

Meeting Program

DGDR-KRUPP Foundation Symposium 2022: DNA Repair and Human Disease

Organizers: Zhao-Qi Wang and Julian Stingele

Day 1 - April 6 2022

11:00 - 11:15	Welcome	<p>Alfred Nordheim (FLI Director)</p> <p>Caroline Kisker (DGDR Chair)</p> <p>Julian Stingele (Co-organizer)</p>
SESSION I - Replication-associated genome stability (Chair: Caroline Kisker)		
11:15 - 12:00	Maintenance of genome stability during DNA replication	<p>David Cortez (Vanderbilt University School of Medicine, Nashville, USA)</p>
12:00 - 12:20	Impact of the interplay between stemness features, p53 and pol iota on replication pathway choices	<p>Lisa Wiesmüller (University of Ulm, DE)</p>
12:20 - 12:40	Living at the edge – How human cells cope with ultrahigh mutation rates	<p>Helmut Pospiech (Leibniz Institute on Aging - Fritz Lipmann Institute, Jena, DE)</p>
12:40 - 13:00	Mechanisms that resolve G-quadruplex DNA structures	<p>Puck Knipscheer (Hubrecht Institute, Utrecht, NL)</p>
13:00 - 14:00	<i>Lunch</i>	
SESSION I - Replication-associated genome stability-continued (Chair: Alexander Bürkle)		
14:00 - 14:20	Table manners for cells: Knife & fork etiquette during DNA replication	<p>Helle Ulrich (Institute of Molecular Biology (IMB), Mainz, DE)</p>
14:20 - 14:40	RPA on single-stranded DNA: More than just beads on a string	<p>Matthias Altmeyer (University of Zurich, CH)</p>
14:40 - 14:55	Loss of RECQ4-MUS81 interaction leads to genome instability at hard to replicate regions and is associated with Rothmund-Thomson syndrome	<p>Lumir Krejci (National Centre for Biomolecular Research, Masaryk University, CZ)</p>
14:55 - 15:10	Nuclear actin polymerisation mediates the rapid cellular response to DNA replication stress	<p>Maria Dilia Palumbieri (University of Zurich, CH)</p>

15:10 - 15:25	Running in harmony: A role for ubiquitin ligase HUWE1 in the resolution of transcription-replication conflicts	Elias Einig (Universitätsklinikum Tübingen, Tübingen, DE)
15:25 - 15:55	<i>Café break</i>	
SESSION II - DNA damage response signalling pathways (Chair: Lee Zou)		
15:55 - 16:15	ATR and ATM-mediated mechanotransduction pathways	Marco Foiani (FIRC Institute of Molecular Oncology, Milan, IT)
16:15 - 16:35	PARP1 and XRCC1 exhibit a reciprocal relationship in genotoxic stress response	Aswin Mangerich (University of Konstanz, DE)
16:35 - 16:55	Systemic stress and metabolic effects of genotoxic stimuli	Maria Ermolaeva (Leibniz Institute on Aging - Fritz Lipmann Institute, Jena, DE)
16:55 - 17:10	MAEA is a clinically-relevant E3 ubiquitin ligase subunit with a novel role in the DNA damage response	Søren Hough (Gurdon Institute, Cambridge, UK)
17:10 - 17:25	Nucleotide excision repair of oxidatively induced DNA damage	Andriy Khobta (Friedrich Schiller University Jena, DE)
17:25 - 17:40	A complete solution enabling coding-free, publication-ready RNA research: combining strand-specific transcriptome sequencing with BGI's RNA data visualization and analysis platform, Dr. Tom	Peter Liu (BGI Genomics, Copenhagen, DK)
18:30	<i>Welcome reception</i>	<i>Scala</i>

