

INSTITUTES AND CONSTITUENT COLLEGES

INSTITUTE OF SELF ORGANISING SYSTEMS AND BIOPHYSICS

The Institute is a purely research centre within the university system dedicated to pursue interdisciplinary research in newly emerging areas and to evolve an integrated vision of science. The current activities are in the areas of biophoton emission, quantum information, harmono-toxins, drug targeting, acoustic communication in Anurans, bio-diversity, conservation of amphibians in the eastern Himalayan belt, and nonlinear dynamics. The Institute admits students in M.Phil. and Ph.D. programmes. The Executive Council has directed the Institute not to admit new students. The Deans' Committee has recommended the transfer of faculty members of the Institute to the departments of their primary research interests.

Head: vacant

Faculty :

Professor : R.P.Bajpai, M.Sc.(Alig.), Ph.D.(Glasgow)
 Readers : Vinod Singh, M.Sc., Ph.D.(Kanpur)
 Satish Kumar, M.Sc. (BHU), Ph.D (Utkal)
 Debjani Roy M.Sc.(Gau.), Ph.D.(NEHU)

Student intake : a) Enrolment capacity : 5
 b) Actual Admission : Nil

Seminar/Workshop :

Attended :

Dr. R.P.Bajpai attended (i) a discussion group meeting at Vimal Research Society, Rajkot and gave an invited talk entitled "Biophoton Ek Parichay" in April 1999. (ii) The International Symposium on Biophotons in Moscow, Russia from September 5-12, 1999 and gave an invited talk entitled "Implications of Biophotons and their Coherent Nature".

Dr. Vinod Singh attended the International meeting held at St. Louis Missouri during December 6-10, 1999. and delivered an invited lecture entitled "Expression, Purification and characterization of Genetically Engineered proteins"

Dr. Debjani Roy delivered an invited lecture at the 26th International Ethological Conference "Mate Selection by Female Frogs" held at Bangalore in August 1999.

Dr Satish Kumar attended the National Workshop on Non linear Dynamics at Indian Institute of Technology, Kharagpur from February 29- March 3, 2000 and presented a paper entitled " Hopf Bifurcation in a harvested one-predator two-prey model: An analytical approach"

Publications:

Bajpai, R.P.1999. Coherent Nature of the Radiation Emitted in Delayed Luminescence of Leaves, *Journal of Theoretical Biology* 198: 287-299.

Roy, D. 1999 Acoustic Communication: A Guiding Factor in Anuran Social Structure and Mate Selection. In S. Sridhara Ed. *Advances in Ethology*. Blackwell Science. 34-41.

Roy, D. and S Chaudhury. 1999 Prioritisation of biodiversity rich sites in the State of Meghalaya. In B. Kharbuli, D. Syiem, H. Kayeng ed. *Biodiversity Conservation*. 159 - 163.

Roy, D. The crocodile salamanders of eastern Himalayas. *Himalayan Pariyavaran*. 2000. 6: 133-135.

Singh, Vinod and Singh, RC. 1999. Modification of ovine luteinizing hormone subunits with SMPT and its effect on subunit recombination, immunological and steroidogenic activity, *Indian J. Exp. Biol.*, 37: 849-858.

Singh, Vinod, Singh, RC, Dubey, RK and Alam, A. 1999. Purification of gelonin from the seeds of *gelonium multiflorum* and characterization, *Indian J. Biochem. & Biophys.*, 36: 258-265.

Singh, Vinod, Singh, RC and Dubey, RK. 1999. Significance of charge on lysine residue of ovine luteinizing hormone on immunological and biological properties of the hormone, *Indian J. Biochem. & Biophys.*, 36: 398-404.

Singh, Vinod and Singh, RC. 2000. Current status of ribosome-inactivating proteins: A mini review, *Indian J. Biochem. & Biophys.*, 37: 1-5.

