

# Scientific Program

## WEDNESDAY, AUGUST 16, 2017

08:30 am – 08:35 am	<i>Opening Remarks</i> <b>Henry Mann</b> ; Dean of College of Pharmacy, The Ohio State University, USA
08:35 am – 08:40 am	<i>Welcome Speech</i> <b>Matt McNair</b> ; Vice President Corporate Engagement, The Ohio State University, USA
<b>SESSION 1: Viral Motor and Cellular RNA In Motion – I</b> <span style="float: right;"><b>August 16</b></span>	
<i>Session Chairs: <b>Hiroyuki Noji</b>; University of Tokyo, Japan; <b>Ian Molineux</b>; University of Texas-Austin, USA</i>	
08:40 am – 09:00 am	<b>Peixuan Guo</b> ; The Ohio State University, USA <i>Introduction to Biomotors, Virus Assembly, and Nanobiotechnology Applications</i>
09:00 am – 09:30 am	<b>KEYNOTE TALK: Stephen Kowalczykowski</b> ; University of California at Davis, USA <i>Watching Individual DNA Helicases and Motor Proteins: Unexpected Un-twists and Turns</i>
09:30 am – 10:00 am	<b>KEYNOTE TALK: Nils Walter</b> ; University of Michigan, USA <i>Folding of Single RNA Molecules in Nanomachines</i>
10:00 am – 10:05 am	<b>Farzin Haque</b> and <b>Congcong Xu</b> ; Conference Host Staff <i>Meeting Logistics</i>
10:05 am – 10:30 am	<b>Coffee Break</b> , Conference Theater Lobby
<b>SESSION 2: Viral Motor and Cellular RNA In Motion – II</b> <span style="float: right;"><b>August 16</b></span>	
<i>Session Chairs: <b>Sarah Woodson</b>; Johns Hopkins University, USA; <b>Kevin Raney</b>; University of Arkansas, USA</i>	
10:30 am – 10:50 am	<b>Sarah Woodson</b> ; Johns Hopkins University, USA <i>RNA Self-assembly, Dynamics, and Catalysis</i>
10:50 am – 11:10 am	<b>Aleksei Aksimentiev</b> ; University of Illinois at Urbana-Champaign, USA <i>Computational Microscopy of Nanopore Transport</i>
11:10 am – 11:30 am	<b>Kathleen Boris-Lawrie</b> ; University of Minnesota, USA <i>Revisiting the HIV-1 RNA Switch Hypothesis and Defining Biophysical Basis for Translation Rate</i>
11:30 am – 11:50 am	<b>Anil Sood</b> ; The University of Texas MD Anderson Cancer Center, USA <i>Therapeutic Applications of Non-coding RNAs</i>
12:00 pm – 01:20 pm	<b>Lunch</b> , Grand Ballroom

**SESSION 3: Single Molecule Studies of Biomotor Dynamics****August 16**Session Chairs: **Fred Antson**; University of York, UK; **Terence Williams**, The Ohio State University, USA

<b>01:30 pm – 02:00 pm</b>	<b>KEYNOTE TALK: Richard Fishel</b> ; The Ohio State University, USA <i>Single Molecule Imaging of Mismatch Repair in Real Time</i>
<b>02:00 pm – 02:20 pm</b>	<b>James M. Berger</b> ; Johns Hopkins University, USA <i>Regulation of Transcription Termination Through Controlling Hexameric Helicase Dynamics</i>
<b>02:20 pm – 02:40 pm</b>	<b>John Kasianowicz</b> ; National Institute of Standards and Technology, USA <i>Nanopore-based Detection of Single Molecules</i>
<b>02:40 pm – 03:00 pm</b>	<b>Smita Patel</b> ; Rutgers University, USA <i>Motors Proteins of DNA Replication</i>
<b>03:00 pm – 03:20 pm</b>	<b>Kevin Raney</b> ; University of Arkansas, USA <i>Helicase Trains on Single-stranded DNA or RNA</i>
<b>03:20 pm – 03:50 pm</b>	<b>Coffee/Water Break</b> , Conference Theater Lobby

