

PROGRAM

MONDAY, June 13—7:00 PM

SESSION 1 KEYNOTE SPEAKERS

Mechanism for DNA lesion recognition, repair and tolerance

Wei Yang, Filip Golebiowski, Chia-lung Li, Yuki Onishi, Kaoru

Sugasawa, Yang Gao [35'+10']

Presenter affiliation: National Institutes of Health, Bethesda, Maryland. 1

Making and breaking recombination intermediates

Stephen C. West [35'+10']

Presenter affiliation: The Francis Crick Institute, South Mimms, United Kingdom. 2

TUESDAY, June 14—8:30 AM

SESSION 2 GENOME REPLICATION, STABILITY AND DISEASES I

Chairpersons: **Thomas Kunkel**, NIEHS, National Institutes of Health, Research Triangle Park, North Carolina, USA
Anthony Carr, University of Sussex, Brighton, United Kingdom

Generating and correcting nuclear DNA replication errors in yeast

Thomas A. Kunkel [15'+5']

Presenter affiliation: NIEHS, NIH, Research Triangle Park, North Carolina. 3

The structure of ORC and new thoughts on how the initiator finds chromosomes

Michael R. Botchan, Franziska Bleichert, James M. Berger [15'+5']

Presenter affiliation: University of California, Berkeley, California. 4

Bidirectional initiation of chromosomal DNA replication in budding yeast

Hiroyuki Araki, Nishiho Makino, Masaru Yagura, Sachiko Muramatsu, Shizuko Endo, Hiroshi Itou [15'+5']

Presenter affiliation: National Institute of Genetics, Mishima, Japan; SOKENDAI, Mishima, Japan.

5

Replication fork formation and fork stabilization in eukaryotic cells

Daochun Kong [15'+5']

Presenter affiliation: Peking University, Beijing, China.

6

Dynamic role of flap endonuclease 1 (FEN1) in Okazaki fragment maturation and genome stability

Binghui Shen [15'+5']

Presenter affiliation: Beckman Research Institute, City of Hope, Duarte, California.

7

Coffee Break

Mechanisms of replication-associated genome rearrangement

Izumi Miyabe, Andrea Keszthelyi, Karel Naiman, Johanne M. Murray, Antony M. Carr [15'+5']

Presenter affiliation: University of Sussex, Brighton, United Kingdom.

8

ETAA1 acts at stalled replication forks to maintain genome integrity

Thomas E. Bass, David Cortez [15'+5']

Presenter affiliation: Vanderbilt University School of Medicine, Nashville, Tennessee.

9

Error-prone processing of DNA heteroduplexes by mismatch repair

Jinzhen Guo, Liya Gu, Guo-Min Li [15'+5']

Presenter affiliation: Tsinghua University School of Medicine, Beijing, China; University of Southern California Keck School of Medicine, Los Angeles, California.

10

Repair at DNA nicks

Nancy Maizels, Luther Davis, Henry C. Olson [15'+5']

Presenter affiliation: University of Washington, Seattle, Washington.

11

The KEOPS complex regulates telomere replication and recombination independently of tRNA modification

Ying-Ying Liu, Ming-Hong He, Jing Peng, Jin-Qiu Zhou [15'+5']
Presenter affiliation: Shanghai Tech University, Shanghai, China;
SIBS, CAS, University of Chinese Academy of Sciences, Shanghai, China.

12

TUESDAY, June 14—2:00 PM

SESSION 3 POSTER SESSION

A transcription-proximal DNA double-strand break results in large deletions due to R-loop processing

Julien Brustel, Steve M. Sweet
Presenter affiliation: Sussex University, Brighton, United Kingdom. 13

Evidence that endogenous G-quadruplex DNA mediates stress granule assembly in response to oxidative stress

Alicia K. Byrd, Boris L. Zybailov, Leena Maddukuri, Jun Gao, Matthew R. Bell, Kevin D. Raney
Presenter affiliation: University of Arkansas for Medical Sciences, Little Rock, Arkansas. 14

Human MLH1 prevents the insertion of telomeric sequences at intra-chromosomal sites

Pingping Jia, Megan Chastain, Chengtao Her, Weihang Chai
Presenter affiliation: Washington State University, Spokane, Washington. 15

APOBEC3s mediate mutagenesis in CRISPR/Cas9-induced genome editing

Liqun Lei, Hongquan Chen, Wei Xue, Bian Hu, Jia Wei, Yafang Pan, Yiqiang Cui, Xiaosa Li, Jianying Wang, Wanjing Shang, Jimin Gao, Jiahao Sha, Min Zhuang, Bei Yang, Xingxu Huang, Bin Shen, Li Yang, Jia Chen
Presenter affiliation: ShanghaiTech University, Shanghai, China. 16

