Online Faculty Development Program on

"Computational Genomics and Proteomics"

(Under E & ICT Academy of IIITDM Jabalpur)

Jointly Organized by

IIITDM Jabalpur and JUIT Solan

28th Aug. 2022 to 10th Sept. 2022

1. About the FDP

The faculty development program (FDP) on Computational Genomics & Proteomics got successfully completed on 10.09.22. This event was sponsored by the Electronics & ICT Academy, an initiative of the Ministry of Electronics & Information Technology, Government of India. The event commenced on 28.08.22 and was jointly organized by ECE departments of Jaypee University of Information Technology (JUIT), Waknaghat, Solan & IIITDM Jabalpur. During this two-week FDP eminent speakers delivered talks on the Fundamentals of Molecular Biology, Genome Sequencing, Signal Processing, Machine learning, Personalized Medicine, MATLAB Programming &Computer-aided drug design. Also, Numerous case studies were discussed to highlight the applicability of computational methods in facilitating molecular biology experimentations. The learned speakers who delivered the talks in this program include Prof. B.Jayaram (IIT Delhi), Prof. L. Shashidhara (IISER, Pune), Prof. Rajiv Saxena (JIIT Noida), Dr.Pushpendra Singh (Scientist, ICMR), Prof. S.N.Sharma (IIITDM, Jabalpur), Dr. D.K. Shakya (SATI, Vidisha), Dr. S.D. Sharma (JUIT, Waknaghat) and Yashpal Yadav**.** Prof. Aparajita Ojha, Coordinator E&ICT Academy Jabalpur, emphasized the importance of such collaborative programs. In his concluding remarks Prof. R.K. Sharma, Vice Chancellor, JUIT Waknaghat wished that this program will promote collaborative cross-disciplinary research and that participants will contribute towards nation-building by developing novel solutions for the existing molecular biology problems using computational tools. Prof. Rajiv Kumar (HOD, ECE) also briefed on the facilities and infrastructure of the department. Prof. S.N. Sharma, ECE Department, IIITDM Jabalpur &Dr. S.D. Sharma, ECE Department,and JUITWaknaghat were the coordinators of this program.

2. Coordinators

- Prof. Sanjeev Narayan Sharma (Prof. S.N.Sharma), ECE Department, PDPM IIITDM Jabalpur, M.P.
- Dr. Sunil Datt Sharma (Dr. S.D. Sharma), ECE Department, JUIT, Waknaghat, Solan, H.P.

3. Numberof Participants

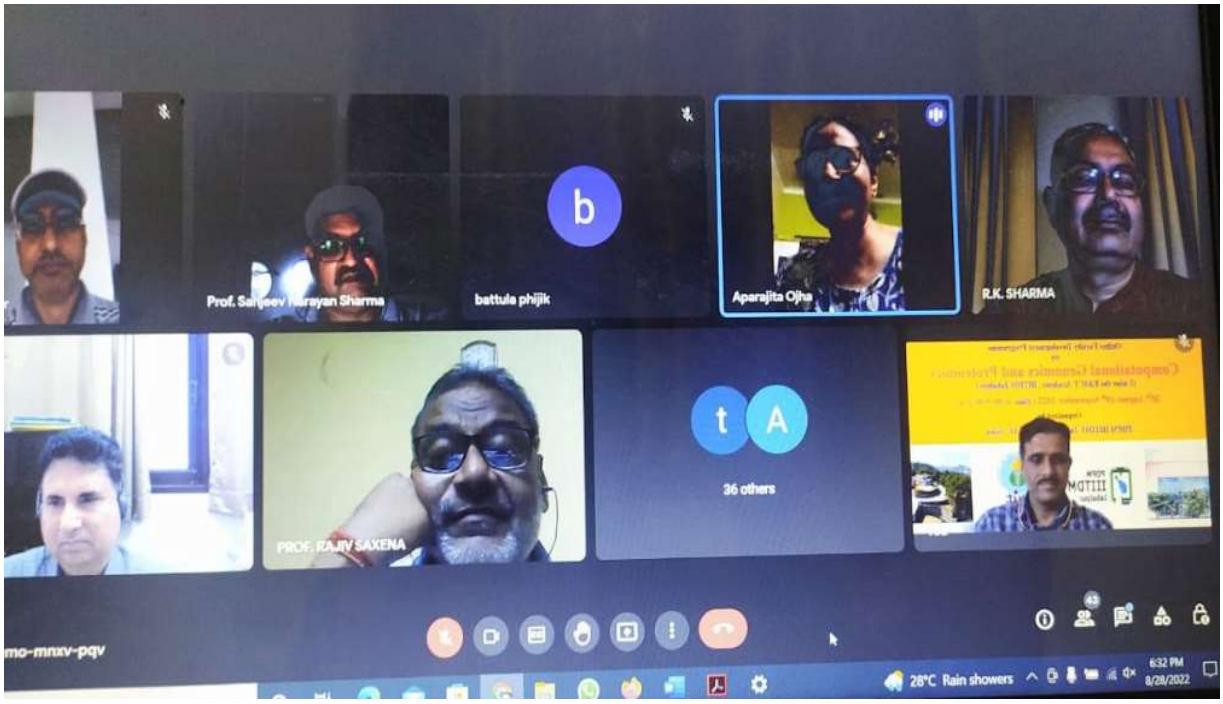
- External participants: 52
- Internal participants: 05

4. Highlights of the online FDP

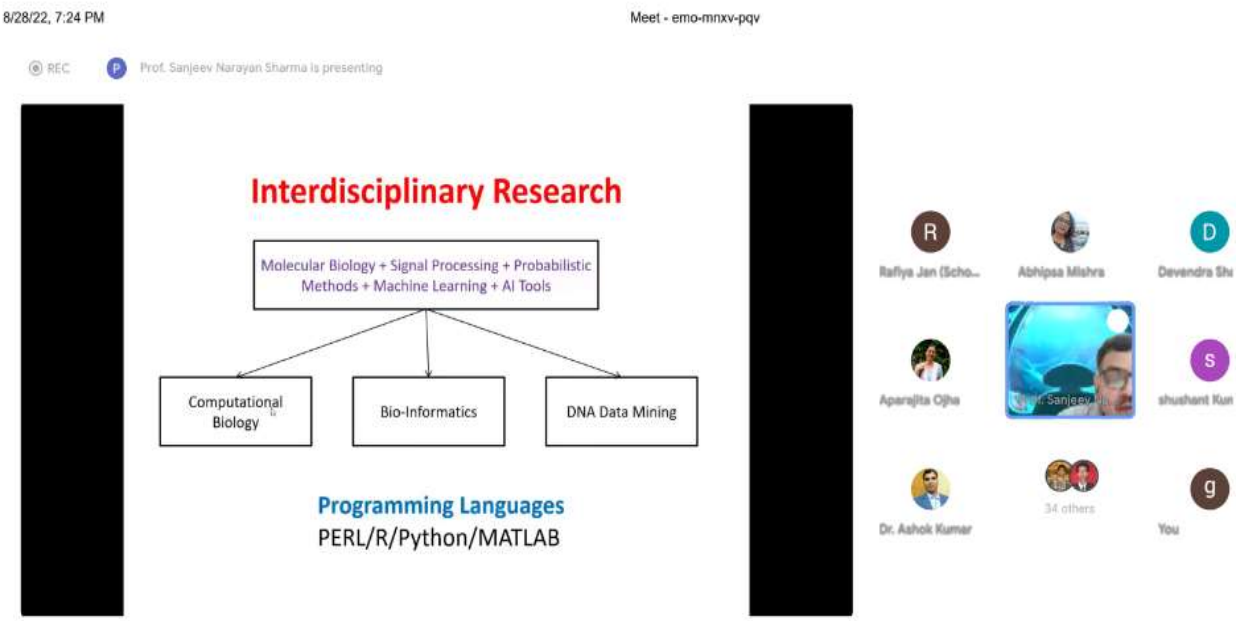
Date: 28-08-22

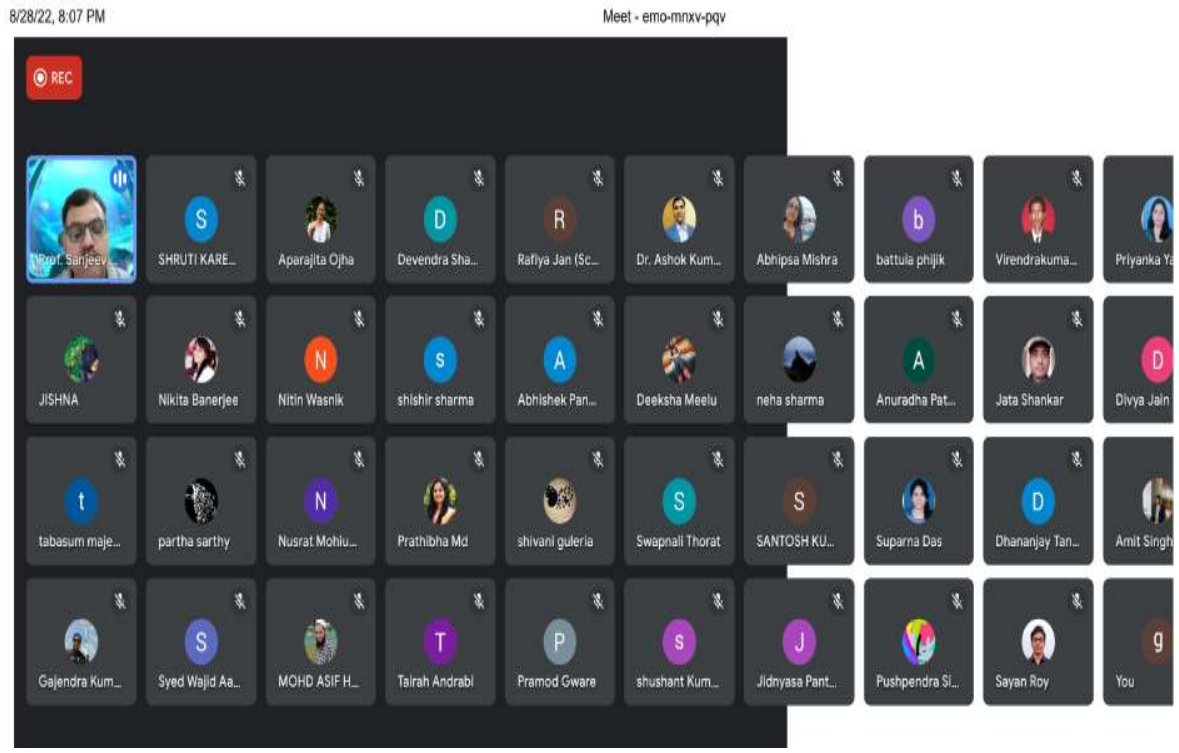
Session-1: Inaugural Session on-28-08-22

During the inaugural ceremony, Prof. Aparajita Ojha (Head, E & ICT Academy, IITDM Jabalpur), Prof. (Dr.) R.K. Sharma (Vice-Chancellor, JUIT), eminent academician Prof. Rajiv Saxena (Adjunct Professor, JIIT Noida), Prof. Sanjeev Narayan Sharma (ECE, PDPM IIITDM, Jabalpur), and Prof. Rajiv Kumar (HOD, ECE JUIT) were present. Total 57 participants from different parts of the country have been registered for the FDP. The session was coordinated by Prof. Sanjeev Narayan Sharma (PDPM IIITDM Jabalpur), and Dr. Sunil Datt Sharma (Jaypee University of Information Technology, Solan, H.P.) expressed the vote of thanks to distinguished dignitaries and participants for their kind presence at the end of the session.



