

2019 Mesilla Chemistry Workshop

Nucleic Acids-Protein Interactions

Mesilla, NM, February 9 - 12, 2019

Organizers:

Natalia Tretyakova, Department of Medicinal Chemistry, Univ. of Minnesota

Yinsheng Wang, Department of Chemistry, University of California-Riverside

Meeting Site: Hacienda de Mesilla and Double Eagle Restaurant on the Mesilla Plaza

Workshop Website: <http://hase-group.ttu.edu/mesilla/current.shtml>

Support:

New Mexico State University

Texas Tech University

The Robert Welch Foundation

Schedule:

Saturday, February 9, 2019

6:30 pm Reception – La Posta Restaurant

Sunday, February 10 Hacienda de Mesilla

Session A. Chair: Yinsheng Wang

8:30 am	Yinsheng Wang	Welcome and introductions
8:40	Jikui Song	Mammalian DNA methylation: how is the fifth base installed and maintained?
9:10 am	Bethany Buck-Koehntop	Zinc Finger Recognition of Methylated DNA
9:40 am	Natalia Tretyakova	DNA-protein cross-linking at epigenetic marks of DNA

10:10 am **Coffee Break**

10:40 am **Marc Greenberg** Damaged DNA Histone Interactions in Nucleosome Core Particles

11:10 am **John-Stephen Taylor** DNA photoproduct formation and deamination in nucleosomes.

11:40 Lunch Break & Afternoon free –Trip to White Sands

Session B. *Protein interactions with damaged DNA* Double Eagle on the Mesilla Plaza

Chair: Michael Stone

7:00 pm **Jim Liu** Interruption of zinc finger protein binding with DNA by arsenic

7:30 pm **Fred Guengerich** DNA polymerase interactions with ribonucleotides, DNA-peptide crosslinks, and labile base adducts

8:00 pm **Thomas Spratt** DNA polymerase kappa activity during cell cycle

Monday, February 11, 2017

Session C. Double Eagle on the Mesilla Plaza Chair: Natalia Tretyakova

8:30 am **Vicki Wysocki** Native MS of Nucleoprotein Complexes

9:00 am **Wang, Yinsheng** Quantitative proteomics for uncovering novel nucleic acid-recognition proteins

9:30 **Deyu Li** Chemical biology of DNA damage

10:00 am **Coffee Break**

10:30 am **Fabris, Dan** Native mass spectrometry for the investigation of protein-nucleic acid assemblies

- 11:00 am **Urlaub, Henning** Protein-Nucleic Acid cross-linking Approaches and their analyses by Mass Spectrometry
- 11:30 **Dong Wang** Molecular basis of lesion recognition during transcription coupled repair

12-7 p.m. Lunch break and afternoon free

Session D. Double Eagle on the Mesilla Plaza **Chair: Marc Greenberg**

- 7:00 pm **Geacintov, Nicholas** Recognition of DNA Lesions by the Mammalian NER System: The Initial Damage-Sensing or the Verification Step?
- 7:30 pm **Kent Gates** The intrusion of base excision repair proteins into the world of DNA interstrand cross-link repair
- 8:00 pm **Sheila David** When you're strange: Unusual features of the MUTYH glycosylase and implications in cancer

Tuesday, February 12, 2017

Session E Double Eagle on the Mesilla Plaza **Chair: Thomas Spratt**

- 8:30 am **Beuning, Penny** Processivity clamp dynamics influence DNA replication activities
- 9:00 am **Michael Stone** Structures of Fapy-dG DNA Lesions and Interactions with Y-Family DNA Polymerases
- 9:30 **Sarah Delaney** Base Excision Repair in Nucleosomes
- 10:00 **Coffee Break**
- 10:30 am **Ashis Basu** Replication of DNA-Peptide Cross-links in Human Cells
- 11:00 am **Linlin Zhao** Interactions of damaged DNA with a mitochondrial DNA-packaging protein

12-4 p.m. Lunch break and Early Afternoon Free

Session F: Double Eagle on the Mesilla Plaza Chair: Bill Hase

4:00 pm	Christine Chow	In vivo selection and mapping of peptide-RNA interactions
4:30 pm	Patrick Limbach	Characterizing Radiation-induced Damage in RNA using LC-MS/MS
5 p.m.	Break	
5:30 pm	Sean O'Leary	mRNA-protein dynamics in eukaryotic translational control.
6:00 pm	Peter Beal	RNA Editing by ADAR Enzymes

7:30 pm Workshop Banquet at Double Eagle Restaurant