Single-molecule studies of single-stranded binding protein dependent ssDNA annealing dynamics

Jin Chen, Shimin Le, Walter J. Chazin, Jie Yan
Presenter affiliation: National University of Singapore, Singapore. 17

- Wuho is a new member in maintaining genome stability through regulating Flap endonuclease 1**
I-Cheng Cheng, Betty Chen, Hung-Hsun Shuai, Fan-Ching Chien, Peilin Chen, Tao-shih Hsieh
 Presenter affiliation: Academia Sinica, Taipei, Taiwan. 18
- Genetic crosstalk between homologous recombination pathway and oxidative stress responses for genomic integrity**
 Myung Ju Kim, Ji Eun Choi, Joohee Jung, Woo-Hyun Chung
 Presenter affiliation: Duksung Women's University, Seoul, South Korea. 19
- Distinct mutation accumulation rates among tissues determine the variation in cancer risk**
 Dapeng Hao, Li Wang, Li-jun Di
 Presenter affiliation: Cancer Center, Macau, China. 20
- HMGA2 protein protects stalled replication forks by constraining plectonemic DNA supercoils – implications for genome stability in stem and cancer cells**
 Xiaodan Zhao, Sabrina Peter, Priya Dharshanna, Moiz Ahmed, Jie Yan, Peter Droge
 Presenter affiliation: Nanyang Technological University, Singapore. 21
- Structural and functional study of a novel ATPase associated with Holiday junction resolvase Hjc**
 Binyuan Zhai, Kevin DuPrez, Tzanko I. Doukov, Yulong Shen, Li Fan
 Presenter affiliation: University of California, Riverside, California. 22
- Human RecQL4 helicase drives cisplatin resistance in gastric cancer by activating an Akt-YB1-MDR1 pathway**
Hongbo Fang, Dongliang Mo, Kaifeng Niu, Srinivasan Madhusudan, Yongliang Zhao
 Presenter affiliation: Key Laboratory of Genomic and Precision Medicine, China Gastrointestinal Cancer Research Center, Beijing, China. 23
- Compact chromatin structure induced by Ctr6-HDAC mediated deacetylation of histone H2B lysine 33 stabilizes stalled replication forks**
Gang Feng, Daochun Kong
 Presenter affiliation: Peking University, Beijing, China. 24

- Global chromosome fragile site mapping by Break-seq discovers novel function of the Fragile X mental retardation protein**
Arijita Chakraborty, Piroon Jenjaroenpun, Andrew McCulley, Vladimir Kuznetsov, Wenyi Feng
Presenter affiliation: SUNY Upstate Medical University, Syracuse, New York. 25
- Valproic acid causes radiosensitivity to breast cancer cells via disrupting DNA repair pathway**
Yue Luo, Hui Wang, Fengmei Zhang, Zhihui Feng
Presenter affiliation: Public Health School, Shandong University, Jinan, China. 26
- Severe microcephaly, growth retardation, and ataxia in BCCIP conditional knockout mice**
Dakim K. Gaines, Huimei Lu, Caiyong Ye, Yuan Lu, Jingmei Liu, Mladen-Roko Rasin, Zhiyuan Shen
Presenter affiliation: The Cancer Institute of New Jersey- Rutgers University, New Brunswick, New Jersey. 27
- Chromosome segregation fidelity is impacted by the ribosomal RNA gene repeats**
Daniela M. Quintana, Matthew A. Woods, Megan A. Schischka, Takehiko Kobayashi, Austen R. Ganley
Presenter affiliation: Massey University, Auckland, New Zealand; University of Auckland, Auckland, New Zealand. 28
- ICP0 binding partners from cell DNA repair machinery and their implication in HSV-1 replication**
Haidong Gu, Hyunah Kim
Presenter affiliation: Wayne State University, Detroit, Michigan. 29
- Shifting of mini-loop in TTTA and CCTG repeats—An efficient DNA repair escape pathway?**
Pei Guo, Sik Lok Lam
Presenter affiliation: The Chinese University of Hong Kong, Shatin, Hong Kong. 30
- Regulatory roles of cohesin components in promoting homologous recombination during meiosis**
Soogil Hong, Keun P Kim
Presenter affiliation: Chung-Ang University, Seoul, Korea. 31

