

# Foundations of Nanoscience Meeting (FNANO 2014) - April 14-17, 2014, Snowbird, UT

## Monday 14 April 2014

	10:20-10:30	<b>Introduction</b>	<b>Andrew Turberfield, Program Chair</b>
<b>14 April 2014 - Track on Nanaophotonics and Superresolution; Track Chair: Philip Tinnefeld, Technische Universität Braunschweig</b>			
	10:30-11:10	Keynote	<b>Yan Liu</b> Assembly of Photonic Elements by DNA Nanostructures
	11:10-11:35	Invited Talk	<b>Ralf Jungmann</b> , Maier Avendano, Johannes Woehrstein, Mingjie Dai, William M. Shih and Peng Yin. DNA probes for super-resolution bioimaging
	11:35-12:00	Invited Talk	<b>Philip Tinnefeld</b> Enhancing single-molecule fluorescence with DNA origami
	12:00-12:20	Contributed Talk	<b>Giuseppe Strangi</b> Plasmon-Gain Interplay: Loss Compensation Routes in Meta-Structures
	12:20-1:20	<b>Lunch</b>	
<b>14 April 2014 - Track on DNA Nanostructures I; Track Chair: Nadrian Seeman, New York University</b>			
	1:20-2:00	Keynote	<b>Weihong Tan</b> DNA Nanostructures for molecular medicine
	2:00-2:25	Invited Talk	<b>Masayuki Endo</b> , Yuki Suzuki, Yangyang Yang and Hiroshi Sugiyama Photoresponsive DNA nanostructures; single-molecule imaging and controlled assembly
	2:25-2:50	Invited Talk	Matthew Adendorff, Soma Dhakal, Minghui Liu, Hao Yan, Nils Walter and <b>Mark Bathe</b> Computational Design Principles for Functional Nucleic Acid Nanostructures
	2:50-3:40	<b>Refreshments and Poster Session (all Monday posters)</b>	
	<b>Posters: Track on Nanophotonics and Superresolution</b>		
WITHDRAWN	Poster	Tao Zhang, Tim Liedl, Goutam Pramanik, Andre Neumann, Jessica Lindlau, Florian Schüder, Sebastian Huber, Marinus Huber, Florian Stehr, Tanja Weil and Alexander Högele.	Fluorescent nanodiamonds assembled on DNA origami
	Poster	Anton Kuzyk, Robert Schreiber, Hui Zhang, Sasha Govorov, Tim Liedl and Na Liu.	Reconfigurable 3D plasmonic metamolecules
	Poster	Donald Kellis, Chris Menter, Brittany Cannon, Paul Davis, Elton Graugnard, William Hughes, Wan Kuang, Jeunghoon Lee, Jaswinder Sharma, Bernard Yurke and William Knowlton.	AgNC's as acceptor/donor pairs in FRET-based excitonic waveguides
	Poster	Steven Swasey and Elisabeth Gwinn.	Chiral electronic transitions in fluorescent silver clusters stabilized by DNA templates
	Poster	Luisa M. Kneer, Philipp C. Nickels, Robert Schreiber and Tim Liedl.	Creating Plasmonic Hot Spots with DNA Origami supported Gold Nanorods
	Poster	William Klein, Sadao Takabayashi, Bernard Yurke, William Knowlton, Elton Graugnard, Jeunghoon Lee, William Hughes and Wan Kuang.	Plasmonic Chiral Structures Assembled by DNA Origami

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Poster	Palash Dutta, Hao Yan, Neal Woodbury, Symon Levenberg, Andrey Loskutov, Daniel Jun, Rafael Saer, J. Thomas Beatty, Su Lin and Yan Liu.	DNA Directed Light Harvesting Antenna System to Enhance and Control the Absorption Cross-section of Photosynthetic Reaction Center
Poster	Susan Buckhout-White, Jonathan Claussen, Zaire Dunningham, Mario Ancona, Ellen Goldman and Igor Medintz.	A Three-dye triangular DNA switch capable of dynamic molecular logic
Poster	Brittany Cannon, Bill Knowlton, Bernard Yurke, Donald Kellis, Paul Davis, Elton Graugnard, Jeunghoon Lee, Will Hughes and Wan Kuang.	DNA-Mediated Reversible and Reconfigurable AND Logic Gates
Poster	Craig Laboda and Chris Dwyer.	Upconverting Nanoparticle Based Resonance Energy Transfer Relays
Poster	Michael C. Zubelewicz, Susan M. Brozik, Steven W. Graves, David R. Wheeler and Andrew P. Shreve.	Plasmon coupling of gold nanoparticles arranged via DNA origami assemblies

### Posters: Track on DNA Nanostructures I

Poster	Sungwook Woo and Paul Rothemund.	Self-assembly of two-dimensional DNA origami lattices using cation-controlled surface diffusion
Poster	Michelle Pillers and Marya Lieberman.	Thermal Stability of DNA on Mica
Poster	Carl Miller, Morgan Bernier, Qirui Fan, Jessica Winter, Michael Poirier and Carlos Castro.	Regulation of a DNA Origami Hinge Nanostructure with a DNA Binding Transcription Factor and a Gold Nanoparticle.
Poster	Haorong Chen, Te-Wei Weng and Jong Hyun Choi.	Understanding Folding and Unfolding Reconfiguration of DNA Origami Tiles
Poster	Yuki Suzuki, Masayuki Endo, Yangyang Yang and Hiroshi Sugiyama.	Dynamic Assembly/Disassembly Processes of Photoresponsive DNA Origami Nanostructures Directly Visualized on a Lipid Membrane Surface
Poster	Erik Benson, Mahiar Hamedi, Anders Elfving, David Julleson, Patrik Johansson, Olle Inganäs and Björn Högberg.	Coating DNA origami structures with the conducting polymer PEDOT-S
Poster	Alexander Marras, Lifeng Zhou, Haijun Su and Carlos Castro.	Programmable motion of DNA origami mechanisms
Poster	Peng Yin, Ryosuke Iinuma, Yonggang Ke, Ralf Jungmann, Thomas Schlichthaerle and Johannes Woehrstein.	Polyhedra Self-Assembled from DNA Tripods and Characterized with 3D DNA-PAINT
Poster	Lifeng Zhou, Alexander Marras, Haijun Su and Carlos Castro.	DNA Origami Compliant Nanostructures with Tunable Mechanical Properties