**SESSION 4: Structure and Assembly of Viruses and Biomotors****August 16**Session Chairs: **Jun Yu**; Beijing Institute of Genomics, China; **Wah Chiu**; Baylor College of Medicine, USA

<b>03:50 pm – 04:20 pm</b>	<b>KEYNOTE TALK: Wah Chiu</b> ; Baylor College of Medicine, USA <i>Cryo-EM of Molecular Machines</i>
<b>04:20 pm – 04:40 pm</b>	<b>Yale Goldman</b> ; University of Pennsylvania, USA <i>Protein Structural Dynamics One Tilt at a Time</i>
<b>04:40 pm – 05:00 pm</b>	<b>Di Xia</b> ; NCI/NIH, USA <i>Structure and Function of the Human AAA ATPase p97, A Mighty Protein Extractor</i>
<b>05:00 pm – 05:20 pm</b>	<b>Elena Orlova</b> ; University of London, UK <i>Structural Organization of the Phage Genome Gatekeeper</i>
<b>05:20 pm – 05:40 pm</b>	<b>Zongqiang Cui</b> ; Wuhan Institute of Virology, Chinese Academy of Sciences, China <i>Virus-based Nanoparticles for In Vivo Targeting and Imaging</i>
<b>05:40 pm – 06:00 pm</b>	<b>Alex Sparreboom</b> ; The Ohio State University, USA <i>Kinase-mediated Regulation of Oncology Drug Transporters</i>
<b>06:00 pm – 06:20 pm</b>	<b>Group Photo</b> , Outdoor
<b>06:30 pm – 07:30 pm</b>	<b>Dinner</b> , Grand Ballroom
<b>07:30 pm – 09:00 pm</b>	<b>Poster Session and Evening Social</b> , Hancock room

## THURSDAY, AUGUST 17, 2017

<b>SESSION 5: Nanobiotechnology as Introduction to The Fields of Virology and Biomotors</b>		<b>August 17</b>
<i>Session Chairs: <b>Sharyn Baker</b>; The Ohio State University, USA; <b>Shahid Nimjee</b>; The Ohio State University, USA;</i>		
<b>08:30 am – 09:00 am</b>	<b>KEYNOTE TALK: Mauro Ferrari</b> ; Houston Methodist Research Institute, USA <i>Post-Nanomedicine</i>	
<b>09:00 am – 09:20 am</b>	<b>Piotr Grodzinski</b> , NCI/NIH, USA <i>Current Status and Future Directions in Nanotechnologies for Cancer – View from the NCI Alliance for Nanotechnology in Cancer</i>	
<b>09:20 am – 09:40 am</b>	<b>Xing-Jie Liang</b> ; National Ctr Nanosci. & Tech, China <i>RNA-Based Pharmaceutical Development with Nanotechnology</i>	
<b>09:40 am – 10:00 am</b>	<b>Peixuan Guo</b> ; The Ohio State University, USA <i>Advancement of the Emerging Field of RNA Nanotechnology</i>	
<b>10:00 am – 10:30 am</b>	<b>Coffee Break</b> , Conference Theater Lobby	
<b>SESSION 6: Biophysical and Single Molecule Studies of Biomotors and RNA</b>		<b>August 17</b>
<i>Session Chairs: <b>Venkat Gopalan</b>; The Ohio State University, USA; <b>Piotr Grodzinski</b>; NCI/NIH, USA</i>		
<b>10:30 am – 11:00 am</b>	<b>KEYNOTE TALK: David Lilley</b> ; University of Dundee, UK <i>RNA Structure in Epigenetics and Gene Regulation</i>	
<b>11:00 am – 11:20 am</b>	<b>Yuri Lyubchenko</b> ; University of Nebraska Medical Center, USA <i>Nanoscale Gymnastics of Centromere Nucleosomes. CENP-A Stabilizes the Nucleosome Core</i>	
<b>11:20 am – 11:40 am</b>	<b>Naoki Sugimoto</b> ; Konan University, Japan <i>Regulation of Gene Expressions by Non-canonical DNA and RNA</i>	
<b>11:40 am – 12:00 pm</b>	<b>Gino Cingolani</b> ; Thomas Jefferson University, USA <i>Structural Maturation of Portal Protein Functions akin to A DNA-sensor That Couples Genome-packaging to Icosahedral Capsid Maturation</i>	
<b>12:00 am – 01:20 pm</b>	<b>Outdoor Lunch</b> , Sanders Grand Lounge in The Longaberger Alumni House	

