

## TEACHER'S ACTIVITY REPORT 2016 - 2021

**FACULTY:**

Science

**DEPARTMENT/ COMMITTEE**

Environmental Sciences

**IQAC ACTIVITY No:**

SVC 2019-20 EVS RS 3

**NAME OF THE ACTIVITY:**

**DATE**

19 – 24 August 2019

**FACULTY**

Science

**DEPARTMENT/COMMITTEE**

Environmental Sciences

**COORDINATOR NAME**

Dr. Robin Suyesh

**TIME:**

**VENUE**

Turku, Finland

**NUMBER OF PARTICIPANTS**

1

**NATURE: Outdoor/Indoor**

Outdoor

**SUPPORT/ASSISTANCE:**

Environmental Sciences, Sri Venkateswara College

BRIEF INFORMATION ABOUT THE ACTIVITY (CRITERION NO. - II,III and VII):

TOPIC/SUBJECT OF THE ACTIVITY

**Participation in European Society for Evolutionary Biology Conference (ESEB), University of Turku, Finland**

OBJECTIVES

Scientific talks, workshop and Presentation

METHODOLOGY

Submission of Abstract by Students

OUTCOMES

Students learned new insights on various aspects of evolutionary biology from many eminent speaker of multiple domains

Interaction with peer and scholars

**PROOFS & DOCUMENTS ATTACHED (Tick mark the proofs attached):**

Notice & Letters

**Student list of participation**

**Activity report**

**Photos**

Feedback form

**Feedback analysis**

News clip with details

Certificate

Any other

IQAC Document No:

Criterion No:

Metric No:

Departmental file no

IQAC file No;

NAME OF TEACHER & SIGNATURE

NAME OF HEAD/ COMMITTEE INCHARGE & SIGNATURE

IQAC COORDINATOR (SEAL & SIGNATURE)

For Reference

Criterion I

Curricular Aspects (planning & Implementation)

