



The International Society for Microbial Ecology



**Sri Venkateswara College, University of Delhi
& PhiXgen Pvt. Ltd. India**

Brief Report

On

International E-conference and Pre-Conference Hands on
Workshop on

*“Health and Research in Current Scenario:
with Special Emphasis on Covid-19 Virus Genomics and
Pathogenicity”*

(July 14-17, 2020)

Sponsored by

**International Society for Microbial Ecology
(ISME)**

The four-day ISME sponsored International E-conference and Hands on Workshop on “**Health and Research in Current Scenario: with Special Emphasis on Covid-19 Virus Genomics and Pathogenicity**” was organized jointly by **Sri Venkateswara College**, University of Delhi and **PhiXgen Pvt. Ltd.**, India during 14th-17th July 2020 (e-Abstract Book attached). Pre-conference Workshop was held from 14th-16th July 2020 where various bioinformatics tools were taught and familiarized to students during hands-on session. This workshop was organized with the motive to upskill young minds for students who are keen on learning Bioinformatics and applying its knowledge in the fight against COVID-19 virus and other such pathogens which threaten human health. Whereas, e-conference was conducted on 17th July, 2020 with seven eminent speakers.

The conference touched on subjects of Epidemiology, Diagnosis, Detection Methods, Bioinformatics tools, Treatments, and elucidated ways to sustain a good mental health during these crucial times. The conference also provided a platform to researchers and undergraduate students to present their findings and review their works in the form of an E-Poster Presentation Competition with broad themes like- Health and Disease Management; Environmental Issues and World of Microbes and Innovative Research Ideas where talented minds can showcase their thoughts as E-posters.

During this pandemic, e-platform (Zoom Pro) was used as a mean of online conducting workshop sessions. Overall, we got 198 registrations for workshop and 414 registrations for the conference. Here is the detailed program:



Hands on Pre-conference workshop on “Health and Research in Current Scenario: with Special Emphasis on Covid-19 Virus Genomics and Pathogenicity”

Day 1 (July 14, 2020)

PROGRAMME

Time	Event
MORNING SESSION	
10:30 AM-10:35 AM	Invocation
10:35 AM-10:40 AM	Welcome Address: Dr. Anita Verma -Convenor, Conference
10:40 AM-10:45 AM	Dr. S. Venkata Kumar, Ag. Principal About the Workshop and College
10:45 AM-11:00 AM	About ISME Dr. Edward Delong , ISME President
11:00 AM-11:40 AM	Prof Rup Lal, ISME Ambassador Talk: "Rapid Evolution of SARS-CoV-2 Genome and its Consequences"
EVENING SESSION	
03:00 PM-03:30 PM	Dr. Vipin Gupta, Director, PhiXgen Talk: "Basic of SARS-CoV-2 Genome Architecture and its Assemblage"
03:30 PM-05:30 PM	Hands on: Dr. Vipin Gupta SARS-CoV-2 Databases, Genome , Sequences ,Download

Day 2 (July 15, 2020)

Time	Event
MORNING SESSION	
10:30 AM-11:00 AM	Dr. Mona Singh, PhiXgen Pvt. Ltd. Talk: "Immunopathogenesis of COVID-19"
11:00 AM-01:00 PM	Hands on: Dr. Roshan Kumar, Post Graduate Department of Zoology, Magadh University Bodhgaya Talk: Phylogenetic Analysis: Deducing Phylogeny using Multiple Phylogenetic Tools
EVENING SESSION	
03:00 PM-03:30 PM	Dr. Utkarsh Sood, The Energy and Resources Institute (TERI), New Delhi Talk: "What are SNPs and Why are they important?"
03:30 PM-05:30 PM	Hands on: Dr. Utkarsh Sood SNP Calculation and Visualization

Day 3 (July 16, 2020)

Time	Event
MORNING SESSION	
10:30 AM-11:00 AM	Dr. Princy Hira, PhiXgen Pvt. Ltd. Talk: "Viral Genome Annotations"
11:00 AM-01:00 PM	Hands on: Dr. Princy Hira Complete Genome Annotations
EVENING SESSION	
03:00 PM-03:30 PM	Ms. Nirjara Singhvi, Department of Zoology, University of Delhi Talk: "Protein Modelling and Docking"
03:30 PM-05:30 PM	Hands on: Ms. Nirjara Singhvi Spike Protein Structure and its Docking with ACE 2
5:30 PM-6:00 PM	Vote of Thanks by Dr. Rajendra Phartyal, Co-Convenor Concluding Remarks and Certificate details- Dr. P. Jayaraj, Co-Convenor