**SESSION 7: ATP, Entropy, Force, Coordination and Other Mechanisms of Biomotors****August 17**

Session Chairs: **David Bisaro**; The Ohio State University, USA; **Eckhard Jankowsky**; Case Western Reserve University, USA

<b>01:30 pm – 02:00 pm</b>	<b>KEYNOTE TALK: Paulo Tavares</b> ; University of Paris-Saclay, France <i>Gating the Viral Chromosome During Siphoviruses Assembly and Infection</i>
<b>02:00 pm – 02:20 pm</b>	<b>Christopher Yengo</b> ; Pennsylvania State University, USA <i>Direct Measurements of the Power Stroke in Myosin</i>
<b>02:20 pm – 02:40 pm</b>	<b>Wei Feng</b> ; Institute of Biophysics, Chinese Academy of Sciences, China <i>Non-canonical Myo9b/rhoGAP Accelerate RhoA GTP Hydrolysis by Dual-Arginine Finger Mechanism</i>
<b>02:40 pm – 03:00 pm</b>	<b>David Jeruzalmi</b> ; City College of New York, USA <i>Mechanisms of Opening the Bacterial Replicative Helicase by a Helicase Loader</i>
<b>03:00 pm – 03:20 pm</b>	<b>Christophe Lavelle</b> , CNRS & Sorbonne Universities at Paris, France <i>Twisting, Pulling, Pushing Nucleosomes: When Epigenetics Goes Physical</i>
<b>03:20 pm – 03:50 pm</b>	<b>Coffee Break</b> , Conference Theater Lobby

**SESSION 8: Viral DNA Packaging and Ejection****August 17**

Session Chairs: **Shan-Lu Liu**; The Ohio State University, USA; **Steve Harvey**; University of Pennsylvania, USA

<b>03:50 pm – 04:20 pm</b>	<b>KEYNOTE TALK: Hiroyuki Noji</b> ; University of Tokyo, Japan <i>Robustness of Chemo-mechanical Coupling of F1-ATPase Motor</i>
<b>04:20 pm – 04:40 pm</b>	<b>Steve Harvey</b> ; University of Pennsylvania, USA <i>Bacteriophage Genome Packaging Motors: DNA is an Active Element in Force Generation</i>
<b>04:40 pm – 05:00 pm</b>	<b>Lindsay Black</b> ; University of Maryland, USA <i>The Phage T4 DNA Packaging Machine-Old, New, Widely True, Useful too</i>
<b>05:00 pm – 05:20 pm</b>	<b>Ian Molineux</b> ; University of Texas-Austin, USA <i>Molecular Motors Catalyze Bacteriophage T7 Genome Ejection</i>
<b>05:20 pm – 05:40 pm</b>	<b>Carlos E. Catalano</b> ; University of Colorado, USA <i>Terminase - A Multifunctional Viral Genome Packaging Machine</i>
<b>06:30 pm – 09:00 pm</b>	<b>Music Performance</b> , Grand Ballroom <b>Banquet</b> , Grand Ballroom