The Holliday junction resolvase Hje in the hyperthermophilic archaeon <i>Sulfolobus islandicus</i> is likely modified by phosphorylation	
<u>Qihong Huang</u> , Tengteng Song, Zhou Yan, Jinfeng Ni, Yulong Shen	
Presenter affiliation: Shandong University, Jinan, China.	32
USP7 enforces RNF169-dependent DNA double-strand break responses	
Liwei An, Yiyang Jiang, Qingguo Gong, <u>Michael Huen</u>	
Presenter affiliation: The University of Hong Kong, Hong Kong.	33
Identification new regulatory pathways on RseP protease in <i>Pseudomonas aeruginosa</i>	
<u>Yida Y. Jiang</u> , Iain I. Lamot	
Presenter affiliation: University of Otago, Dunedin, New Zealand.	34
SYCP3 inhibits RAD51-mediated, but not DMC1-mediated, homologous pairing	
<u>Wataru Kobayashi</u> , Noriko Hosoya, Mutsumi Teramoto, Shinichi Machida, Kiyoshi Miyagawa, Hitoshi Kurumizaka	
Presenter affiliation: Waseda University, Tokyo, Japan.	35
Meiotic prophase role of Rec8 in regulating crossover recombination	
<u>Min-Su Lee</u> , Keun P. Kim	
Presenter affiliation: Chung-Ang University, Seoul, Korea.	36
RNF8 promotes epithelial-mesenchymal transition of breast cancer cells	
<u>Li Li</u> , Jingyu Kuang, Limei Guo, Yanrong Su, Yuxuan Wang, Yongjie Xu, Genze Shao	
Presenter affiliation: Peking University, School of Basic Medical Sciences, Beijing, China.	37
Regulation of spindle integrity and mitotic fidelity by BCCIPα	
Steven Huhn, <u>Jingmei Liu</u> , Caiyong Ye, Huimei Lu, Zhiyuan Shen	
Presenter affiliation: Rutgers Cancer Institute of New Jersey, New Brunswick, New Jersey.	38
Okazaki fragment maturation involves α-segment error editing by the mammalian FEN1/MutSα functional complex	
<u>Songbai Liu</u> , Guojun Lv, Shafat Ali, Wenpeng Liu, Li Zheng, Guomin Li, Thomas A. Kunkel, Binghui Shen	
Presenter affiliation: Suzhou Health College, Suzhou, China.	39

A selective small molecule DNA2 inhibitor for sensitization of human cancer cells to chemotherapy

Wenpeng Liu, Mian Zhou, Zhengke Li, Zheng Li, Judith L. Campbell, Binghui Shen, Hongzhi Li, Polaczek Piotr, Huifang Dai, Qiong Wu, Changwei Liu, Kenneth K. Karanja, Vencat Popuri, Shu-ou Shan, Katharina Schlacher

Presenter affiliation: Zhejiang University, Hangzhou, China; Beckman Research Institute, City of Hope, Duarte, California; California Institute of Technology, Pasadena, California.

40

FUSE binding protein 1 facilitates hepatitis C virus replication by regulating tumor suppressor p53

Zhihe Liu, Jinli Zhang, Xifeng Xiong

Presenter affiliation: Guangzhou Institute of Traumatic Surgery, Guangzhou Red Cross Hospital, Guangzhou, Guangdong, China.

41

Formations of liver tumors and B-cell lymphomas in mosaic mice reveal a role of BCCIP gene in suppression of inflammation-associated tumorigenesis

Huimei Lu, Caiyong Ye, Jingmei Liu, Zhiyuan Shen

Presenter affiliation: Robert Wood Johnson Medical School, Rutgers University, New Brunswick, New Jersey.

42

BRCA1 maintains genomic stability in male germ cells

Peng Li, Lin-Yu Lu

Presenter affiliation: Women's Hospital, Hangzhou, China; Institute of Translational Medicine, Hangzhou, China.

43

Genomic instability in the diploid and tetraploid offspring of the goldfish x the common carp cross

Jing Luo, Shaojun Liu, Jing Chai, Li Ren, Yi Zhou, Feng Huang, Xiaochuan Liu, Axel Meyer, Yaping Zhang

Presenter affiliation: State Key Laboratory for Conservation and Utilization of Bio-resource, Kunming, China.

44

The homologous pairing reaction in higher-ordered chromatin containing linker histone H1

Shinichi Machida, Motoki Takaku, Masae Ikura, Jiyong Sun, Wataru Kobayashi, Aiko Kinomura, Akihisa Osakabe, Hiroaki Tachiwana, Yasunori Horikoshi, Atsuhiko Fukuto, Tsuyoshi Ikura, Satoshi Tashiro, Hitoshi Kurumizaka

Presenter affiliation: Waseda University, Tokyo, Japan.