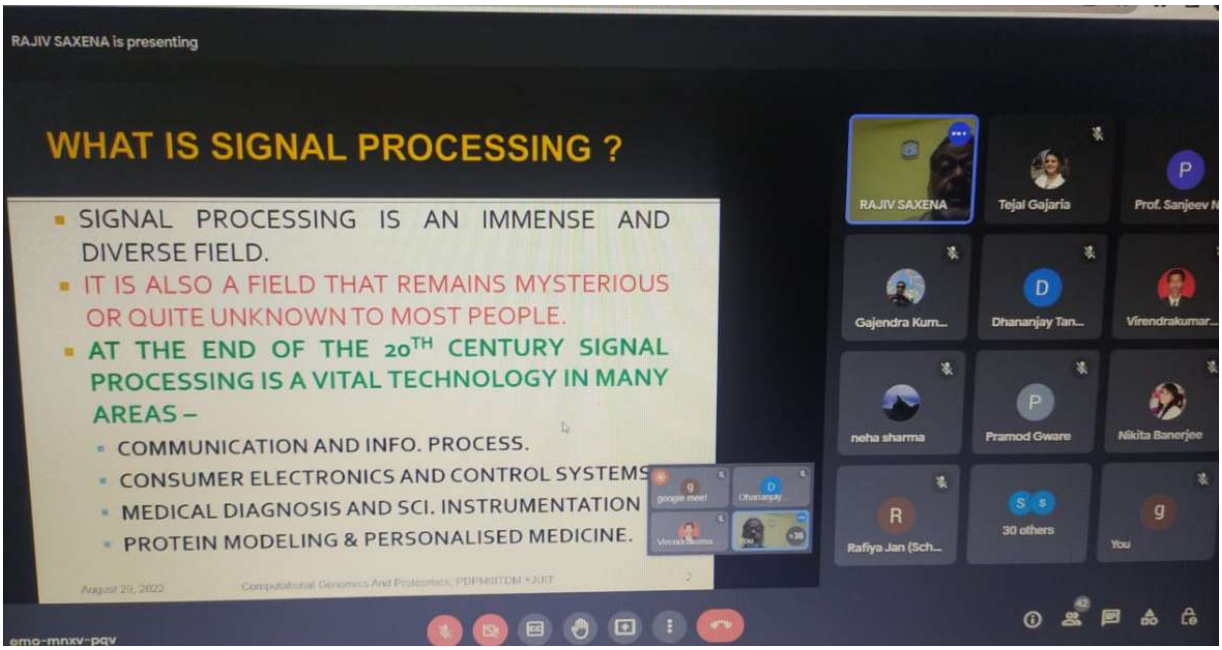
Lecture-1: Fundamentals of Genomics & Proteomics by Prof. S.N.Sharma, IIITDM. Jabalpur



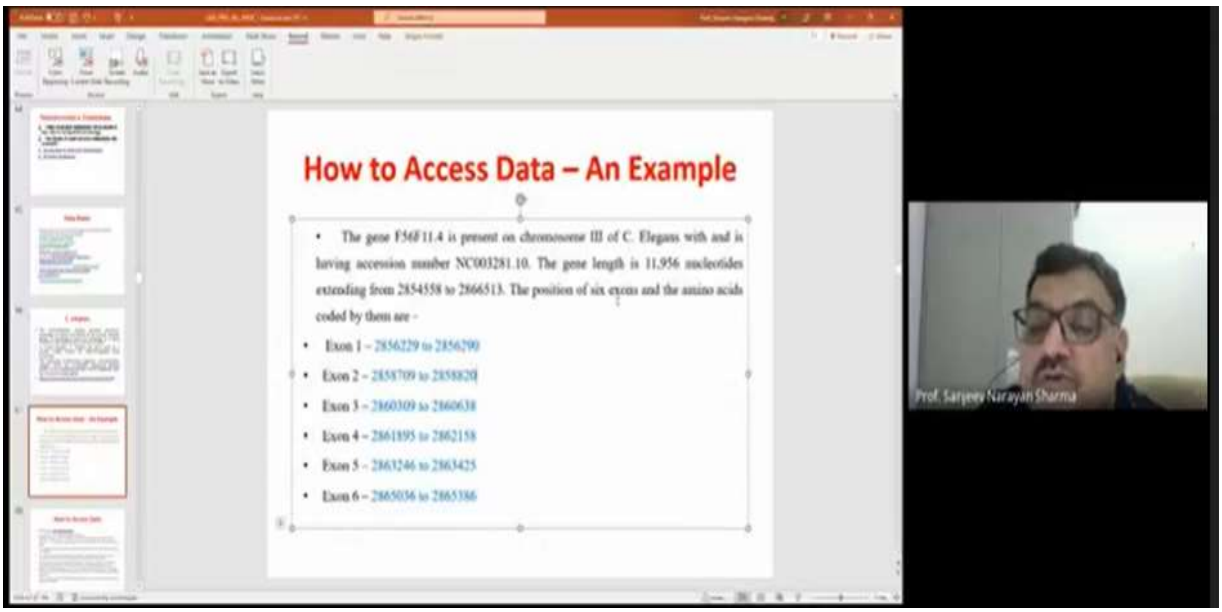


Date: 29-08-22

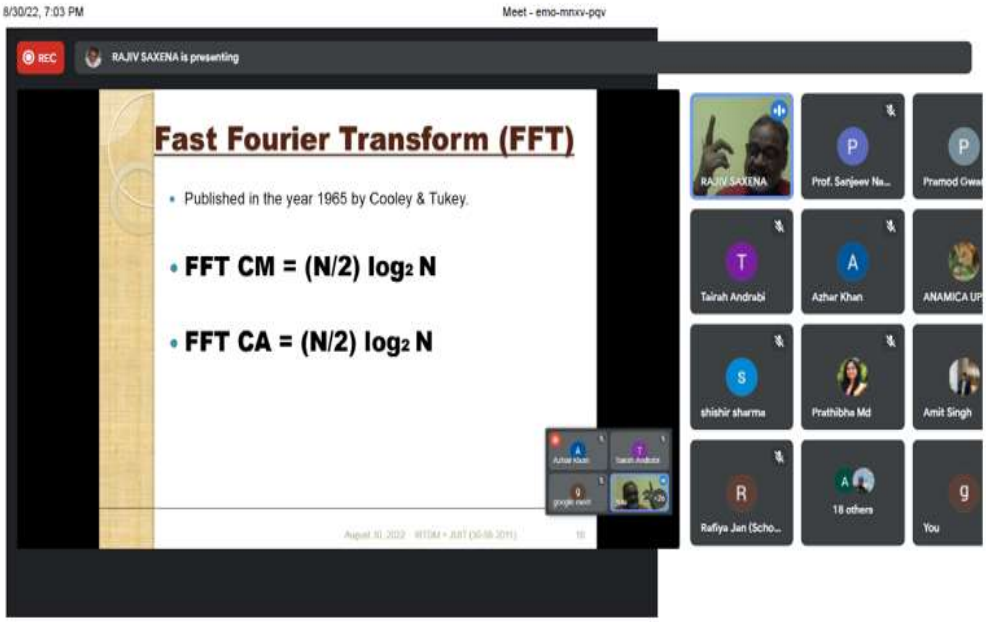
Lecture-2: Fundamentals Signals & Systems by Prof. Rajiv Saxena (Former VC, Jaypee University, AnoopShahr, & Adjunct Professor, JIIT Noida)

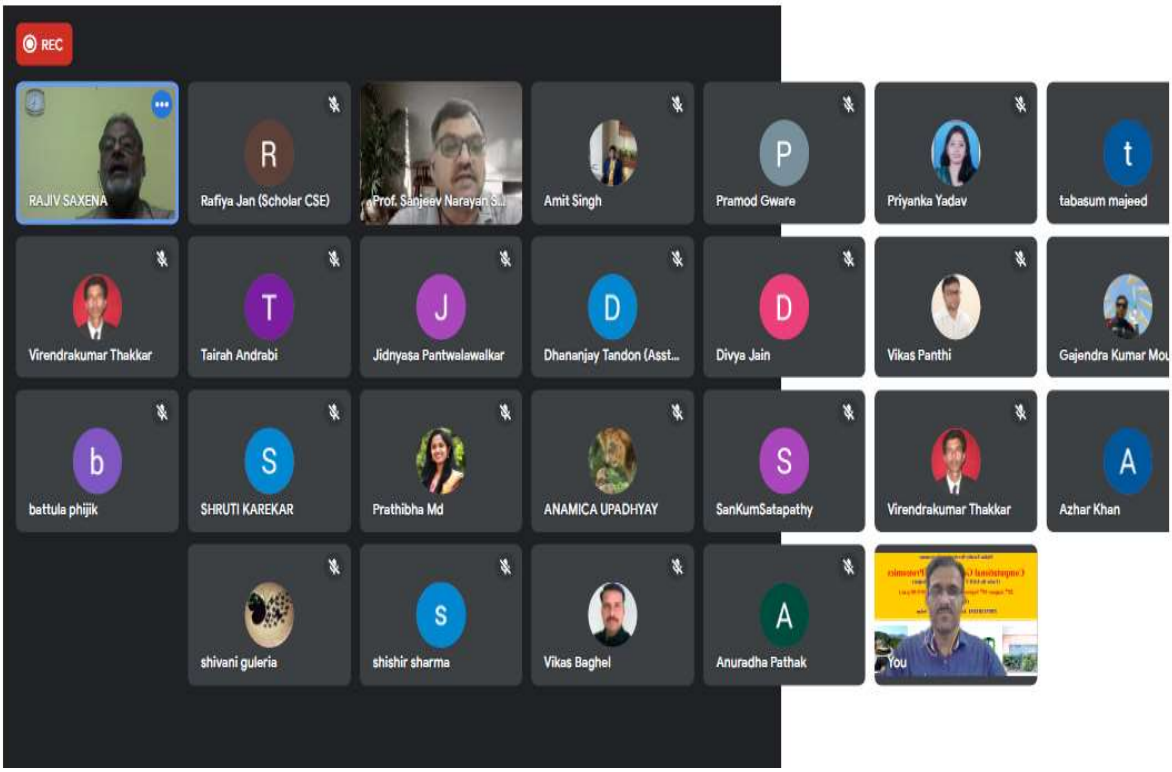


Lecture-3: Accessing DNA, Protein and Cancer Databases, Numerical Mapping Schemes by Prof. S.N.Sharma

