

Cordially Invites you all for Joint Online International Workshop for Faculty Development on

CRISPR/Cas9 Human Genome Engineering: Basics and Applications

Organised by Centre for Professional and Career Advancement, Sathyabama Institute of Science and Technology, India and Genome Engineering Laboratory, School of Life Sciences, University of Westminster, London, UK

Patrons

Dr. Mariazeena Johnson, Chancellor

Dr. Marie Johnson, President

Dr. T. Sasipraba, Vice-Chancellor

Workshop Convener

Dr Kalpana Surendranath
MSc, PhD, PGCHE, FHEA, MRSB



Associate professor

Leader of Genome Engineering Lab, School of Life Sciences, University of Westminster, www.westmingenlab.com

Dr Kalpana Surendranath is the convener of the Institute of Biomedical Sciences (IBMS)-UK accredited short course in human genome engineering. She conceived the "Gene Editors of the Future" higher education student training and development programme for life sciences funded by Quintin Hogg Trust this year. Her recent notable research grants and awards include: Royal Society's top project award (2018) at the house of commons - UK parliament, Children with Cancer UK (2020), Genetics Society (2019) and 125 funds (2018, 2019 and 2020). She is the recipient of the highest honour of the University "The Vice-Chancellor's WestminSTAR Award" (2019), Women of Westminster Award (2020), Individual Award for Teaching Excellence (2019) and Westminster Champion Award for Educational Experience (2020). She is a London STEM ambassador and Aurora AdvanceHE UK role model for women leadership in Higher Education. She has been recognised as a role model by 1 Million Women in STEM in June 2020.

Dr John J. Murphy
Plenary speaker



Reader and Research Director
Leader of Genome Engineering Lab
School of Life Sciences, University of Westminster

Dr Kanagaraj Radhakrishnan
Keynote speaker



Project Research Scientist, Francis Crick Institute
Visiting Research Scientist, University of Westminster

Nadeen Solaiman
Guest speaker



Doctoral Researcher
Genome Engineering Lab

Ahmed Sidali
Guest speaker



Doctoral Researcher
Genome Engineering Lab

Date : 24th – 29th

August 2020

Time : 5 PM – 7 PM

Everyday (IST)

Workshop Convener

Dr. Wilson Aruni
Pro-Vice Chancellor
Sathyabama

Workshop Coordinator

Dr Krupakar Parthasarathy, Scientist D
Centre for Drug Discovery and Development
Member, Centre for Professional and Career Advancement, Sathyabama

This course is aimed at researchers with basic understanding of molecular and cell biology and most importantly with interest in creating engineered cellular models using CRISPR/Cas9 technology. No previous experience in genome engineering is required.

24/08/2020 (Day 1) Monday	CRISPR Basics	<u>Session 1</u> CRISPR basics: Introduction to the origins and basic principles of genome editing technologies	Dr Kalpana Surendranath
		<u>Session 2</u> Keynote Address: CRISPR genome editing and DNA repair mechanisms	Dr Kanagaraj Radhakrishnan
25/08/2020 (Day 2) Tuesday	Genome Engineering 101 - Part A	<u>Session 1</u> A workflow and experimental design for generation of cellular models using CRISPR/Cas9 technology	Dr Kalpana Surendranath
		<u>Session 2</u> Demonstration of on-target site selection and design of sgRNA. Genome Engineering Boot Camp Exercise 1 - Optimized guide RNA design	Dr Kalpana Surendranath
26/08/2020 (Day 3) Wednesday	Genome Engineering 101 - Part B	<u>Session 1</u> In house construction of sgRNA containing plasmid, purification, construction and assembly of RNP complexes, vector builder options and limitations	Dr Kalpana Surendranath
	CRISPR Cellular Models – Case Study	<u>Session 2</u> Case Study: Generation of a cellular model for investigation of a newly identified cancer driver gene Genome Engineering Boot Camp Exercise 2 - Generating and analysing CRISPR/Cas9 edited knock out cell lines	Nadeen Solaiman
27/08/2020 (Day 4) Thursday	Genome Engineering 101 - Part C	<u>Session 1</u> CRISPR tools delivery, selection and generation of engineered clonal lines	Ahmed Sidali and Dr Kalpana Surendranath
	CRISPR Cellular Models - Case Study	<u>Session 2</u> Case study: Validation of genome editing by Sanger sequencing and/or next-generation sequencing methods Genome Engineering Boot Camp Exercise 3 – Applications of CRISPR- Mini Project 1	Ahmed Sidali
28/08/2020 (Day 5) Friday	Applications of CRISPR Technology	<u>Session 1</u> Plenary address: CRISPR and the future of cancer research and drug discovery	Dr John Murphy
		<u>Session 2a</u> CRISPR in infectious disease biology research and diagnostics.	Dr Krupakar Parthasarathy
		<u>Session 2b</u> CRISPR towards Clinic: Emerging clinical applications of CRISPR/Cas9 as promising strategies in gene therapy and disease correction Genome Engineering Boot Camp Exercise 4 – Applications of CRISPR- Mini Project 2	Dr Kalpana Surendranath
29/08/2020 (Day 6) Saturday	Mini project and feedback	<u>Session 1</u> Mini project workshop- sharing selected examples	Dr Kalpana Surendranath
		<u>Session 2</u> Brainstorming/feedback	

Eligibility: Researchers Interested In CRISPR Technology

Registration Fee: INR 1000; Mode of Payment: Online Transfer*

Bank Account details for Payment of Registration fee for the Joint Online Workshop

Account Name: Dean (Publications & Conferences) Sathyabama Institute of Science and Technology

Account Number : **891734627**; IFSC Code: IDIB000T020; Swift Code: IDIBINBBTLT

Branch code: 098; Bank and Branch Address: Indian Bank, Thousand Lights Branch, Chennai-600006.

* Mention Genome Engineering and CRISPR workshop after your name in the Remarks column while transferring money online

Registration Link: <https://forms.gle/n5zZFUJR6uKG4rWH7>

Email: crisprcas9workshop@gmail.com

Website: <http://www.sathyabama.ac.in/onlinecourses/index.html>

Zoom meeting Credentials, detailed program schedule and study materials will be shared for registered participants.

Organising Team
CPCA, CDDD and
International Relations
Sathyabama