Thrust Area of Research: Holistic View of Biology, Non linear Dynamics, Biodiversity, Immunology

Research Programme/Project

DST sponsored project "Origin, Characteristics and Applications of Ultraweak photon emission" (Principal Investigator R.P. Bajpai)

WWF-India project "Status report for the National Parks and Sanctuaries of Meghalaya" (Principal Investigator. Debjani Roy In Collaboration with Sri Aurobindo Institute of Indian Culture, Shillong)

WWF-India project "Studies on Habitat, Ecology and Breeding Biology of the Himalayan Newt for their in situ conservation" (Principal Investigator Debjani Roy In Collaboration with Sri Aurobindo Institute of Indian Culture, Shillong)

DST-SERC project "Timing of Development of the Middle ear in *Rana limnocharis* and acoustically mediated behaviour from metamorphosis to sexual maturity" (Principal Investigator Debjani Roy)

Other Activities:

Prof. R.P. Bajpai is an executive member of the International Institute of Biophysics e.V. Germany and also a member of the Evaluation Committee of SAP (Special Assistance Programme) to the Department of Biophysics and Crystallography, University of Madras.

Dr. Debjani Roy was elected for the 3rd term as the Executive Body Member of the Ethological Society of India for a period of 3 years from 2000 to 2002.

The magazine Science (USA) has covered the work of Dr. Debjani Roy in "Behaviourists Listen In As Animals Call and Croak" in 1999. Science 285: 1480-1481.

Dr. Vinod Singh delivered six lectures at the Department of Biological Sciences, Wichita State University, Wichita, Kansas during December 1999 to January 2000.

PACHHUNGA UNIVERSITY COLLEGE

Pachhunga University College the oldest College in Mizoram was founded in 1958 and is now 41 years old. It was initially a Private College and in 1967 was made a Government College under the Composite State of Assam. It remained a Government College till 1979. When it was taken over as a Constituent College of North Eastern Hill University, with a view to making it a pace-setting institution in the region. This is the Premier College in the State of Mizoram offering Pass & Honours undergraduate courses in eighteen subjects of Sciences, Arts and Commerce.

The College occupies a land area of 730 acres with trees of many species. It is ideally located about three kilometres from the heart of the Aizawl town, and well connected by the public transport system.

Courses of Graduate Studies :

The pattern of courses in this College falls mainly into three broad categories : Arts, Sciences and Commerce. The College ran +2 level Arts, Sciences and Commerce courses till 1996 and since they have been dropped, as the +2 level in the State is shifted to Higher Secondary Schools.

At present the College offers Undergraduate Courses in Arts, Science and Commerce. Under the Arts Courses, subject covered are Literature (English/Mizo), History and Philosophy. Under Social Sciences come Economics, Sociology, Political Sciences, Geography, Education and Psychology. Under the Science stream, Physics, Chemistry, Mathematics, Geology, Botany, Zoology and Statistics are offered. Commerce subjects include Banking, Computer Science, Accountancy and Economics. It is noteworthy to mention that Honours level courses are offered in all the existing subjects in Arts, Sciences and Commerce, only in this College in Mizoram. The subject combination in Arts is not restricted and students are given wide options. In the Science stream subject combinations are restricted due to obvious reasons.

Enrolment of Students :

During the last five years the total enrolment of students per year is over 1200. The number of students in the Science stream per year on the average is over 600. The enrolment in the Arts stream is gradually increasing, although it is also being introduced in a number of Colleges of Mizoram. The Commerce stream in the College attracts only a few students and the enrolment remains the same over the years. Ninety five percent of the students belong to scheduled tribe and are from backward, and border areas of the State. The ratio of female students to male students is 1 : 3.

The admission of Students to the different courses is generally based on merit. The minimum requirement for admission to Honours course in the degree level is 45% marks in the Higher Secondary Examination in the subject concerned. Each Science Department can accommodate 20 students in Honours/Major courses.

Performance of the Students :

Pachhunga University College has contributed immensely for the development of Higher Education particularly the Science Education in Mizoram. Till recently the College was the only institute providing +2 level course in Science to the students, who after completing the course entered the professional education namely Engineering, Medicine and Agriculture, and Veterinary. The graduates passed out from this College in Arts, Sciences and Commerce are of high quality who joined civil/administrative services, teaching and other jobs. This College is an important feeder institution for the post-graduate programmes in Shillong and Aizawl Campuses of the University.

Over the last few years the pass percentage of the students in the University Examination at the degree level Honours courses have been increasing.

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