PROGRAMME REPORT

2019-20

Department of Biotechnology

Mar Ivanios College (Autonomous)

Report on International Symposium on Converging Technologies for Human Welfare: Biotechnology, Nanotechnology, and Information Technology: Concept to Common Life

Date: 2nd July 2019
Supported by: DBT-STAR Scheme
Coordinator: Dr. Lini N.

Participants: 250

Introduction: The International Symposium on Converging Technologies for Human Welfare aimed to explore the transformative potential of biotechnology, nanotechnology, and information technology in enhancing human life. With a focus on ethical considerations and societal needs, the symposium aimed to foster awareness and collaboration among participants towards achieving impactful societal outcomes.

Key Objectives:

- Raise awareness about the impact and benefits of converging technologies on human welfare.
- Facilitate interaction between internationally renowned speakers and participants to exchange knowledge and insights.
- Educate undergraduate and postgraduate students on the significance of research in these emerging fields.

Event Highlights:

- **Inauguration:** The symposium was inaugurated by Shri. M. Chandra Dathan, Scientific Advisor to Chief Minister of Kerala and Former Director of VSSC. His address highlighted the importance of technological advancements in improving societal well-being.
- **Keynote Address:** Prof. G. M. Nair, Advisor, Kerala Biotechnology Commission, Kerala State Council for Science Technology and Environment, delivered the keynote address focusing on the integration of biotechnology, nanotechnology, and information technology for sustainable development.
- **Sessions and Speakers:**
    - **Prof. Achuth Sankar S. Nair**, Head, Department of Computational Biology & Bioinformatics, University of Kerala, Thiruvananthapuram, provided insights into computational approaches in biotechnology.
    - **Dr. Saji George**, Associate Professor, Canada Research Chair in Sustainable Nanotechnology for Food and Agriculture, McGill University, Canada, discussed applications of nanotechnology in food and agriculture.
    - **Dr. Sanalkumar Rajendran**, Associate Scientist, University Institute of Pathology, CHUV, Switzerland, shared advancements in information technology for healthcare and pathology.

- **Competitions:** Poster and oral presentation competitions were held during the symposium. Participants showcased their research and innovative ideas, with winners receiving certificates and cash prizes to encourage further exploration in converging technologies.

The International Symposium on Converging Technologies for Human Welfare served as a platform for interdisciplinary dialogue and collaboration. It successfully highlighted the potential of biotechnology, nanotechnology, and information technology to address global challenges and improve human life. The symposium inspired participants, especially students, to engage in research and innovation that can contribute to societal well-being and

sustainable development.

Report on Institute Visit to CSIR-National Institute of Oceanography, Goa

Date of Visit: 20-01-2020

Coordinator: Sajeesh R.

Objective of Visit: The visit aimed to provide students and faculty members with an opportunity to explore selected labs at CSIR-National Institute of Oceanography, Goa, and engage with its research and academic environment.

Overview: On 20-01-2020, a group of 30 students accompanied by faculty members from Mar Ivanios College visited CSIR-National Institute of Oceanography, Goa. The visit was organized by Sajeesh R. to expose our students to the advanced research and academic facilities in oceanography.

Activities and Highlights:

1. **Welcome and Introduction:** The group received a warm welcome from the institute, where an introduction to its mission, research areas, and academic programs was provided.
2. **Lab Tours:** Students and faculty members toured selected laboratories relevant to oceanography, gaining insights into ongoing research projects and technologies.
3. **Interaction with Scientists:** Interactive sessions with scientists allowed students to discuss research methodologies, findings, and career opportunities in oceanographic sciences.
4. **Q&A and Networking:** A Q&A session provided students with the opportunity to engage directly with scientists and clarify their queries about research and career paths in oceanography.

Conclusion: The visit proved highly educational and inspiring for both students and faculty members. It provided valuable exposure to the cutting-edge research and academic environment at CSIR-National Institute of Oceanography, Goa, fostering potential collaborations and deeper engagement in oceanographic sciences.

A journey through Entrance Exams in Life science: A career orientation program

Janaki Nair, Jawahar Lal Nehru University,
Arya Suresh, Central University Hyderabad
Awasthi BJ, IISER TVM on 4th,5th, and 6th August 2020.