# FRIDAY, AUGUST 18, 2017

NOTE: PARALLEL SESSIONS 9 and 10

<b>SESSION 9: Viral and Biomotor Components for Single Pore Sensing - I</b>		<b>August 18</b>
<b>Location: Conference Theatre</b>		
Session Chairs: <b>Meni Wanunu</b> ; Northeastern University, USA; <b>Jia Geng</b> ; Sichuan University, China		
08:30 am – 08:50 am	<b>Ulrich Keyser</b> ; University of Cambridge, UK <i>Ion Channels Made from DNA</i>	
08:50 am – 09:10 am	<b>Farzin Haque</b> ; P&Z Biological Technology, USA <i>Viral Protein Channels for Single Molecule Sensing</i>	
09:10 am – 09:30 am	<b>Meni Wanunu</b> ; Northeastern University, USA <i>Combining Molecular Machine and Nanoscale Interface for Single Molecule DNA Sequencing</i>	
09:30 am – 09:50 am	<b>Lakmal Jayasinghe</b> ; Oxford Nanopore Technologies Ltd., UK <i>Chemistry and Platforms of Oxford Nanopore Technologies</i>	
09:50 am – 10:00 am	<b>SHORT TALK: David Winogradoff</b> ; University of Illinois at Urbana-Champaign, USA <i>Structure and Ionic Conductivity of the Nuclear Pore Complex</i>	
10:00 am – 10:30 am	<b>Coffee/Water Break</b> , Conference Theater Lobby	
<b>SESSION 9: Viral and Biomotor Components for Single Pore Sensing - II</b>		<b>August 18</b>
<b>Location: Conference Theatre</b>		
Session Chairs: <b>Ning Fang</b> ; Georgia State University, USA; <b>Jianxun Lin</b> ; BGI-Research, China		
10:30 am – 10:50 am	<b>Haichen Wu</b> , Institute of Chemistry, Chinese Academy of Sciences, China <i>Simultaneous Quantification of Tumor Antigens in a Single Sample through Bar-Code DNA-Assisted Nanopore Sensing</i>	
10:50 am – 11:10 am	<b>Li-Qun (Andrew) Gu</b> ; University of Missouri, USA <i>Nanopore-based Molecular Structure-function Study and Clinical Applications</i>	
11:10 am – 11:30 am	<b>Deqiang Wang</b> ; Chongqing Institute of Green and Intelligent Technology, China <i>Fabrication of 5 nm Graphene Nanopore with a Helium Ion Microscope for Biomolecule Detection</i>	
11:30 am – 11:50 am	<b>Shaoying Wang</b> ; P&Z Biological Technology, USA <i>Channel of Viral DNA Packaging Motor for Real Time Kinetic Analysis of Peptide States</i>	

<b>SESSION 10: RNA Nanotechnology - I</b>		<b>August 18</b>
<b>Location: Clinton</b>		
Session Chairs: <b>William Carson</b> ; The Ohio State University, USA; <b>Kirill Afonin</b> ; U North Carolina at Charlotte, USA		
08:30 am – 08:50 am	<b>Janusz Bujnicki</b> ; International Institute of Molecular and Cell Biology, Poland <i>SimRNP: A New Method for Fully Flexible Modeling of Protein-RNA Complexes and for Simulations of RNA-protein Binding</i>	
08:50 am – 09:10 am	<b>Kirill Afonin</b> ; The University of North Carolina at Charlotte, USA <i>Dynamic RNA and DNA Nanoparticles with Controllable Properties</i>	
09:10 am – 09:30 am	<b>Mark Bathe</b> ; Massachusetts Institute of Technology, USA <i>Programming Functional DNA Nanoparticles</i>	
09:30 am – 09:50 am	<b>Xiaoting Zhang</b> ; University of Cincinnati, USA <i>Overcoming Tamoxifen Resistance of Human Breast Cancer by pRNA Nanoparticles</i>	
09:50 am – 10:00 am	<b>SHORT TALK: Zhengyi Zhao</b> ; Nanobio Delivery Pharmaceutical Co., Ltd. USA <i>RNA Nanotechnology Brings a New Era of Targeted Therapy</i>	
10:00 am – 10:30 am	<b>Coffee/Water Break</b> , Conference Theater Lobby	

