



Avian physiology: From behavior to molecular biology (Course Code : 194017H01)

Overview

Avian world has been evolved with many unique characteristics, most strikingly seen in generous gifts of feathers and wings with powerful flight muscles. Thus, the life of birds offers us unique opportunities to understand ways for nature-nurture relationship in the wild. Indian subcontinent harbors more than 1200 species of birds and Mizoram a North East state of India has been documented with the presence of more than 900 bird species and is home for a large number of endemic and endangered bird species. In this century, bird studies have been and are being pursued at several institutes and universities as well as the non-governmental and government organization. A general inspiration for avian studies has been largely from the pioneer work done by Dr. Salim Ali.

In recent times, there has been consistent efforts to train and motivate young brains to pursue avian research throughout the world. Considering that Indian avifauna is rich with large number of endemic and endangered bird species, a greater need is felt for increased research efforts. We need to have a much stronger base of scientific research on birds if we want to protect our endangered species. Here we take an opportunity initiated by Ministry of Human Resource Development, New Delhi to fund a program under Global Initiative of Academic Network (GIAN) program. We believe with the expertise within the Indian and learned foreign faculty we shall be able to motivate our young researchers to pursue their career in the area of avian biology research and will also generate awareness for bird conservation.



Objectives

The primary objectives of the course are as follows:

- i) Exposing participants to the diversity of avian fauna within the country with special reference to North-East India.
- ii) Providing scientific knowledge of various physiological mechanisms of avian system
- iii) Providing exposure to practical problems and their solutions, through case studies and live projects
- iv) Conservation strategies

Teaching Faculty

Prof. Barbara Helm (Foreign Faculty)

Professor for Biological Rhythms of Natural Organisms,
GELIFES, University of Groningen, Netherlands
Visiting Professor, BAHCM, University of Glasgow

Dr. Amit Kumar Trivedi (Host faculty)

Assistant Professor
Department of Zoology
Mizoram University
Aizawl, Mizoram

Course Details (October 5-11, 2020)

Modules

Day 1	
Lecture 1:	Birds of India: Perceptions of priority issues in the conservation of biodiversity and ecosystems in India
Lecture 2:	European birds, classical study models, and about northern-subtropical contrasts
Tutorial 1:	Bird walk: Study of bird diversity within the University campus
Day 2	
Lecture 3:	Anatomy and physiology of birds
Lecture 4:	Timekeeping in Birds: Daily and Annual system
Tutorial 2:	Laparotomy, molt and plumage coloration and collection of behavioural data and analysis
Tutorial 3	Blood collection and hormone assay
Day 3	
Lecture 5:	Avian Migration and stopover physiology
Lecture 6	Bird clock: A complex system
Lecture 7:	Life history state dependent physiology in birds
Tutorial 4:	Primer designing, PCR, Gel electrophoresis
Day 4	
Lecture 8	Evolution of sky islands and Shola birds
Lecture 9	Climate change and impact on seasonal Biology
Lecture 10	Communication in birds: Song and Call
Tutorial 5	Gene expression studies using real time PCR
Day 5	
Lecture 11	Seasonality in birds
Lecture 12	Genetic modulation of energy metabolism in birds
Lecture 13	Effect of urbanization on bird physiology
Tutorial 6	Capturing of birds using mist nets
Day 6	
	Field Trip
Day 7	
	Final Evaluation

Who can attend:

Post graduate students, research scholars, young faculty and registered NGO members working in the area of bird conservation

Participation Fee:

Participants from abroad: USD (\$) 500

Indian Faculty/Scientists: INR 2000

Indian Students: INR 1500

Industry Participants/Registered NGO members: 4000

The above fee includes all instructional materials, computer use for tutorials, and assignments, laboratory consumables, tea and working lunch. The participants will be provided accommodation on payment basis.

Course Coordinator

Dr. Amit Kumar Trivedi

Assistant Professor

Department of Zoology

Mizoram University

Aizawl, Mizoram

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Hot to Apply

Register yourself on GIAN portal (<https://gian.iitkgp.ac.in>)

Select the course “Avian physiology: From behavior to molecular Biology.

Fill the registration form and pay course fee by RTGS.

Fill registration form and send scan copy to coordinator (amittrivedi9@gmail.com)



REGISTRATION FORM

(October 05-11, 2020)

1. GIAN Registration/Application Number: _____
2. Full Name: _____
3. Date of Birth: _____ Category (SC/ST/OBC/GEN) _____
4. Participation type (Industry/Academic/Student): _____
5. Qualification/Degree Programme: _____
6. Organization: _____

Paste your
soft copy of
recent
photograph

7. Address: _____

8. E-mail ID: _____ Mobile No.: _____

9. Fee Detail:

Transaction No. (e-transfer/RTGS/NEFT): _____ Date: _____ Amount: _____

10. Accommodation Required: Yes/No: _____

Place : _____

Date : _____

Signature of the Applicant: _____

*Bank details for RTGS/NEFT transfer
Account Name : Amit Kumar Trivedi
Bank Name : United Bank of India
Account Number : 1548050001878
Account type: Current account
IFSC Code : UTBI0MZUH61
Branch : Mizoram university branch*