Criterion II

Teaching Learning & Evaluation

Criterion III

Research, Innovations & Extension

Criterion IV

Learning Resources and Infrastructure

Criterion V

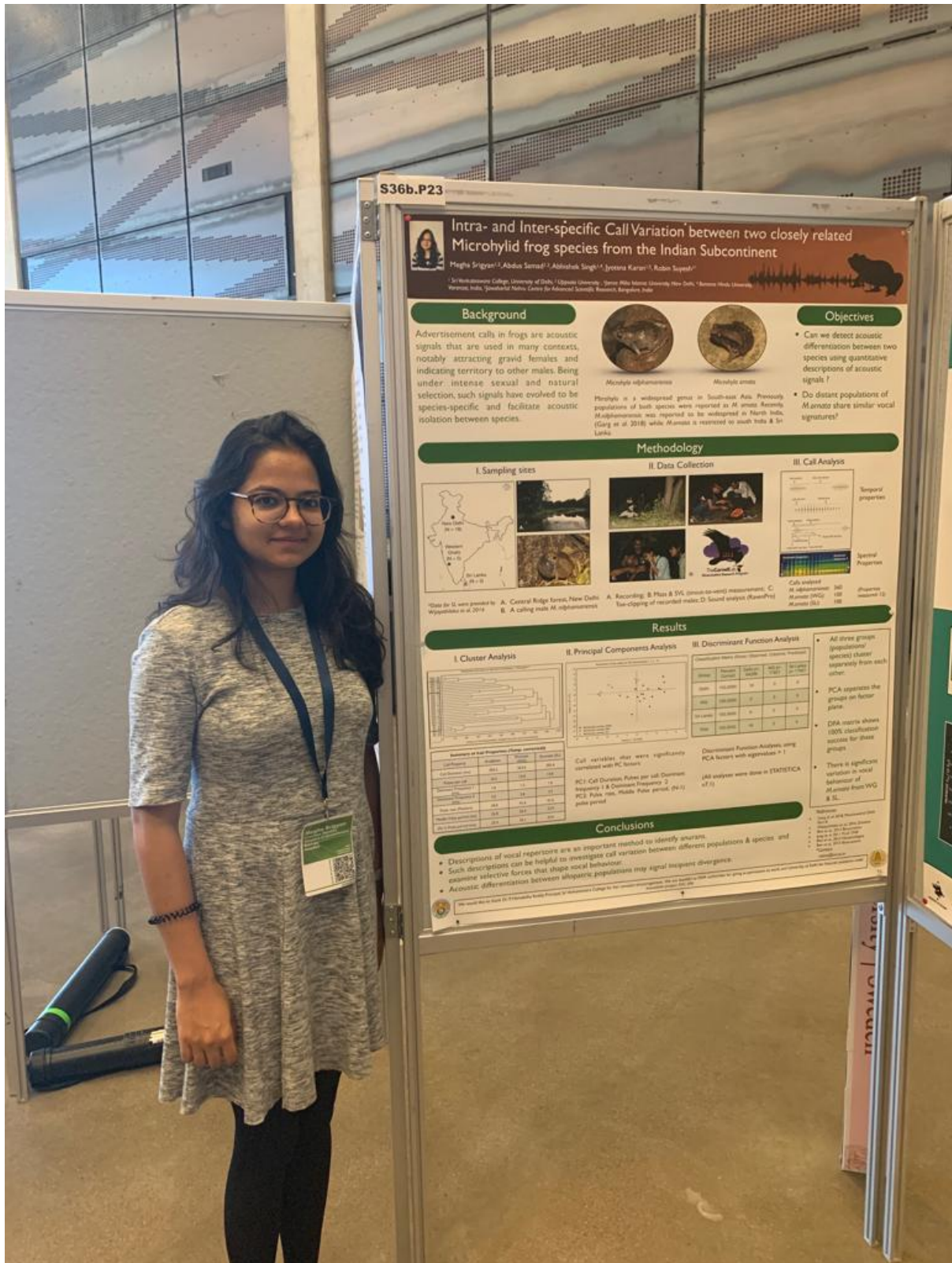
Student Support & Progression

Criterion VI

Governance

Criterion VII

Institutional Values & Best Practices



S36b.P23

# Intra- and Inter-specific Call Variation between two closely related Microhylid frog species from the Indian Subcontinent

Megha Srigrani<sup>1,2</sup>, Abdus Samad<sup>3</sup>, Abhishek Singh<sup>4</sup>, Jyotsna Karan<sup>1,5</sup>, Robin Suresh<sup>1,6</sup><sup>1</sup> Sri Venkateswara College, University of Delhi, <sup>2</sup> Uppala University, <sup>3</sup> Jamia Millia Islamia University, New Delhi, <sup>4</sup> Banarus Hindu University, Varanasi, India, <sup>5</sup> Jawahar Institute for Advanced Scientific Research, Bangalore, India

## Background

Advertisement calls in frogs are acoustic signals that are used in many contexts, notably attracting gravid females and indicating territory to other males. Being under intense sexual and natural selection, such signals have evolved to be species-specific and facilitate acoustic isolation between species.



Microhyla nilphamariensis



Microhyla ornata

Microhyla is a widespread genus in South-east Asia. Previously, populations of both species were reported as *M. ornata*. Recently, *M. nilphamariensis* was reported to be widespread in North India, (Garg et al. 2018) while *M. ornata* is restricted to south India & Sri Lanka.

## Objectives

- Can we detect acoustic differentiation between two species using quantitative descriptions of acoustic signals?
- Do distant populations of *M. ornata* share similar vocal signatures?