The Pre-Conference Workshop was conducted with a total number of 198 participants (176 undergraduate, postgraduate and PhD students and 16 faculty) to gain knowledge and hands on training on various softwares available for analyzing SARS-CoV-2 genomes. The workshop started with inauguration ceremony in the presence of Prof. Rup Lal (ISME Ambassador) and Dr. S. Venkata Kumar (Principal, SVC and Patron, INSA workshop). Inauguration ceremony was followed by welcome address by Dr. Anita Verma, Convenor. She mentioned about the foundation of this workshop and conference. She appreciated the efforts made by Prof. Rup Lal and his team to organize this important workshop under the umbrella of ISME. This was followed by a brief note by Dr. S. Venkata Kumar where he introduced the participants to the workshop and college. He also emphasized on the importance of bioinformatics in this current pandemic situation.



Pic 1-2: Welcome address by Dr. Anita Verma, Convener and Dr. Venkata Kumar, Ag. Principal, Sri Venkateswara College, University of Delhi to the conference participants

Scientific program began with the motivational video message by Dr. Edward DeLong, ISME President. He introduced the mandate of International Society for Microbial Ecology (ISME) to propagate the exciting field of Microbial Ecology in the era of genomics and metagenomics. Students were really excited to after hear the inspiring recorded video of Dr. Edward DeLong. The session ended with the talk of Prof. Rup Lal, ISME Ambassador where he talked about the current COVID-19 pandemic and rapid evolution of SARS-CoV2 genomes. Further, he mentioned the aim and objective of this workshop and importance of computational biology in microbiology and introduced the basic work flow. He motivated students to start venturing into the computational tools that will become very important in coming years to do good science.



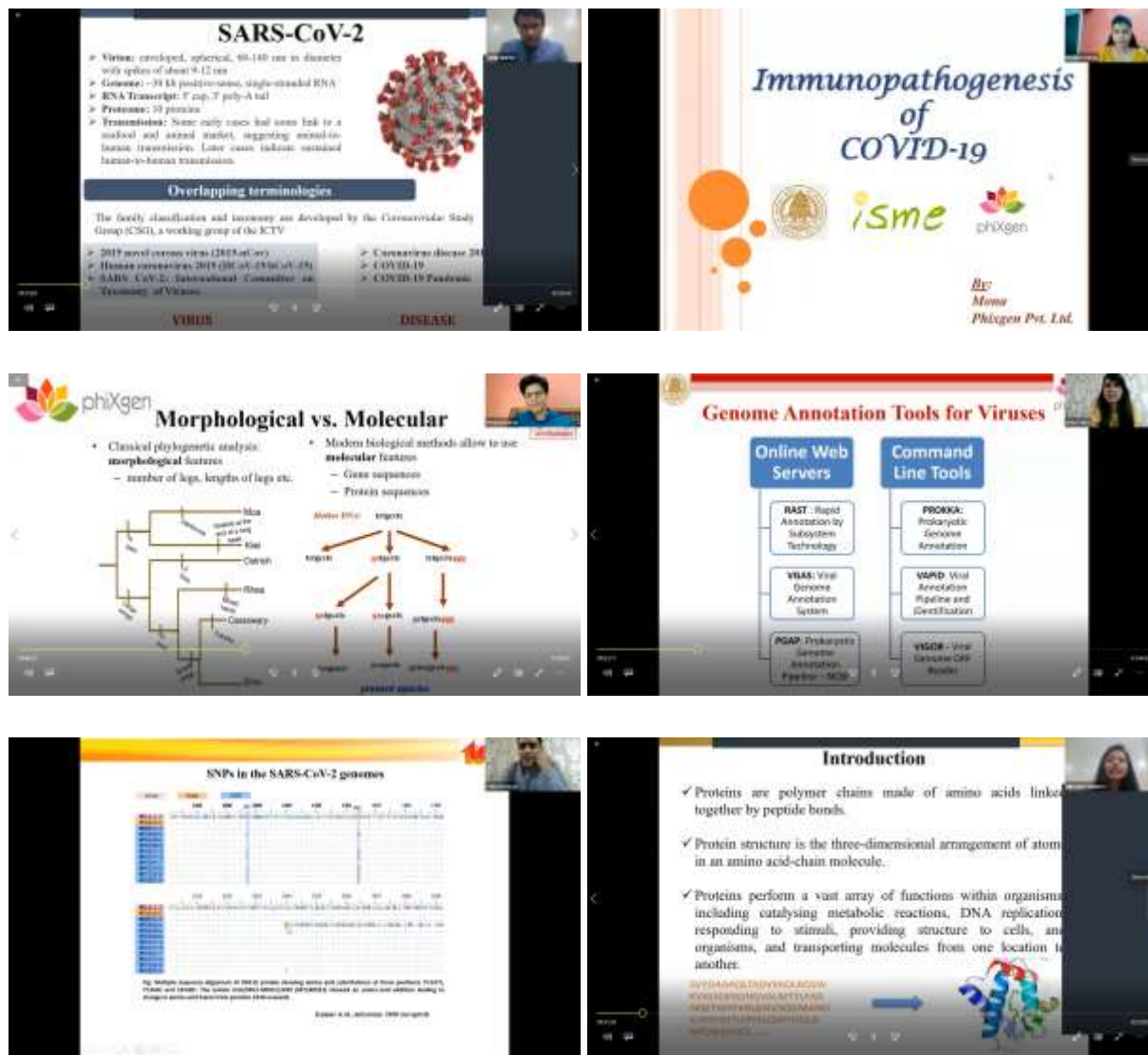
Pic 3-4: Recorded message from Dr. Edward Delong, ISME President and talk by Prof. Rup Lal, ISME Ambassador on evolution of SARS-CoV2 genomes.