Coordinators: **Dr.Lini.N & Dr.Sajeesh T**

Session 1: A Journey through Entrance Exams in Life Sciences

Date: 4th August 2020
Speaker: Janaki Nair, Jawaharlal Nehru University

Objective:
The session aimed to provide students with insights into the various entrance exams relevant to life sciences and orient them towards potential career paths in the field.

Key Highlights:

- **Introduction:** Janaki Nair provided an overview of the importance of entrance exams in shaping careers in life sciences.
- **Exam Overview:** Detailed discussions on entrance exams such as JNU Entrance Exam (JNUEE), GATE-BT, ICMR-JRF, and others, including their syllabi, exam patterns, and eligibility criteria.
- **Career Guidance:** Guidance on career opportunities post clearing these exams, including opportunities in research, academia, and industry.
- **Q&A Session:** An interactive Q&A session allowed participants to clarify doubts and seek advice directly from Janaki Nair.

Conclusion:
The session proved highly informative, equipping students with valuable knowledge about entrance exams and career prospects in life sciences, thereby guiding them towards informed career decisions.

Session 2: A Journey through Entrance Exams in Life Sciences

Date: 5th August 2020
Speaker: Arya Suresh, Central University Hyderabad

Objective:
This session aimed to deepen students' understanding of various entrance exams in life sciences and provide insights into career opportunities available post-exam.

Key Highlights:

- **Introduction:** Arya Suresh introduced the session and highlighted the significance of competitive exams in life sciences education.
- **Exam Insights:** Detailed analysis of entrance exams like CSIR-UGC NET, DBT-JRF, and others, focusing on exam structure, preparation strategies, and recommended study resources.
- **Career Perspectives:** Discussion on career paths after clearing these exams, including roles in research institutes, universities, pharmaceutical companies, and biotechnology firms.
- **Interaction:** Arya Suresh engaged with participants through interactive discussions and encouraged questions on exam preparation and career planning.

Conclusion:
The session provided comprehensive insights into various life sciences entrance exams and career opportunities, empowering students with the knowledge needed to pursue successful careers in the field.

Session 3: A Journey through Entrance Exams in Life Sciences

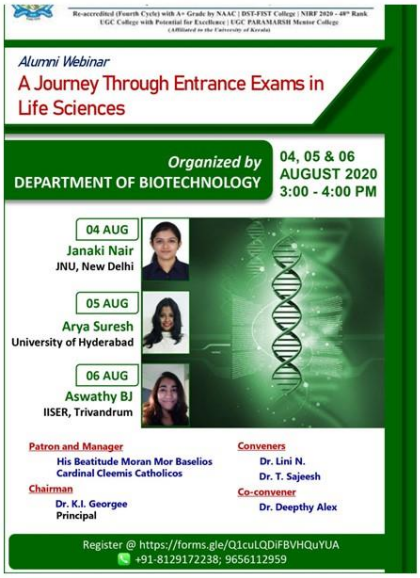
Date: 6th August 2020
Speaker: Awasthi BJ, IISER Thiruvananthapuram

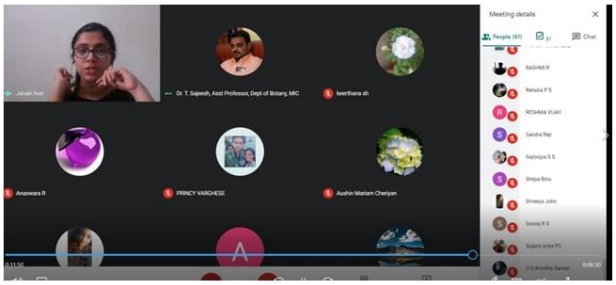
Objective:
To educate students about the nuances of entrance exams in life sciences and inspire them towards impactful careers in the scientific community.

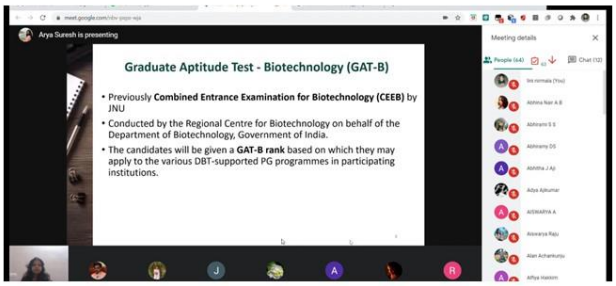
Key Highlights:

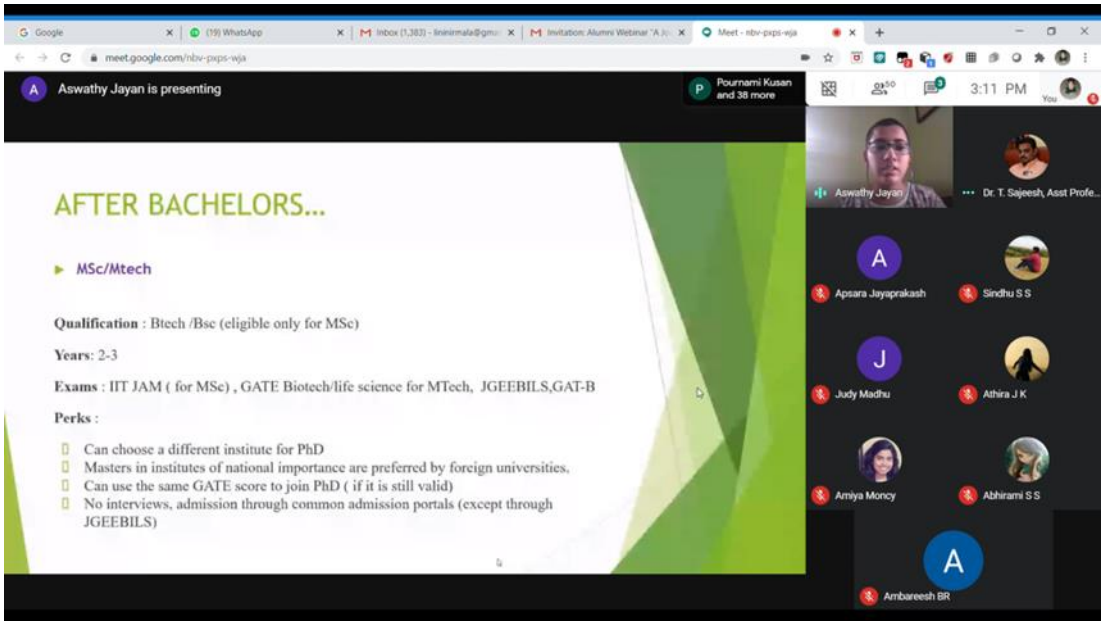
- **Introduction:** Awasthi BJ commenced the session by emphasizing the role of entrance exams in shaping future careers in life sciences.
- **Exam Focus:** In-depth coverage of exams such as IISER Integrated PhD, NIPER JEE, and others, highlighting exam patterns, syllabi, and preparation strategies.
- **Career Opportunities:** Insights into diverse career opportunities post clearing these exams, including research fellowships, academic positions, and entrepreneurship in biotechnology.
- **Interactive Session:** Participants actively engaged in discussions, seeking guidance on exam preparation techniques and career pathways from Awasthi BJ.

Conclusion:
The session was instrumental in guiding students towards understanding the complexities of life sciences entrance exams and fostering their enthusiasm for pursuing meaningful careers in the scientific realm.


Re-accredited (Fourth Cycle) with A+ Grade by NAAC | DST-FIST College | NIRF 2020 - 48th Rank
UGC College with Potential for Excellence | UGC PARAMARSH Mentor College
(Affiliated to the University of Kerala)
Alumni Webinar
A Journey Through Entrance Exams in Life Sciences
Organized by
DEPARTMENT OF BIOTECHNOLOGY
04, 05 & 06 AUGUST 2020
3:00 - 4:00 PM
04 AUG
Janaki Nair
JNU, New Delhi
05 AUG
Arya Suresh
University of Hyderabad
06 AUG
Aswathy BJ
IISER, Trivandrum
Patron and Manager
His Beatitude Moran Mor Baselios Cardinal Cleemis Catholicos
Chairman
Dr. K.I. Georgee
Principal
Conveners
Dr. Lini N.
Dr. T. Sajeesh
Co-convener
Dr. Deepthy Alex
Register @ https://forms.gle/Q1cuLQDiFBVHQuYUA
+91-8129172238; 9656112959


Meeting details
Dr. T. Sajeesh, Asst Professor, Dept of Botany, MIC
Aswin Mariam Cheriyan
PRINCY VARGHESE


