1961 - 2021
Tirumala Tirupati Devasthanams
Sri Venkateswara College
(University of Delhi)

SRI VENKATESWARA COLLEGE
(UNIVERSITY OF DELHI)

EVENT REPORT

NAME OF THE ACTIVITY: PROF. B. K. BACHHAWAT MEMORIAL SEMINAR SERIES INAUGURAL SEMINAR ON "GLUTATHIONE: NEW DISCOVERIES ON AN OLD MOLECULE"			
DATE	**FACULTY**	**DEPARTMENT/ COMMITTEE**	**COORDINATOR NAME**
9th November 2021	Science	Biochemistry	Dr. Nimisha Sinha Dr. Meenakshi Kuhar
TIME	**VENUE**	**NUMBER OF PARTICIPANTS**	**NATURE: Outdoor/ Indoor**
9:30 – 11:30 a.m.	Online mode (Zoom meeting platform)	100	Indoor (Online)
SUPPORT/ ASSISTANCE	DEPARTMENT OF BIOCHEMISTRY, SRI VENKATESWARA COLLEGE, UNIVERSITY OF DELHI		

BRIEF INFORMATION ABOUT THE ACTIVITY

OBJECTIVES:

The objective of this seminar series is to invite distinguished speakers, retired faculty members and alumni of the department to deliver lectures and share their valuable experiences with the students. Through the seminar series, we aim to build connections with our alumni, experts from various fields of biological sciences, faculty members and students. We believe that this interface will provide the young minds sound fundamentals of science, will foster professional networks and ignite their interest in research.

The first lecture in the series was conducted on the topic "Glutathione: New Discoveries on an old molecule", which proved to be a great learning opportunity for all the participants of the lecture. The lecture was mainly focused on the research of Prof. Anand Kumar Bachhawat on the molecule glutathione. The session gave students and faculty an insight of the research going on the molecule and this would definitely help them develop an intellect and think about the potential research that could be conducted in future.

It laid the multi-dimensional approach one can take towards discovering potential mechanisms of an already much-known molecule, with thorough interlinking of variable concepts. In addition, it involved a holistic motivational aspect for students wishing to pursuit core research in the future.

INTRODUCTION:

The talk was conducted by Prof. Anand Kumar Bachhawat who is a professor at the Department of Biological Sciences, Indian Institute of Science and Research (IISER), Mohali and heads the 'Bachhawat Lab'. He is the son of late Prof. Bimal Kumar Bachhawat, in honor of whom the talk was organized. Prof. B. K. Bachhawat was the founding member of the Department of Biochemistry at Sri Venkateswara College, University of Delhi. He was a profound scientist in the field of neurochemistry and glycobiology. He is well-renowned for his discovery of HMG CoA-lyase and elucidation of the molecular cause of metachromatic leukodystrophy, a hereditary brain disease. He has been the recipient of several awards, namely the Shanti Swarup Bhatnagar Award, the Padma Bhushan and was an elected fellow of all the three major Indian science societies. Prof. Anand Kumar Bachhawat completed his bachelors in chemistry from the University of Madras and went on to complete his masters from IIT Kanpur. He pursued his Ph.D. in biochemistry from Bose Institute, University of Calcutta. Prof. Anand Kumar Bachhawat completed his post-doctoral training in MGH Cancer Center, Harvard Medical School, USA. He has held the positions of Scientist (E1/E2/F) at the Institute of Microbial Technology from 1993 to 2008, Scientist (G) at the Institute of Microbial Technology from 2008 to 2010, Dean faculty at IISER, Mohali from 2011 to 2014, Dean of R&D at IISER, Mohali from 2014 to 2016 and head-of-the-department of biological sciences at IISER, Mohali from 2015 to 2018. Prof. Bachhawat has been awarded with the National Bioscience Award (2001), CSIR New Idea Fund (2004) along with several fellowships. He has also been a member of the editorial boards of Journal of Biosciences from 2010 to 2015, Current Sciences from 2013 to 2015, Resonance from 2009 to 2012 and 2018 to 2020, Microbial Cell from 2014 to the present date and Journal of Biological Chemistry from 2015 to the present date. He also received the prestigious JC Bose Fellowship in 2012. Prof. Anand Bachhawat has mentored over 21 PHD students and 18 M.Sc. students for their masters' thesis.