45

- The p53-like protein CEP-1 is required for meiotic fidelity in *C. elegans***
Abigail Rachele Mateo, Zebulin Kessler, Kristine Jolliffe, Olivia McGovern, Bin Yu, Alissa Nicolucci, Judith Yanowitz, Brent Derry
 Presenter affiliation: University of Toronto, Toronto, Canada; The Hospital for Sick Children, Toronto, Canada. 46
- PP2A-mediated suppression of ATM signaling by *Chlamydia trachomatis* inhibits repair of DNA double strand breaks by homologous recombination**
Yang Mi, Rajendra K. Gurumurthy, Piotr Zadora, Thomas F. Meyer, Cindrilla Chumduri
 Presenter affiliation: The Fifth Affiliated Hospital of Zhengzhou University, Zhengzhou, China. 47
- RNR regulation in fission yeast.**
Konstantinos Nestoras, Antony M. Carr
 Presenter affiliation: University of Sussex, Brighton, United Kingdom. 48
- Distinct catalytic activity and functional interplay of the ExoIII and EndoIV AP endonucleases from *Sulfolobus islandicus***
 Zhou Yan, Jinfeng Ni, Yulong Shen
 Presenter affiliation: State Key Laboratory of Microbial Technology, Jinan, China. 49
- Acetylation of replication protein A (RPA) improves its DNA binding property**
Onyekachi E. Ononye, Sneha Surendran, Lata Balakrishnan
 Presenter affiliation: Indiana University-Purdue University Indianapolis (IUPUI), Indianapolis, Indiana. 50
- Timeless interacts with Parp1 to promote DNA DSB repair**
 Si Xie, Oliver Mortusewicz, Hoi Tang Ma, Randy YC Poon, Thomas Helleday, Chengmin Qian
 Presenter affiliation: The University of Hong Kong, Hong Kong. 51
- Yeast helicase Pif1 mediates remodeling of protein-nucleic acid complexes**
Kevin D. Raney, Shubeena Chib, Alicia K. Byrd
 Presenter affiliation: University of Arkansas for Medical Sciences, Little Rock, Arkansas. 52

- Germline *RET* mutations contribute to chromosomal instability in osteosarcoma, independent of canonical *TP53* / *RB1* pathways**
Sebastian Ribí, Michal Kovac, Claudia Blattmann, Karl Heimann, Gernot Jundt, Michaela Nathrath, Daniel Baumhoer
 Presenter affiliation: University Hospital Basel, Basel, Switzerland. 53
- In vivo* functional analyses of two DExD/H-box family helicases in *Sulfolobus islandicus***
 Xueguo Song, Qihong Huang, Jinfeng Ni, Yulong Shen
 Presenter affiliation: Shandong University, Jinan, China. 54
- Negative regulation of a Holliday junction resolvase by an E3 ubiquitin ligase complex**
Brett N. Spatola, Jacqueline Y. Lo, Sean P. Curran
 Presenter affiliation: University of Southern California, Los Angeles, California. 55
- Insights into the roles of ATP in Mre11 complex functions revealed by the structure of ATPγS-Mre11/Rad50-DNA complex**
Sihyun Sung, Yaqi Liu, Youngran Kim, Youngbong Park, Fuyang Li, Sang Eun Lee, Yunje Cho
 Presenter affiliation: POSTECH, Pohang, Korea. 56
- Novel Fanconi anemia E3 ligase RFWD3 regulates RPA and RAD51 degradation to facilitate homologous recombination and ICL repair**
 Shojiro Inano, Koichi Sato, Yoko Katsuki, Shinichiro Nakada, Akifumi Takaori-Kondo, Masamichi Ishiai, Detlev Schindler, Hitoshi Kurumizaka, Minoru Takata
 Presenter affiliation: Radiation Biology Center, Kyoto University, Kyoto, Japan. 57
- Fission yeast 9-1-1 complex is required for the maintenance of circular chromosome in the presence of 5-fluorodeoxyuridine**
 Hossain M. Shamim, Yukako Minami, Masaru Ueno
 Presenter affiliation: Hiroshima University, Higashi-Hiroshima, Japan. 58
- Identification and characterization of androgen receptor splice variants preferred bindings that drive prostate cancer progression**
Liguo Wang, Yundong He, Ji Lu, Zhenqing Ye, Tindall J. Donald, Haojie Huang
 Presenter affiliation: Mayo Clinic, Rochester, Minnesota. 59

Control of non-homologous end joining by histone H2AX

Yili Feng, Ye Feng, Jifeng Xiang, Guofang Yan, Hui Lin, Xiujun Cai, Anyong Xie

Presenter affiliation: Sir Run Run Shaw Hospital, Zhejiang University, Hangzhou, China; Institute of Translational Medicine, Zhejiang University, Hangzhou, China.

60

APE1 promotes EGFR-TKI acquired resistance in non-small cell lung cancer through regulating epithelial to mesenchymal transition

Xiao Yang, Mengxia Li, Dong Wang, Xuan Jiang, Yu Peng, Wei Duan, Nan Dai, Jinlu Shan, Yan Feng, Shiheng Zhang, Xuemei Li, Yi Cheng, Yuxin Yang

Presenter affiliation: Third Military Medical University, Chongqing, China.