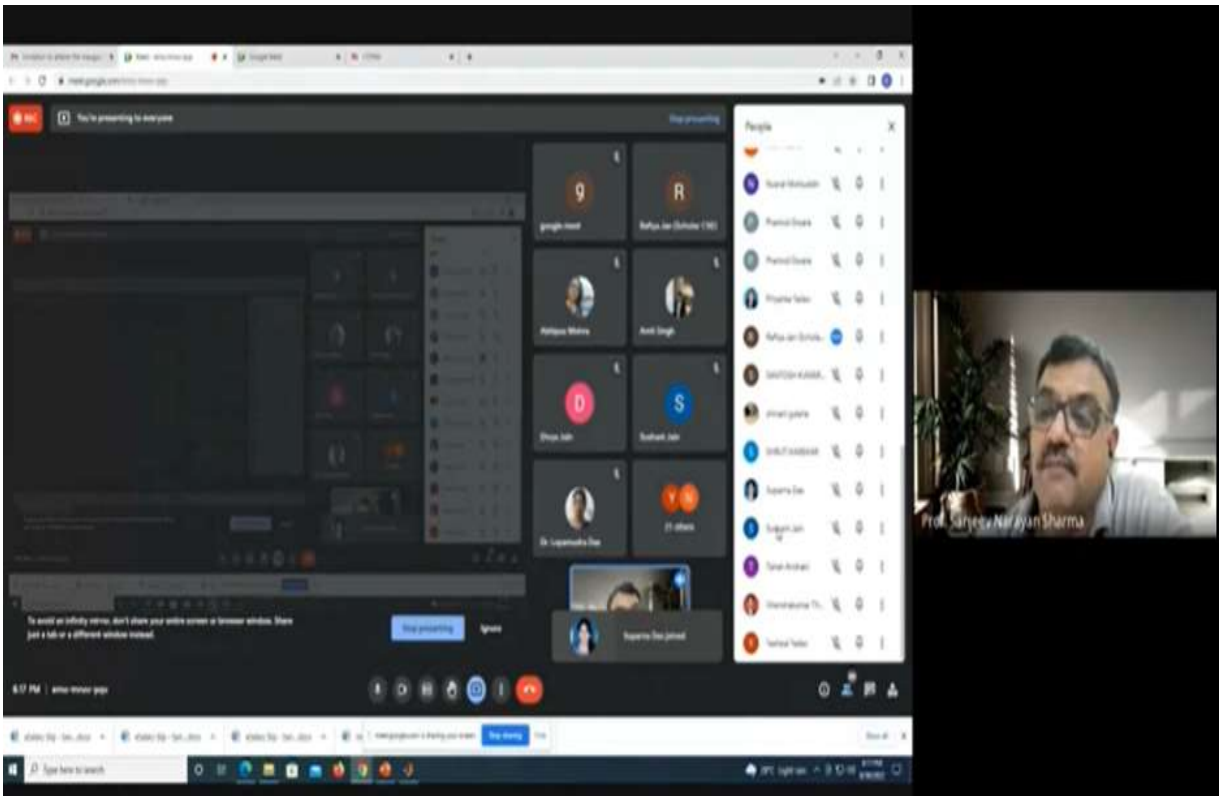


Date: 30-08-22
Lecture-4: Discrete Transforms by Prof. Rajiv Saxena (Former VC, Jaypee University, AnoopShahr, & Adjunct Professor, JIIT Noida)



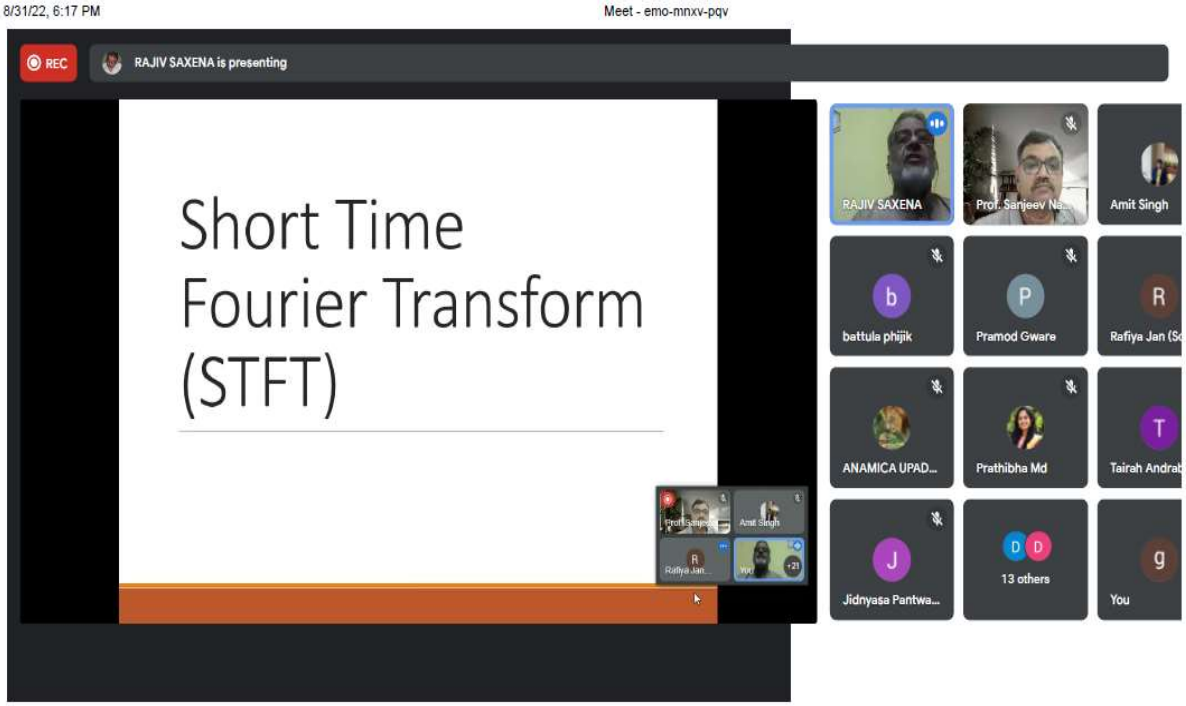


Lecture-5: Computation Using MATLAB-I by Prof. S.N. Sharma, IIITDM Jabalpur

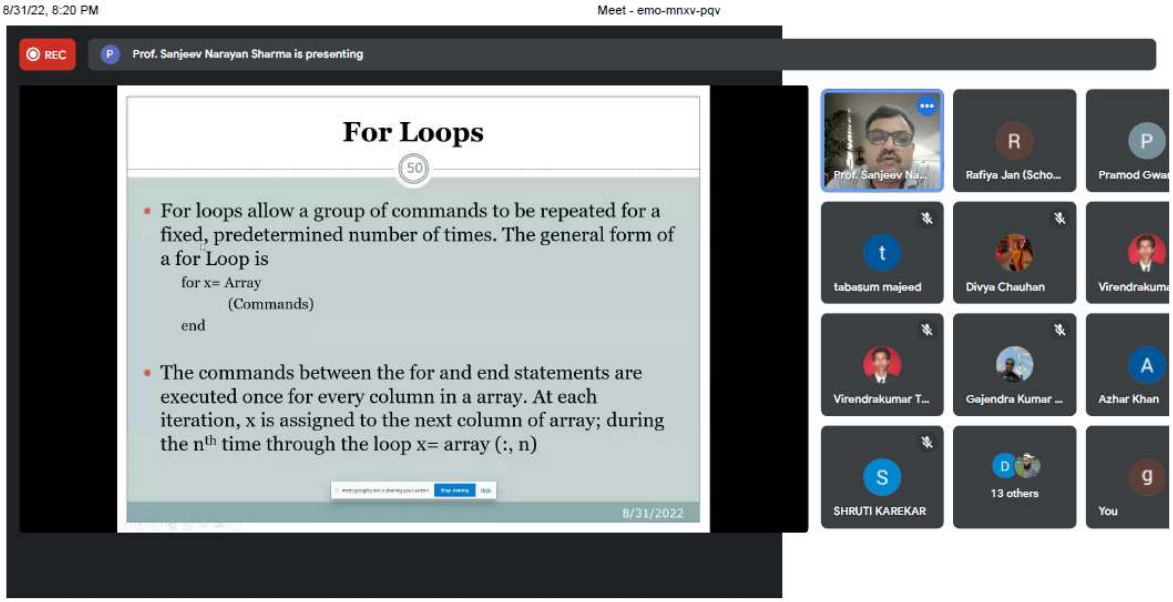


Date: 31-08-22.

