



DEPARTMENT OF ZOOLOGY
SYNAPSES – THE ZOOLOGICAL SOCIETY

LIST & REPORT OF ACTIVITIES (2020-2021)

S. No.	Date	Event Details
1.	21-22 September, 2020	Online Quiz Competition “Qriosity” organized under the aegis of Synapses, the subject society of Department of Zoology, Deen Dayal Upadhyaya college. (<i>Event Coordinator: Dr. Anita Gulati</i>); No. of beneficiaries: 132
2.	13 October, 2020	A National online inaugural webinar of Synapses (the subject society of Department of Zoology, Deen Dayal Upadhyaya college) was organized on “Strategies behind COVID-19 Vaccine Candidates” by Dr. Upasana Ray, Senior Scientist & Assistant Professor, Ramalingaswamy Fellow, INSA Young Scientist, Division – Infectious Diseases and Immunology, CSIR- Indian Institute of Chemical Biology, Kolkata. (<i>Event Coordinator: Dr. Renu Solanki</i>); No. of beneficiaries: 107
3.	9 November, 2020	Student Lecture Series (SLS) organized under Synapses – the subject society of Department of Zoology (<i>Event Coordinator: Dr. Anita Gulati</i>): <ul style="list-style-type: none">○ SLS: ‘Prosopagnosia: Face Blindness’ by students of B.Sc. Life Sciences III Semester (Ankita Kapil and Shashikant) on 9 November, 2020; No. of beneficiaries: 76
4.	19 November, 2020	An online Orientation Program organized for first year students under the Deeksharambh -Student Induction Program. (<i>Event Coordinator: Dr. Renu Solanki & Dr. Shailly Anand</i>); No. of beneficiaries: 58
5.	28 November, 2020	An Alumni Interaction & Counselling Session with Anoop Singh (Research Scholar, Dept. of Zoology) organized by Synapses under the aegis of Deeksharambh - Student Induction Program. (<i>Event Coordinator: Dr. Anita Gulati</i>); No. of beneficiaries: 56
6.	20 January, 2021	Student Lecture Series (SLS) organized under Synapses – the subject society of Department of Zoology (<i>Event Coordinator: Dr. Anita Gulati</i>): <ul style="list-style-type: none">○ SLS: ‘COVID-19 Vaccines Explained’ by students of B.Sc. Life Sciences IV Semester (Ankit Srivastava and Arpit Garg) on 20 January, 2021; No. of beneficiaries: 109
7.	30 January, 2021	An Online Sports and Entertainment (SPENT) Quiz was organized by Synapses in association with Sangyaan – the Quiz Society (<i>Event Coordinator: Dr. Renu Solanki</i>); No. of beneficiaries: >100
8.	3 February, 2021	An Online International Conference “Reaching out to Children & Society: A Step towards promoting Microbiology Literacy” (A Virtual Outreach Program) was organized under the aegis of Synapses & Science Foundation in collaboration with The Association of Microbiologists of India (AMI), Indian Network for Soil Contamination Research (INSCR), The Energy and Resources Institute (TERI), Indian Agricultural Research Institute (IARI)

		<p>and Indian National Science Academy (INSA). The following eminent microbiologists delivered talks during the conference:</p> <ul style="list-style-type: none">• Prof. Kenneth Timmis (Tech. Univ. of Braunschweig) Title: <i>"Microbiology Literacy Initiative"</i>• Prof. Jack Gilbert (University of California) Title: <i>"Human Microbiome: The Importance of Furry Pets in Microbial Health"</i>• Prof. D.L.N. Rao (Indian Institute of Soil Science, Bhopal, India) Title: <i>"Microbes and Sustainable Agriculture"</i>• Mr. Lanuakum Imchen (Cold Mountain, Organic Tea Products) Title: <i>"Organic Farming in Holistic Approach"</i>• Prof. Terry McGenity (University of Essex, UK) Title: <i>"Visualizing the Invisible: Class Excursions to Ignite Children's Enthusiasm for Microbes"</i>• Prof. Rup Lal (TERI) Title: <i>"Human Microbiome and Health: Communicating Complex Subjects with a Concerned Public and Children"</i>• Dr. Shailly Anand (University of Delhi) Title: <i>"There is no Plan B for there is no Planet B: Microbiology Literacy is the hope"</i>• Dr. Priya Singh (University of Delhi) Title: <i>"Food for Health"</i> <p>Conference Convenors: Dr. Shailly Anand & Dr. Renu Solanki; No. of beneficiaries: >150</p>										
9.	20 February, 2021	<p>Synapses in association with Kalpavriksha- The Botanical Society and the Career Counselling & Placement Cell (CCPC) of Deen Dayal Upadhyaya College organized an interactive career counselling session on the topic 'Future Prospects Of Healthcare Management In India' through the Zoom platform. The session was conducted by:</p> <ul style="list-style-type: none">• Prof. Divya Aggarwal, Associate Dean-Academics and Student Affairs, IIHMR Delhi and• Prof. Vinay Tripathi, Associate Professor, IIHMR Delhi <p>(Event Convenors: Dr. Shailly Anand & Dr. Renu Solanki); No. of beneficiaries: 107</p>										
10.	26-27 February, 2021	<p>An Online Inter-college Zoofestea'21 – The Annual Festival of Synapses, the Zoological Society was organized encompassing the following activities through the Zoom platform (Convenor: Dr. Shailly Anand).</p> <table><tr><td>Just-A-Minute: The Extempore Contest</td><td>Event Coordinator: Dr. Anita Gulati & Dr. Renu Solanki</td></tr><tr><td>Cerebrosus 3.0: The Zoological Quiz</td><td>Event Coordinator: Dr. Nitish Mahato</td></tr><tr><td>Canvas 3.0: The Painting Competition</td><td>Event Coordinator: Dr. Kamlesh Kumari</td></tr><tr><td>Graph-The-Idea: The Digital Poster Making Contest</td><td>Event Coordinator: Dr. Shailly Anand</td></tr><tr><td>Digital Exposure: The Photography Contest</td><td>Event Coordinator: Dr. Lathika Nair & Dr. Anina James</td></tr></table>	Just-A-Minute: The Extempore Contest	Event Coordinator: Dr. Anita Gulati & Dr. Renu Solanki	Cerebrosus 3.0: The Zoological Quiz	Event Coordinator: Dr. Nitish Mahato	Canvas 3.0: The Painting Competition	Event Coordinator: Dr. Kamlesh Kumari	Graph-The-Idea: The Digital Poster Making Contest	Event Coordinator: Dr. Shailly Anand	Digital Exposure: The Photography Contest	Event Coordinator: Dr. Lathika Nair & Dr. Anina James
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A brief report of each of the above activities is as follows:

21-22 September, 2020
NATIONAL LEVEL ONLINE
QUIZ COMPETITION,
QRIOSITY

An online quiz was conducted under the aegis of Synapses for two days i.e. 21st and 22nd September, 2020 from 10 AM to 9 PM. A total of 132 students participated in the competition from different colleges and states the summary of which is as below:

- Delhi: 106
- Bihar: 9
- Daman: 8
- Haryana: 2
- Odisha: 2
- Uttarakhand: 1
- Uttar Pradesh: 1
- Maharashtra: 1
- Chandigarh: 1
- Jharkhand: 1

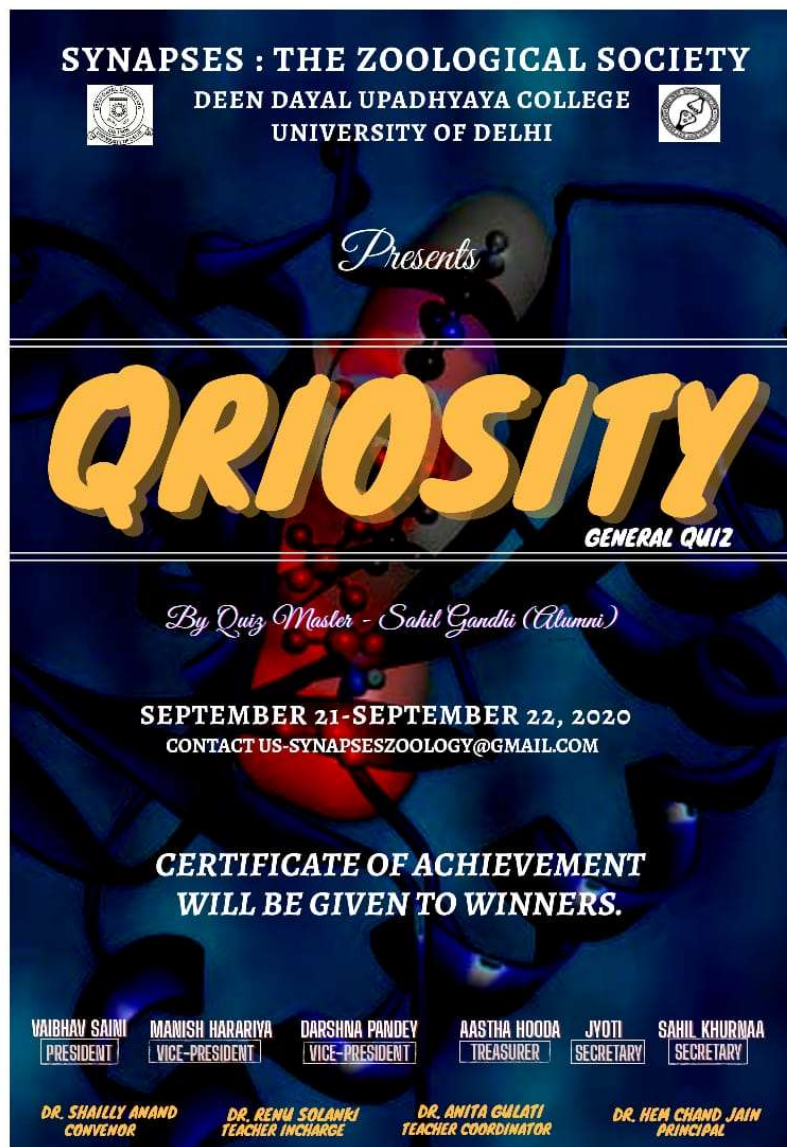
The quiz competition was based on general knowledge. The questions were designed from diverse genres. The top scorers included a total of 7 students who were awarded with the certificate of achievement. These rankers were:

First Position: Rupam Kumari & Rohan Bahl (DDUC)

Second Position: Nirmal Singh, Nilamadhab Senapati & Bhawna (DDUC)

Third Position: Swadha Srivastava (Kirori Mal College) & Sadiyah Afroz (Gargi College)

The rest of the participants were provided with a certificate of participation (those who scored > 70%). The quiz competition was a success which was much appreciated and was well coordinated by the office bearers.



13th October, 2020 NATIONAL WEBINAR ON 'STRATEGIES BEHIND COVID-19 VACCINE CANDIDATES'

Synapses, the Zoological Society of Deen Dayal Upadhyaya College, University of Delhi, organized a webinar on '**Strategies Behind COVID-19 Vaccine Candidates**' on October 13, 2020, taking ahead its tradition of organizing interactive sessions for students.

The webinar witnessed a whooping participation of about 100 attendees and 7 faculty members. The speaker for the session was **Dr. Upasana Ray**, a distinguished scientist and professor, who has to her credit a seemingly endless list of laurels and accolades. The topic being a hot potato was particularly fascinating to the audience. The speaker presented an overview of the present pandemic, the various types of vaccines and their working principles, the strategies behind frontrunner COVID-19 vaccine candidates and a briefing of the two most popular vaccines under trial: '**Chadox**', being developed by Oxford University and '**mRNA-1273**' vaccine, being developed by a private company, Moderna. At the end of the session, a 'Question and Answer' round was conducted where students asked several insightful questions. The session received positive feedback from participants.

The event was well coordinated among guiding teachers and all office bearers of Synapses. A 'Certificate of Participation' was also provided to all participants who made this event a huge success by their active involvement.

SYNAPSES: THE ZOOLOGICAL SOCIETY
DEEN DAYAL UPADHYAYA COLLEGE
UNIVERSITY OF DELHI

Presents
A Webinar on
**STRATEGIES BEHIND
COVID-19
VACCINE CANDIDATES**

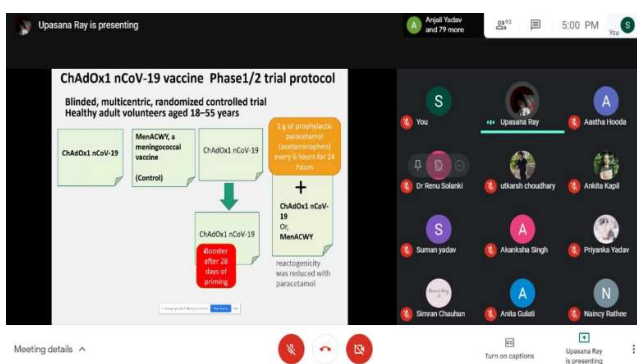
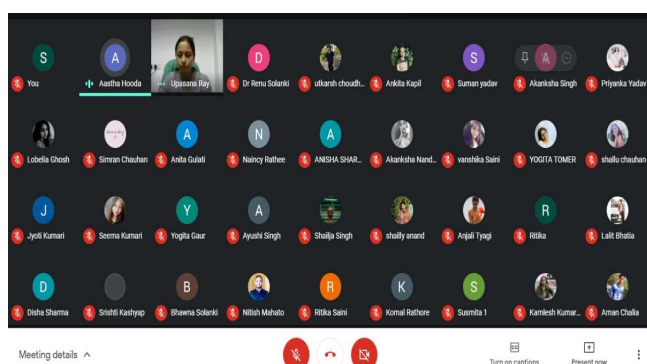
Speaker:
Dr. Upasana Ray
Senior Scientist and Assistant Professor (ACSIR)
Ramalingaswamy Fellow
NSA Young Scientist
Division: Infectious diseases and immunology
CSIR-Indian Institute of Chemical Biology, Kolkata

Date: 13th October 2020 | Time: 4:15 PM

Certificate of Participation will be provided.
Join Meeting 10-15 minutes before scheduled time.

Meeting Link

Vaibhav Saini (President)	Manish Harariya (Vice-President)	Darshina Pandey (Vice-President)	Aastha Hooda (Treasurer)	Jyoti (Secretary)	Sahil Khurana (Secretary)
Dr. Renu Solanki (Teacher Coordinator Teacher Incharge)		Dr. Shailly Anand (Convenor)		Dr. Hem Chand Jain (Officiating Principal)	



9th November, 2020 STUDENT LECTURE SERIES

On 9th November, 2020, Synapses" the Zoological Society of Deen Dayal Upadhyaya College, University of Delhi, presented its latest session of Student Lecture Series on the topic "**Prosopagnosia: Face Blindness**". Ankita Kapil and Shashikant of B. Sc Life Sciences, 2nd year delivered an informative lecture on this unique disorder.

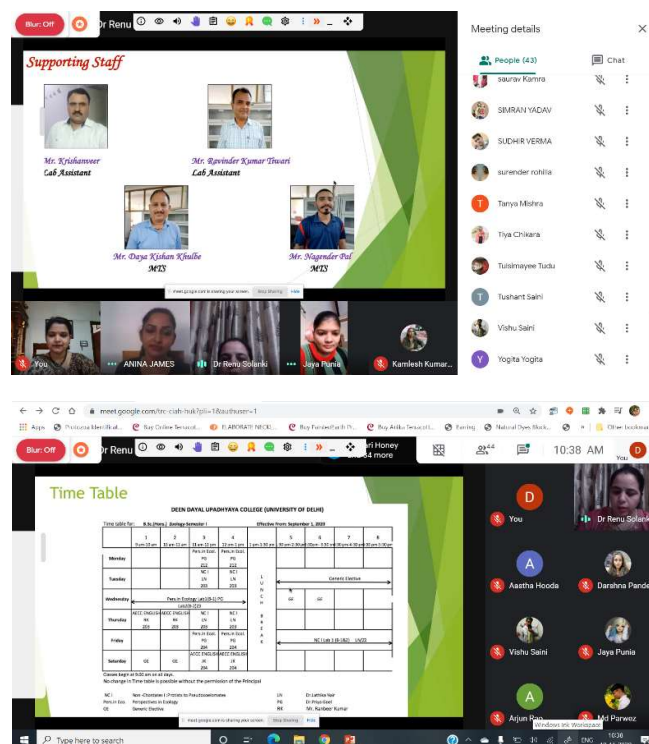
The event opened with a short introduction by the student coordinator of synapses. The lecture was attended by around 70 students from both Zoology (Hons.) and life sciences and 6 faculty members. Prosopagnosia is a disorder in which a person loses its ability to recognise similar faces and is caused due to damage of temporo- occipital area of the brain. In this lecture we came across different types of face blindness and also learned about the treatments for the same. This lecture also explained how face blindness has different effects on different age groups.

19th November, 2020 ORIENTATION PROGRAM

The orientation Program was organized online on Google meet for the first year students of B. Sc (Hons.) Zoology under the “Deeksharambh - Student Induction Program (2020-2021)” on 19th November, 2020. The following faculty members were present:

- Dr. Anita Gulati
- Dr. Lathika Nair
- Dr. Renu Solanki
- Dr. Shailly Anand
- Dr. Sudhir Verma
- Dr. Kamlesh Kumari
- Dr. Nitish Kumar Mahato
- Dr. Anina James

A total of more than 50 B.Sc (H) first year students attended the orientation program.