61

EXOGENOUS DNA IN HUMAN MITOCHONDRIAL DNA REPAIR

Michal Szymanski, Wangsheng Wang, Aleksandra Gmyrek, Mark White, Ching Lee, Whitney Yin

Presenter affiliation: University of Texas Medical Branch, Gavelston, Texas; Sealy Center for Structural Biology, Gavelston, Texas.

62

Novel oncogene with kinase-domain (NOK) induces two distinct cellular responses with respect to cell cycle checkpoint and DNA damage in different cell lines

Sulin Zeng, Li Liu

Presenter affiliation: Institute of Basic Medical Sciences, Beijing, China.

63

Female-specific crossover inefficiency—A new feature of human meiosis that underlies elevated female aneuploidy

Shunxin Wang, Terry Hassold, Pat Hunt, Nancy Kleckner, Liangran Zhang

Presenter affiliation: Shandong University, Jinan, China.

64

Cdc45 ubiquitylation is required for replicative integrity

Xiyang Guo, Bin Hu, Xianhao Wu, Yuexuan Zhang

Presenter affiliation: Huazhong University of Science and Technology, Wuhan, China.

65

ESC-specific Filia/Floped/BLM complex regulates replication stress response and safeguards genomic stability

Bo Zhao, Weidao Zhang, Ping Zheng

Presenter affiliation: Kunming Institute of Zoology, CAS, Kunming, China.

66

Structural basis for DNA 5'-end resection by RecJ

Ye Zhao, Kaiying Cheng, Hong Xu, Xuanyi Chen, Liangyan Wang,
Bing Tian, Yuejin Hua

Presenter affiliation: Zhejiang University, Hangzhou, China.

67

**Triptolide-assisted phosphorylation of p53 suppresses
inflammation-induced NF- κ B survival pathways in cancer cells**

Li Zheng, Mian Zhou, Binghui Shen

Presenter affiliation: City of Hope, Duarte, California.

68

TUESDAY, June 14—4:30 PM

Chinese Tea and Beer Tasting

TUESDAY, June 14—7:00 PM

SESSION 4 GENOME REPLICATION, STABILITY AND DISEASES II

Chairperson:

Arthur Levine, University of Pittsburgh School of
Medicine, Pittsburgh, Pennsylvania, USA

Zhao-Qi Wang, Leibniz Institute On Aging - Fritz Lipmann
Institute (FLI), Jena, Germany

**Cancer and translesion synthesis polymerases: with special
reference on UV-induced mutagenesis**

Yasutaka Sakurai, Masayuki Yokoi, Fumio Hanaoka [15'+5']

Presenter affiliation: Gakushuin University, Tokyo, Japan.

69

PTEN family regulates DNA replication and metabolism

Hui Liang, Zhuo Sun, Shiming He, Jingyi Yang, Minglu Zhu, Michael A.
McNutt, Yuxin Yin [15'+5']

Presenter affiliation: Institute of Systems Biomedicine, Peking
University Health Science Center, Beijing, China.

70

**Confounding roles of essential caretaker genes in
tumorigenesis—New insights gained from reversible BCCIP-
deficiency mouse models**

Zhiyuan Shen, Huimei Lu, Roberto Droz, Jingmei Liu, Dakim Gaines,
Caiyong Ye, Steven Huhn [15'+5']

Presenter affiliation: Rutgers Cancer Institute of New Jersey, Rutgers
The State University of New Jersey, New Brunswick, New Jersey.

71

Preventing topoisomerase I-induced DNA breaks during transcription by the RECQ5 helicase

Yilun Liu [15'+5']

Presenter affiliation: Beckman Research Institute of City of Hope, Duarte, California.

72

The FEN1 L209P mutation interferes with long patch base excision repair and induces cellular transformation

Hongfang Sun, Huan Wu, Yilan zhang, Chandra Sekhar, Zhigang Guo [10'+5']

Presenter affiliation: Nanjing Normal University, Nanjing, China.

73

DNA damage response and neurodevelopment

Zhao-Qi Wang [15'+5']

Presenter affiliation: Leibniz Institute On Aging – Fritz Lipmann Institute (FLI), Jena, Germany.

74

De novo purine biosynthesis in drug resistance and tumor relapse of childhood AL

Bin-Bing S. Zhou [15'+5']

Presenter affiliation: Pediatric Translational Medicine Institute, Shanghai, China.

75

WEDNESDAY, June 15—8:30 AM

SESSION 5 DNA DAMAGE RESPONSE

Chairpersons: **Junjie Chen**, University of Texas MD Anderson Cancer Center, Houston, Texas, USA
Lee Zou, MGH Cancer Center/Harvard Medical School, Boston, Massachusetts, USA

Protein-protein interaction network in DNA damage response and tumorigenesis

Junjie Chen [15'+5']

Presenter affiliation: The University of Texas M. D. Anderson Cancer Center, Houston, Texas.

