



SVCEI Sri Venkateswara
College of
Engineering

Department of Biotechnology

in Association with the

iGEM Team, SVCE-CHENNAI

BIOBLITZ

"DECODING THE FUTURE : UNLEASHING THE POWER
OF BIOINFORMATICS & SYNTHETIC BIOLOGY"

TOOLS:

PyRx

ChimeraX

NCBI-
Primer BLAST

Snapgene

NEBcutter

REGISTRATION LINK : [BIOBLITZ](https://www.bioblitz.org/)

SCAN TO REGISTER



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BIOTECHNOLOGY SVCE





"DECODING THE FUTURE: UNLEASHING THE POWER OF BIOINFORMATICS & SYNTHETIC BIOLOGY"

BOBFIN

Organized by
Department of Biotechnology
in Association with the
iGEM Team, SVCE-CHENNAI



ABOUT THE INSTITUTION

Sri Venkateswara College of Engineering (SVCE), is a unit of Sri Venkateswara Educational and Health Trust (SVEHT). SVCE is one of the premier technical institutions in Tamilnadu, the College is situated on the Chennai – Bangaluru National Highway (NH4) about 37 km south-west of Chennai. The college is in a 95 acre lush green Campus. It is housed in architecturally exquisite buildings with ample infrastructure such as classrooms, laboratories, libraries, sports arena, canteen, hostels, dispensary etc., The college offers 12 UG programmes and 7 PG programmes. SVCE is an ISO 9001:2015 certified institution and Accredited by 'NAAC' with 'A+' grade.

ABOUT THE DEPARTMENT

Sri Venkateswara College of Engineering noted the growth in Modern Industrial Biotechnology. In order to support the growth in Biotechnology, SVCE started the Department of Biotechnology in 2005. The department offers B.Tech and M.Tech Biotechnology programmes approved by AICTE. It is also approved as a Research Center in Biotechnology for MS (by Research) and Ph.D. programmes by Anna University, Chennai. The Department has well-established laboratory facilities namely Genetic Engineering, Bioprocess, Research Lab, Animal house and Computational System Biotechnology Lab. The Department received Research Grants (2.85 Crores) from various funding agencies such as SERB, ICMR, AICTE, CTS and also several grants for organizing Short Term Training courses, Workshops, Faculty Development Programmes from various funding agencies such as DBT, SERB, ICMR, CSIR and EDII.
<https://youtu.be/p6TZo15pL7U>

VISION & MISSION OF THE DEPARTMENT

VISION

To produce higher caliber Biotechnologists to attain new heights in bioinformatics and bioprocess technology as per industrial needs and to provide leaders in the field of Biotechnology.

MISSION

- To progress the department to attain center of excellence in bioinformatics and bioprocess technologies by providing best Undergraduate, Postgraduate, Doctoral programs and R&D activities within a decade.
- To develop special skilled training programs for graduates to meet the personality characters stipulated by the industries within a period of five years.
- To build potential biotechnologists capable of dealing with new challenges and socio-ethical implications.

OBJECTIVE & LEARNING OUTCOMES OF THE WORKSHOP

OBJECTIVE

The goal of this workshop is to equip the participants with the basic knowledge of bioinformatics and provide hands on experience on insilico tools that can be applied for research projects on genetic engineering and synthetic biology.

LEARNING OUTCOMES

At the end of this workshop, the participants will have:

- Knowledge and experience in open-source bioinformatics tools used for genetic engineering.
- Hands-on experience in primer design, sequence analysis, molecular docking, gene circuit design, and evaluation.

ORGANIZING COMMITTEE

CONVENORS

Prof. M. Sivanandham- Secretary, SVEHT

Prof. E. Nakkeeran- HoD/BIO

ORGANIZING SECRETARY

Dr. K. Divakar- Associate Professor/BIO

FACULTY COORDINATORS

Mr. J. Hariharan- Assistant Professor/BIO

Mr. S. Naga Vignesh- Assistant Professor/BIO

iGEM Team of SVCE

1. Jyothishree V

2. Vibhushini

3. Thapasvi Puvvada

4. Maanasa M

5. Harini B

6. Madhumitha K

7. Ragini Vidyashankar

8. Arun Pravin C V

9. Sriram M

10. Aswatha Narayana R

11. Maseera Ahmedi M

12. Nandakishor V

13. Sivagurunathan R

WORKSHOP TOPICS

PyRx

PyRx is a Virtual Screening software for Computational Drug Discovery that can be used to screen libraries of compounds against potential drug targets.