The three-day workshop had talks and hands on sessions on various genomics and proteomics aspects of SARS-CoV2 Virus as mentioned in the program schedule. Hands on session began with the introductory session by **Dr. Vipin Gupta** (Director, Phixgen Pvt. Ltd.). He explained students about genomic, proteomic and interactomics databases for SARS-CoV2 like GISAID, NCBI, VIRALZONE, IntAct etc. Student were taught downloading multiple sequences and their alignment.

Session on second day of the workshop started with **Dr. Mona's** (Research Associate, PhiXgen Pvt. Ltd.) talk where she discussed the pathogenesis of SARSCoV 2 and the immunological responses inside host. She explained the critical role and judicial balance of immune system during the infection. Through the hands-on phylogeny of SARS-CoV-2, **Dr. Roshan Kumar** (Assistant Professor, Magadh University) explained the overall approach for constructing whole genome-based phylogeny. For this, he selected a dataset of 20 SARS-CoV-2 genome along with an outgroup of bat-sarscov. He also explained different models that are used in phylogeny. After constructing the tree, he made it visualize using the iTOL server. This was followed by **Dr. Princy Hira's** (Research Associate, PhiXgen Pvt. Ltd.) talk on viral genome annotations mainly focusing on using different bioinformatics tools to annotate and add scientific information to genomic sequences with specific examples of SARS-CoV2 reference genomes. The students performed the annotation exercise online simultaneously and were very enthusiastic to observe the exciting results.

Further, **Dr. Utkarsh Sood** (Research Associate, TERI) explained in detail about single nucleotide polymorphisms present in the genomic content of different organism in all domains of life. He spoke about striking differences between point mutation and SNPs. Also, he mentioned

about the recent SNP analysis been carried out on SARS-CoV2 genomes and how it is helping in its evolution. In the last session, **Ms. Nirjara Singhvi** introduced students to structural biology and its importance in data science. She explained about types of modelling and tools used in the process. Students were taught to predict protein structure of Spike and its validation using computation tools. Later they explored protein docking and simulation studies taking Spike and ACE2 as an example.



Pic 5-10: Talk and hands on session by resource persons (Dr. Vipin Gupta, Dr. Mona, Dr. Roshan Kumar, Dr. Princy Hira, Dr. Utkarsh Sood, Ms. Nirjara Singhvi) in pre-conference workshop dealing with viral genomics, immunopathology, phylogeny, annotations, SNPs and proteomics, respectively.

A healthy discussion between the participants and trainers for clearing all the doubts of the participants succeeded the sessions followed by vote of thanks. The workshop ended with the group photograph of organizers and the participants. This report also includes the participants statistics for the workshop (Annexure I).