<b>SESSION 10: RNA Nanotechnology – II</b>		<b>August 18</b>
<b>Location: Clinton</b>		
Session Chairs: <b>Deliang Guo</b> ; The Ohio State University; <b>Haibo Hu</b> ; Nanobio Delivery Pharmaceutical Co., Ltd, USA		
10:30 am – 10:50 am	<b>Besik Kankia</b> ; The Ohio State University, USA <i>Tetrahelical Monomolecular Architecture of DNA for Biotechnological Applications</i>	
10:50 am – 11:10 am	<b>Emil Khisamutdinov</b> ; Ball State University, USA <i>Tunable Nucleic Acid Nano-Scaffolds Designed from Flexible Tetra-U Helix Linking Module</i>	
11:10 am – 11:30 am	<b>Fengmei Pi</b> ; Nanobio Delivery Pharmaceutical Co., Ltd., USA <i>Multifunctional RNA Nanoparticles for Next Generation Targeted Drug Delivery</i>	
11:30 am – 11:40 am	<b>SHORT TALK: Mouzhe Xie</b> ; The Ohio State University, USA <i>Protein-Nanoparticle Interactions at Residue-Level Resolution and Their Quantitative Prediction</i>	
11:40 am – 11:50 am	<b>SHORT TALK: Kuangcai Chen</b> ; Georgia State University, USA <i>Characteristic Rotational Behaviors of Rod-shaped Cargo Revealed by Automated Five-Dimensional Single Particle Tracking</i>	
12:00 am – 01:20 pm	Lunch, Grand Ballroom	
12:00 am – 01:20 pm	Special Lunch for Invited Speakers and Session Chairs, Grand Ballroom A Business Meeting, Grand Ballroom A	

**NOTE: PARALLEL SESSIONS 11 and 12**

<b>SESSION 11: Nanobiotechnology Applications of RNA and Biomotors - I</b>		<b>August 18</b>
<b>Location: Conference Theatre</b>		
Session Chairs: <b>Xing-Jie Liang</b> ; National Ctr Nanosci. & Tech, China; <b>Chad Bennett</b> ; The Ohio State University, USA		
01:30 pm – 01:50 pm	<b>Chuanbin Mao</b> ; University of Oklahoma, USA <i>Phage-Enabled Nanomedicine: From Probes to Therapeutics</i>	
01:50 pm – 02:10 pm	<b>Feng Li</b> ; Wuhan Institute of Virology, Chinese Academy of Sciences, China <i>Controlled Co-assembly of Virus-Like Particles of Simian Virus 40 with Inorganic Nanoparticles: Strategies and Applications</i>	
02:10 pm – 02:30 pm	<b>Li Wu</b> ; The Ohio State University, USA <i>N6-Methyladenosin of HIV-1 RNA Regulates Viral Replication: Mechanisms and Implication</i>	
02:30 pm – 02:50 pm	<b>Charles Bell</b> ; The Ohio State University, USA <i>Structure and Mechanism of Highly Processive Exonuclease Enzymes</i>	
02:50 pm – 03:10 pm	<b>Fred Antson</b> ; University of York, UK <i>Engineering Properties of A Circular Protein Oligomer</i>	
03:10 pm – 03:30 pm	<b>Richard Lease</b> ; The Ohio State University, USA <i>Fingerloop RNA Motifs: The Smallest RNA Nanodevice?</i>	
03:30 pm – 04:00 pm	Coffee/Water Break, Conference Theater Lobby	