Prof. Anand Kumar Bachhawat and his lab principally focus on understanding how glutathione levels are maintained in the cell and its role in forming a major component to various molecular mechanisms. The webinar was built upon the same lines, where Prof. A. K. Bachhawat highlighted their lab's contributions towards the in-depth exploration of the glutathione molecule.

PROCEEDINGS:

Prof. C. Sheela Reddy, Principal, Sri Venkateswara College, Prof. D. P. Sarkar, Senior Professor, Department of Biochemistry, University of Delhi, Prof. A. K. Bachhawat, speaker of the event, Kiran Bachhawat and Kalpana Bachhawat, daughters of late Prof. (Dr.) B. K. Bachhawat, the faculty of Department of Biochemistry, Sri Venkateswara College and student enthusiasts in the field of biological sciences were the attendees of this event.

The webinar commenced with the addressal of the gathering by the principal of Sri Venkateswara College, Prof. C. Sheela Reddy, followed by Prof. D. P. Sarkar reminiscing his fond memories of Prof. B. K. Bachhawat. The floor was then handed over to the convener of the webinar, Dr. Nimisha Sinha, who welcomed everyone to the event and spoke about the Diamond Jubilee Year celebration, where she expressed the significance of the celebrations and explained the motto of the celebrations, "Proud History, Promising Future", after which Dr. Meenakshi Kuhar introduced the speaker of the day, Prof. A. K. Bachhawat.

Prof. A. K Bachhawat began his talk by highlighting the deep devotion, unwavering dedication and visionary aptitude his father, Prof. B. K. Bachhawat held towards the field. He then geared up to the discussion of glutathione. He discussed the essentiality of glutathione for the survival of eukaryotic cells, its function as a redox buffer, the interplay of GSH/GSSG ratio, the glutathione synthesis and degradation pathway and how the deficiency of this molecular species can lead to a diseased state. The following are the highlights of his talk:

- An introduction to glutathione

    - It is a tripeptide (γ-glutamyl cysteinyl glycine)
    - It dimerizes on oxidation
    - Glutathione synthesis and degradation discoveries timeline
    - Knockdown of glutathione immediately leads to cell death, due to oxidative stress imparted by reactive oxygen species
- The time his team happen to come across glutathione and their findings of some missing and misfitting aspects of the same. In particular, the mis-proposed role of glutathione in amino acid transport was identified in the γ-glutamyl cycle of glutathione metabolism. They later dwelled upon the idea of further exploring the arena and finding the answers to unresolved queries.
- Contribution of his team towards glutathione transport and degradation
    - The reverse genetic approach in yeast, 1996 was adopted while attempting to identify glutathione transporters
    - Identification of HDT1, the first high-affinity glutathione transporter was performed by knocking out several transporters in Δmet_{15}
    - Additional take on already existing degradation pathway of glutathione, wherein degradation takes place only outside the cytosol
    - Discovery of DUG (defective utilization of glutathione) pathway, a cytosolic degradation pathway, in the year 2007 and its key players, Dug1, Dug2 and Dug3
    - Discovery of alternative Chac2 (Cation/H^+ Antiporter Regulator) pathway in 2017
    - Indulging into the exploration of glutathione metabolism as a signaling pathway, wherein the idea that glutathione degradation may lead to a shift in GSH/GSSG ratios and subsequent change in redox environment may lead to consequences on a certain ion signaling pathway was taken into account
    - The realization that calcium influx increased upon glutathione degradation along with the overexpression of Chac1, and its suggestive correlation.
    - The association of glutathione degradation with cytoplasmic oxidation and the role of an unknown pathway in YVC1 and CCH1 calcium transporter activation leading to calcium influx.
    - The unknown mechanism exploration at transcriptional and post-translational levels and revelation of variable possible mechanisms such as channel glutathionylation, disulphide bond formation in the channel and cysteine residue modifications
    - Experimenting with Chac1 knockdown using morpholins and its subsequent effect on brain, muscle and heart leading to defective development during zebrafish embryogenesis and correlation of the same with calcium homeostasis.
    - Future methodology in identifying potential drugs against Chac1 and its possible effect in curing disease related to calcium dysregulation especially cancer and combatting viral infection

The feedback form was circulated right after the lecture was completed.

It was then followed by student and faculty interaction with Prof. A. K. Bachhawat. The highlights of the same are as follows:

- The therapeutic strategies to counter cancer and inhibitor identification strategies.
- The temporal or conditional operation of Chac2 and Chac1, and their relative prevalence in stressful conditions.
- The scope of glutathione consumption by diet.
- Morphological differences in culture during methionine rich and glutathione rich conditions.
- The tissue-specific abundance of glutathione receptors
- Specificity of protein for glutathionylation as a post-translational modification

The seminar was concluded with a vote of thanks, thanking the esteemed guests, distinguished speaker and all the participants.