ChimeraX

ChimeraX is the state-of-the-art visualization program from the Resource for Biocomputing, Visualization, and Informatics.

NCBI-Primer BLAST

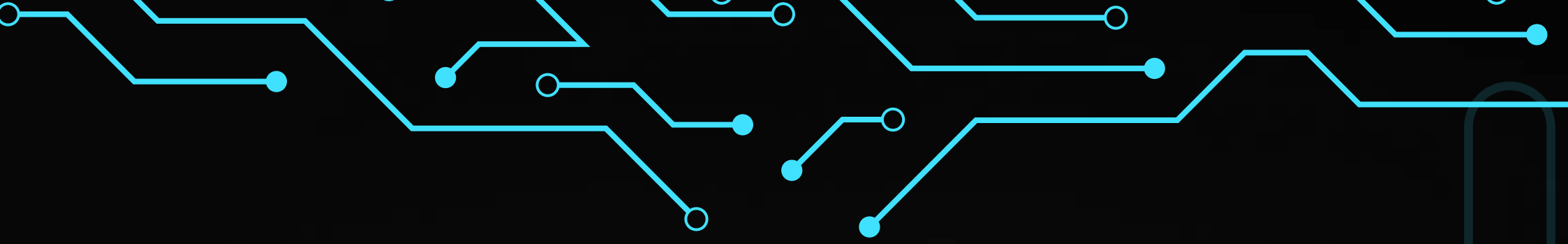
A free online primer design platform which designs PCR primers using the Primer3 system and simultaneously checks the specificity.

Snappgene

It enables DNA sequence visualization, sequence annotation, sequence editing, cloning, protein visualization, and simulating common cloning methods.


NEBcutter

NEBcutter is a bioinformatics tool designed to aid in the analysis and prediction of restriction enzyme cleavage sites in DNA sequences.



This workshop aims to equip participants with essential knowledge and practical skills to screen protein libraries, DNA sequence visualization, annotation, editing, virtual cloning, protein visualization, and simulating common virtual cloning methods.

WORKSHOP FORMAT



The workshop will consist of a series of interactive lectures, and practical sessions. Participants will have the opportunity to work with open-source bioinformatics tools and software, gaining hands-on experience in analyzing biological data. The workshop will also include group discussions, Q&A sessions, and networking opportunities to encourage collaboration among attendees.

CERTIFICATE OF PARTICIPATION



Upon successful completion of the workshop, participants will receive a Certificate of Participation.

WORKSHOP DETAILS

- Date: 24th and 25th August 2023
- Time: FN session: 9:00 - 12:00
AN session: 1:00 - 3:00
- Location: Department of Biotechnology, SVCE
- Registration: Each participant has to pay Rs.590 (including 18% GST) (working lunch will be provided).

PAYMENT DETAILS

A/C Name: PRINCIPAL, SRI VENKATESWARA COLLEGE OF ENGG

A/C No: 467302331

Bank Info: Indian Bank, Sriperumbudur

IFSC Code: IDIB000S080

MICR No: 600019112

REGISTRATION

To secure your spot in the Bioinformatic Workshop, please complete the registration process by 20th August. Spaces are limited, so we encourage early registration to avoid disappointment.

[\[https://forms.gle/4Eu5WHixdD4HpngqZ9\]](https://forms.gle/4Eu5WHixdD4HpngqZ9)

CONTACT US



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Sriperumbudur Tk - 602 117, Tamil Nadu



Department of Biotechnology

&

iGEM Team : SVCE-CHENNAI



Solicit your esteemed presence for the **Inaugural Function**

of

BIOBLITZ

Bioinformatics and Synthetic Biology Workshop

by



Dr. V. Naveen Kumar, PhD
Founder & Managing Director,
ImmuGenix Biosciences Pvt Ltd,
Chennai-11

Date: 24th August 2023

Time: 09:00 AM

Venue: Biotech Conference Hall

ALL ARE CORDIALLY INVITED!