Day 2 - April 7 2022

SESSION IV - Telomeres & DNA secondary structures (Chair: David Cortez)		
09:00 - 09:20	The good, the bad and the ugly: How to keep recombination in check in the alternative lengthening of telomeres pathway	Stephanie Panier (Max Planck Institute for Biology of Ageing and University of Cologne, DE)
09:20 - 09:40	Telomeric RNA-DNA hybrids are regulators of replicative senescence	Brian Luke (Institute of Molecular Biology (IMB), Mainz, DE)
09:40 - 10:00	Relevance and consequences of G-quadruplexes for genome stability	Katrin Paeschke (Universitätsklinikum Bonn, DE)
10:00 - 10:15	iMUT-seq: high-resolution DSB-induced mutation profiling reveals prevalent homologous-recombination dependent mutagenesis	Aldo S. Bader

		(Gurdon Institute, Cambridge, UK),
10:15 - 10:45	<i>Café break</i>	
SESSION V - DNA-protein crosslinks and their repair (Chair: Boris Pfander)		
10:45 - 11:05	The regulation of DNA-protein crosslink proteolysis repair	Kristijan Ramadan (University of Oxford, UK)
11:05 - 11:25	How are DNA-protein crosslinks targeted to degradation?	Julien Duxin (University of Copenhagen, DK)
11:25 - 11:40	Mechanistic insight into Colibactin as a mutagenic driver of cancer	Shihan Wang (Christian-Albrechts-University Kiel, DE)
11:40 - 11:55	Targeting RAD51 and Chk1 in a combination therapy to overcome acquired cisplatin resistance in tumor cells	Julia Mann (Heinrich Heine University Düsseldorf, DE)
11:55 - 13:00	<i>Lunch</i>	
13:00 - 14:00	DGDR General Assembly	
POSTER SESSION		
14:00 - 16:00	Poster session I (odd numbers)	
16:00 - 16:30	<i>Café break</i>	
SESSION V - DNA-protein crosslinks and their repair - continued (Chair: Kristijan Ramadan)		
16:30 - 16:50	Global-genome DNA-protein crosslink repair defects caused by <i>SPRTN</i> patient mutations	Julian Stinglee (Ludwig-Maximilians-Universität München, DE)
16:50 - 17:10	Proteases in DNA-protein crosslink repair	Yuichi Machida (Mayo Clinic, Rochester, USA)
17:10 - 17:30	A transposon screen to identify new factors involved in DNA-protein crosslink repair in yeast	Françoise Stutz (Université de Genève, CH)
17:30 - 17:50	Formation and repair of nitrogen mustard-induced DNA interstrand crosslinks	Alexander Bürkle (University of Konstanz, DE)
17:50 - 18:05	Sister chromatid cohesion without Pds5	Martin Kupiec (Tel Aviv University, IL)
19:00	<i>Invited Speaker's dinner</i>	<i>Versilia</i>