76

CLASPIN deubiquitination modulates ATR-dependent CHK1 activation in response to replication stress

Hongchang Zhao, Min Zhu, Xingzhi Xu [15'+5']

Presenter affiliation: Capital Normal University, Beijing, China.

77

A mitosis-specific MRN complex acts as a mitotic DNA damage checkpoint <u>Dongyi Xu</u> [10'+5'] Presenter affiliation: Peking University, Beijing, China.	78
Regulation of the BRCA2-Rad51 pathway by ubiquitination signaling Jian Yuan, <u>Zhenkun Lou</u> [15'+5'] Presenter affiliation: Mayo Clinic, Rochester, Minnesota.	79
An endogenous PARP inhibitor <u>Xiaochun Yu</u> [15'+5'] Presenter affiliation: City of Hope, Duarte, California.	80
Coffee Break	
Novel functions of RPA as a sensor of genomic instability Hai Dang Nguyen, Tribhuwan Yadav, <u>Lee Zou</u> [15'+5'] Presenter affiliation: Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts.	81
The ATM-PKM2-CtIP axis bridges cancer cell metabolism to DNA repair Steven Sizemore, Manchao Zhang, Ju hwan Cho, Zhimin Lu, Arnab Chakravarti, <u>Fen Xia</u> [10'+5'] Presenter affiliation: the Ohio State University, Columbus, Ohio.	82
Role of Bclaf1 in DNA damage induced cellular senescence Anwen Shao, <u>Jun Tang</u> [10'+5'] Presenter affiliation: College of Veterinary Medicine, China Agricultural University, Beijing, China.	83
Progress in molecular mechanisms of radioresistance in <i>Deinococcus radiodurans</i> <u>Yuejin Hua</u> [15'+5'] Presenter affiliation: Zhejiang University, Hangzhou, China.	84
Role of ATM, DNA-PKcs and ATR in DNA repair—Go beyond signaling <u>Shan Zha</u> [15'+5'] Presenter affiliation: Columbia University, New York, New York.	85

SESSION 6 CELLULAR RESPONSES TO DNA REPLICATION STRESSES

Chairperson: **Tanya Paull**, University of Texas at Austin, Austin, Texas, USA

Processing of protein-DNA lesions in eukaryotic cells

Nodar Makharashvili, Sucheta Arora, Fu Qiong, Tanya T. Paull [15'+5']

Presenter affiliation: Howard Hughes Medical Institute, The University of Texas at Austin, Austin, Texas. 86

Regulation of the Dna2 helicase/nuclease during DNA replication stress

Martin E. Budd, Kenneth K. Karanja, Piotr Polaczek, Greg Ngo, David Lydall, Wenpeng Liu, Judith L. Campbell [15'+5']

Presenter affiliation: California Institute of Technology, Pasadena, California. 87

Fanconi anemia and cellular response to DNA replication stress

Yanyan Tian, Xi Shen, Sarah Martin, Erica Lynn, Junjie Chen, Katharina Schlacher, Lei Li [15'+5']

Presenter affiliation: The University of Texas MD Anderson Cancer Center, Houston, Texas. 88

Interaction with G-quadruplex structures forms a basis for Rif1-mediated regulation of DNA replication, transcription and chromatin architecture

Hisao Masai, Rino Fukatsu, Naoko Kakusho, Yutaka Kanoh, Seiji Matsumoto, Kenji Moriyama, Naoko Yoshizawa, Satoshi Yamazaki [15'+5']

Presenter affiliation: Tokyo Metropolitan Institute of Medical Science, Tokyo 156-8506, Japan, Japan. 89

Control of replication timing and subnuclear localization by telomere binding proteins in fission yeast

Shiho Ogawa, Hidesato Ogawa, Haruhiko Asakawa, Tatsuro S. Takahashi, Takuro Nakagawa, Yasushi Hiraoka, Hisao Masukata [15'+5']

Presenter affiliation: Osaka University, Toyonaka, Japan; Osaka University, Suita, Japan. 90

The Smc5/6 complex and replication stress

Johanne M. Murray [15'+5']

Presenter affiliation: University of Sussex, Brighton, United Kingdom. 91

Alcohol and endogenously derived aldehydes mutate the genomes of blood stem cells

Ketan Patel [15'+5']

Presenter affiliation: University of Cambridge, Cambridge, United Kingdom. 92

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THURSDAY, June 16—8:30 AM

SESSION 7 DOUBLE STRAND BREAK REPAIR I

Chairpersons: **Maria Jasin**, Memorial Sloan-Kettering Cancer Center, New York, New York, USA
Stephen Kowalczykowski, University of California-Davis, Davis, California, USA