Conveners

Prof. M. Sivanandham, Secretary-SVEHT
Prof. E. Nakkeeran, HOD-BIO

Organising Secretary

Dr. K. Divakar, ASP-BIO

Coordinators

Mr. J. Hariharan, AP-BIO
Mr. S. Naga Vignesh, AP-BIO





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BIOBLITZ

Bioinformatics and Synthetic Biology Workshop

AGENDA

- 09:00 AM** - Prayer song
- 09:05 AM** - Welcome Address by Prof. E Nakkeeran, HoD/BIO
- 09:10 AM** - About the Workshop by Dr. K. Divakar, ASP/BIO
- 09:15 AM** - Releasing Workshop Manual /Magazine
- 09:20 AM** - Introducing the Chief Guest by Ms. Maanasa M
- 09:25 AM** - Inaugural Address followed by Keynote lecture by the Chief Guest, Dr. V. Naveen Kumar, PhD
- 10:55 AM** - Vote of Thanks by Mr. J. Hariharan, AP/BIO





BIOBLITZ

24th and 25th August 2023

Department of Biotechnology

in association with

iGEM Team : SVCE-CHENNAI

Programme Schedule

DAY- 1 (24th August 2023)	
Time	Events
08:30 – 09:00 AM	Registration
09:00 – 11:00 AM	Inauguration followed by key note lecture
11:00 – 11:10 AM	Tea Break
11:10 AM – 12:40 PM	Hands on Session - NEBcutter
12:40 – 1:10 PM	Lunch Break
1:10 – 02:00 PM	Hands on Session - NCBI Primer BLAST
02:00 – 02:10 PM	Tea Break
02:10 – 03:15 PM	Hands on Session - SnapGene
DAY- 2 (25th August 2023)	
08:30 – 10:00 AM	Hands on Session – ChimeraX
10:00 – 10:10 AM	Tea Break
10:10 – 12:00 Noon	Hands on Session - PyRx
12:00 - 12:40 PM	Lunch Break
12:40 – 01:40 PM	Hands on Session - NCBI Genome Data Viewer
01:40 – 02:15 PM	Discussion on iGEM and awareness on Synthetic Biology
02:15 – 02:30 PM	Assessment Test / Quiz
02:30 – 02:40 PM	Tea Break
02:40 – 03:10 PM	Valedictory Session & Certificate Distribution
Vote of Thanks & National Anthem	



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of

BIOBLITZ

Bioinformatics and Synthetic Biology Workshop



Dr. N. MEYYAPPAN

Professor and HOD

Department of Chemical Engineering

Sri Venkateswara College of Engineering

Date: 25th August 2023

Time: 02:40 PM

Venue: Biotech Conference Hall

ALL ARE CORDIALLY INVITED!

Conveners

Prof. M. Sivanandham, Secretary-SVEHT
Prof. E. Nakkeeran, HOD-BIO

Organising Secretary

Dr. K. Divakar, ASP-BIO

Coordinators

Mr. J. Hariharan, AP-BIO

Mr. S. Naga Vignesh, AP-BIO



Department of Biotechnology

Report

Hands-On Workshop BIOBLITZ

24th & 25th August 2023

A Hands-on Workshop titled “BIOBLITZ” was organized by the Department of Biotechnology at Sri Venkateswara College of Engineering on August 24th and 25th 2023, was a comprehensive and informative event. Dr. K. Divakar, Associate Professor, Mr. J. Hariharan, Assistant Professor, Mr. S. Naga Vignesh, Assistant Professor, Department of Biotechnology organised/coordinated to conduct the hands-on workshop. Here's a summary of the key activities and sessions that took place during the workshop:

Day 1 - August 24, 2023:

Registration and Welcome: The day began with formal registration, during which participants received registration kits. There were 20 participants from various engineering colleges, some of whom required lodging and boarding facilities. A total of 20 participants from other engineering colleges registered for the workshop. Hostel facilities for lodging and boarding were provided for the outstation participants. Transport facilities were arranged (in SVCE college bus) for other participants.