Day 3 - April 8 2022

SESSION VI - DNA repair deficiency and disease (Chair: Sherif El-Khamisy)		
09:00 - 09:20	Transcription and PARylation patterns induced by loss of ATM	Tanya Paull (University of Texas at Austin, Texas, USA)
09:20 - 09:40	ATR at crossroad of DNA damage response and mitochondria integrity	Zhao-Qi Wang (Leibniz Institute on Aging - Fritz Lipmann Institute, Jena, DE)
09:40 - 10:00	A novel genome instability syndrome caused by mutations in RECQL1	Grant S. Stewart (University of Birmingham, UK)
10:00 - 10:15	Stress-responsive tumor suppressor RFX7 regulates AKT/mTORC1 and cell fate decisions	Martin Fischer (Leibniz Institute on Aging - Fritz Lipmann Institute, Jena, DE)
10:15 - 10:30	Dietary restriction prevents cell-intrinsic DNA damage driven neurodegeneration in Purkinje neuron-specific DNA repair deficient mouse mutants	María B. Birkistóttir (Erasmus MC, Rotterdam, NL)
10:30 - 11:00	<i>Café break</i>	
SESSION VI - DNA repair deficiency and disease-continued (Chair: Lisa Wiesmüller)		
11:00 - 11:20	The role of hypoxia and ubiquitination in R-loop regulation	Sherif El-Khamisy (University of Sheffield, Sheffield, UK)
11:20 - 11:40	Genome Stability mechanisms in aging and disease: Insights from <i>C. elegans</i>	Siyao Wang (University of Cologne, DE)
11:40 - 12:00	Impact of carcinogenic metal compounds on the transcriptional DNA damage response	Andrea Hartwig (Karlsruher Institut für Technologie (KIT), DE)
12:00 - 12:15	Intratumor heterogeneity meets the DNA damage response: The plasticity factor ZEB1 governs a resistance-promoting, but vulnerable replication stress response	Harald Schuhwerk (Friedrich-Alexander University of Erlangen-Nürnberg, DE)
12:15 - 13:00	<i>Lunch</i>	
POSTER SESSION		
13:00 - 15:00	Poster session II (even numbers)	
15:00 - 15:30	<i>Café break</i>	
SESSION VII - DNA double-strand break repair (Chair: Tanya Paull)		
15:30 - 15:50	Structural mechanism of the Mre11-Rad50 complex in DNA double-strand break repair	Karl-Peter Hopfner

		(Ludwig-Maximilians-University Munich, DE)
15:50 - 16:10	Chromatin and cell cycle control of DSB repair	Boris Pfander (Max-Planck Institute of Biochemistry, Martinsried, DE)
16:10 - 16:30	Repair of DNA double-strand breaks by homologous recombination	Markus Loebrich (TU Darmstadt, DE)
16:30 - 16:50	From killer to saviour - an essential role of HIPK2 in DNA double-strand break repair	Thomas Hofmann (Mainz University School of Medicine, DE)
16:50 - 17:05	Highly multiplexed screens to gain insight into chromatin effects on DSB repair pathway balance	Xabier Vergara (Netherlands Cancer Institute, Amsterdam, NL)
17:05 - 17:20	Sequence and chromatin features direct resection initiation at DNA double-strand breaks	Robert Gnügge (Columbia University, New York, USA)
17:20 - 17:35	Unravelling DNA damage repair mechanisms and genome organization using Dynamic Single Molecule Analysis	Roman Renger (LUMICKS, Amsterdam, NL)
19:00	<i>Dinner – Networking – Music - Dancing</i>	<i>Volksbad</i>

Day 4 - April 9 2022

SESSION VIII - Transcription-associated genome (in)stability (Chair: Françoise Stutz)		
09:30 - 10:15	Impacts of transcription and chromatin compartmentalization on DNA repair	Lee Zou (Harvard Medical School, Charlestown, USA)
10:15 - 10:30	Cytoskeleton meets chromatin: the role of Myosin VI during replication stress	Jie Shi (Institute of Molecular Biology (IMB), Mainz, DE)
10:30 - 10:45	Dipeptidyl peptidase 9 triggers BRCA2 degradation and promotes DNA-damage repair	Ruth Geiss-Friedlander (University of Freiburg, DE)
10:45 - 11:15	<i>Café break</i>	
SESSION VIII - Transcription-associated genome (in)stability-continued (Chair: Julian Stingele)		
11:15 - 11:35	The XPB translocase: A driving force for the TFIIH transcription factor	Caroline Kisker (Julius-Maximilians-University Würzburg, DE)
11:35 - 11:55	Mechanisms opposing transcription-associated genomic instability	Petra Beli (University of Mainz and Institute of Molecular Biology (IMB), DE)

11:55 - 12:10	Replication profile shapes transcription-dependent recurrent DNA break clusters	Pei-Chi Wei (DKFZ, Heidelberg University, DE)
12:10 - 12:20	Poster Award	Scientific Committee
12:20 - 12:30	Closing remarks	Zhao-Qi Wang & Julian Stingele
12:30	Departure + Lunch pack	