not the words that are significant, it is the order in which these four words are joined. What does this order signify? It prescribes the order in which respect is due from a student. The mother takes the supreme place, next follow the father, the teacher and the god. Further, what is significant to us, it shows the place of god to be only next to the place of the teacher. This is not meant to belittle god; it is meant to prescribe that, in the order of respectability, the place of the teacher precedes the place of the god. Those who have taught in India and are now teaching here, know the difference; it is profound, shocking. But we have successfully absorbed the shock, while keeping this ancient



Indian ideal hidden in a dark closet of our minds.

Now let us take a quick look at teaching and learning vis-à-vis the student of ancient India. A very distant parallel to our schools and colleges in ancient India was what is known as the *gurukula*, literally meaning a community of students who took abode with the teacher. The children, at the age of seven or more, were taken by their parents to one such *gurukula* and left to be cared for, to be taught, and to be trained

under the guru's guardianship. The child, now becoming a part of the guru's family of students, studied whatever was considered important, serving concurrently the guru's family in whatever way required. There were no prescribed texts, though there were scriptures to be mastered which included such arts as archery, music, astrology medicine etc. There were no structured classes or homework, and, there was no prescribed fee or remuneration to the guru. The maintenance of such *gurukulas* was considered a privilege (rather than a burden and responsibility) by the local ruler and/or the local wealthy families.

The student learned from the guru as well as from fellow students in the prevailing homely but scholarly atmosphere. There were discussions and debates, not in the spirit of trouncing and exulting, but in the spirit of exploring and enlightening. The students learned from life as lived it was lived, which was considered as important as studying. This period in a student's life, referred to as

*brahmacharya*, extended for 12 years or more. In the next phase of life know as *grihastha*, students would return to their parents' home as adults ready to accept the responsibilities of family life.

#### QUESTIONS:

*Does this system exist in any form today in India?*

The system is still respected and often followed in the field of fine arts. Our greatest musicians and our greatest dancers are still trained by individual gurus. The discipline by such teachers is considered to be very rigorous, and uncompromising. Learning fine arts—particularly music and dancing—is yet to become common in the Indian schools and colleges.

*What is the prevailing form of education now in India?*

Education in schools and colleges is mostly similar to that in the West. This change from the traditional to the 'modern' form took place mostly during the British rule extending for more than 150 years, till 1947.





*Delegates at Karma Yoga Conference listen intently while Dr. Martha Doherty (above left) delivers a lecture at the Karma Yoga Conference, July 24, 2004 at UMass Dartmouth. (center) Graduate student Ghuncha Ambrin asks a question. (above right) Dr. Bal Ram Singh gives a lecture at the UMass Dartmouth faculty luncheon series, "Food as Science."*

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