OUTCOMES:

- The talk was instrumental in providing the students an insight about the different aspects of the glutathione molecule including its composition, metabolism, degradation as well as well as its therapeutic applications.
- The lives and experiences of Prof. Bimal Kumar Bachhawat and Prof. Anand Kumar Bachhawat shared during the event served as inspiration for students wishing to pursue a career in core research.

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

1 Notice and Letters ✓	**2** Number of Participants and Name of Participants ✓	**3** Video Clip	**4** Photos ✓	**5** Feedback Form and Analysis ✓
6 News Clip with Details	**7** Sample Copy of Certificate	**8** Posters/Invites ✓	**9** Event report Attested by Event Coordinator & IQAC Coordinator ✓	**10** Any other document

PROOFS:

- **Poster**

- **Brochure**

PATRON

Prof. C. Sheela Reddy
Principal
Sri Venkateswara College

DEPARTMENT OF BIOCHEMISTRY SRI VENKATESWARA COLLEGE

The Department of Biochemistry at Sri Venkateswara College, DU was established in the year 1989. The Biochemistry undergraduate program was founded by the Late Padma Bhushan Prof. B. K. Bachhawat and former SVC Principal, Dr. V. Krishna Moorthy.

CONVENORS

Dr. Meenakshi Kuhar
Dr. Nimisha Sinha

ORGANIZING TEAM

Team Catalysis 2021-22

Late Prof. Bimal Kumar Bachhawat

Professor B.K. Bachhawat was a renowned neurochemist and biochemist who made significant contributions in the field of Neurochemistry and Glycobiology. He was instrumental in establishment of the Department of Biochemistry at the University of Delhi (South Campus) and set up the first internationally recognized Center of Neurochemistry and Glycobiology in Vellore.

- Some of his best-known research findings include the discovery of HMGCoA lyase and the molecular cause of the inherited disease metachromatic Leucodystrophy.
- He published over 150 research articles, edited several books, and mentored a large number of students including about 42 Ph.D. students.
- The Government of India awarded him the third highest civilian honour of the Padma Bhushan, in 1990, for his contributions to science.

CATALYSIS
THE BIOCHEMICAL SOCIETY
DEPARTMENT OF BIOCHEMISTRY
SRI VENKATESWARA COLLEGE

presents

PROF. B. K. BACHHAWAT MEMORIAL SEMINAR SERIES

Inaugural Seminar
on
GLUTATHIONE: NEW DISCOVERIES ON AN OLD MOLECULE

NOVEMBER 9, 2021 (TUESDAY)
TIME: 09:30 A.M.
ZOOM ONLINE PLATFORM

ABOUT THE EVENT

"It is the supreme art of the teacher to awaken joy in creative expression and knowledge" - Albert Einstein

Padma Bhushan Late Prof. Bimal Kumar Bachhawat was one such teacher and a visionary par excellence. Being one of the founding members of the Department of Biochemistry at Sri Venkateswara College, he was instrumental in establishment of the department and conception of the Honors course in Biochemistry with a vision to groom the scientific inquisitiveness in young minds.

The Prof. B.K. Bachhawat Memorial Seminar series is being introduced by the Department of Biochemistry, Sri Venkateswara College to recognize his contributions and to commemorate the Diamond Jubilee Year of Sri Venkateswara College.

The objective of this seminar series is to invite distinguished speakers, retired faculty members and alumni of the department to deliver lectures and share their valuable experiences with the students. Through the seminar series, we aim to build connections with our alumni, experts from various fields of biological sciences, faculty members and students. We believe that this interface will provide the young minds sound fundamentals of science, will foster professional networks and ignite their interest in research.

ABOUT THE SPEAKER

Prof. Anand Kumar Bachhawat

Prof. Anand Kumar Bachhawat, an highly acclaimed Indian biochemist, is a Professor in Biological Sciences at the Indian Institute of Science Education and Research, Mohali. His field of specialization includes Redox biology / Sulphur metabolism / Synthetic Biology.