<b>SESSION 11: Nanobiotechnology Applications of RNA and Biomotors - II</b>		<b>August 18</b>
<b>Location: Conference Theatre</b>		
Session Chairs: <b>Carlo Montemagno</b> ; University of Alberta, Canada; <b>Zongqiang Cui</b> ; Wuhan Institute of Virology, China		
04:00 pm – 04:20 pm	<b>Hanbin Mao</b> ; Kent State University, USA <i>Behavior of Nucleic Acid Structures inside Nanocage</i>	
04:20 pm – 04:40 pm	<b>Carlos Castro</b> , The Ohio State University, USA <i>Design and Control of Dynamic DNA Origami Nanodevices</i>	
04:40 pm – 05:00 pm	<b>Anita Hopper</b> ; The Ohio State University, USA <i>tRNA Subcellular Dynamics</i>	
05:00 pm – 05:20 pm	<b>Zhengyi Zhao</b> ; Nanobio Delivery Pharmaceutical Co., Ltd. USA <i>Arginine Finger Coordinates the Sequential Action of Asymmetrical Hexameric ATPase for Single Direction DNA Translocation</i>	
05:20 pm – 05:30 pm	<b>SHORT TALK: Vibhuti Wadhwa</b> ; The Ohio State University, USA <i>Zinc Availability-dependent Unfolding of Loz1 Zinc Finger</i>	

**SESSION 12: Viral and Biomotor Components for Nanobiotechnology Applications - I****August 18****Location: Clinton**Session Chairs: **Junghae Suh**; Rice University, USA; **Robert Lee**; The Ohio State University, USA

<b>01:30 pm – 01:50 pm</b>	<b>Dong Men</b> ; Wuhan Institute of Virology, Chinese Academy of Sciences, China <i>Self-assembly Protein Nanostructures for Highly Sensitive Bio-sensing</i>
<b>01:50 pm – 02:10 pm</b>	<b>Min Chen</b> ; University of Massachusetts - Amherst, USA <i>Single Molecule Sensing Using OmpG Nanopore</i>
<b>02:10 pm – 02:30 pm</b>	<b>Mario Vieweger</b> ; The Ohio State University, USA <i>RNA Dendrimer Platform for Nanomedicine</i>
<b>02:30 pm – 02:50 pm</b>	<b>Hui Li</b> ; University of California – San Francisco, USA <i>Controllable Self-Assembly of 3D RNA Tetrahedron Nanoparticles for Therapeutics Delivery and Cancer Targeting</i>
<b>02:50 pm – 03:10 pm</b>	<b>Jia Geng</b> ; Sichuan University, China <i>Biological and Artificial Nanopores for Single Molecule Sensing</i>
<b>03:10 pm – 03:30 pm</b>	<b>Andrew Laszlo</b> ; University of Washington, USA <i>Single-molecule Picometer Resolution Nanopore Tweezers (SPRNT)</i>
<b>03:30 pm – 04:00 pm</b>	<b>Coffee/Water Break</b> , Conference Theater Lobby

**SESSION 12: Viral and Biomotor Components for Nanobiotechnology Applications - II****August 18****Location: Clinton**Session Chairs: **Hua Zhu**; The Ohio State University; **Feng Li**; Wuhan Institute of Virology, CAS, China

<b>04:00 pm – 04:20 pm</b>	<b>Yao-Gen Shu</b> ; Institute of Theoretical Physics, Chinese Academy of Sciences, China <i>Proofreading of DNA Polymerase: A New Kinetic Model with Higher-order Terminal Effects</i>
<b>04:20 pm – 04:40 pm</b>	<b>Hui Wei</b> ; Nanjing University, China <i>Nanozymes: Next Generation of Artificial Enzymes</i>
<b>04:40 pm – 05:00 pm</b>	<b>Junghae Suh</b> ; Rice University, USA <i>Synthetic Virology: Reprogramming Viruses into Controllable Nanodevices</i>
<b>05:00 pm – 05:20 pm</b>	<b>Rajgopal Govindarajan</b> ; The Ohio State University, USA <i>Lysosomal Nucleoside Transporter</i>
<b>05:20 pm – 05:30 pm</b>	<b>SHORT TALK: Jiajie Diao</b> ; University of Cincinnati, USA <i>Ultra-sensitive Single-molecule Fluorescent Quantification of DNA Epigenetic Modifications</i>
<b>05:30 pm – 05:40 pm</b>	<b>POSTER PREVIEW TALK: Sebastian Leptihn</b> ; University of Hohenheim, Germany <i>A Membrane-embedded Molecular Motor Drives Filamentous Phage Assembly</i>