Pic 11: Group photograph of organizers and participants at the end of the pre-conference workshop

Conference Report – 17th July, 2020



INTERNATIONAL E-CONFERENCE ON “Health and Research in Current Scenario: with Special Emphasis on COVID-19 Virus Genomics and Pathogenicity”

July, 17, 2020

PROGRAMME

Time	Event
10:00 AM-10:05 AM	Invocation
10:05 AM-10:10 AM	Welcome Address: Dr. Anita Verma Convenor, Conference
10:10 AM-10:20 AM	Dr. S. Venkata Kumar, Ag. Principal, Sri Venkateswara College About the College
10:20 AM-10:25 AM	Abstract Book Release
10:25 AM-10:50 AM	Dr. Edward Delong , ISME President ISME Introduction
10:50 AM-11:30 AM	Speaker 1: Prof. Rup Lal, ISME Ambassador The Energy and Resources Institute Title: SARS-CoV-2: Epidemiology, Diagnosis, Detection Methods, Treatments and Managing Family Life During Lockdown
11:30 AM-12:00 PM	Speaker 2: Dr. Jayashree Dasgupta Co-Founder and Project Director, Samvedna Senior Care, Gurugram, India Title: Taking care of mental health during uncertain times
12:00 PM-12:30 PM	Speaker 3: Dr. Prakasha Kempaiah Associate Professor, Loyola University Medical Center, Chicago Title: Race to find cure for COVID-19 Pandemic: Decoding the Viral proteome for drug targets
12:30 PM-01:00 PM	Speaker 4: Dr. Shazia Haider Assistant Professor, JayPee Institute, Noida Title: Bioinformatics Skills to Analyze Covid-19
Break / Display of e-posters	
03:00 PM-03:20 PM	Speaker 5: Dr. Roshan Kumar Assistant Professor, Post Graduate Department of Zoology, Magadh University, Bodh Gaya, India Title: Phylogenetic Relationships and Potential Functional Attributes of the Genus Parapedobacter: A Member of Family Sphingobacteriaceae
03:20 PM-03:40 PM	Speaker 6: Dr. Vipin Gupta Director, PhiXgen Pvt. Ltd., Gurugram, India Title: Comparative genomics and system biology approach predicted the emerging evolutionary Patterns, mutational hotspots and functional crosstalk in SARS-CoV-2
03:40 PM-04:00 PM	Speaker 7: Dr. Utkarsh Sood Research Associate, The Energy and Resources Institute Title: Role of genomics in intercepting pandemics
04:00 PM-04:45 PM	Best Poster presentation Awards: Dr. P. Jayaraj Valedictory Ceremony: Dr. Rajendra Phartyal

A total number of 415 registrations were obtained for the International conference where participation was obtained from other countries as well (Germany, Malaysia, Bangladesh). Within India, participation was seen from many states. The highlight of the conference was the National and International speakers, as well as the three e-poster prizes worth Rs. 2000.00 each for three themes. This was an overwhelming response from all over India, and we received 55 e-posters from students as well as faculty. The conference began with the welcome address of Dr. Anita Verma and Dr. Venkata Kumar followed by abstract book release. Further, recorded message by Dr. Edward Delong, ISME President was played. This was followed by talks by eminent speakers from different parts of the world (as in program) and display of e-posters.



Pic 11-14: Lecture by eminent speakers during the conference with emphasis on the current pandemic.

At the end, prizes for best e-poster in three themes were announced followed by vote of thanks and concluding remarks.

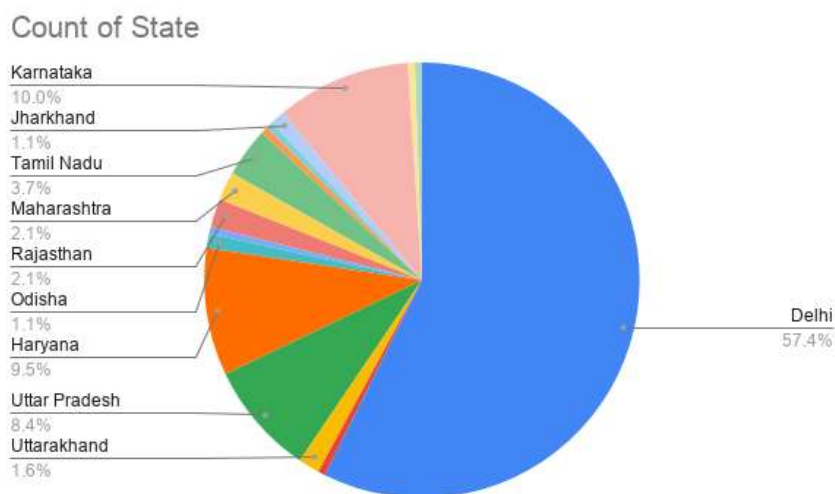


Pic 1: Group photograph of organizers and participants during the valedictory session of the E-conference