- Holds patents for the biochemical processes developed by him and is a co-author for more than 70 research publications.
- Recipient of prestigious awards like the National Bioscience Award (2001) and CSIR New Idea Fund (2004).
- A distinguished fellow of IAS, NAS and INSA.
- He has guided over 20 Ph.D. and Postdoc. students.

REGISTRATION DETAILS

The webinar is open for all Students and Faculty.

TO REGISTER

Scan the QR code

OR

Use the link below

https://forms.gle/q7hC7Sgrdono7H5ZA

E-certificates will be given to all the participants

FOR DETAILS CONTACT

Catalysis
bcatalysis@gmail.com

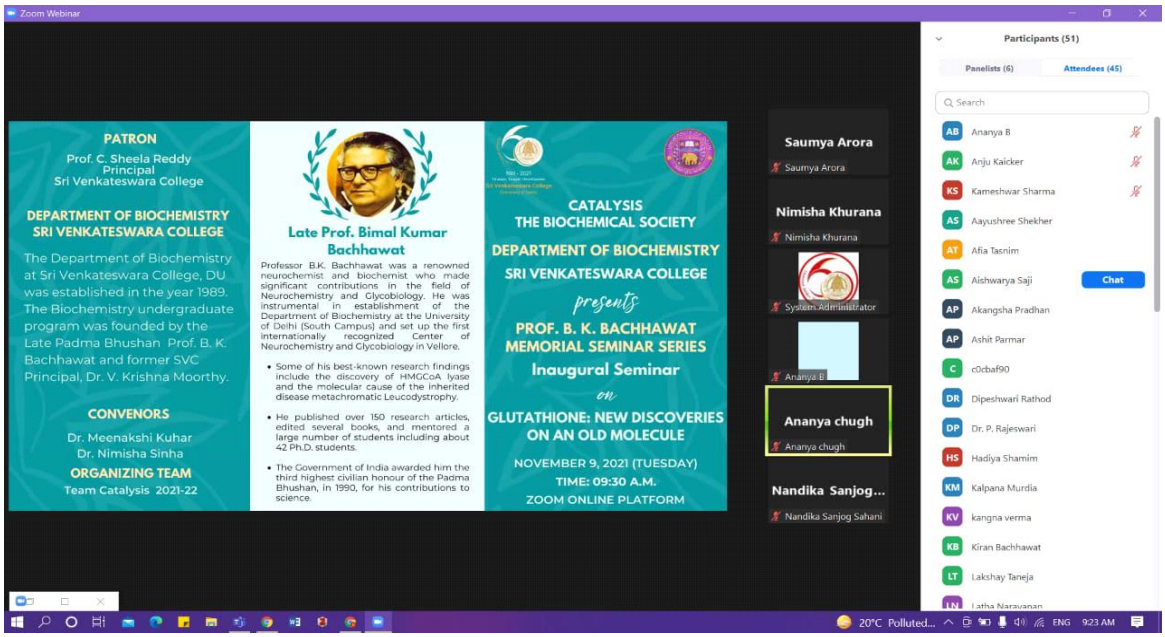
Dr. Meenakshi Kuhar
mkuhar@svc.ac.in

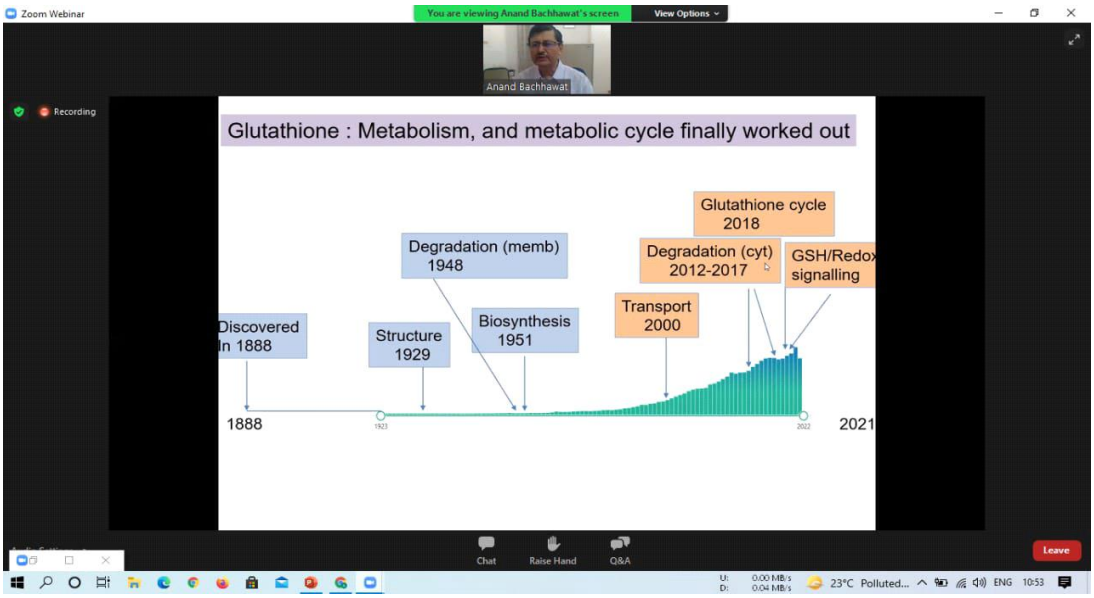
Dr. Nimisha Sinha
nimishasinha@svc.ac.in