Lecture-6: Digital Filtersby Prof. Rajiv Saxena (Former VC, Jaypee University, AnoopShahr, & Adjunct Professor, JIIT Noida)

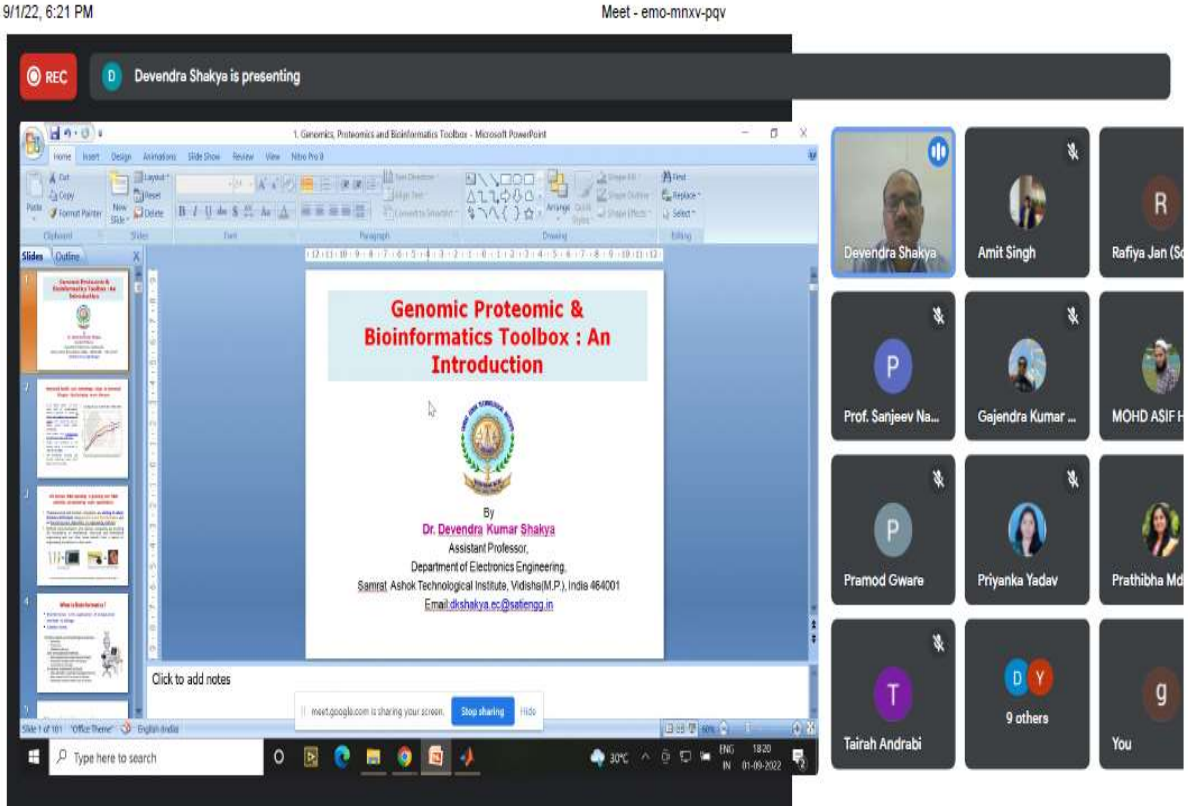


Lecture-7: Computation Using MATLAB-II by Prof. S.N. Sharma, IIITDM Jabalpur

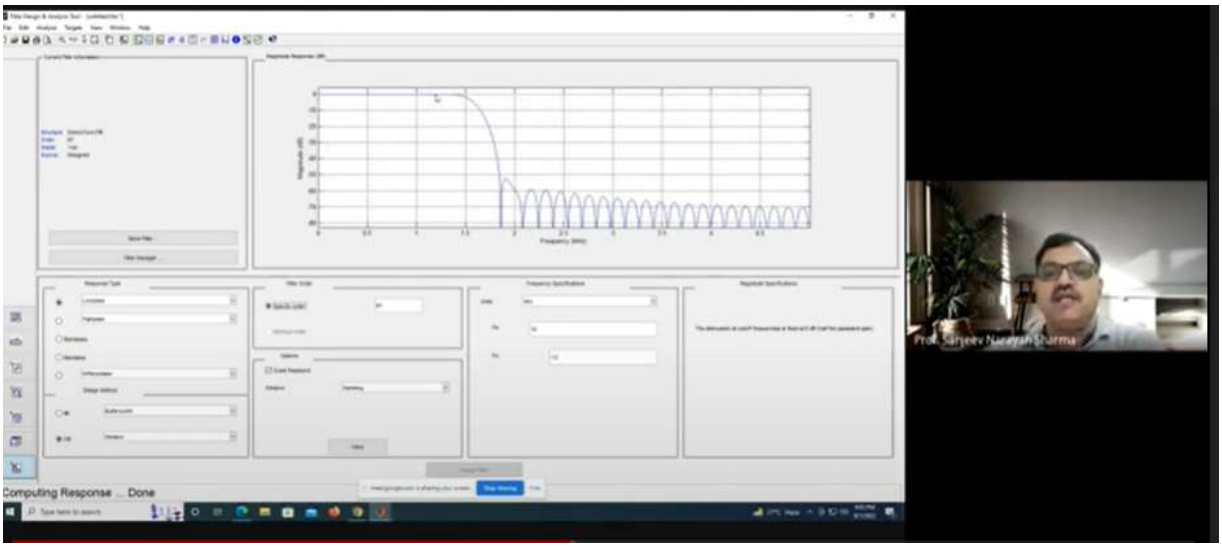


Date: 01-09-22

Lecture-8: Introduction to Bioinformatics MATLAB Toolbox by Dr. D.K. Shakya, SATI, Vidisha, M.P.

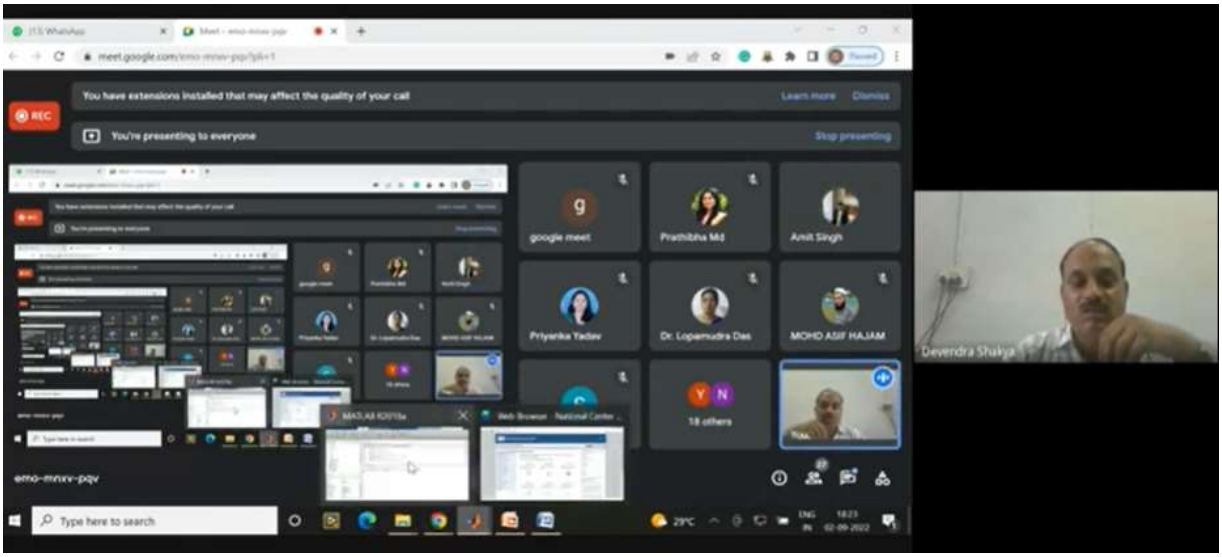


Lecture-9: Signal Processing Using MATLAB by Prof. S.N. Sharma, IIITDM Jabalpur

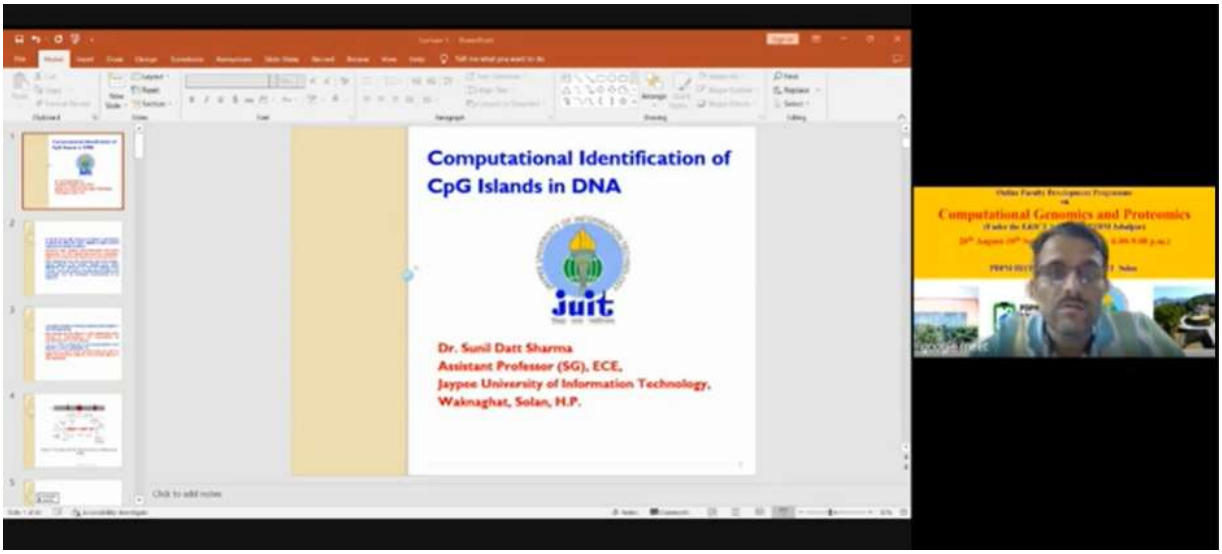


Date: 02-09-22

Lecture-10: Hands on Bioinformatics MATLAB Toolbox by Dr. D.K. Shakya, SATI, Vidisha, M.P.