The program was started by the welcome address of Dr. Renu Solanki (Teacher In-charge, Department of Zoology). Thereafter, all the faculty members introduced themselves and also welcome the first year students to the DDUC family. Dr. Renu Solanki apprised the students about the Department establishment, infrastructure of the Department including well equipped laboratories, research laboratory, museum, lecture rooms and class rooms. She talked about student teacher relationship and significance of Mentor-mentee groups. Students were told about the academic performance of Department alumni in different fields.

Dr. Shailly Anand (Convenor, Synapses Departmental Society) apprised the students about the different activities like educational trips, seminars, workshops, hand on training sessions, lectures by eminent speakers, career counselling, industry academia activities which are being organized under the Synapses and DBT Star college scheme for the holistic development of students. Student office bearers of Society interacted with the students of first year and composed a video in the honor of first year students. Students were taken on the virtual tour with the help of laboratory staff.

Further, Dr. Renu Solanki told the students about the papers which they would be taught in this semester, credits of practical and theory, about downloading the syllabus, about the current curriculum LOCF (Learning outcome based curriculum framework). She stressed that students need to be punctual and regular in the classes. At last of the program, students introduced themselves and talked about their hobbies. Program was concluded with the vote of thanks.

28th November, 2020 ALUMNI INTERACTION-CUM- COUNSELLING SESSION

An Alumni Interaction-cum-Counselling Session was organized online on Google meet for the students of B. Sc (Hons.) Zoology and B. Sc Life Sciences under the “Deeksharambh -Student Induction Program (2020-2021)” on 28th November, 2020. The following faculty members attended the program:

- Dr. Anita Gulati
- Dr. Lathika Nair
- Dr. Renu Solanki
- Dr. Shailly Anand
- Dr. Sudhir Verma
- Dr. Nitish Kumar Mahato
- Dr. Anina James

DEEKSHARAMBH
STUDENT INDUCTION PROGRAM
UNDER THE AEGIS OF
SYNAPSES: THE ZOOLOGICAL SOCIETY
DEEN DAYAL UPADHYAYA COLLEGE
UNIVERSITY OF DELHI

Presents

ALUMNI INTERACTION

ANOOP SINGH
Affiliation: Research Scholar
Department of Zoology
University of Delhi

Date: 28th November 2020
Time: 3:00 PM
Meeting Link:
meet.google.com/lew-drsg-wwq

Join Meeting 10-15 minutes before scheduled time.

Vaibhav Saini (President) Manish Harariya (Vice-President) Darshna Pandey (Vice-President) Aastha Hooda (Treasurer) Jyoti (Secretary) Sahil Khurana (Secretary)

Dr. Anita Gulati (Teacher Coordinator) Dr. Renu Solanki (Teacher Incharge) Dr. Shailly Anand (Convenor) Dr. Hem Chand Jain (Officiating Principal)

A total of more than 49 students attended the session. Additionally, a few alumni also joined the program. The program started with a brief introduction of our Alumni Mr. Anoop Singh (Research Scholar at the Department of Zoology, University of Delhi) by Ms. Astha Hooda, the treasurer of the society. Thereafter, with a short interaction and nostalgic memories shared by other alumni who had joined the event and the teachers, the lecture took off a flight. Mr. Anoop began his talk with a brief introduction of how his career started from his college days to the post-graduation, competitive entrance examinations and finally his research tenure. He elaborated the challenges he faced and also shared his shortcomings along the path. Through his experience, he shared the do's and don't's with the juniors which was a great inspiration. He then talked about his present research work on gut microbiome, tuberculosis and metagenomics. Altogether, it was an interactive session where the students not only gathered inspiration from their alumni but also were guided to take the right path. Finally, all the faculty members expressed their immense love on seeing their students doing well in their lives. It was a great nostalgic evening that the teachers and students shared. At the end, everyone bid goodbyes with a commitment to meet again on any such future platforms.

Meeting details

People (52)

Nitish Mahato 3:15 PM
Good afternoon everyone!
Nice to see all past and present students!

Dr Sudhir Verma 3:15 PM
Dear All, my apologies that I have to leave as I have another important meeting scheduled at 3:30pm today. It's so nice to see all our past and present students interacting and benefited with each other. would love to see you all face to face once situations become normal, with lots of best wishes... Sudhir

Send a message to everyone

Masters Programs

India

IIT, IISc, IISER, NISER, etc. AIMS, NBRC

Entrance examinations

Scholarships available

Abroad

Oxford, Harvard, Cambridge, TUM, Max planck, Helmholtz

GRE/TOEFL/IELTS

Free applications

Scholarships available

Possibilities

Non-academic

Academic

POSTGRADUATE

RESEARCH

SCIENCE OUTREACH

SCIENCE EDUCATION

Meeting details

People (51)

IN CALL

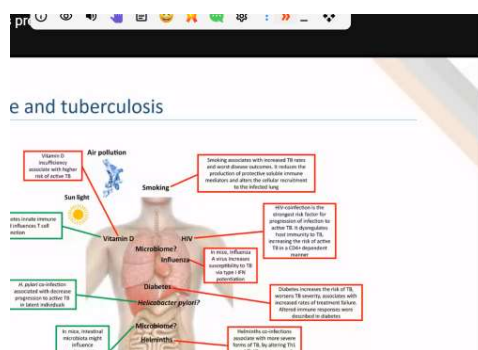
shailly anand (1)

Aastha Hooda

Aman Chalia

ANINA JAMES

Anita Gulati

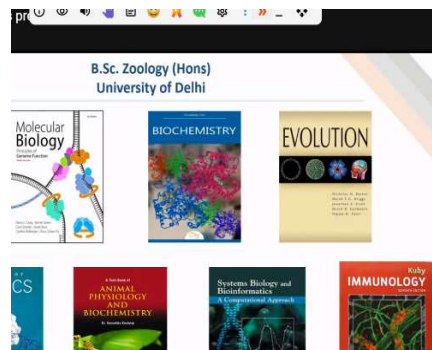


Meeting details

People (53)

IN CALL

shailly anand (i)
Aastha Hooda
Aman Chalia
ANINA JAMES
Anita Gulati



Meeting details

People (52)

IN CALL

shailly anand (i)
Aastha Hooda
Aman Chalia
ANINA JAMES
Anita Gulati


20 January, 2021 STUDENT LECTURE SERIES

A lecture on 'COVID-19: VACCINES EXPLAINED' was organized online on Google meet under the Student Lecture Series on 20th January, 2021. The following faculty members were present:


- Dr. Anita Gulati
- Dr. Lathika Nair
- Dr. Renu Solanki
- Dr. Shailly Anand
- Dr. Priya Goel
- Dr. Kamlesh Kumari
- Dr. Nitish Kumar Mahato
- Dr. Anina James

A total of more than 101 B.Sc (H) and B.Sc Life Sciences students attended the lecture. Ankit Srivastava and Arpit Garg of B. Sc Life Sciences, 2nd year delivered an informative lecture covering details about the current status of Covid vaccines.

The event opened with a short introduction by the student coordinator, Sahil Khurana of Synapses. The lecture focused on how vaccines work, how they are prepared, what constituents are present in a vaccine and how vaccines are distributed. The lecture also covered how WHO ensures safe and equitable access to vaccines and how India is running its vaccination campaign. The lecture was informative and interactive.



SYNAPSES: THE ZOOLOGICAL SOCIETY
DEEN DAYAL UPADHYAYA COLLEGE
University of Delhi
organizes



STUDENT LECTURE SERIES

on 20th January, 2021 (Wednesday)

COVID-19 Vaccines Explained

By: ANKIT SRIVASTAVA | ARPIT GARG

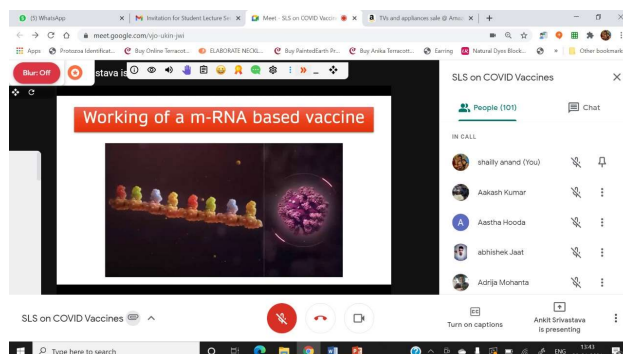
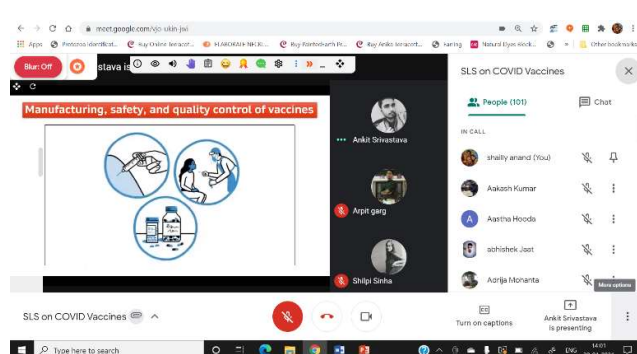
Venue: Google Meet
Time: 1:30 PM

STUDENT CO-ORDINATOR : SAHIL KHURANA

Dr. Renu Solanki
Teacher In-charge

Dr. Shailly Anand
Convenor

Dr. Anita Gulati
Teacher Co-ordinator



30 January, 2021 ONLINE SPORTS & ENTERTAINMENT (SPENT) QUIZ

In association with Sangyaan, the quizzing society, a Sports and Entertainment Quiz was organized in an online mode on 30th January, 2021. More than 100 students participated in the quiz and won prizes.