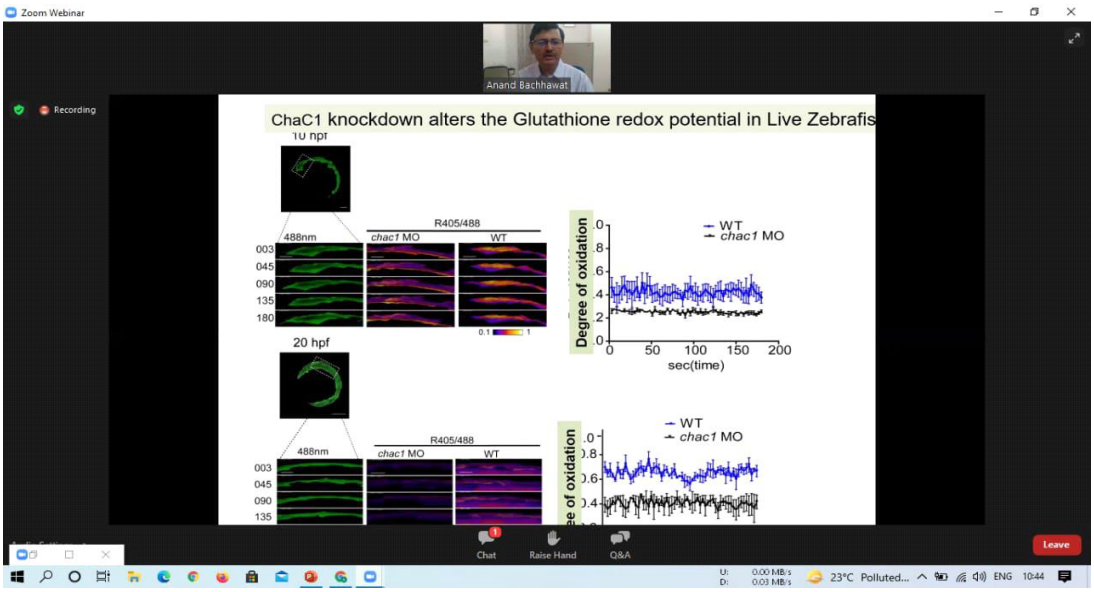
- **Registration Form**
  https://forms.gle/V4cs6L787rphntdk6

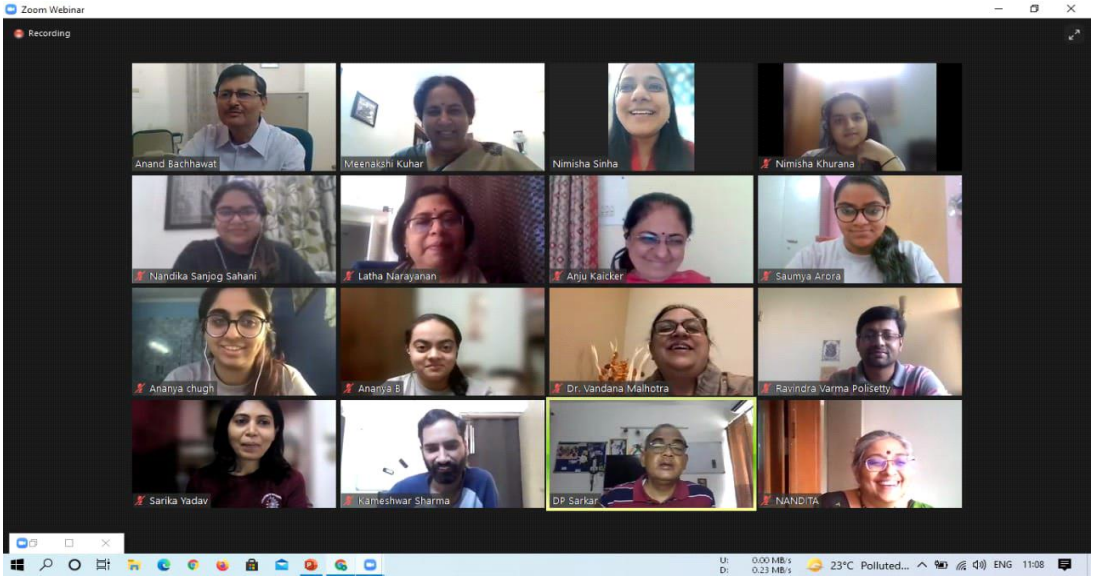
- **Feedback Form**
  https://forms.gle/MEMHNs5EwfowDDHz9

