WELLCOME GENOME CAMPUS
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CRISPR and Beyond: Perturbations at Scale to Understand Genomes

22-25 September 2020

Virtual Conference Agenda

Tuesday, 22 September				
13:00	**13:05**			**Welcome**
				Scientific Programme Committee: John Doench, Broad Institute, USA Leopold Parts, Wellcome Sanger Institute, UK Lea Starita, University of Washington, USA Jolanda van Leeuwen, University of Lausanne, Switzerland
13:05	**14:35**			**Session 1: Links to Disease**
			Live	Introduction to the session *Chair: Leopold Parts, Wellcome Sanger Institute, UK*
13:05	13:25	20 mins	pre-recorded	Genome-wide characterisation of BRCA I functioning in DNA damage repair Sylvie Noordermeer, Leiden University Medical Centre, Netherlands
13:25	13:45	20 mins	pre-recorded	Using Stem Cells to Explore the Genetics Underlying Complex Genetic Disease Kristen Brennand, Icahn School of Medicine at Mount Sinai, USA
13:45	13:55	10 mins	pre-recorded	Whole genome CRISPR screen for entry of extracellular tau in human neurons *Lewis Evans, UCL Great Ormond Street, ICH, UK*
13:55	14:05	10 mins	pre-recorded	Transforming diagnostic confidence in developmental disorders using CRISPR-based saturation genome editing *Hong Kee Tan, Wellcome Sanger Institute, UK*
14:05	14:35	30 mins	Live	Q&A *Chair: Leopold Parts, Wellcome Sanger Institute, UK* *Moderator: Shondra Miller, St Jude Children's Research Hospital, USA*
14:35	14:55	20 mins		Break
14:55	**16:25**			**Session 2: Coding Variation**
			Live	Introduction to the session *Chair: Leopold Parts, Wellcome Sanger Institute, UK*
14:55	15:15	20 mins	Pre-recorded	High throughput functional annotation of pharmacogene variants using yeast Maitreya Dunham, University of Washington, USA
15:15	15:35	20 mins	Pre-recorded	Understanding the functional effects of coding variation, at scale Lea Starita, University of Washington, USA
15:35	15:45	10 mins	Pre-recorded	Massively parallel assessment of human variants with base editor screens *Ruth Hanna, Broad Institute, USA*
15:45	15:55	10 mins	Pre-recorded	Large-scale phenotypic characterization of genetic variants of the DNA damage response using CRISPR-dependent base editing *Alberto Ciccia, Columbia University, USA*
15:55	16:25	30 mins	Live	Q&A *Chair: Leopold Parts, Wellcome Sanger Institute, UK* *Moderator: Shondra Miller, St Jude Children's Research Hospital, USA*
16:25	16:45	20 mins		Break
16:45	17:00		Pre-recorded	Poster Session 1 lightning talks
17:00	18:00			Poster Session 1

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Wednesday, 23 September

13:00	14:30			Session 3: Genetic Screens
			Live	Introduction to the session *Chair: Sylvie Noordermeer, Leiden University, Netherlands*
13:00	13:20	20 mins	Pre-recorded	CRISPR screening for cancer drug discovery Mathew Garnett, Wellcome Sanger Institute, UK
13:20	13:40	20 mins	Pre-recorded	Optimisation and meta-analysis of genome-scale signals Kenneth Baillie, University of Edinburgh, UK
13:40	13:50	10 mins	Pre-recorded	Major functional bias in genome-wide CRISPR screens for mitochondrial complexes *Maximilian Billmann, University of Minnesota, USA*
13:50	14:00	10 mins	Pre-recorded	Temporal analysis of time-series CRISPR screen data using mixed linear models. *Lorena Sofia Lopez Zepeda, Berlin Institute of Medical Systems Biology, Germany*
14:00	14:30	30 mins	Live	Q&A *Chair: Jolanda van Leeuwen, University of Lausaane, Switzerland* *Moderator: Sylvie Noordermeer, Leiden University, Netherlands*
14:30	14:50	20 mins		Break

14:50	16:20			Session 4: Rewriting DNA
			Live	Introduction to the session *Chair: Tom Ellis, Imperial College London, UK*
14:50	15:10	20 mins	Pre-recorded	Genome-wide interrogation of gene functions through base editor screens empowered by barcoded sgRNAs Wensheng Wei, Peking University, China
15:10	15:30	20 mins	Pre-recorded	Recording cellular and molecular events in DNA Nozomu Yachie, University of British Columbia, Canada
15:30	15:40	10 mins	Pre-recorded	Pooled protein tagging, cellular imaging and in situ sequencing for monitoring drug action in real time *Andreas Reicher, CeMM Research Center for Molecular Medicine, Austria*
15:40	15:50	10 mins	Pre-recorded	Characterization of synthetic single guide RNAs for CRISPR/Cas9 genome editing – An extensive evaluation of gRNA formats, purity, and delivery methods *Garrett Rettig, Integrated DNA Technologies, USA*
15:50	16:20	30 mins	Live	Q&A *Chair: Lea Starita, University of Washington, USA* *Moderator: Tom Ellis, Imperial College London, UK*
16:20	16:40	20 mins		Break
16:40	17:15		Pre-recorded	Poster Session 2 lightning talks
17:15	18:15			Poster Session2