3 February, 2021 INTERNATIONAL CONFERENCE

Reaching out to Children & Society: A Step towards promoting Microbiology Literacy
(A Virtual Outreach Program)

Department of Zoology
Deen Dayal Upadhyaya College (University of Delhi)
under the aegis of Synapses & Science Foundation & in association with
The Association of Microbiologists of India (AMI),
Indian Network for Soil Contamination Research (INSCR),
The Energy and Resources Institute (TERI), University of Delhi (DU),
Indian Agricultural Research Institute (IARI) &
Indian National Science Academy (INSA)
Organizes
Online International Conference A virtual Outreach Program

**"Reaching out to Children & Society:
A step towards promoting Microbiology Literacy"**
3rd February, 2021

Speakers:

- Kenneth Timmis** (Professor, Tech. Univ. of Braunschweig, Germany)
- Terry McGenity** (Professor, Univ. of Essex, UK)
- Prof. Rup Lal** (NASI Senior Scientist, TERI, India)
- Lanuakim Imchen** (Founder, Cold Mountain Organic Products, India)
- Priya Singh** (Assistant Professor, University of Delhi, India)
- Jack Gilbert** (Professor, University of California, USA)
- Jitendra P Khurana** (J.C. Bose Fellow, DU, Vice-Pres. Int. Affairs, INSA, India)
- DLN Rao** (Emeritus Scientist, IISS, India)
- Shailly Anand** (Assistant Professor, DDUC, DU, India)

*e-certificate shall be given to all participants

Register for the event at: <https://forms.gle/Gp5SN7vM7KscEQnXA>
The link for the program will be shared soon !!!

Organizing Committee: Faculty Members of Department of Zoology
Office Bearers, Synapses: President (Vaibhav), Vice-President (Manish), Secretary (Darshna & Sahil Khurana), Treasurer (Aastha)

PROGRAM SCHEDULE		
Chair: Prof. Kenneth Timmis (Tech. Univ. of Braunschweig & Editor in-Chief, Environmental Microbiology & Microbial Biotechnology). Prof. Jitendra P. Khurana (J.C. Bose Fellow, DU, Vice-Pres. Int. Affairs, INSA)		
Co-Chair: Dr. Shailly Anand (Assistant Professor, Deen Dayal Upadhyaya College). Dr. Vipin Gupta (Managing Director, PhixGen Pvt. Ltd.). Dr. Jasvinder Kaur (Assistant Professor, Gargi College)		
TIME	PROGRAM DETAILS	LINK
1135-1140	Prof. Rup Lal (NASI Senior Scientist, TERI) Opening Remarks	
1145-1225	Prof. Kenneth Timmis (Tech. Univ. of Braunschweig) Title: "Microbiology Literacy Initiative"	
1230-1300	Prof. Jack Gilbert (University of California) Title: "Human Microbiome: The Importance of Furry Pets in Microbial Health"	Click Here
1305-1325	Prof. D.L.N. Rao (Indian Institute of Soil Science, Bhopal, India) Title: "Microbes and Sustainable Agriculture"	
1330-1350	Mr. Lanuakim Imchen (Cold Mountain, Organic Tea Products) Title: "Organic Farming in Holistic Approach"	
1350-1500 LUNCH BREAK		
1505-1525	Prof. Terry McGenity (University of Essex, UK) Title: "Visualizing the Invisible: Class Excursions to Ignite Children's Enthusiasm for Microbes"	
1530 - 1550	Prof. Rup Lal (TERI) Title: "Human Microbiome and Health: Communicating Complex Subjects with a Concerned Public and Children"	
1555 - 1615	Dr. Shailly Anand (University of Delhi) Title: "There is no Plan B for there is no Planet B: Microbiology Literacy is the hope"	Click Here
1620 - 1640	Dr. Priya Singh (University of Delhi) Title: "Food for Health"	
1640 - 1730	Microbiology Quiz Dr. Jasvinder Kaur (University of Delhi), Dr. Vipin Gupta (PhixGen Pvt. Ltd.) & Dr. Nirjara Singhal (University of Delhi)	
1730-1740	Concluding Remarks Dr. Shailly Anand	

Department of Zoology, Deen Dayal Upadhyaya College under the aegis of Synapses & Science Foundation & in association with The Association of Microbiologists of India (AMI), Indian Network for Soil Contamination Research (INSCR), The Energy and Resources Institute (TERI), University of Delhi (DU), Indian Agricultural Research Institute (IARI) & Indian National Science Academy (INSA) organized an online International Conference "Reaching out to Children & Society: A step towards promoting Microbiology Literacy" (A Virtual Outreach Program) on 3rd February, 2021. The conference observed many eminent speakers.

About the Conference:

Microbes are all around us and their significance is profound on the health and well-being of human beings, the whole of the biological world, and the entire surface of the planet and its atmosphere. It would not be wrong to say that these tiny bugs are the life support system of the biosphere. Therefore, in addition to other important aspects of our daily lives, it is imperative to understand the microbial activities, how they impact our lives, and how they may be harnessed for the benefit of our humankind. In the present state, the so-called “microbiology literacy” is lacking in the general population. Owing to its indispensability for informed personal decisions, as well as for government policy development, an understanding of key microbial activities is essential for transitioning from childhood to adulthood. Thus with an aim of making Microbiology Literacy in Society a reality, this special conference was organized to discuss some of the key aspects of not only this initiative led by Prof. Kenneth Timmis but also a few areas of our daily lives where microbiology plays the central stage.

The talks:

SPEAKER 1 (11:45 to 12:25)

KENNETH TIMMIS

Professor, Technical University of Braunschweig

Title of the Talk: *Microbiology Literacy Initiative*

Prof Kenneth Timmis delivered the lecture on “International Microbiology Literacy Initiative”. He emphasized that there is an urgency of Microbiology literacy in every section of society to deal the unexpected problems like Covid 19 pandemic.

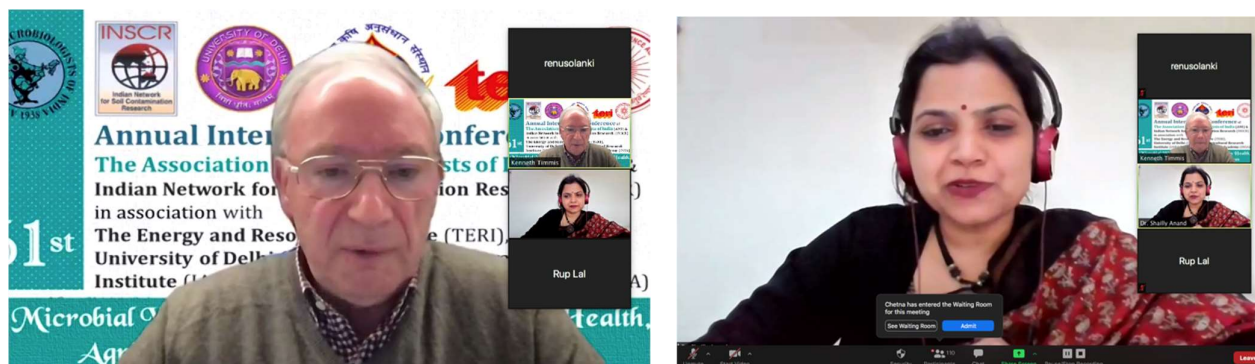
He talked majorly on the following three aspects about Microbiology Literacy:

- (i) Need of Microbiology literacy in people of every socio-economic strata: It is to understand the importance of microbes as they are responsible for generation of 25% oxygen, 90% of marine biomass, recycling of wastes. It is also important for dealing with pandemics, antimicrobial resistance, resurgence of old diseases, food crisis, air and water pollution, global warming, and many more.
- (ii) Implication of Microbiology literacy at school level: He stressed that Microbiology should be an essential component of curriculum at the school level.
- (iii) Development of education content for Microbiology literacy: He apprised the participants about the Topic Frameworks of Microbiology like Pet Dogs, Dirt is good for you, Classical food fermentations, oldest microbiome, taking care of your tooth and many more. He discussed about the different sections of Topic framework structure and its relation to sustainable development goals. He also told that 200 topic frameworks are being developed which are divided into ten categories including need of microbiology literacy, introductory topics, human well-being, planet earth and biogeochemistry, water, animals, plants and food framing, food, nutrition and beverages, applications (biochemistry), microbes, civilization(s) and culture (s).