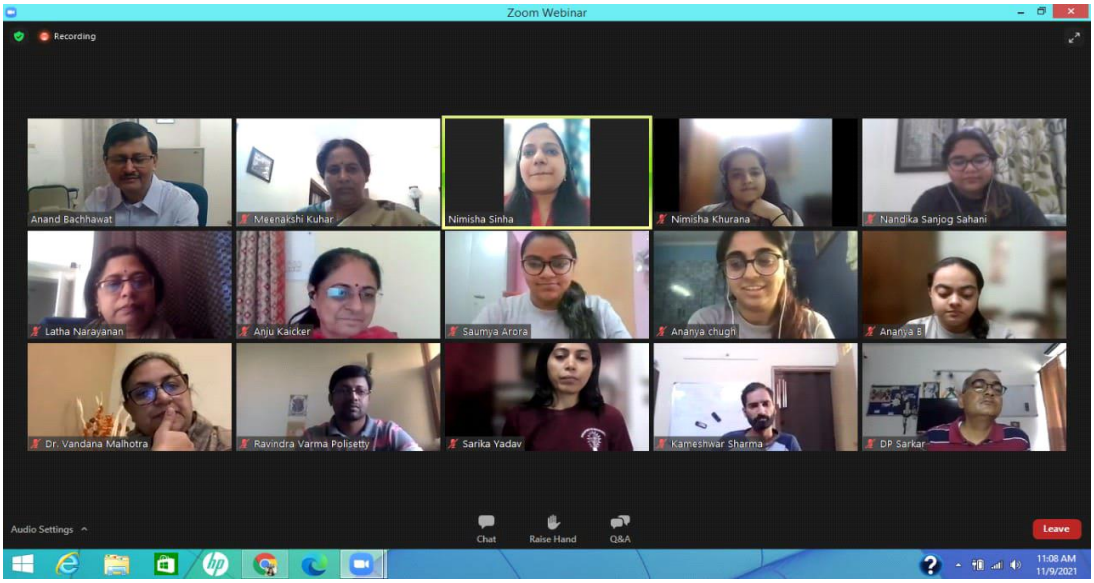
- **PHOTO GALLERY**






Zoom Webinar
Recording
Anand Bachhawat
ChaC1 knockdown alters the Glutathione redox potential in Live Zebrafis
10 hpf
488nm
chac1 MO
WT
R405/488
003
045
090
135
180
Degree of oxidation
WT
chac1 MO
sec(time)
20 hpf
Chat
Raise Hand
Q&A
Leave


Zoom Webinar
Recording
Anand Bachhawat
Meenakshi Kuhar
Nimisha Sinha
Nimisha Khurana
Nandika Sanjog Sahani
Latha Narayanan
Anju Kaicker
Saumya Arora
Ananya chugh
Ananya B
Dr. Vandana Malhotra
Ravindra Varma Polisetty
Sarika Yadav
Kameshwar Sharma
DP Sarkar
NANDITA