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Thursday, 24 September

13:00	14:10			Session 5: Genetic Interactions
			Live	Introduction to the session *Chair: Jolanda van Leeuwen, University of Lausanne, Switzerland*
13:00	13:20	20 mins	Pre-recorded	Crosstalk between cellular metabolism and DNA repair Joanna Loizou, Research Centre for Molecualr Medicine, Austria
13:20	13:30	10 mins	Pre-recorded	Comprehensive prediction of synthetic lethality between paralog pairs in cancer cell lines Barbara De Kegel, University College Dublin, Ireland
13:30	13:40	10 mins	Pre-recorded	Understanding Chemical-Genetic Interactions *Loan Vulliard, CeMM Research Center for Molecular Biology, Austria*
13:40	14:10	30 mins	Live	Q&A *Chair: Jolanda van Leeuwen, University of Lausanne, Switzerland* *Moderator: John Doench, Broad Institute, USA*
14:10	14:30	20 mins		Break

14:30	16:00			Session 6: Single Cell + Perturbation
			Live	Introduction to the session *Chair: Shondra Pruett-Miller, St Jude Children's Research Hospital, USA*
14:30	14:50	20 mins	Pre-recorded	Biochemistry at single-cell resolution: a new appraoch to understand functional heterogeneity Jay Hesselberth, University of Colorado School of Medicine, USA
14:50	15:10	20 mins	Pre-recorded	Human tissues & Cellular Phenotypes Sarah Teichmann, Wellcome Sanger Institute, UK
15:10	15:20	10 mins	Pre-recorded	Relating thousands of variants to function with massively parallel pooled genetic screens *Kathryn Geiger Schuller, Bbroad Institute of MIT and Harvard, USA*
15:20	15:30	10 mins	Pre-recorded	Towards genome-scale CROP-seq screens *Tilmann Buerckstuemmer, Aelian Biotechnology GmbH, Austria*
15:30	16:00	30 mins	Live	Q&A *Chair: Lea Starita, University of Washington, USA* *Moderator: John Doench, Broad Institute, USA*
16:00	16:20	20 mins		Break
16:20	17:00		Pre-recorded	Poster Session 3 lightning talks
17:00	18:00			Poster Session 3

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Friday, 25 September

13:00	14:40			Session 7: Technology
			Live	Introduction to the session *Chair: Mathew Garnett, Wellcome Sanger Institute, UK*
13:00	13:20	20 mins	Pre-recorded	Tricks of the Trade: Functionalizing Genome Editing for a Broad Range of Cellular Targets Shondra Pruett-Miller, St Jude Children's Research Hospital, USA
13:20	13:40	20 mins	Pre-recorded	Exploring the flexibility of a eukaryotic genome using synthetic yeast Tom Ellis, Imperial College London, UK
13:40	13:50	10 mins	Pre-recorded	Massively parallel kinetic profiling of natural and engineered CRISPR nucleases *Stephen Jones, University of Texas at Austin, USA*
13:50	14:00	10 mins	Pre-recorded	A benchtop platform for generating highly multiplexed variant libraries *Deanna Church, Inscripta, Inc. USA*
14:00	14:10	10 mins	Pre-recorded	Discovery and characterization of transcriptional effectors with high-throughput protein domain screens in human cells *Josh Tycko, Bassik Lab, USA*
14:10	14:40	30 mins	Live	Q&A *Chair: John Doench, Broad Institute, USA* *Moderator: Mathew Garnett, Wellcome Sanger Institute, UK*
14:40	15:00	20 mins		Break

15:00	16:10			Session 8: Non-coding Variation
			Live	Introduction to the session *Chair: Lea Starita, University of Washington, USA*
15:00	15:20	20 mins	Pre-recorded	CRISPR, cancer and long noncoding RNAs Rory Johnson, University College Dublin, Ireland
15:20	15:30	10 mins	Pre-recorded	Systematic characterisation of functional circular RNAs *Matt Neve, Monash University, Australia*
15:30	15:40	10 mins	Pre-recorded	High-throughput screening of engineered microRNA target sites enables precise control of gene expression patterns in mammalian cells *Yale Michaels, University of British Columbia, Canada*
15:40	16:10	30 mins	Live	Q&A *Chair: Lea Starita, University of Washington, USA* *Moderator: Jolanda van Leeuwen, University of Lausanne, Switzerland*

16:10	16:20	Closing remarks
		Scientific Programme Committee: John Doench, Broad Institute, USA Leopold Parts, Wellcome Sanger Institute, UK Lea Starita, University of Washington, USA Jolanda van Leeuwen, University of Lausanne, Switzerland