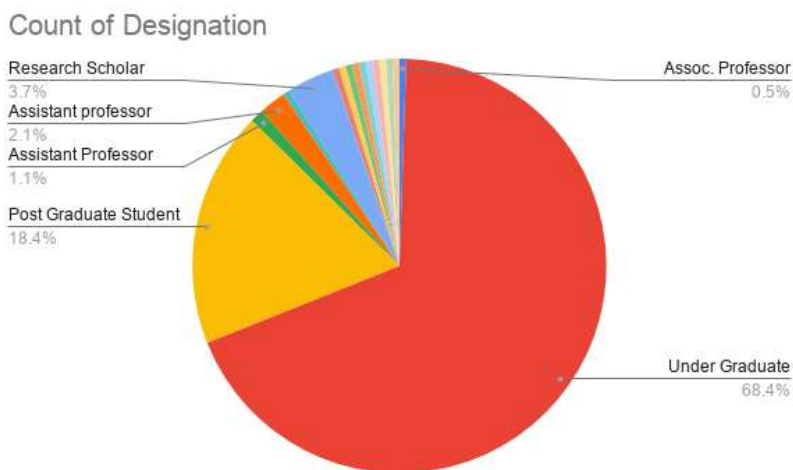
Annexure I (Participation Statistics for Workshop- 14th -16th July, 2020)

Students of various disciplines (**B.Sc. (Hons.) Zoology, B.Sc. (Hons.) Biological Sciences, B.Sc. (Hons.) Biochemistry and B.Sc. Life Sciences etc.**), representing 14 states showed enthusiasm for participating in the workshop and we got 198 total entries by google form. The workshop was advertised using posters, google form, and website.

States of India from where participation observed



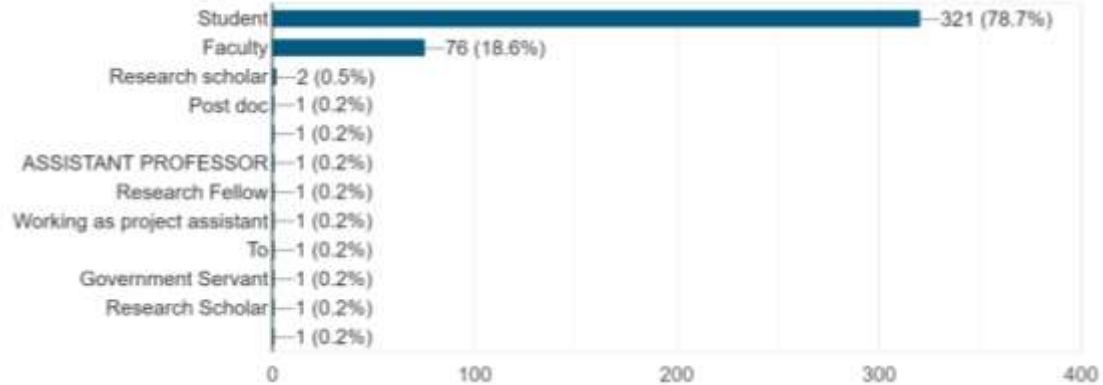
Designation of Workshop participants



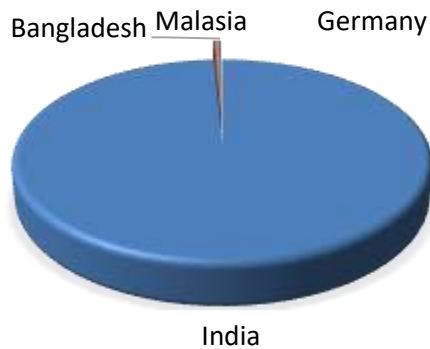
Annexure II (Participants Statistics for the E-conference- 17th July, 2020)