He stressed that introduction of Microbiology literacy at very starting educational level will help in the wider dissemination of Microbiology knowledge in which a children will be an educator for his or her family, peer groups and society. He encouraged faculty participants to participate in the development of Topic frameworks and to inculcate Microbiology in the curriculum of their State and Country.

The participants asked very valid questions enthusiastically related to vaccination drive, challenges being faced in the introduction of Microbiology literacy at school level, role of

teachers and education system in Microbiology literacy which were answered by Prof. Timmis with interest and patience. Dr. Shailly Anand closed the session with the concluding remarks.



Professor Kenneth Timmis is working as emeritus at the Institute of Microbiology, Technical University of Braunschweig. He served as a Professor and Director of Division of Microbiology, GBF-National Centre for Biotechnology/HZI-Helmholtz Centre for Infection Research, Braunschweig for 24 years from 1988 to 2011. He also served as the Head of the Plasmid Group, Max Planck Institute for Molecular Genetics, Berlin and Professor at Dept. of Medical Biochemistry, University of Geneva. He has been a member/fellow of EMBO, American Academy of Microbiology, the Royal Society, and European Academy of Microbiology. Owing to his immense work, he was bestowed with the prestigious Erwin Schrödinger Prize in 2001. He has also been the Editor of Journal of Bacteriology and Current Opinion in Biotechnology. Additionally, he has been the Founding Editor-in-Chief of Environmental Microbiology and Microbial Biotechnology. His Research focus lies with microbial genetics, microbial ecology, microbial diversity, microbial pathogenesis & microbial biotechnology. He has published 352 papers in international journals, 5 books and book series; 53 book chapters; 32 commentaries/policy articles/editorials & 16 educational microbial humour articles to his credit with an h-index of 116. His Current focus is in International Microbiology Literacy Initiative; digital DIY primary healthcare & microbial biotechnology for sustainable development goals.

SPEAKER 2 (12:30 to 13:00)

JACK GILBERT

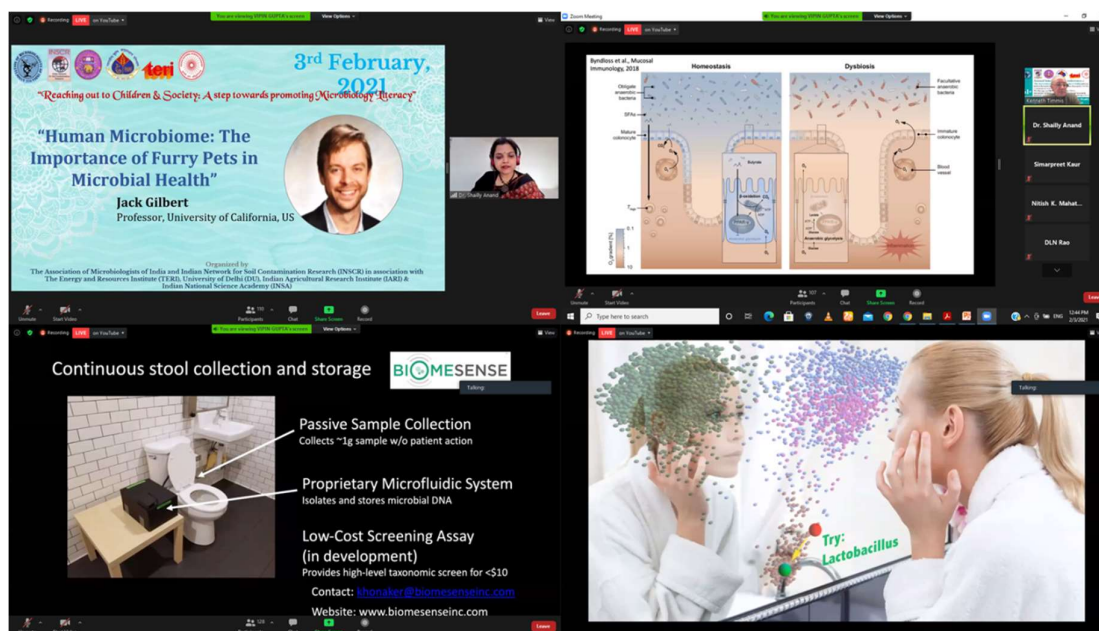
Professor, University of California

Title of the Talk: *Human Microbiome: The Importance of Furry Pets in Microbial Health*

The session started with brief introduction of Prof. Jack Gilbert by Dr. Shailly Anand.

Prof. Jack Gilbert could not join live in the session due to time zone difference. However, he kindly sent a recorded lecture to address the audience. Prof. Gilbert started with describing the association between microbial activity and human health and disease. He discussed how diet preferences (omnivore, vegetarian, not red meat, eats seafood and vegan) affect microbiome composition of the gut. The gut microbiome can also explain variations observed in human phenotypes depending on age, gender and calorie intake. The disruption of gut microbiome homeostasis often leads to dysbiosis of human health. He then emphasized farm life in rural area is having 50% lesser chance to develop asthma in comparison to the people lived in industrial areas. In fact, the microbial highways (routes of colonization) can also be mapped among household items, family members, pets and home surfaces in a particular house. According to some recent microbiome studies, bacteria in gut are responsible for making a person fat or lean. Lifestyle and high fat diet shape a particular gut microbial community which eventually can make a person obese; e.g. one bacterium *Enterobacter cloaca* B29 can make the mice

obese if they predominate in its gut microbiome. Microbial community also control significantly how one person reacts to surgery. At last Prof. Gilbert discussed use of smart toilets “**Biomesense**” for collection and storage of stool samples which eased the sample collection in American gut microbiome project. Prof. Gilbert ended his talk with his futuristic vision of “**mirror screens**” showing microbiome compositions of a person. He welcomed any question by audience on his email. The wonderful session ended with acknowledgement by Dr. Shailly Anand.



Prof. Jack Gilbert is a Professor in the Department of Surgery, as well as a Group Leader in microbial ecology at Argonne National Laboratory, Associate Director of the Institute for Genomic and Systems Biology and Adjunct Senior Scientist at the Marine Biological Laboratory.

His research is focused on the ecology, evolution and metabolic dynamics of microbial ecosystems from myriad environments including built environments, oceans, rivers, soils, air, plants, animals and humans. Through his extensive collaboration network, he is also innovating the use of genome-enabled metabolic models that capture the chemical cross-talk between bacteria and archaea in diverse ecosystems. Jack also founded and has led the Earth Microbiome Project (www.earthmicrobiome.org) and co-founded American Gut (www.americangut.org). These two massive collaborative efforts are aimed at developing a comprehensive understanding of the bacterial and fungal communities that inhabit the myriad niches across our planet and in our bodies.

SPEAKER 3 (13:05 to 13:25)

D L N RAO

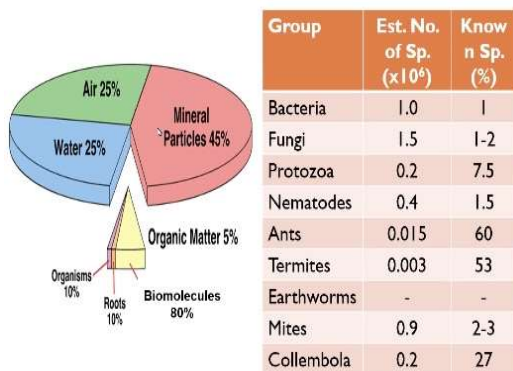
Professor, Indian Institute of Soil Science, Bhopal, INDIA

Title of the Talk: *Microbes and Sustainable Agriculture*

In his lecture followed by a discussion, he started explaining the importance of soil microbes in four facets; global biomass nutrients; then he gave a correlation between the soil degradation and health concerns with the sustainability. Soil degradation is a major concern of researchers and nations across the globe as it is directed connected with the erosion of soil, diminished soil diversity; less amount of organic matter as well depletion of nutrients. He describes the soil health as the ability of the soil to sustain the productivity, diversity and environmental services of terrestrial ecosystems. Further, he covered the nutrients to enrich the biomass, structure if the soil, cropping, fungi. He gave a very clear picture on the chemical fertilizers and biofertilizers. He extended the information on fertilizers by relating them to the biodiversity. The quality of soil is responsible for the health of the planet; animals and plants and humans. Dr. Rao sparked the audience by

throwing light on maintaining the soil ecosystem for better future of human. At last he ends the lecture with an inspiring quotation taken from the Atharveda translated to english, that is, “MAY EVERYTHING I EXTRACT FROM YOU MOTHER EARTH, QUICKLY GROWN AGAIN, Oh! PURIFIER, MAY WE NEVER INJURE YOUR VITAL NERVE NOR YOUR HEART” means **Our ecosystem starts and ends with Soil.**

Soil Organisms: Mostly Unknown



Barrios et al. (2014)

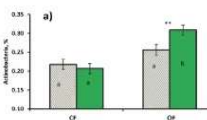
Cover Cropping



Continuous *Sesbania* Green Manuring for 30 yrs in a Citrus Orchard, Maharashtra

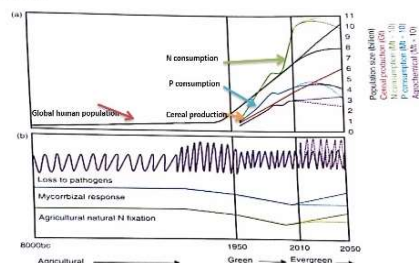


Pores with 30–150 μm radii contain the most active microorganisms capable of responding rapidly to fresh C inputs since they have higher abundance of diverse taxa, produce the greatest amounts of microbially processed products enriched in lipids, depleted in lignin, higher enzyme activity and leading to greater SOC accumulation. (Kravchenko 2019).