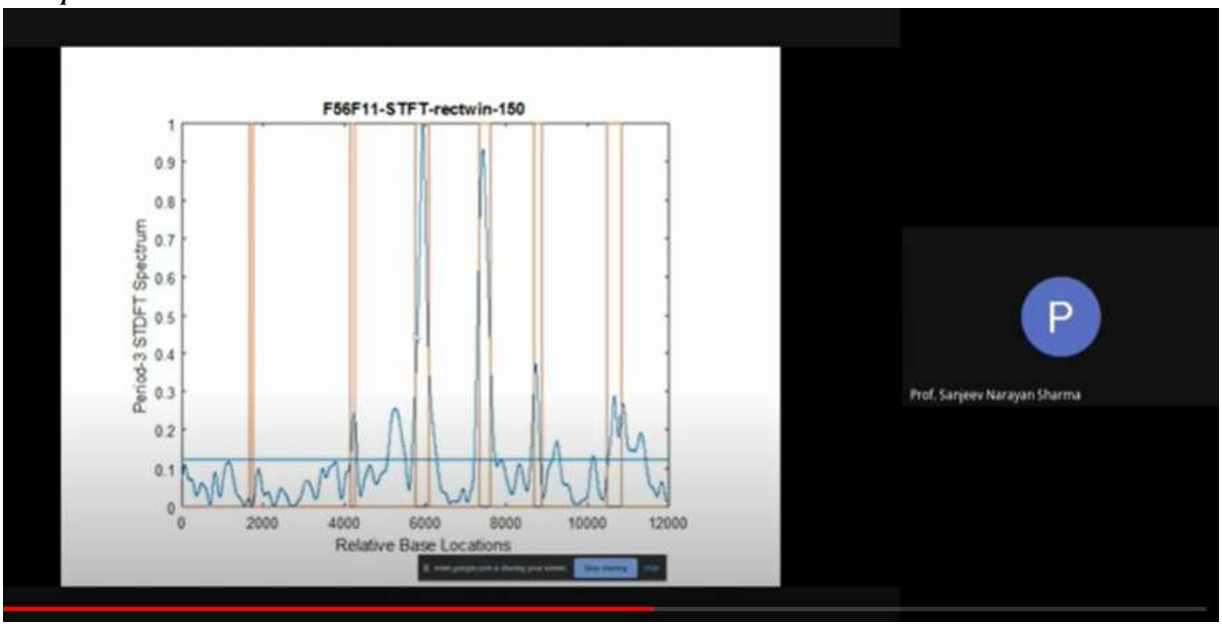


Lecture-11: Computational of Identification of CpG Islands in DNA by Dr. S.D.Sharma, JUIT, Solan

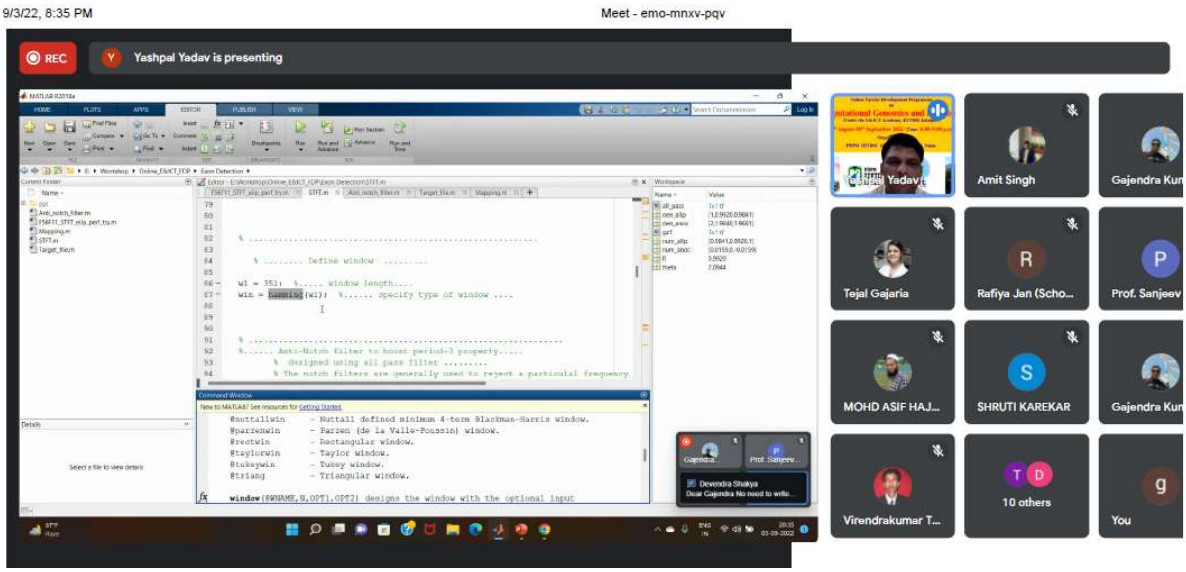


Date: 03-09-22

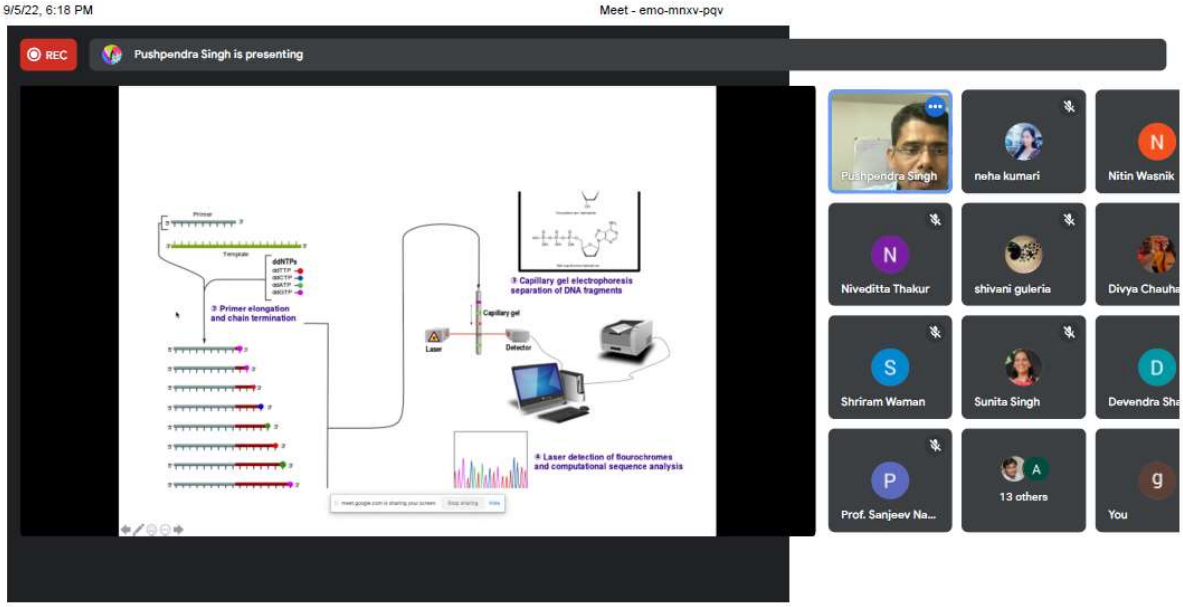
Lecture-12: Computational Identification of protein coding region in DNA by Prof. S.N. Sharma, IIITDM Jabalpur



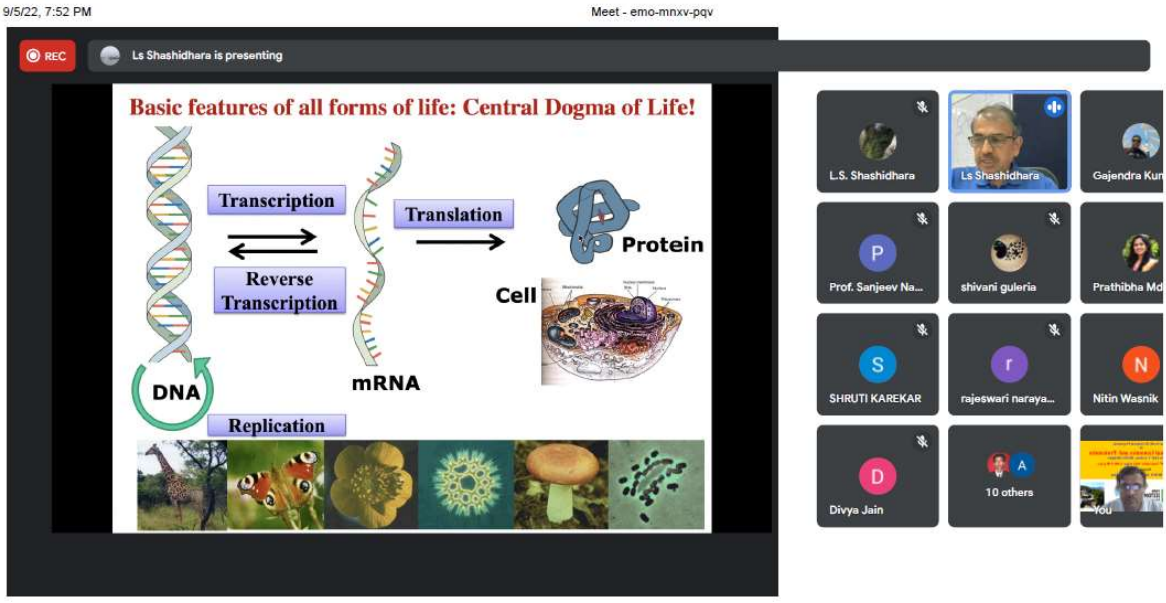
Lecture-13: MATLAB Implementation of Computational Identification of protein coding region in DNA by Mr. Yashpal Yadav



Date: 05-09-22
Lecture-14: Next generationsequencing by Dr. Pushpendra Singh, ICMR (NIRTH), Jabalpur, M.P.