Protecting the genome by homologous recombination

Maria Jasin [15'+5']

Presenter affiliation: Memorial Sloan Kettering Cancer Center, New York, New York. 93

Structural mechanism of double strand break repair by the Mre11 complex

Yunje Cho [15'+5']

Presenter affiliation: Pohang University of Science and Technology, Pohang, South Korea. 94

The deubiquitinases in regulating homologous recombination	
<u>Jian Yuan</u> , Yunhui Li, Chenming Wu, Lei Li, Yujiao Yin, Yuping Chen [10'+5']	
Presenter affiliation: Shanghai East Hospital, Shanghai , China.	95
Quality control of homologous recombination repair	
<u>Jun Huang</u> [15'+5']	
Presenter affiliation: Zhejiang University, Hangzhou, China.	96
Factors that influence the outcome of mammalian chromosomal break repair	
David O. Onyango, Sean M. Howard, Ragini Bhargava, <u>Jeremy M. Stark</u> [15'+5']	
Presenter affiliation: Beckman Research Institute of the City of Hope, Duarte, California.	97
Replication fork collapse triggers the relocation of common fragile sites to nuclear periphery and crossover recombination in mammalian cells	
Zhanwen Du, Yao Zhang, Xiaosong Yang, Zhefu Ma, Gonzalo Susana, Chunhong Yan, <u>Junran Zhang</u> [10'+5']	
Presenter affiliation: School of Medicine, Case Western Reserve University, Cleveland , Ohio.	98
<i>Coffee Break</i>	
Molecular functions of BRCA1, BRCA2, and RAD51 paralogs in homologous recombination	
<u>Stephen Kowalczykowski</u> [15'+5']	
Presenter affiliation: University of California, Davis, Davis, California.	99
Nek7 protects telomere integrity via preventing TRF1 degradation during DNA damage	
Rong Tan, Arthur Levine, Bing Su, <u>Li Lan</u> [15'+5']	
Presenter affiliation: University of Pittsburgh Cancer Institute, Pittsburgh, Pennsylvania.	100
The structure of the eukaryotic Holliday junction-resolving enzyme GEN1 bound to DNA	
<u>David M. Lilley</u> [15'+5']	
Presenter affiliation: University of Dundee, Dundee, United Kingdom.	101

The Mre11 interaction domain of Nbs1 is necessary and sufficient for Mre11 complex functions

Jun Hyun Kim, John H.J. Petrini [15'+5']

Presenter affiliation: Memorial Sloan Kettering Cancer Center, New York, New York.

102

A proposed role for the telomere resolvase, ResT, in rescue of DNA replication near the hairpin telomeres of *Borrelia*

Shu Hui Huang, Kerri Kobryn [10'+5']

Presenter affiliation: University of Saskatchewan, Saskatoon, Canada.

103

THURSDAY, June 16—2:00 PM

SESSION 8 DOUBLE STRAND BREAK REPAIR II

Chairpersons: **Patrick Sung**, Yale University School of Medicine, New Haven, Connecticut, USA
Keith Caldecott, University of Sussex, Brighton, United Kingdom

Role of the RAD51-RAD51AP1-UAF1 complex in homologous recombination

Fengshan Liang, Claudia Wiese, Gary Kupfer, Patrick Sung [15'+5']
Presenter affiliation: Yale University School of Medicine, New Haven, Connecticut.

104

Control of meiotic recombination by Rad51/Dmc1 mediators and DNA helicases

Akira Shinohara [15'+5']

Presenter affiliation: Institute for Protein Research, Osaka University, Suita, Osaka, Japan.

105

Regulation of DNA double-strand break repair in mammalian cells

Shibo Li, Lan Truong, Yongjiang Li, Tinghong Lu, Xiaohua Wu [15'+5']

Presenter affiliation: The Scripps Reserach Institute, La Jolla, California.

106

Novel shuttle vector-based methods for assessing the transcriptional and replicative bypass of DNA lesions in cells

Changjun You, Pengcheng Wang, Bifeng Yuan, Yinsheng Wang [15'+5']

Presenter affiliation: University of California, Riverside, California.