Soil Sustainability

Fertilizer Hotspots: Reduce N and P loss; Improve NUE, Improve Soil Biology



(Bennett et al. 2017)

Dr. D.L.N. Rao earned his doctorate in Microbiology from the Indian Agricultural Research Institute, New Delhi and did post-doctoral research in Soil Microbial Ecology at the University of Kent, UK and in Biological Nitrogen Fixation at Wye College and University of Sussex, U.K. He worked at the Central Soil Salinity Research Institute, Karnal, and as Principal Scientist and ICAR Project Coordinator at Indian Institute of Soil Science, Bhopal. He led the All India Coordinated Research Project on Biological Nitrogen Fixation and All India Network Project on Soil Biodiversity-Biofertilizers. He worked as ICAR-Emeritus Scientist on Improvement of Soil Health by Novel Microbial Inoculants, and headed the India-UK Nitrogen Fixation Centre (IUNFC) under the DBT Newton-Bhabha fund. He has published about 150 research papers and teaches as Adjunct Professor at RVSKVV, Gwalior. He is a Fellow of the National Academy of Agricultural Sciences and advises and mentors in several national programmes in Soil Science and Microbiology.

SPEAKER 4 (13:30 to 13:50)

MR. LANUAKUM IMCHEN

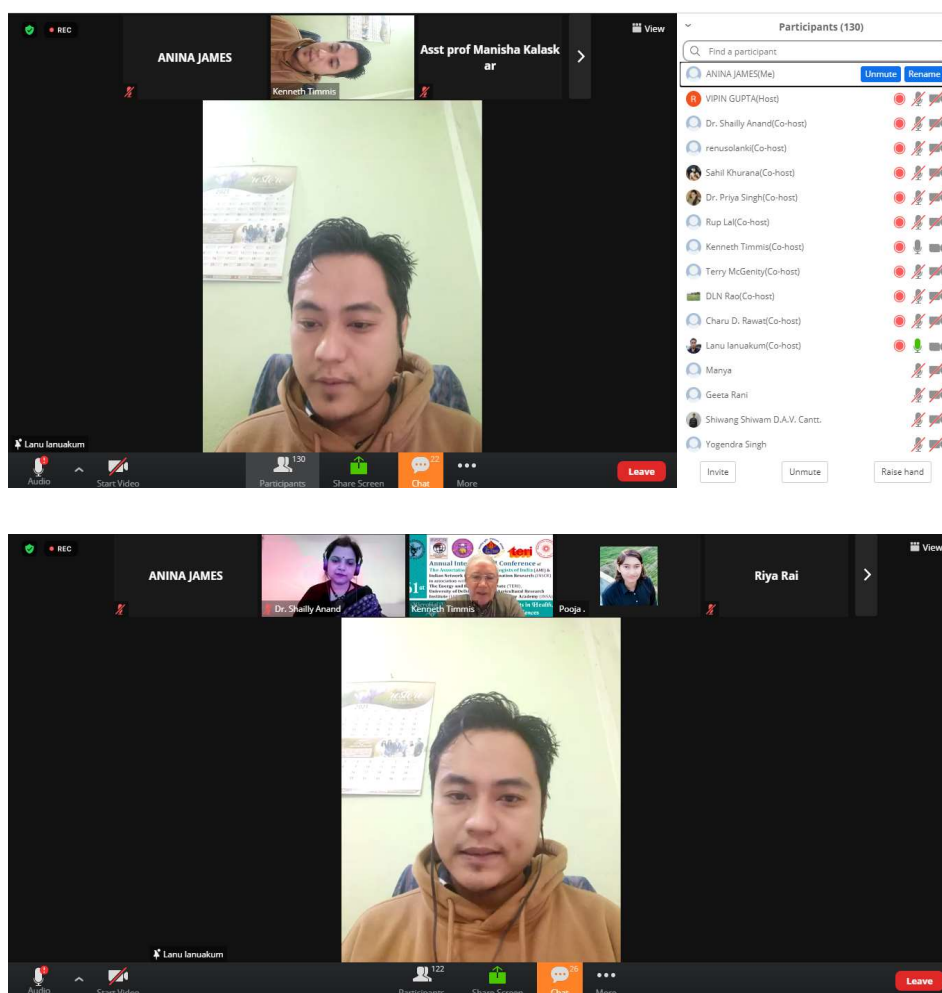
Founder, Cold Mountain, Organic Tea Products

Title of the Talk: **Organic Farming in Holistic Approach**

He delivered a talk titled “Human Microbiome and Health: Communicating Complex Subjects with a Concerned Public and Children”. He started with a relationship between the microbiome and health. He explained the importance of microbiology and encourages students to think, understand as well as

move towards to get educate in microbiology. He described unlimited world of microbes: Archaea, Virus and Bacteria. He gave a data for the number of microbes, that is, $0.9-3.2 \times 10^{30}$. He told about the World Microbiome Day and it is celebrated on 27th June on microbes all around the world and introduces International Microbiome researchers to the public to raise awareness of the vibrant and diverse world of microbes. Last year, the theme of World Microbiome Day was **Diversity**, that is, diversity of microbes, microbiome habitats, diets to feed and fuel microbiomes and the diversity among microbiome researchers. Microorganisms can be found everywhere in and on plants, animals, water, soil, food and humans. Within each of those habitats, microorganisms live together in communities called microbiomes. Microbiomes have an effect on human health; therefore, scientists are exploring how these communities of organisms co-exist with each other, with us and our environment? He thrown light about diseases that they begin in GUT and he explained how the Gut Microbiota is linked to diseases?

He emphasized on Life style, food habits and no drugs as they are the keys to keep you healthy. He concluded with to a statement “To win the war against obesity, we need rigorous exercises, life style changes and eating right, to change our microbial army”.



He is a farmer from Nagaland, founder of Cold Mountain Organic Advisor to UNCTAD Empretec India Foundation. He has been promoting organic farming for the past seven years and his work bagged him the Best India Organic Farmer Award in the year 2018 by the Union minister of state for agriculture and farmer welfare. This award was given by Jaivik India Award and International Competence Centre for Organic Agriculture. At Cold Mountain Organic, they promote and sell local products of Nagaland. Besides selling

organic products, the establishment also trains farmers to be self-sufficient and to undertake environment-friendly farming practices. It further aims to promote the state produce at international markets.

SPEAKER 5 (15:05-15:25)

TERRY MCGENITY

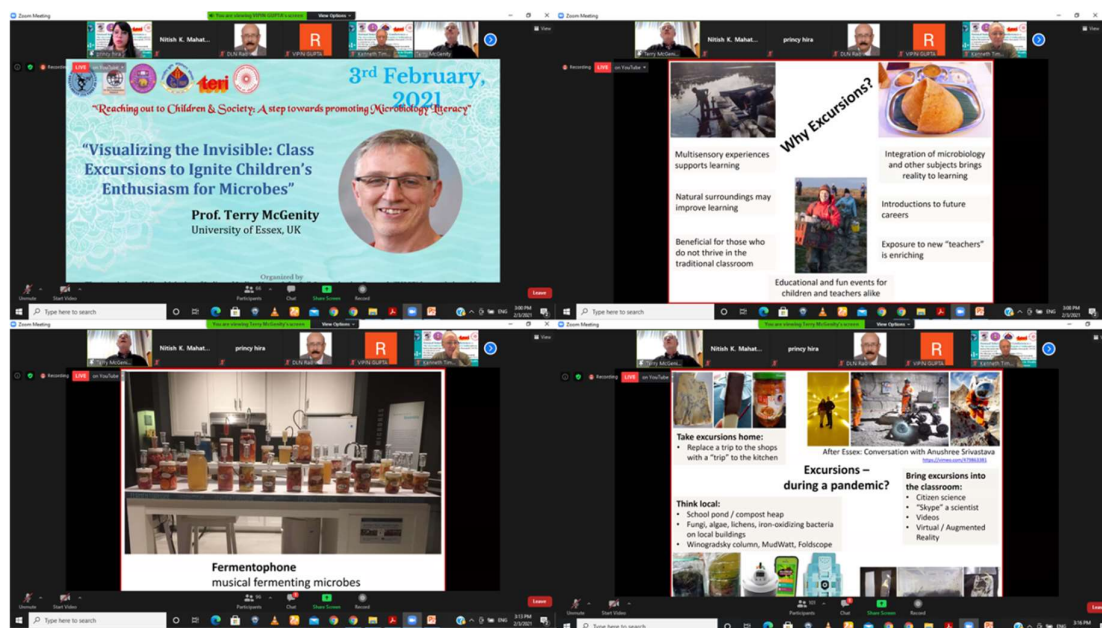
Professor, University of Essex, UK

Title of the Talk: *Visualizing the Invisible: Class Excursions to Ignite Children's Enthusiasm for Microbes*

The afternoon session started with brief introduction of Prof. Terry McGenity by Dr. Princy Hira.