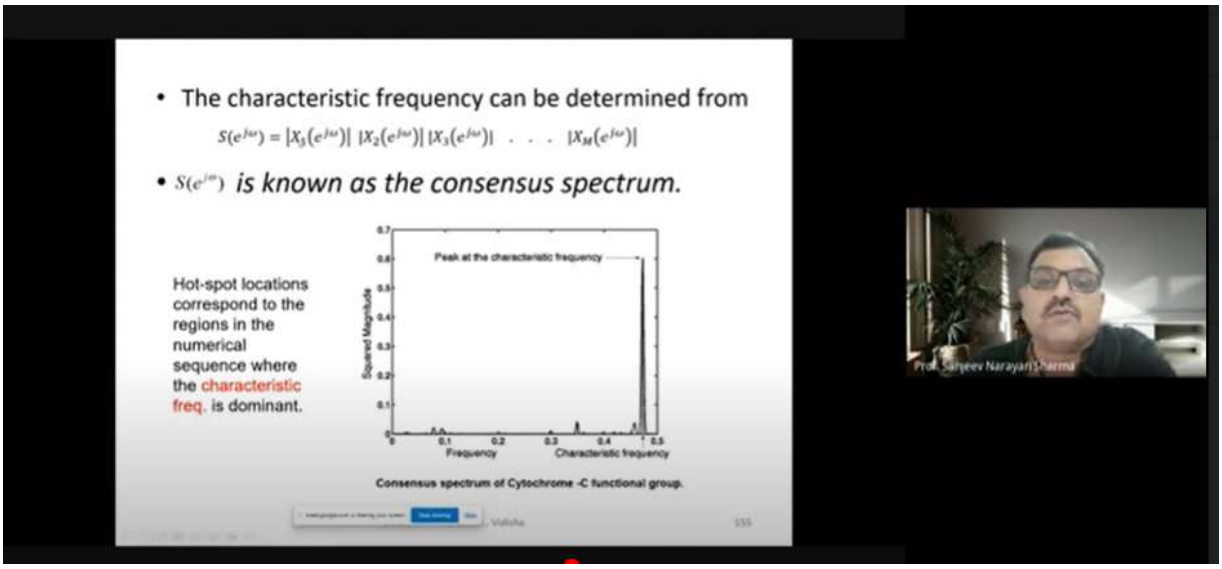


Lecture-15: From Genetics to Cancer Genome by Prof L. Shashidahra, IISER, Pune

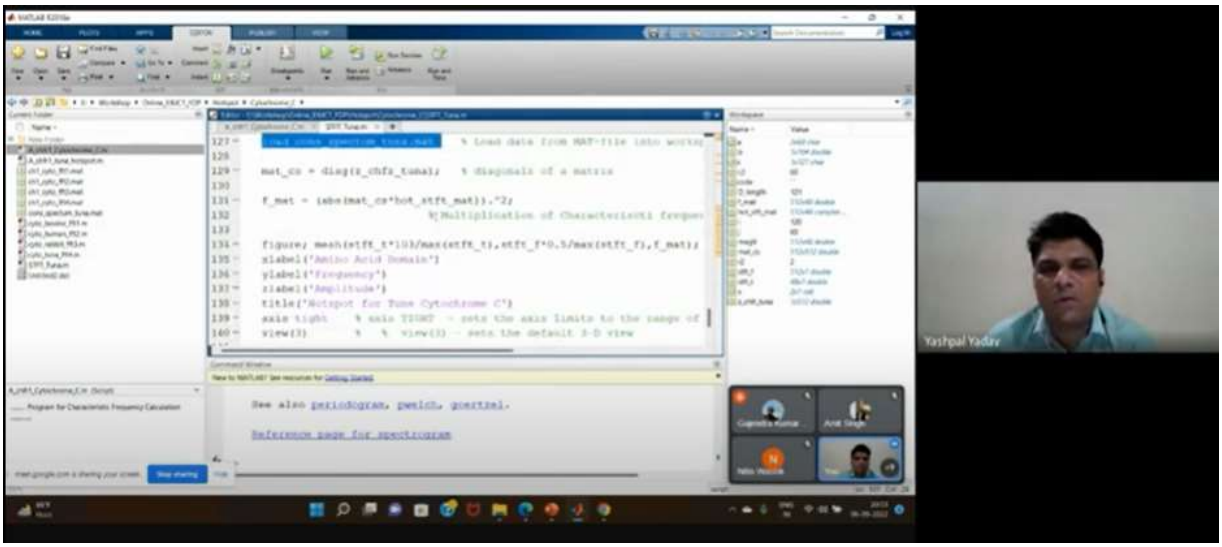


Date: 06-09-22

Lecture-16: Computational Identification of Hot Spot in Protein by Prof. S.N. Sharma, IIITDM Jabalpur

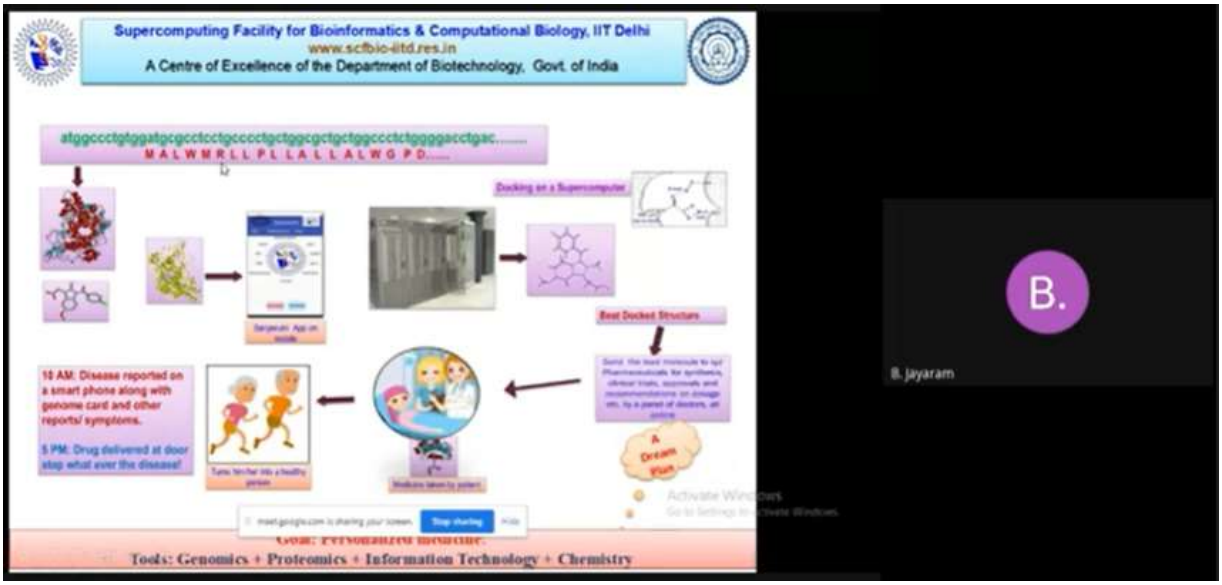


Lecture-17: MATLAB Implementation of Computational Identification of Hot Spot in Protein by Mr. Yashpal Yadav



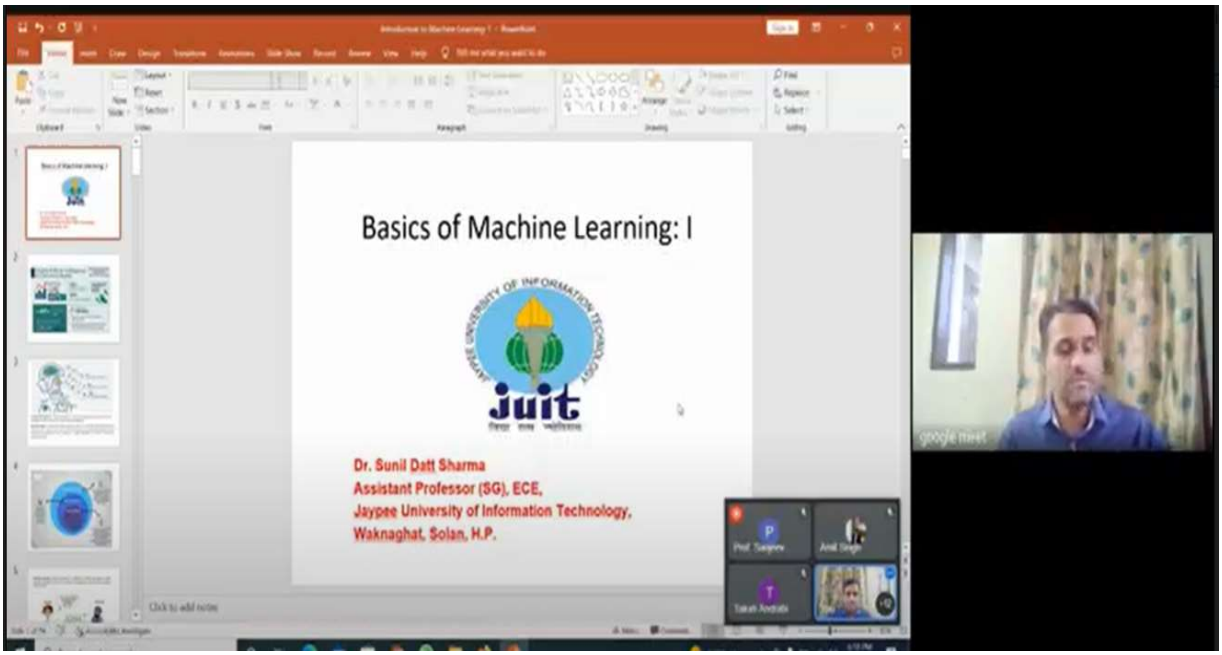
Date:07-09-22

Lecture-18: Molecular Dynamics Based Genome Annotation by Prof. B. Jayaram, IIT Delhi

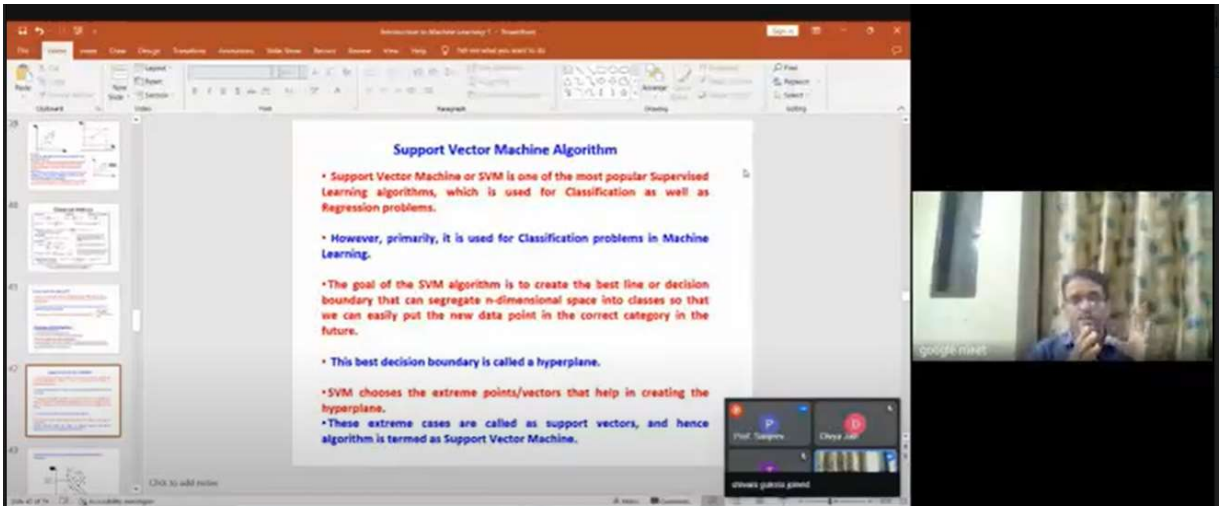


Date: 08-09-22

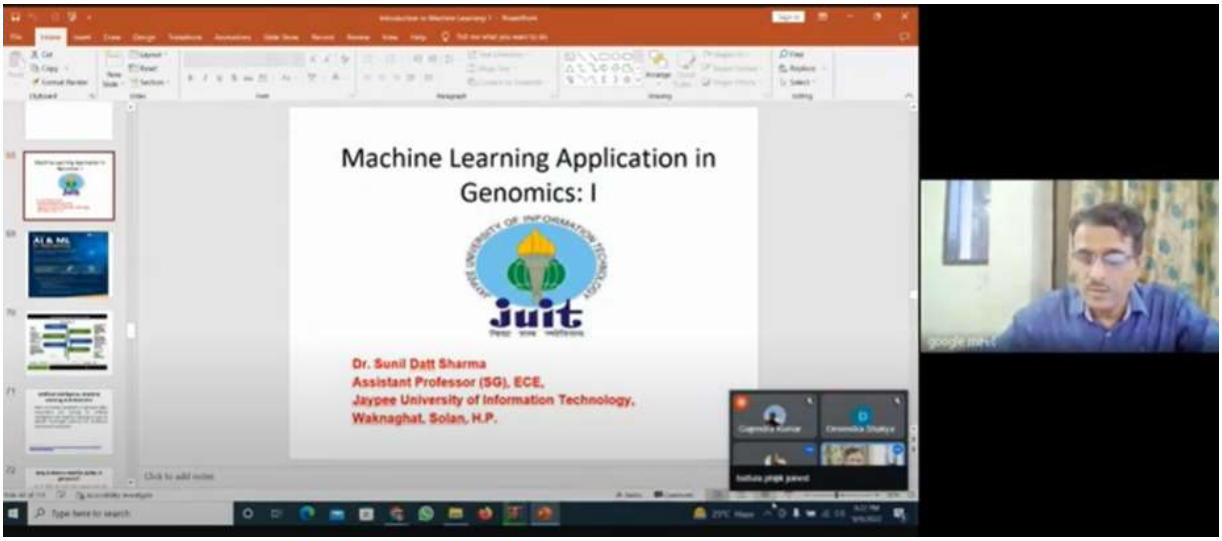
Lecture-19: Basics of machine learning-I by Dr. S.D. Sharma, JUIT Solan, H.P.