<b>06:30 pm – 07:30 pm</b>	<b>Dinner</b> , Grand Ballroom
<b>07:30 pm – 08:00 pm</b>	<b>Speaker Expansion Window</b> , Hancock room
<b>08:00 pm – 09:00 pm</b>	<b>Poster Session and Evening Social</b> , Hancock room

# SATURDAY, AUGUST 19, 2017

<b>SESSION 13: Mechanisms of Biomotors</b>		<b>August 19</b>
Session Chairs: <b>Steven Qian</b> ; North Dakota State University, USA; <b>Thomas Schmittgen</b> ; University of Florida, USA		
<b>08:30 am – 08:50 am</b>	<b>Ian Grainge</b> ; The University of Newcastle, Australia <i>The FtsK Translocase - A Very Hungry Caterpillar?</i>	
<b>08:50 am – 09:10 am</b>	<b>Saurabh Raj</b> ; CNRS and École Normale Supérieure at Paris, France <i>Upf1-like Helicases: Differences in the Family</i>	
<b>09:10 am – 09:30 am</b>	<b>Eckhard Jankowsky</b> ; Case Western Reserve University, USA <i>Function of the RNA Helicase Mtr4p in the TRAMP Complex</i>	
<b>09:30 am – 09:50 am</b>	<b>Qunxin She</b> ; University of Copenhagen, Denmark <i>Insights into Nucleic Acids Cleavage by <i>Sulfolobus Islandicus</i> Cmr-<math>\alpha</math>, the First CRISPR-Cas System Demonstrated for Transcription-dependent DNA Interference</i>	
<b>09:50 am – 10:00 am</b>	<b>SHORT TALK: Daniel Binzel</b> ; The Ohio State University, USA <i>Thermodynamics and Kinetics of the Three-component Collision of <math>\Phi</math>29 pRNA-3WJ Assembly for Nanoparticles Targeting and Therapeutic Delivery to Prostate Cancer</i>	
<b>10:00 am – 10:30 am</b>	<b>Coffee Break</b> , Conference Theater Lobby	

<b>SESSION 14: Nanobiotechnology applications using biological machine or components</b>		<b>August 19</b>
Session Chairs: <b>Jianhua Yu</b> ; The Ohio State University, USA; <b>Mitch Phelps</b> ; The Ohio State University, USA		
<b>10:30 am – 10:50 am</b>	<b>Ning Fang</b> ; Georgia State University, USA <i>Automated Five-Dimensional Single Particle Tracking</i>	
<b>10:50 am – 11:10 am</b>	<b>Thomas Schmittgen</b> ; University of Florida, USA <i>Endogenous Loading for MicroRNA into Therapeutic Extracellular Vesicles</i>	
<b>11:10 am – 11:30 am</b>	<b>Carlo Montemagno</b> ; University of Alberta, Canada <i>Light-Driven Energy Production for Cell-Free Metabolic Systems</i>	
<b>11:30 am – 11:55 am</b>	<b>Special Chih-Ming Chen Lecture</b> <b>Yizhou Dong</b> ; The Ohio State University, USA <i>Development of Nanomaterials for mRNA Therapeutics and Genome Editing</i>	
<b>11:55 am – 12:00 am</b>	<b>Closing Remarks:</b> <b>Peixuan Guo</b> ; The Ohio State University, USA	
<b>12:00 am – 12:10 pm</b>	<b>Poster Award Ceremony:</b> <b>Ian Grainge</b> ; The University of Newcastle, Australia; <b>Jianhua Yu</b> ; The Ohio State University, USA	
<b>12:10 pm – 01:00 pm</b>	<b>Lunch</b> , Grand Ballroom	
<b>Meeting adjourned</b>		



## Invited Speaker and Session Chair Expansion Window

**Aug 18, Friday, 7:30 – 8:00 pm:**

Printed slides need to be put up by 7:20 pm & taken down by 9:00 pm.