Prof. Terry McGenity started with describing importance and need of microbiological literacy to the society as microbes are although invisible, yet vital to functioning of planets and affects our daily life. Our society, especially the children should be encouraged to be familiar with microbiology with enjoyable and hands-on exposure to various examples of microbial activities which brings a reality to learning of facts e.g. role of bacteria in food factories, fermentation, reducing food spoilage etc. Then, Prof. Terry mentioned that how class excursions became difficult during pandemic situation. In such time period, one can think of local excursions like of school pond, old local buildings and observation of microbes with foldscope, Winogradsky column, MudWatt kit etc. In fact, excursions can be done at home also such as trips to kitchen where one can find bacteria actively present in cheese, dairy products, pickle etc. **Fermentophone** is also a good example of use of microbes to produce music by fermenting bacteria. Besides, citizen science campaigns can also be arranged locally to spread science of microbes in society.

The informative session ended with acknowledgement by Dr. Princy Hira.



*Dr. Terry is a Professor in Environmental Microbiology at the University of Essex, United Kingdom. His overarching research interest is to understand how microbial communities function and interact to influence major biogeochemical processes. He has broad interests in microbial ecology and diversity, particularly with respect to carbon cycling and is driven to better understand how microbes cope with, or flourish, in hypersaline and poly-extreme environments. He is an active member of the Microbiology Society and in addition to attending meetings, chairing sessions, giving presentations and writing for *Microbiology Today*, Prof. Terry*

has co-organised Focused Meetings, e.g. one on Extremophiles in 2010, and another scheduled for 2021 entitled "Microbial Cycling of Volatile Organic Compounds - Biogeochemistry to Biotechnology". He believes harnessing microbial activities is vital in achieving the United Nations's Sustainable Development Goals. Microbes control our atmosphere and are vital to maintaining healthy soils and plants, and thus in feeding the world. He is a part of the Microbiology Literacy Initiative and along with other members participate in and contribute to make microbiology literacy in society a reality.

SPEAKER 6 (15:30 - 15:50)

PROF. RUP LAL

NASI Senior Scientist Platinum Jubilee fellow, The Energy and Resources Institute, New Delhi

Title of the Talk: Human Microbiome & Health: Communicating Complex Subjects with a Concerned Public & Children

He delivered a talk titled "Human Microbiome and Health: Communicating Complex Subjects with a Concerned Public and Children". He started with a relationship between the microbiome and health. He explained the importance of microbiology and encourages students to think, understand as well as move towards to get educate in microbiology. He described unlimited world of microbes: Archaea, Virus and Bacteria. He gave a data for the number of microbes, that is, $0.9-3.2 \times 10^{30}$. He told about the World Microbiome Day and it is celebrated on 27th June on microbes all around the world and introduces International Microbiome researchers to the public to raise awareness of the vibrant and diverse world of microbes. Last year, the theme of World Microbiome Day was **Diversity**, that is, diversity of microbes, microbiome habitats, diets to feed and fuel microbiomes and the diversity among microbiome researchers. Microorganisms can be found everywhere in and on plants, animals, water, soil, food and humans. Within each of those habitats, microorganisms live together in communities called microbiomes. Microbiomes have an effect on human health; therefore, scientists are exploring how these communities of organisms co-exist with each other, with us and our environment? He thrown light about diseases that they begin in GUT and he explained how the Gut Microbiota is linked to diseases?

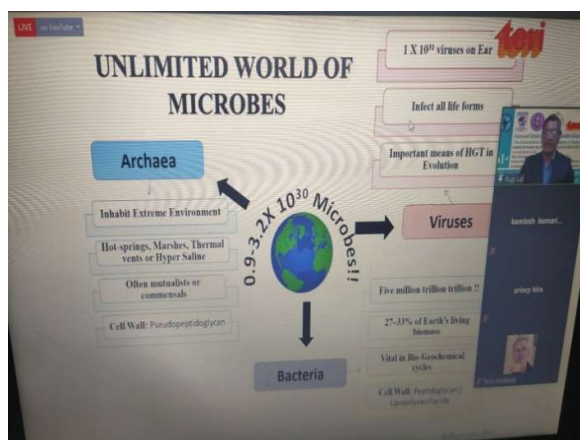
He emphasized on Life style, food habits and no drugs as they are the keys to keep you healthy. He concluded with to a statement "To win the war against obesity, we need rigorous exercises, life style changes and eating right, to change our microbial army".



Acknowledgements



On **World Microbiome Day** we celebrate all things microbe, all around the world and we introduce international microbiome researchers to the public to raise awareness of the vibrant and diverse world of microbes



2013	2018	April 2020
90 Kg	77 Kg	66.8 Kg
BP 95-170 mm Hg	BP 77-130 mm Hg	BP 73-127 mm Hg
	Blood Sugar levels: 110-140	

To win the war against obesity we need rigorous exercises, life style changes and eating right, to change our microbial army.

Prof. Rup Lal is the NASI Senior Scientist Platinum Jubilee fellow at The Energy and Resources Institute, New Delhi. He has over 40 years of teaching and research experience with many administrative positions like Chairman of Board of Research Studies, Dean, Faculty of Science, Dean, Examination, Member of Executive Council and Academic Council. He has longstanding research experience in various disciplines highlighting molecular and genetic aspects of hexachlorocyclohexane (HCH) degradation, exploring microbial diversity, genetic manipulation of rifamycin producing actinobacterium, microbial genome sequencing and metagenome analysis.

He has served as the Editor-in-Chief of Indian Journal of Microbiology from 2006-2013 and has also been serving as a member of editorial board in various leading scientific journals. He was the Ambassador, American Society for Microbiology for the Indian Ocean Region from 2012-2015 and Presently, he is the Ambassador of ISME (International Society for Microbial Ecology), The Netherlands.

Professor Lal is the recipient of several prestigious fellowships and honours. He was awarded with AMI Lifetime Achievement Award 2020 in recognition to his work and commitment. Recently he has been associated with microbiology literacy initiative with Prof. Kenneth and translated editorial depicting the need of microbiology literacy in society in different regional languages of India.

SPEAKER 7 (15:55 – 16:15)

DR. SHAILLY ANAND

Assistant Professor, Department of Zoology, Deen Dayal Upadhyaya College, University of Delhi, INDIA

Title of the Talk: *There is no Plan B for there is no Planet B: Microbiology Literacy is the hope*

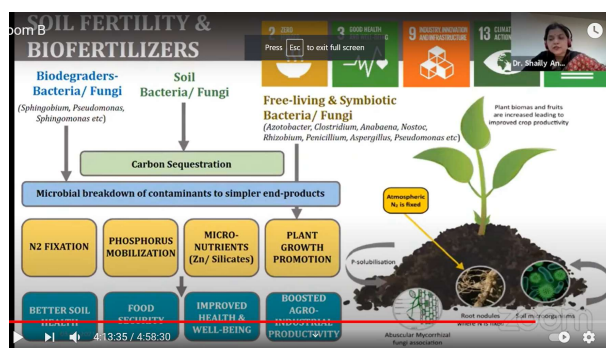
The talk started with a brief introduction by Dr. Princy Hira.

Dr. Anand started her talk with a statement made by Mr. Boon – the United nations Secretary General while addressing a global conference on Climate change in 2016. She believed that if one child is educated the right way, we can change the way a society functions. She went on explain the scope of use of micro-organisms, methods for their better utilization and the role of educating the society to curb the significant problems being faced by the world including food, health, well-being and the green energy – creating a sustainable today for a sustained future. She discussed the role of micro-organisms in ensuring a better tomorrow and how relevant “sustainability” is in the present scenario so as to construct our present with a capacity to continue into the distant future.

She discussed how the current practices, wherein we are using a lot of chemicals indiscriminately, increasingly employing non-renewable sources of energy (those which if exhausted, cannot be replenished) and also causing an uncontrolled generation of waste products in every possible industrial

process has posed a large threat to the sustainability of the environment. She explained how these practices, if not renewed and shifted to greener ways might soon deplete earth of its natural resources and the pollution levels might bring a doom making it an inhabitable place with completely destroyed ecology. She then discussed the significant role of United Nations which in January 2016 brought together 193 countries worldwide to agree to 17 global goals with 169 targets for sustainable economic development of the world by 2030.