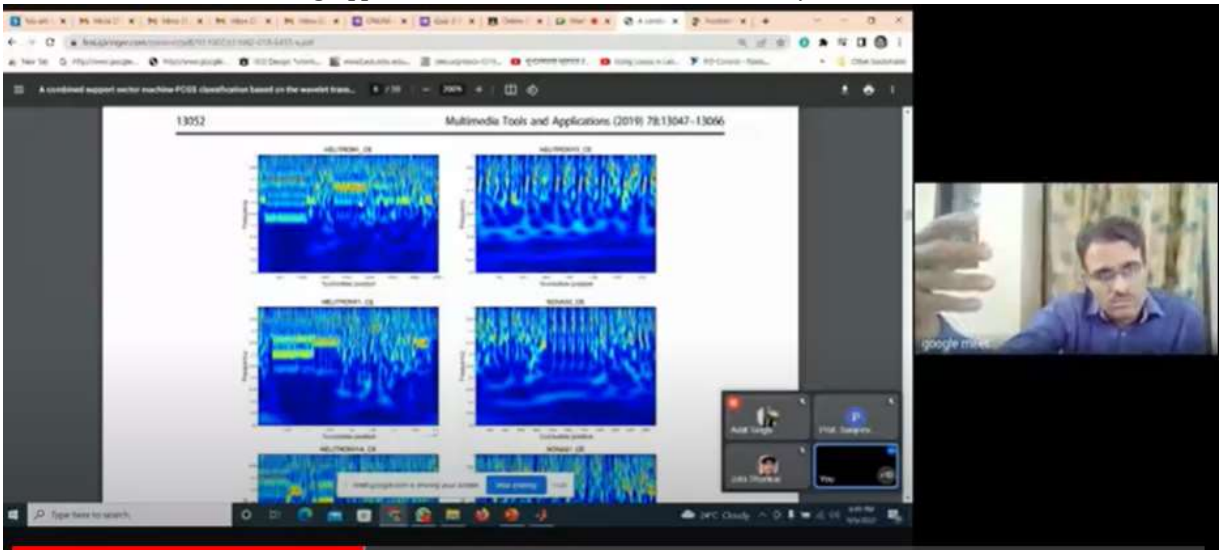
Lecture-20: Basics of machine learning-II by Dr. S.D. Sharma, JUIT Solan, H.P.



Date: 09-09-22
Lecture-21: Machine learning Application in Genomics & Proteomics-I by Dr. S.D. Sharma, JUIT Solan, H.P.



Lecture-22: Machine learning Application in Genomics & Proteomics-II by Dr. S.D. Sharma, JUIT Solan, H.P.



Date:10-09-22

Lecture-23: Some open research problems in computational Genomics and Proteomics & Useful referencing by Prof. S.N. Sharma, IIITDM Jabalpur

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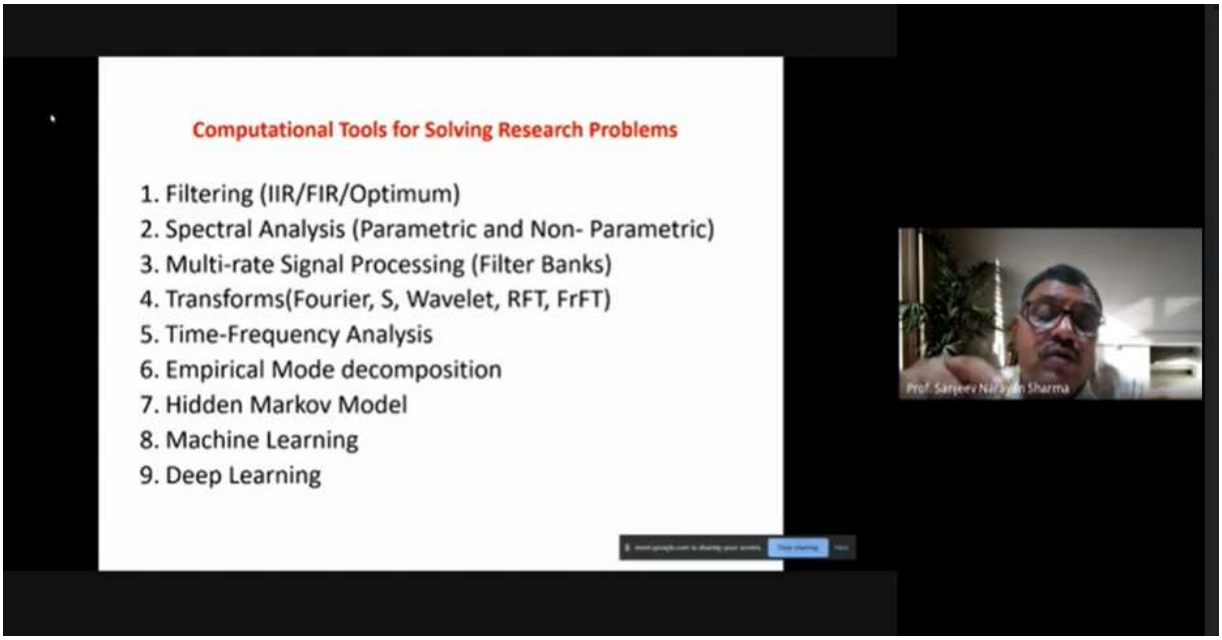
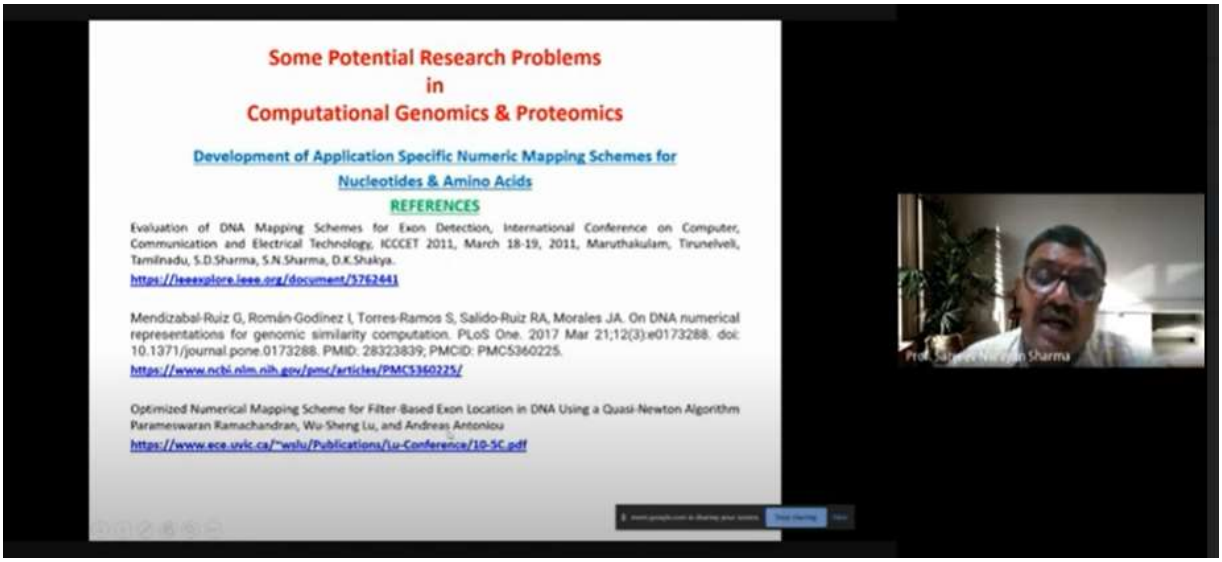
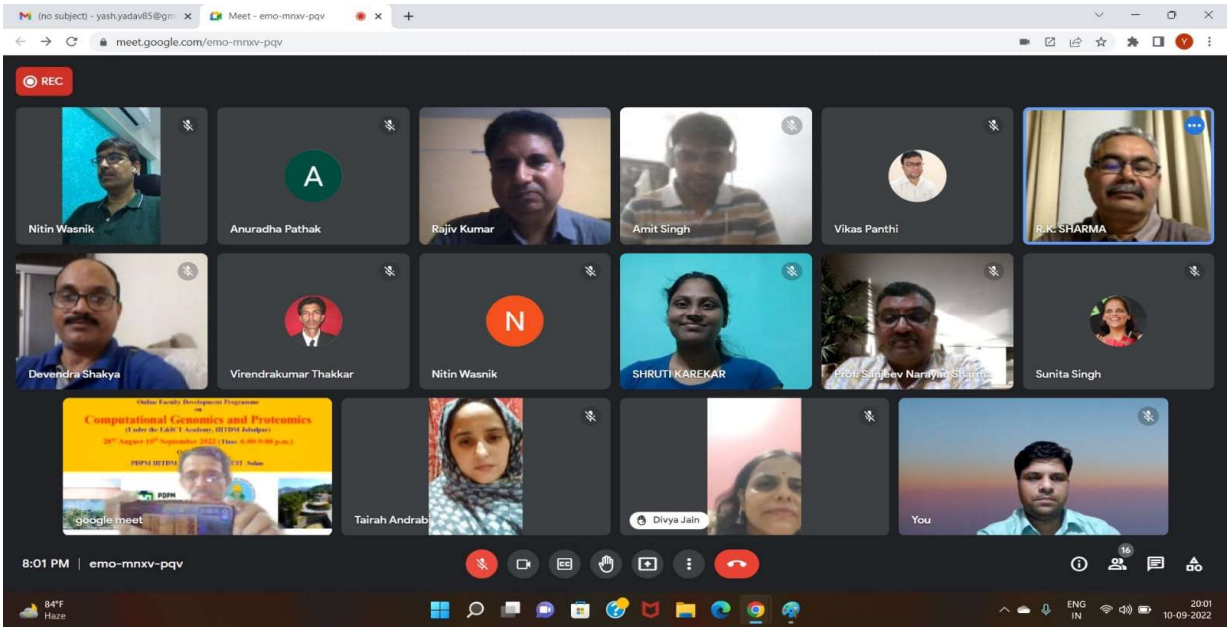