107

Generation of a highly sensitive antibody capable of detecting a minimal level of the thymine dimer lesion inflicted by a physiological dose of UV
Bingjie Kong, [Haiying Hang](#) [10'+5']
Presenter affiliation: Institute of Biophysics, Chinese Academy of Sciences, Beijing, China. 108

Coffee Break

Regulation and assembly of DNA strand break repair protein complexes associated with human genetic disease
[Keith W. Caldecott](#) [15'+5']
Presenter affiliation: University of Sussex, Falmer, Brighton, United Kingdom. 109

Smc5/6- and SUMO-based regulation of recombination intermediate metabolism
[Xiaolan Zhao](#), Jaclyn Bonner, Koyi Choi [15'+5']
Presenter affiliation: Memorial Sloan-Kettering Cancer Center, New York, New York. 110

Single-molecule imaging reveals how the Mre11/Rad50/Nbs1 complex coordinates the first steps of double-stranded break repair
Logan R. Myler, Ignacio F. Gallardo, Yoori Kim, Tanya T. Paull, [Ilya J. Finkelstein](#) [10'+5']
Presenter affiliation: UT-Austin, Austin, Texas. 111

Unexpected roles of caspases, DNA double strand breaks, and DNA damage response in facilitating carcinogenesis and sustaining tumorigenicity
Xinjian Liu, Fang Li, Qian Huang, [Chuan-Yuan Li](#) [15'+5']
Presenter affiliation: Duke University Medical Center, Durham, North Carolina. 112

Differential roles of human telomere proteins in telomere maintenance
[Songyang Zhou](#) [15'+5']
Presenter affiliation: Baylor College of Medicine, Houston, USA and Sun Yat-Sen University, Guangzhou, China.

THURSDAY, June 16—6:00 PM

COCKTAILS and BANQUET

SESSION 9 EPIGENETICS AND PTM-MEDIATED DNA DAMAGE RESPONSE AND REPAIR I

Chairpersons: **Guoliang Xu**, Institute of Biochemistry and Cell Biology, CAS, Shanghai, China
Li-Lin Du, National Institute of Biological Sciences, Beijing, China

Enzymatic oxidation of methylcytosine in mammalian genomic DNA

Guo-Liang Xu [15'+5']

Presenter affiliation: Institute of Biochemistry and Cell Biology, Shanghai, China.

113

Altered structures and physical characteristics of nucleosomes containing cancer-associated histone mutations

Hitoshi Kurumizaka [15'+5']

Presenter affiliation: Waseda University, Tokyo, Japan.

114

RNA epigenetics control of DNA double-strand breaks repair

Yun-Gui Yang [15'+5']

Presenter affiliation: CAS Key Laboratory of Genomic and Precision Medicine, Beijing, China.

115

Replication protein A interacts with histone H3-H4 and contributes to DNA replication coupled nucleosome assembly

Shaofeng Liu, Zhiyun Xu, He Leng, Pu Zheng, Jianxun Feng, Kaifu Chen, Qing Li [10'+5']

Presenter affiliation: Peking University, Beijing, China.

116

Chromatin remodeling for DNA double-strand break repair and transcriptional repression

Akira Yasui, Reiko Watanabe, Shin-ichiro Kanno, Ayako Ui [15'+5']

Presenter affiliation: Institute of Development, Aging and Cancer (IDAC), Tohoku University, Sendai, Japan.

117

Lysine methyltransferases and demethylases in controlling DNA repair, genome stability and cell survival

Wei-Guo Zhu [15'+5']

Presenter affiliation: Shenzhen University Health Science Center, Shenzhen, China; Peking University Health Science Center, Beijing, China.

118

Coffee Break

- Snf2-family protein Rrp2 confers etoposide resistance through counteracting SUMO-targeted ubiquitin E3 ligase**
Yi Wei, Li-Xue Diao, Hai-Tao Wang, Shan Lu, Meng-Qiu Dong, Li-Lin Du [15'+5']
Presenter affiliation: National Institute of Biological Sciences, Beijing, Beijing, China. 119
- REV1 promotes PCNA monoubiquitination through interacting with ubiquitinated RAD18**
Zhifeng Wang, Min Huang, Xiaolu Ma, Huiming Li, Tie-Shan Tang, Caixia Guo [10'+5']
Presenter affiliation: Beijing Institute of Genomics, Beijing, China. 120
- Wdr70 promotes long-range resection by stimulating histone H2B monoubiquitination**
Ming Zeng, Ken'Ichi Mizuno, Daochun Kong, Lilin Du, Antony Carr, Cong Liu [15'+5']
Presenter affiliation: Sichuan University, Chengdu, China. 121
- Linking sister chromatid cohesion to chromosome replication**
Jingjing Zhang, Haitao Sun, Di Shi, Xiaoli Li, Qinhong Cao, Huiqiang Lou [15'+5']
Presenter affiliation: China Agricultural University , Beijing, China. 122
- PCNA-Ub polyubiquitination inhibits cell proliferation and induces cell-cycle checkpoints**
Wei Xiao, Zhoushuai Qin, Zhiqiang Bai [15'+5']
Presenter affiliation: Capital Normal University, Beijing, China. 123