Thereafter she cited the 17 sustainable development goals, each with a distinct focus but together set to achieve environmental, social, economical growth through cleaner, greener methods and technologies making intelligent use of sustainable science. She also discussed how the 17 goals were sub-grouped into 5 P's – People, Prosperity, Planet, Peace & Partnerships. Subsequently, she took up various examples from day – to-day living where microbiology plays a central stage including fermented foods, biofuels, bioremediation, development of vaccines and drugs etc. Alongside she also narrated the use of marine microorganisms and also the importance in teaching, research & innovation. She finally concluded her talk with the significance of microbiology literacy in the present times especially during childhood for a better and sustainable tomorrow.



Dr. Shaillly Anand is currently working as an Assistant Professor in the Department of Zoology at Deen Dayal Upadhyaya College, University of Delhi since 2012. Academically, She was a meritorious student and secured first position in college throughout her graduation and post-graduation. During her doctoral thesis, she worked on bacterial Genome Sequencing, assembly and annotations. She specializes in the field of Cell & Molecular Biology. She has 14 research papers and articles in peer reviewed National and International Journals of repute to her credit. She has also contributed 11 e-chapters in Biotechnology and Molecular Biology under the MHRD Project National Mission on Education through ICT of the Institute of Lifelong Learning, University of Delhi. Additionally, she has been actively involved in conducting & organizing several workshops/ training programs/ summer camps for the students and also Faculty Development Programs for the teachers. She also holds several academic & administrative positions within her institution.

SPEAKER 8 (16:20 – 16:40)

DR. PRIYA SINGH

Assistant Professor, Department of Zoology, Maitreyi College, University of Delhi, INDIA

Title of the Talk: *Food for Health*

She emphasized on the need and importance of maintaining a good gut health. Dr Priya elaborated that prebiotics and probiotics both support the body in building and maintaining a healthy colony of bacteria and other microorganisms, which supports the gut and aids digestion. These food components help promote beneficial bacteria by providing food and creating an environment where microorganisms can flourish. Prebiotics are present in fiber-rich foods, such as fruits, vegetables, and whole grains. Probiotics occur in many fermented foods, including yogurt, sauerkraut, and tempeh. She also explained that probiotics contain a variety of microorganisms; the most common are bacteria that belong to groups called *Lactobacillus* and *Bifidobacterium*. Different types of probiotics may have different effects. Participants gained immensely on the significance of microbes in gut health.

Dr. Priya Singh is presently working as Assistant Professor at Maitreyi College, University of Delhi. She is an experienced research scholar with a demonstrated history of working in the field of genetic engineering and biotechnology. Skilled in Life Sciences especially Molecular Microbiology with 17 research publications and 3 book chapters to her credit with 166 Google scholar citations. She has presented her research work at various National and International Conferences.

MICROBIOLOGY QUIZ

Quiz Master: Dr. Vipin Gupta (Managing Director, PhiXgen Pvt. Ltd.)

A microbiology quiz was also organized for the school students wherein simple questions based on recent developments in microbiology were posed online and students were asked to mail the correct answers. The idea behind this activity was to engage students alongside making them aware of some of the latest applications of microbiology. The following students scored the highest:

- **Arya Kashyap** and **Bharti Kumari**, DAV School Cantt Area, Bihar
- **Simran Jit**, Gurunanak Dev School, Punjabi Bagh, Delhi
- **Priya Sinha**, DAV School Cantt Area, Bihar

20 February, 2021

CAREER COUNSELLING SESSION

Future prospects of Healthcare Management in India

Synapses in association with Kalpavriksha- The Botanical Society and the Career Counselling & Placement Cell (CCPC) of Deen Dayal Upadhyaya College organized an interactive career counselling session on the topic 'FUTURE PROSPECTS OF HEALTHCARE MANAGEMENT IN INDIA' on 20th February, 2021 through the Zoom platform. More than 110 students along with 7 faculty members attended the session.

Speakers :



The poster is for a 'CAREER COUNSELLING SESSION' organized by KALPAVRIKSHA SYNAPSES & CAREER COUNSELLING and PLACEMENT CELL. The topic is 'Future prospects of healthcare management in India'. It features two speakers: Prof. Vinay Tripathi, Associate Professor, IIHMR Delhi, and Prof. Divya Aggarwal, Associate Dean-Academics and Students Affairs, IIHMR Delhi. The session is on 20th February at 10 am via Zoom. Logos for Deen Dayal Upadhyaya College, Botany, and Kalpavriksha are shown. Contact information for teachers and organizers is provided at the bottom.

KALPAVRIKSHA SYNAPSES & CAREER COUNSELLING and PLACEMENT CELL organizes

CAREER COUNSELLING SESSION

TOPIC- Future prospects of healthcare management in India

Prof. Vinay Tripathi, Associate Professor, IIHMR Delhi

Prof. Divya Aggarwal, Associate Dean-Academics and Students Affairs, IIHMR Delhi

20th february 10 am ZOOM

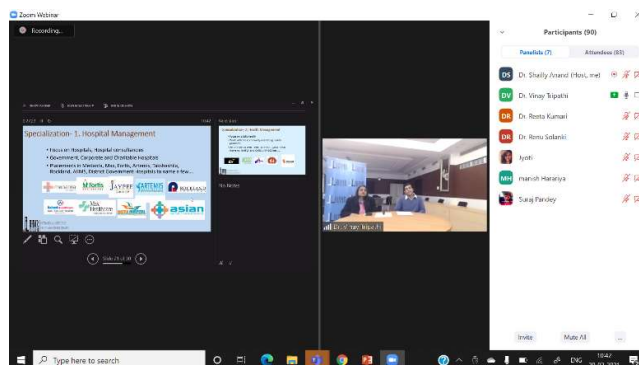
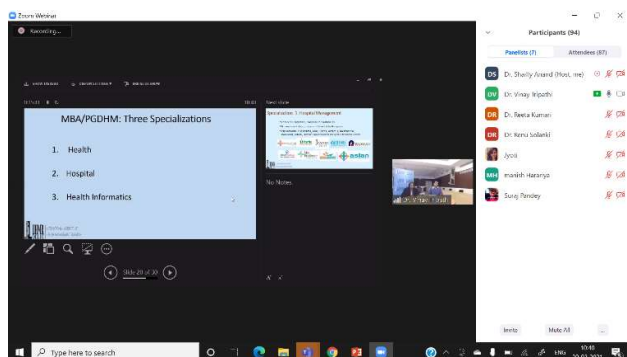
Teacher convenor-Dr. Shailly Anand (Dept. of Zoology)
Teacher-in-charge-Dr. Renu Solanki (Dept. of Zoology)
CCPC convenor-Dr. Monika Bansal

For any query ☎
Ritika-9625805068
Suraj-8173048529

Teacher Convonor - Dr. Reeta Kumari (Dept. of Botany)
Teacher-in-charge - Dr. Charu Kalra (Dept. of Botany)

kalpavriksha_dduc dduckalpavriksha@gmail.com KALPAVRIKSHA

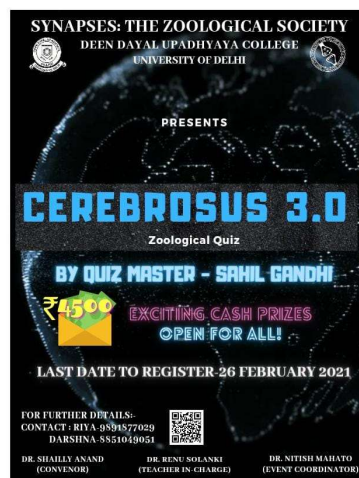
Prof. Divya Aggarwal, Associate Dean-Academics and Student Affairs, IIHMR Delhi and
Prof. Vinay Tripathi, Associate Professor, IIHMR Delhi



26-27 February, 2021
ZOOFESTEA'21
Annual Festival of Synapses

An Online Inter-college Zoofestea'21 – The Annual Festival of Synapses, the Zoological Society was organized encompassing the following activities through the Zoom platform (Convenor: Dr. Shailly Anand).

Just-A-Minute: The Extempore Contest	Event Coordinator: Dr. Anita Gulati & Dr. Renu Solanki
Cerebrosus 3.0: The Zoological Quiz	Event Coordinator: Dr. Nitish Mahato
Canvas 3.0: The Painting Competition	Event Coordinator: Dr. Kamlesh Kumari
Graph-The-Idea: The Digital Poster Making Contest	Event Coordinator: Dr. Shailly Anand
Digital Exposure: The Photography Contest	Event Coordinator: Dr. Lathika Nair & Dr. Anina James



Dr. Shailly Anand
Convenor, Synapses
(Aug, 2020 to 2021)

Dr. Renu Solanki
Teacher In-Charge
Dept. of Zoology