Closing ceremony

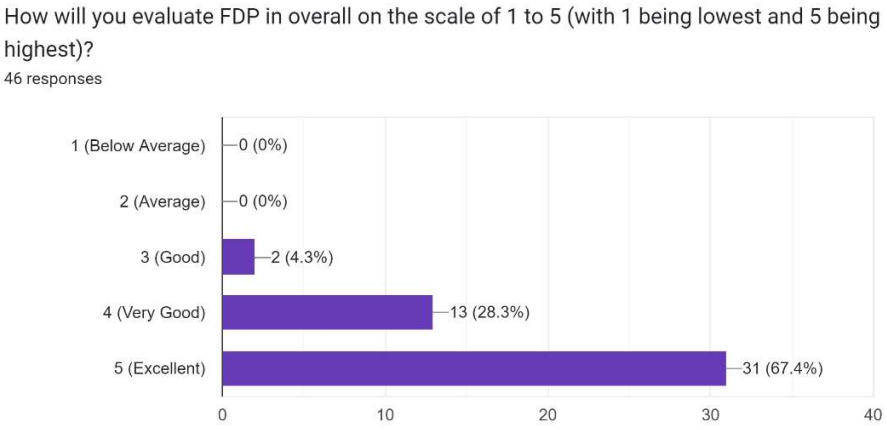
During the closing ceremony of this program, **Prof. R.K. Sharma (Hon'ble VC, JUIT), Prof. S.N. Sharma (ECE, IIITDM, Jabalpur), and Prof. Rajiv Kumar (HOD, ECE JUIT)** were present. The FDP was coordinated by Prof. S.N. Sharma, IIITDM Jabalpur & Dr. **S.D. Sharma JUIT Waknaghat.**

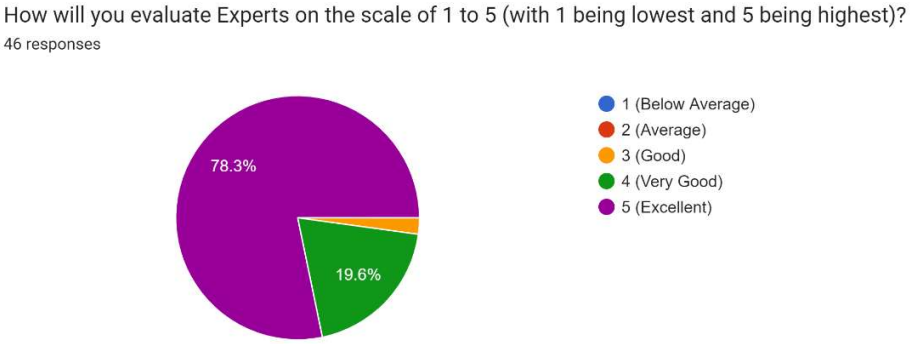


5. Evaluation

Quiz-1-Online-FDP-E & ICT-Computational Genomics and Proteomics-02-09-2022 (9:00pm- 9:30 pm)
Quiz-2-Online-FDP-E & ICT-Computational Genomics and Proteomics-09-09-2022 (9:00pm- 9:30 pm)

6. Feedback from the participants





7. News in social media:

Facebook:

https://www.facebook.com/JUITWSolan/photos/pcb.2637864179683412/2637864119683418/

https://www.facebook.com/JUITWSolan/photos/a.608184322651418/2634832023319961/?__cft__[0]=AZXV77ix_0ER8veZpRDztjNccLXIMJFNw5Z4CoscsGzXkUT9TBRgfM4KwszSvzRRMFFCgd8oNDd6510jelVFraVx8M_M1jWpMGjj_2mmRaT1Xtk3ZN2xTg6W9Qw3deeE9z3uMS6c9Y6kK26tYlMUqwDyg6nWtrTf1y-oLvpMV0fAmRipt4djhYY95eEodGKeRcemYDWyiBpzpofPmfrnO-G-&__tn__=EH-R

https://www.facebook.com/JUITWSolan/photos/pcb.2623673207769176/2623671477769349/?__cft__[0]=AZU3Y6rKuR94u48IhLNeVqefv6jbiT6PEYEsPnpbpdpZYwxEmz2rsCTyoO7PzA-Yn--BMdHm3xkFWpnKeWbjaag1YvyjR9mYRVFopVzHSoQOfbbS6Y9GggmJwT_9j-I6oNYVLltKgCW7ojaSwUOP5otCNMWCCs43WcoUjlJT8ydgApRk6BdTt2ocrkvDvK9bMj23nFyjpN0_KeDS8cAZjMZi&__tn__=*bH-R

LinkedIn

https://www.linkedin.com/feed/update/urn:li:activity:6970074681236180993

8. News in Print Media:

जे.यू.आई.टी. ने कंप्यूटेशनल जीनोमिक्स और प्रोटिओमिक्स पर करवाया संकाय विकास कार्यक्रम

● मैटलैब प्रोग्रामिंग और कंप्यूटर एडेड ड्रग डिजाइन के बुनियादी सिद्धांतों पर चर्चा की

सवेरा न्यूज

नई दिल्ली, 12 सितंबर : जे.यू.आई.टी. सोलन में आई.आई.आई.टी.डी.एम. जबलपुर के सहयोग से कंप्यूटेशनल जीनोमिक्स और प्रोटिओमिक्स पर संकाय विकास कार्यक्रम (एफ.डी.पी.) आयोजित किया गया। कंप्यूटेशनल जीनोमिक्स और प्रोटिओमिक्स पर संकाय विकास कार्यक्रम (एफ.डी.पी.) को सफलतापूर्वक पूरा हुआ। ये कार्यक्रम इलैक्ट्रॉनिक्स और सूचना प्रौद्योगिकी मंत्रालय भारत सरकार की एक पहल, इलैक्ट्रॉनिक्स और आई.सी.टी. अकादमी द्वारा प्रायोजित किया गया था। ये कार्यक्रम 28.08.22 को शुरू हुआ और जे.पी. यूनिवर्सिटी ऑफ इंफॉर्मेशन टैक्नोलॉजी (जे.यू.आई.टी.) वाकनाघाट, सोलन और आई.आई.आई.टी.डी.एम. जबलपुर के ई.सी.ई. विभागों द्वारा संयुक्त रूप से आयोजित किया गया था। इस दो सप्ताह के संकाय विकास कार्यक्रम के दौरान प्रख्यात वक्ताओं ने आणविक जीवविज्ञान, जीनोम अनुक्रमण, सिग्नल प्रोसैसिंग, मशीन लर्निंग, पर्सनलाइज्ड मैडिसिन, मैटलैब प्रोग्रामिंग और कंप्यूटर एडेड ड्रग डिजाइन के बुनियादी सिद्धांतों पर चर्चा की। इसके अलावा आणविक जीव विज्ञान प्रयोगों को सुविधाजनक बनाने में कम्प्यूटेशनल विधियों की प्रयोज्यता को उजागर करने के लिए कई केस स्टडीज पर चर्चा की गई। इस कार्यक्रम में विद्वान वक्ताओं में प्रो. बी. जयराम (आई.आई.टी. दिल्ली), प्रो. एल. शशिधर (आई.आई.एस.ई. आर., पुणे), प्रो. राजीव सक्सेना (जे.आई.आई.टी. नोएडा), डा. पुष्पेंद्र सिंह (वैज्ञानिक, आई.सी.एम.आर.), प्रो. एस.एन. शर्मा (आई.आई.आई. टी.डी.एम., जबलपुर), डा. डी.के. शाक्य, डा. एस.डी. शर्मा और यशपाल यादव शामिल थे। प्रो. अपराजिता ओझा, समन्वयक ई एंड आई.सी.टी. अकादमी जबलपुर ने ऐसे सहयोगी कार्यक्रमों के महत्व पर जोर दिया। कार्यक्रम के दौरान डा. राजीव कुमार भी समापन समारोह में उपस्थित थे।

form of any formalities.

FDP on Computational Genomics & Proteomics at JUIT Solan in Collaboration with IIITDM Jabalpur

The faculty development program (FDP) on Computational Genomics & Proteomics got successfully completed on 10.09.22. This event was sponsored by Electronics & ICT Academy, an initiative of Ministry of Electronics & Information Technology, Government of India. The event commenced on 28.08.22 and was jointly organized by ECE departments of Jaypee University of Information Technology (JUIT), Waknaghat, Solan & IIITDM Jabalpur. During this two-week FDP eminent speakers delivered talks on Fundamentals of Molecular Biology, Genome Sequencing, Signal Processing, Machine learning, Personalized Medicine, MATLAB Programming & Computer aided drug design. Also, Numerous case studies were discussed to highlight the applicability of computational methods in facilitating molecular biology experimentations. The learned speakers who delivered the talks in this program include Prof. B.Jayaram (IIT Delhi), Prof. L. Shashidhara (IISER, Pune), Prof. Rajiv Saxena (JIIT Noida), Dr. Pushpendra Singh (Scientist, ICMR), Prof. S.N.Sharma (IIITDM, Jabalpur), Dr. D.K. Shakya (SATI, Vidisha), Dr. S.D. Sharma (JUIT, Waknaghat) and Yashpal Yadav. Prof. Aparajita Ojha, Coordinator E&ICT Academy Jabalpur, emphasized the importance of such collaborative programs. In his concluding remarks Prof. R.K. Sharma, Vice Chancellor, JUIT Waknaghat wished that this program will promote collaborative cross-discipl nary research and participants will contribute towards the nation building by developing novel solutions for the existing molecular biology problems using computational tools. During the program Dr. Rajiv Kumar (Professor & Head, ECE, JUIT Solan) was also present in the closing ceremony. The program concluded with vote of thanks delivered by Prof. S.N. Sharma, IIITDM Jabalpur & Dr. S.D. Sharma JUIT Waknaghat, Coordinators of this events.

The Hindu (14-09-2022),

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