Inaugural Ceremony: The inaugural ceremony commenced at 09:00 AM with a welcome address by Dr. E. Nakkeeran, the Head of the Department of Biotechnology. Dr. K. Divakar, the organizing secretary, provided an overview of the workshop's objectives and learning outcomes. Ms. Maanasa student of 4th year B. Tech Biotechnology, Event head of iGEM activities (SVCE-CHENNAI team) introduced the chief guest, Dr. V. Naveen Kumar, Founder & Managing Director of ImmuGenix Biosciences Pvt Ltd, Chennai. The Chief guest delivered a key note lecture and gave a speech emphasizing the importance of bioinformatics in drug design and development, sharing insights from his research and product development. Also discussed about the COVID-19 detection kit which they developed and marketed with the approval from ICMR. Participants including students, faculty members from SVCE and external participants from various institutions (engineering colleges) attended the inaugural event. The inaugural ceremony ended with a thanking note to the chief guest by Mr. Hariharan.

Department Tour: Participants were divided into groups and taken on a department tour, visiting various laboratories to familiarize themselves with the facilities available.

Hands-on Session 1 (Session-1): NEBcutter: Mr. Hariharan led the first session on NEBcutter. Participants were provided with internet access and desktop computers as needed.

Hands-on Session 2 (Session-2): Primer Design with NCBI-Primer BLAST: This session focused on designing primers for PCR. Participants used NCBI-Primer BLAST to design primers based on given gene sequences. They worked individually to design PCR primers for their genes of interest, with guidance from Dr. K. Divakar and Mr. Hariharan.

Hands-on Session 3 (Session-3): SNAPGENE: In this session, participants learned about cloning vectors, constructing plasmids, identifying restriction sites, performing in silico restriction digestion, and designing cloning vectors.

Day 2 - August 25, 2023:

Hands-on Session 4: ChimeraX: The second day began with a session on ChimeraX led by Dr. K. Divakar. Participants learned how to import protein structures, manipulate visualization parameters, edit protein files, label residues, generate 2D pharmacophores, and visualize interactions between ligands and proteins.

Hands-on Session 5: PyRx (Protein-Ligand Docking): Mr. S. Naga Vignesh conducted a session on PyRx, a docking tool. Participants were provided with protein and ligand files and learned how to perform protein-ligand docking. They analyzed the results based on instructions provided during the session.

Hands-on Session 6: Genome Data Viewer (GDV): Dr. Divakar demonstrated the usage and navigation of GDV. Participants explored features such as viewing, searching, and retrieving data within GDV, applying their knowledge to their chosen organisms.

The workshop covered a wide range of topics related to bioinformatics and practical applications in biotechnology. It provided participants with valuable hands-on experience and insights from industry experts.

Photos captured during the event



Inauguration of workshop



Guest lecture by the Chief Guest



Hands-On sessions



Certificate distribution during valedictory function

Valedictory session: The valedictory session of the workshop marked the conclusion of the event with the following highlights:

Dr. E. Nakkeeran, the Head of the Department of Biotechnology, delivered a formal welcome address to begin the valedictory session. Dr. K. Divakar, the organizing secretary of the event, provided an overview of the workshop, highlighting its significance and what had transpired over the course of the workshop. Ms. Maanasa, a student of 4th year B. Tech Biotechnology and event head of iGEM activities (SVCE-CHENNAI team), introduced the chief guest for the valedictory session, Dr. N. Meyyappan, Professor and Head of the Department of Chemical Engineering at SVCE. Dr. N. Meyyappan, the chief guest, delivered the valedictory address. He emphasized the importance of hands-on workshops, skill development programs, and lifelong learning. His speech aimed to inspire the participants and encourage them to continue their educational and skill development journeys.

During the session, feedback from the participants was collected. Some participants were given the opportunity to share their views on stage. They expressed their appreciation for the practical and hands-on sessions, highlighting their value and the effective learning methodologies employed. Certificates were distributed to the participants as a recognition of their participation and successful completion of the workshop. Dr. N. Meyyappan, the chief guest, had the honor of presenting the certificates. The valedictory session concluded with a vote of thanks delivered by Dr. Divakar, expressing gratitude to all participants, the management of SVCE, the chief guest, and the organizers for their contributions to the success of the workshop. The session ended with the national anthem, symbolizing the conclusion of the workshop.

The valedictory session provided an opportunity to reflect on the workshop's impact and gather feedback from the participants, ensuring that it met its objectives in providing valuable learning experiences.


Prepared by



Dr. K. Divakar, ASP/BIO

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Approved by



Dr. E. Nakkeeran, HoD/ BIO

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