## Methodology

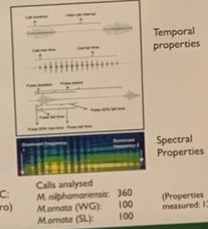
### I. Sampling sites



### II. Data Collection



### III. Call Analysis



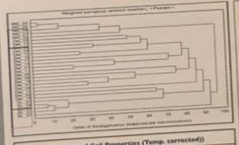
\*Data for SL were provided by Vijayashakha et al. 2016

A. Central Ridge forest, New Delhi  
B. A calling male *M. nilphamariensis*

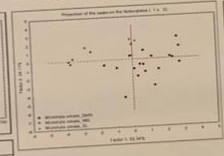
A. Recording; B. Mass & SVL (snout-to-vent) measurement; C. Toe-clipping of recorded males; D. Sound analysis (RavenPro)

## Results

### I. Cluster Analysis



### II. Principal Components Analysis



### III. Discriminant Function Analysis

Group	Percent Correct	Delhi pri-64296	WG pri-17857	Sri Lanka pri-17857
Delhi	100.0000	18	0	0
WG	100.0000	0	5	0
Sri Lanka	100.0000	0	0	5
Total	100.0000	18	5	5

- All three groups (populations/species) cluster separately from each other.

- PCA separates the groups on factor plane.

- DFA matrix shows 100% classification success for these groups.

- There is significant variation in vocal behaviour of *M. ornata* from WG & SL.

## Conclusions

- Descriptions of vocal repertoire are an important method to identify anurans.
- Such descriptions can be helpful to investigate call variation between different populations & species and examine selective forces that shape vocal behaviour.
- Acoustic differentiation between allopatric populations may signal incipient divergence.

References  
 Garg et al. 2018, Plochondral Druk  
 Pan B  
 Vijayashakha et al. 2016, Zootaxa  
 Bas et al. 2013, Bioacoustics  
 Jang et al. 2011, PLoS ONE  
 Bas et al. 2013, Bioacoustics  
 Bas et al. 2013, Bioacoustics  
 \*Contact: robin@vsnl.net

We would like to thank Dr. P. Hemadri Reddy, Principal, Sri Venkateswara College for her constant encouragement. We are thankful to DDA authorities for giving us permission to work, and University of Delhi for financial assistance under Innovation project SNC-304.



**SRI VENKATESWARA COLLEGE**  
(University of Delhi)

**Internal Quality Assurance Cell**

**Chairperson**

Prof C. Sheela Reddy  
Principal  
Sri Venkateswara College

**IQAC Coordinator**

Dr. N. Latha  
Department of Biochemistry

**External Members**

Prof Debi P Sarkar  
Department of Biochemistry  
University of Delhi South  
Campus

Prof Alo Nag  
University of Delhi South  
Campus

Dr. Gitanjali Yadav  
NIPGR, Delhi

**Internal Members**

Dr. Meenakshi Bharat  
Department of English

Dr. Lalitha Josyula  
Department of Electronics

Dr. Namita Pandey  
Department of Political  
Science

Dr. A. K. Chaudhary  
Department of Physics

Dr. K.C. Singh  
Department of Physics

Dr. Swarn Singh  
Department of Mathematics

Dr. Neeraj Sahay  
Department of History

Dr. Vartika Mathur  
Department of Zoology

Dr. Shruti Mathur  
Department of Commerce

Dr. Padma Priyadarshini  
Department of Sociology

Dr. Nimisha Sinha  
Department of Biochemistry

Shri D. Venkat Ramana  
A.O( I/C)

This is to certify that the Activity report (Teacher/Department /Society/Association)  
has been submitted for documentation to IQAC, Sri Venkateswara College,  
University of Delhi.

*N. Latha*

IQAC Coordinator  
Sri Venkateswara College  
**Coordinator, IQAC**  
**Sri Venkateswara College**  
**(University of Delhi)**  
**Dhaura Kuan, New Delhi-110021**

*C. Sheela Reddy*  
PRINCIPAL

Sri Venkateswara College  
**PRINCIPAL**  
**Sri Venkateswara College**  
**(University of Delhi)**  
**Dhaura Kuan, New Delhi-110021**

Website : [www.svc.ac.in](http://www.svc.ac.in)

E-mail : [iqac@svc.ac.in](mailto:iqac@svc.ac.in)