Link of the event:

https://us04web.zoom.us/j/74689359607?pwd=TXhwZHZVdnFkZWlFZS9ReVJtYnd2QT09

LIST OF PARTICIPANTS

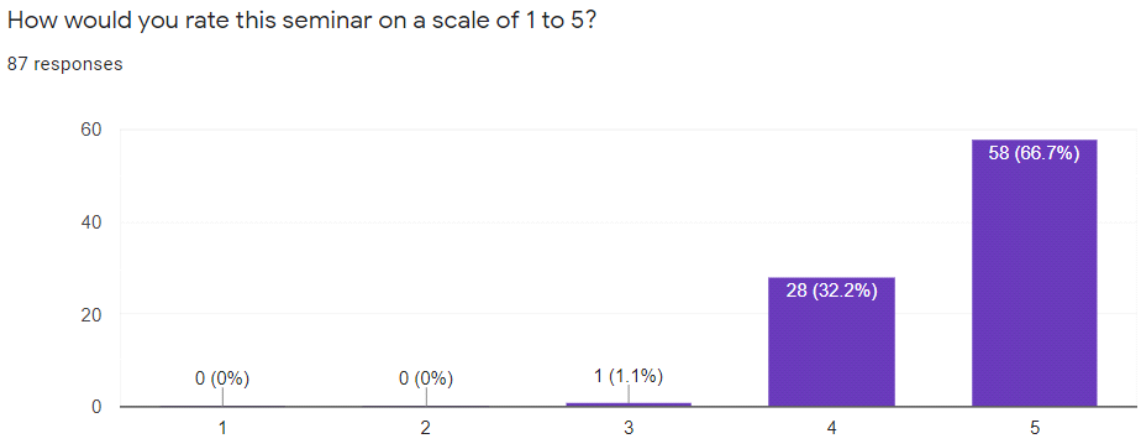
S. No.	Name of Participant	S. No.	Name of Participant
1	Hadiya Shamim	51	Nethma Dulmini
2	Lakshay Taneja	52	Namya Sethi
3	Vridhi Singh	53	PANDE SUBHENDUNATH NIKHILESH
4	Urvi Singh	54	Sainki
5	Reeva Garg	55	Shrist Elizabeth M
6	Dipeshwari Balrajsingh Rathod	56	Himani Arora
7	Ayushi Prasad	57	Shaun Mahanti
8	Parmar Ashit Mukeshbhai	58	Raghav Worah
9	SHREYA GUPTA	59	Alisha Ali
10	Vani	60	Bipasha Yadav
11	Prof.Neena R.Wadehra	61	Thaanya Priyangika Amarasekara
12	Isha Bansal	62	Ishita Sehgal
13	Anwesa Saha	63	DURBA ROY
14	Shreya Kohli	64	Tarun Saini
15	Juliet Christian	65	vani morabiya
16	Nandika Sanjog Sahani	66	Asmita Gahlout
17	Pracheta S Salunkhe	67	Donthula Naveen
18	Sumedha	68	Shristika Konwar
19	Payal Yadav	69	Zeaan Mehernosh Pithawala
20	Sangeeta Kumari Meena	70	Aayushree Shekher
21	Anusha Mahmood	71	Rea Pasricha
22	Monika	72	Ananya Bandyopadhyay
23	Purbasha Das	73	Pinki saini
24	Nipun Kumar Verma	74	Rythem
25	Tanvi Agarwal	75	Ayushi Shukla
26	Nishinki Thakshana de Silva	76	Saumya Satish Kunji
27	M. L. Sai Suguna	77	Tenzin Chondon
28	Smriti Raina	78	Vincy Chacko
29	Aashi Barwal	79	Aishwarya Saji
30	Kareena Yadav	80	Sonali Bhavesh Mehta
31	Akangsha Pradhan	81	Shreya Taluja
32	Dr Sarika Yadav	82	Praveen Gosangi
33	Kangna Verma	83	Kevin Bhagora
34	Tapasya Khanna	84	Pratidunnya Singh