Total Number of registrations= 415

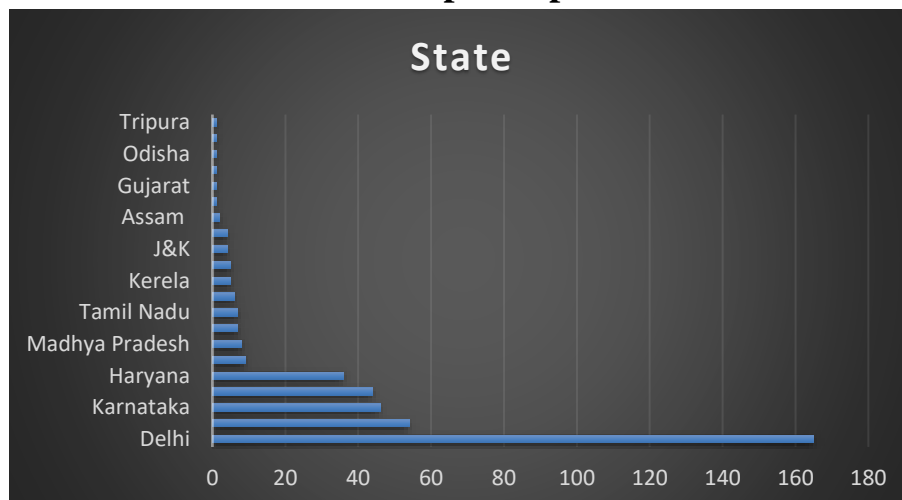
Number of students =321



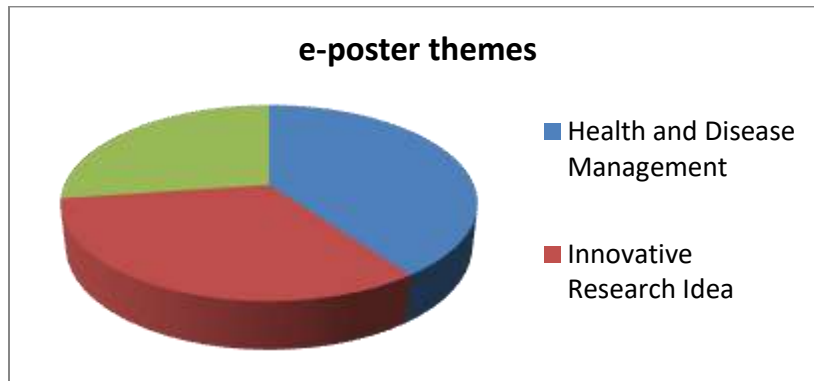
Country-wise registration:



States of India from where participation received:

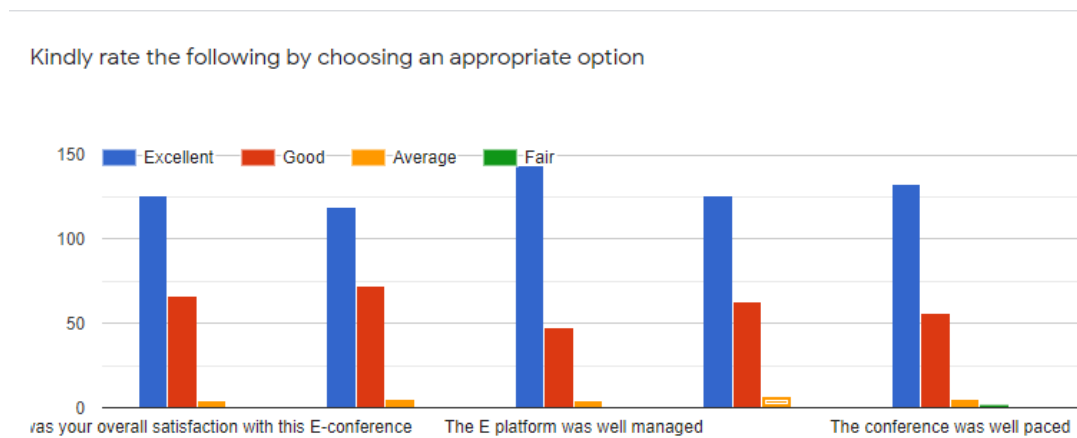


Total e-poster presentations = 55

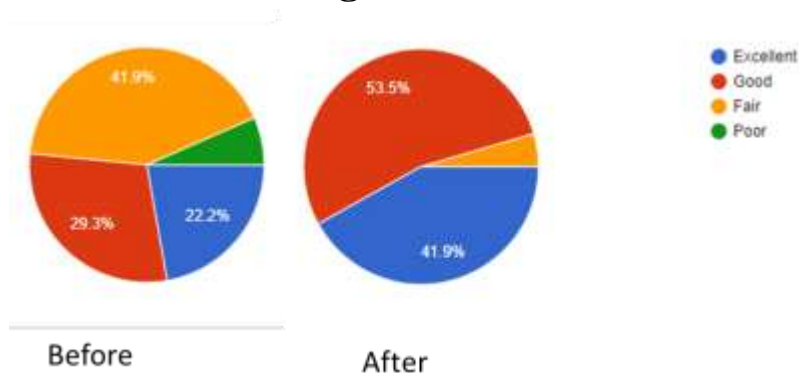


Response of feedback form

Kindly rate the following by choosing an appropriate option.



Rating of overall knowledge level about the topics covered before and after attending the conference



Annexure III- Expenditure Incurred

Budget Particular	Amount Proposed (Rs.)	Amount Incurred (Rs.)
Workshop Resource Persons (@3000/per X 2 hour *5	30,000.00	30,000.00
Honorarium to Guest 3000/lecture*5	15000.00	15,000.00
Best Poster presentations (Three Prizes)	6000.00	6000.00
Miscellaneous (For purchasing Zoom Pro)	5000.00	\$ 64.99 (=Rs. 4873.79)
Total	56000.00	55874.00
@ 85INR to Euro conversion rate	~700 Euro	~658

Annexure IV: Organizing Committee

ORGANIZING COMMITTEE

Patrons

Prof. Rup Lal
(ISME Ambassador)

Dr. S.Venkata Kumar
(Ag.Principal, S.V.C.)

Convenors

Dr. Anita Verma
(Associate Professor, Department of Zoology, S.V.C.)

Dr. Mansi Verma
(Assistant Professor, Department of Zoology, S.V.C.)

Co-Convenors

Dr. P. Jayaraj
(Assistant Professor, Department of Zoology, S.V.C.)

Dr. Rajendra Phartyal
(Assistant Professor, Department of Zoology, S.V.C.)

Advisor

Dr. Om Prakash
(Assistant Professor, Department of Zoology,
S.V.C.)

Treasurer

Dr. Roshan Kumar
(Assistant Professor, Post Graduate Department Of
Zoology, Magadh University)

Organizing Secretaries

Dr. Vipin Gupta
(Director, PhiXgen Pvt. Ltd. Gurugram)

Dr. Utkarsh Sood
(Research Associate, The Energy and Resource Institute(TERI))

Registration Committee

Dr. Namita Nayyar
(Assistant Professor, Department of Zoology, S.V.C.)

Dr. Aarti Sheerawat
(Assistant Professor, Department of Zoology, S.V.C.)

Poster Screening Committee

Dr. Ajaib Singh
(Assistant Professor, Department of
Zoology, S.V.C.)

Dr. Richa Misra
(Assistant Professor, Department of
Zoology, S.V.C.)

Dr. Sadqua Shameem
(Assistant Professor, Department of
Zoology, S.V.C.)

Designing Committee

Dr. Preeti Khandelwal
(Assistant Professor, Department of Zoology, S.V.C.)

Dr. Riyaz Bakshi
(Assistant Professor, Department of Zoology, S.V.C.)

Online Platform Committee

Dr. Vagisha Rawal
(Assistant Professor, Department of Zoology,
S.V.C.)

Dr. Princy Hira
(PhiXgen Pvt. Ltd.
Gurugram)

Ms. Nirjara Singhvi
(Department Of Zoology, University
Of Delhi)

Resource Persons

Dr. Vipin Gupta
(Director, PhiXgen Pvt. Ltd.
Gurugram)

Dr. Princy Hira
(PhiXgen Pvt.Ltd.
Gurugram)

Dr. Mona Singh
(PhiXgen Pvt. Ltd.
Gurugram)

Dr. Utkarsh Sood
(Research Associate, The Energy and
Resource Institute(TERI))

Dr. Roshan Kumar
(Assistant Professor, Post Graduate
Department Of Zoology, Magadh University)

Ms. Nirjara Singhvi
(Department of Zoology,
University of Delhi)