Arya Suresh is presenting
Graduate Aptitude Test - Biotechnology (GAT-B)
Previously Combined Entrance Examination for Biotechnology (CEEB) by JNU
Conducted by the Regional Centre for Biotechnology on behalf of the Department of Biotechnology, Government of India.
The candidates will be given a GAT-B rank based on which they may apply to the various DBT-supported PG programmes in participating institutions.
Meeting details


meet.google.com/nbv-pxps-wja
Aswathy Jayan is presenting
Pournami Kusan and 38 more
3:11 PM
AFTER BACHELORS...
MSc/Mtech
Qualification : Btech /Bsc (eligible only for MSc)
Years: 2-3
Exams : IIT JAM (for MSc) , GATE Biotech/life science for MTech, JGEEBILS,GAT-B
Perks :
Can choose a different institute for PhD
Masters in institutes of national importance are preferred by foreign universities.
Can use the same GATE score to join PhD (if it is still valid)
No interviews, admission through common admission portals (except through JGEEBILS)
Aswathy Jayan
Dr. T. Sajeesh, Asst Profe...
Apsara Jayaprakash
Sindhu S S
Judy Madhu
Athira J K
Amiya Moncy
Abhirami S S
Ambareesh BR

Report on International Webinar on Mass Spectrometry: Basic Principles and Fundamental Applications

Date: 23rd October 2020
Speaker: Dr. Bini Ramachandran, Postdoctoral Research Associate, Food Allergy Research and Resource Program, University of Nebraska, Lincoln, NE

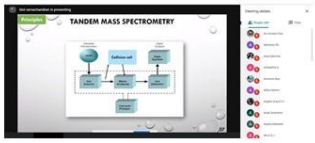
Cordinator: Dr.Lini.N

Objective:
The international webinar aimed to provide participants with foundational knowledge of mass spectrometry, focusing on its basic principles and fundamental applications in various fields.

Key Highlights:

- **Introduction:** Dr. Bini Ramachandran commenced the webinar by introducing the fundamental concepts of mass spectrometry (MS) and its significance in analytical chemistry and research.
- **Basic Principles:** Detailed explanations of the principles underlying MS, including ionization techniques (such as ESI and MALDI), mass analyzers (like TOF and quadrupole), and detection methods.
- **Applications:** Exploration of the diverse applications of MS across different disciplines, including proteomics, metabolomics, environmental analysis, and clinical diagnostics.
- **Case Studies:** Dr. Bini Ramachandran presented case studies and examples showcasing how MS is used to solve real-world problems and advance scientific research.
- **Q&A Session:** An interactive Q&A session allowed participants to engage directly with Dr. Bini Ramachandran, seeking clarifications and further insights on MS techniques and applications.

Conclusion:
The webinar proved to be an enlightening and educational experience, providing participants with a comprehensive understanding of mass spectrometry's foundational principles and its wide-ranging applications. It empowered attendees with the knowledge necessary to leverage MS techniques effectively in their respective fields of research and analysis.


TANDEM MASS SPECTROMETRY


MAR IVANIOS COLLEGE
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BIO-TRAC : Explore Biotechniques
Webinar Series on
Techniques and Tools in Biotechnology
Organized by
DEPARTMENT OF BIOTECHNOLOGY
In Loving Memory of Dr. Thomson Kuruvilla
(Former HoD, Dept. of Biotechnology)
International Webinar on Mass Spectrometry :
Basic Principles and Fundamental Applications
Dr. BINI RAMACHANDRAN
Postdoctoral Research Associate
Food Allergy Research and Resource Program
University of Nebraska-Lincoln, Lincoln, NE
23 OCTOBER 2020
09:00 - 10:00 AM
Patron and Manager
His Beatitude Moran Mor
Baselios Cardinal Cleemis
Catholicos
Chairman
Dr. K.I. Georgee
Principal
Coordinators
Dr. Lini N.
Dr. T. Sajeesh
Co-coordinator
Dr. Deepthy Alex
Join @ https://meet.google.com/nqp-gcjt-npm
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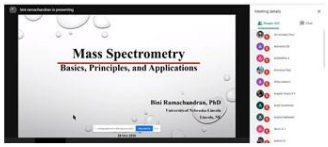
MASS SPECTROMETERS IN SPACE
• Miniature mass spectrometers in Mars
• Analysis of Marsian ions
• SAM- Quadrupole MS (12-220 m/z) on Curiosity Rover
• MOMA- Ion trap MS (upto 1000 m/z) on Perseverance


Mass Spectrometry
Basics, Principles, and Applications
Bini Ramachandran, PhD