Due to the overwhelming response of many distinguished scientists, we have insufficient time to meet the requests of all speakers. Each keynote speaker will only have 30 minutes and invited speakers will only have 20 minutes for oral presentations. Many speakers and session chairs have a lot of exciting results to present. To meet their needs, the conference has added an “Invited Speaker and Session Chair Expansion Window” to provide speakers and section chairs an opportunity to present additional unfinished slides and other information in the format of a poster. In addition, often participants are interested in a talk but they might miss the information, but there is not sufficient time for them to ask questions during the normal session. The “Invited Speaker and Section Chair Expansion Window” is separated from the traditional poster sections and provides an opportunity for interested participants to meet and speak with the invited speakers for further questions.

## Poster Sessions

**Aug 16, Wed, 7:30 – 9:00 pm:**

All posters need to be put up by 7:20 pm & taken down by 9:00 pm. **Odd-numbered posters will be judged.**

**Aug 18, Friday, 8:00 – 9:00 pm:**

All posters need to be put up by 7:50 pm & taken down by 9:00 pm. **Even-numbered posters will be judged.**

All posters will be displayed simultaneously throughout the poster sessions. Display your poster at the board # indicated below. If your name does not appear in the list, display your poster at the next available board. There is plenty of space available for additional posters.

#	Presenter	Title
1	David Winogradoff	Structure and Ionic Conductivity of the Nuclear Pore Complex
2	Janusz M. Bujnicki	SimRNP: A New Method for Fully Flexible Modeling of Protein-RNA Complexes and for Simulations of RNA-protein Binding
3	Wei Si	Nanopore Sensing of Protein Shape and Folding-Unfolding Transitions
4	Zhengyi Zhao	Arginine Finger Coordinates the Sequential Action of Asymmetrical Hexameric ATPase for Single Direction DNA Translocation
5	Yuejia Chen	Construction of a Viral Helicase Nanopore for Active DNA Unwinding and Transport
6	Farzin Haque	Viral Protein Channels for Single Molecule Sensing
7	Emil F. Khisamutdinov	Tunable Nucleic Acid Nano-Scaffolds Designed from Flexible Tetra-U Helix Linking Module
8	Zhouxiang Ji	Fingerprinting of Peptides Biomarkers for Cancer Diagnosis at Single Molecule Level Using Bacteriophage Phi29 Nanochannel
9	Elena Orlova	Structural Organisation of the Phage Genome Gatekeeper
10	Xijun Piao	Assessment of Thermal Stability of Phosphorothioate-DNA, DNA, RNA, 2'-F RNA and LNA in the Context of Phi29 pRNA 3WJ
11	Changjian Zhao	D-spacer DNA Detected by a Viral Motor Protein Nanopore
12	Congcong Xu	Development of RNA Nanoparticles with Controllable Size and Shape Using Planar Phi29 pRNA Three-Way Junction
13	Belinda Loh	A Membrane-embedded Molecular Motor Drives Filamentous Phage Assembly

14	Ke Sun	A Novel Biological Nanopore for DNA Transport and Detection
15	Zhefeng Li	Large Scale Purification of Extracellular Vesicle with Reservation of Shape and Function
16	Andrew H. Laszlo	Single-molecule Picometer Resolution Nanopore Tweezers (SPRNT)
17	Mario C Vieweger	RNA Dendrimer Platform for Nanomedicine
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19	Daniel W. Binzel	RNA Nanotechnology for the Specific Targeting and Delivery of miRNA for Inhibition of Prostate Cancer
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21	Sijin Guo	Controllable Self-assembly of RNA Tetrahedrons with Precise Shape and Size for Cancer Targeting
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25	Victoria Goldsworthy	In-silico Design and Experimental Validation of Boolean Logic Gates Based on Fluorogenic RNA Aptamer
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31	Samantha H. Hinckley	Probing HIV-1 Genome Packaging with Native Mass Spectrometry: Stoichiometry of Specific Gag:RNA Binding
32	Jonathan Craig	Revealing the Dynamics of Hel308 Helicase Using Nanopore Tweezers
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