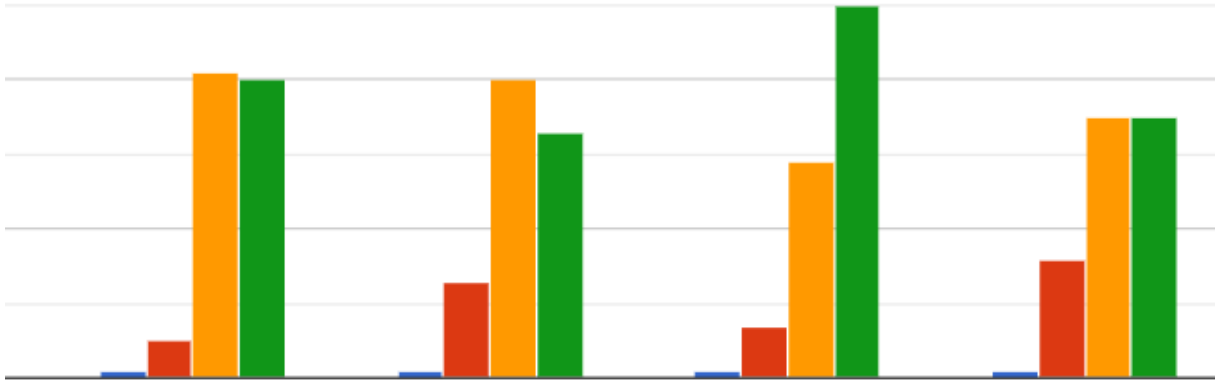
35	CHIRAG PAREEK	85	Afia Tasnim
36	Dikshita Ramesh	86	Nimisha Khurana
37	Vinita Rupareliya	87	Oishika Chatterjee
38	Pawan	88	Prashant Mehra
39	Kajal Yadav	89	Dr. Anju Kaicker
40	PRADEEP SINGH CHEEMA	90	Dr. Vandana Malhotra
41	Rishabh Anant	91	Dr. Nandita
42	Arushi Gupta	92	Dr. Shalini Sen
43	KAMAKSHI ABROL	93	Dr. Nimisha Sinha
44	RIYA SAH	94	Dr. Kameshwar
45	Shahin malik	95	Dr. Ravindra Varma
46	Shivansh Singh	96	Dr. P. Rajeshwari
47	RUNJHUN	97	Dr. N. Latha
48	PATEL SUCHI S	98	Rahul Handa
49	Anjali Surana	99	Shubendunath
50	Vinita Khokhar	100.	Dr. Meenakshi Kuhar

FEEDBACK

Form link: https://forms.gle/i6kbetBSd1K1L5BX8

Feedback Analysis

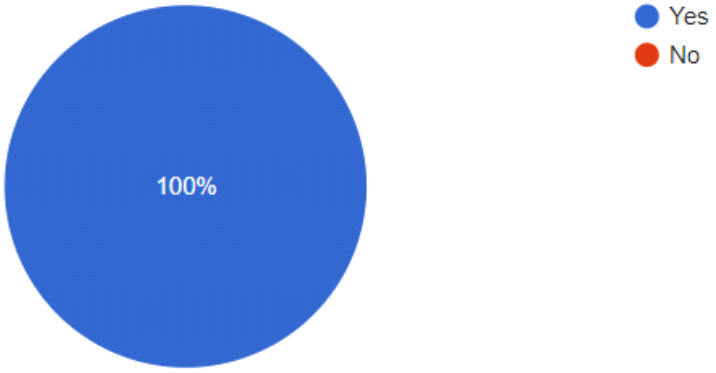




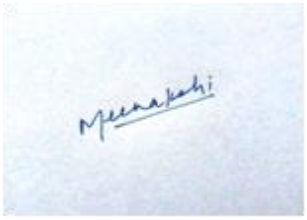
How would you rate the following?

Would you recommend this seminar to others?

87 responses



IQAC Document No: IQAC/SVC/2021-22/BIOCHEM/01	Criterion No: I, III, V
Departmental file no:DJY/2021-2022	IQAC file No: 2021-22

NAME OF TEACHER & SIGNATURE	NAME OF HEAD/ COMMITTEE INCHARGE & SIGNATURE	IQAC COORDINATOR (SEAL & SIGNATURE)
Dr. Nimisha Sinha   Dr. Meenakshi Kuhar	Dr. Nimisha Sinha Teacher In-charge 	

For Reference

Criterion I	Curricular Aspects (planning & Implementation)		Criterion V	Student Support & Progression
Criterion II	Teaching Learning & Evaluation		Criterion VI	Governance
Criterion III	Research, Innovations & Extension		Criterion VII	Institutional Values & Best Practices
Criterion IV	Learning Resources and Infrastructure			

1961 - 2021
Tirumala Tirupati Devasthanams
Sri Venkateswara College
(University of Delhi)

CERTIFICATE

This is to certify that Prof. B. K. Bachhawat Memorial Seminar Series Inaugural Seminar On "Glutathione: New Discoveries On An Old Molecule was successfully conducted on 9th November 2021 from 09:30-11:30am by Department of Biochemistry in the Online mode and its event report has been submitted to IQAC for record.

C Shula Reddy
Principal

PRINCIPAL
Sri Venkateswara College
Dhaula Kuan, New Delhi-110021

IQAC Coordinator

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