### 14 April 2014 - Track on Integrated Synthetic Systems; Track Chair: Amar Flood, Indiana University

3:40-4:20	Keynote	<b>Lee Cronin.</b>	Using Algorithms to Program Complex Chemical Systems
4:20-4:45	Invited Talk	<b>Linda Shimizu.</b>	Functional Materials from Self-Assembling Bis-urea Macrocycles
4:45-5:10	Invited Talk	<b>Jean Chmielewski.</b>	Metal-promoted assembly of collagen peptide-based materials for regenerative medicine

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5:10-5:35	Invited Talk	<b>Jan Jeppesen.</b>	Unidirectional Linear Motion in Redox-Active Molecular Machines
<b>Tuesday 15 April 2014</b>			
<b>15 April 2014 - Track on DNA Nanotechnology and Analytical Methods; Track Chair: Andrew Ellington, University of Texas at Austin</b>			
8:30-9:10	Keynote	Laurent Menard, Jinsheng Zhou and <b>J. Michael Ramsey.</b>	Nanofluidic Platforms for the Controlled Transport and High Throughput Analysis of Single DNA Molecules
9:10-9:35	Invited Talk	<b>David Zhang.</b>	Ultraspecific Nucleic Acid Probes for Rare Mutation Detection
9:35-10:00	Invited Talk	<b>Shana Kelley.</b>	Nano-enabled biomarker analysis and rare cell analysis
10:00-10:25	Invited Talk	<b>Kevin Plaxco.</b>	Folding-based electrochemical biosensors
10:25-11:10	<b>Refreshments and Combined Poster Session (DNA Nanotechnology and Analytical Methods / Nucleic Acid Nanostructures in Vivo)</b>		
<b>Posters: Track on Nanotechnology and Analytical Methods</b>			
	Poster	Ashwani Sharma, Joshua Plant, Alexandra Rangel, Kirsten Meek, Julie Hollien and Jennifer Heemstra.	Harnessing RNA-Small Molecule Recognition for Covalent RNA Modification
	Poster	Soma Dhakal, Minghui Liu, Matthew Adendorff, Mark Bathe, Hao Yan and Nils Walter.	Mechanical modulation of enzyme activity by dynamic DNA tweezers
	Poster	Feng Xuan and I-Ming Hsing.	Exponential Growth of Dendritic DNA Structure Initiated by Target Sequence
	Poster	Cheulhee Jung and Andrew Ellington.	Dumbbell Concatemer Amplification (DCA) system and its applications
	Poster	Cameron Myhrvold, Michael Baym and Peng Yin.	Barcode Extension for Analysis and Reconstruction of Substructures
	Poster	Alessio Andreoni, Reza S. Sedeh, Mark Bathe, Yan Liu and Hao Yan.	Experimental Studies on the Diffusivity of DNA Nanostructures
	Poster	Carl Brown, Matthew R. Lakin, Eli Horwitz, M. Leigh Fanning, Hannah West, Darko Stefanovic and Steven Graves.	Rational design of structured substrates for DNAzyme signaling
	Poster	Hamid Ramezani and D. Jed Harrison.	Application of DNA strand displacement reaction (SDR) to the chemical analysis and separation
	Poster	Luvena Ong, Xi Chen, David Zhang and Peng Yin.	Robust nucleic acid detection using double-stranded toehold probes
	Poster	Ferenc Fordos, Bjorn Hogberg, Alan Shaw and Erik Benson.	Detection and quantification of protein-protein interaction on DNA-nanostructures
<b>Posters: Nucleic Acid Nanostructures In Vivo</b>			
	Poster	Sabine Sellner, Samet Kocabey, Katharina Nekolla, Fritz Krombach, Tim Liedl and Markus Rehberg.	Microinjected DNA Nanotubes as Intracellular Delivery Vehicles in vivo

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	Poster	Aiman Entwistle, Imre Mager, Matthew Wood and Andrew Turberfield.	DNA Cages in Cells
<b>15 April 2014 - Track on Nucleic Acid Nanostructures In Vivo; Track Chair: Yamuna Krishnan, National Centre for Biological Sciences, TIFR</b>			
11:10-11:50	Keynote	<b>Bruce Sullenger.</b>	Forward and Reverse Translation with Antithrombotic Aptamers and Their Antidotes
11:50-12:15	Invited Talk	<b>Peng Yin.</b>	Synthetic organization and regulation with DNA/RNA bricks
12:15-12:40	Invited Talk	<b>Souvik Modi.</b>	Simultaneous pH mapping of intersecting endocytic pathways enabled by programmed DNA nanomachines
12:40-1:40	<b>Lunch</b>		
<b>15 April 2014 - Track on Inorganic Nanostructures; Track Chair: Yuegang Zhang, Lawrence Berkeley Labs</b>			
1:40-2:20	Keynote	<b>Song Jin.</b>	Solar Energy Conversion and Electrocatalysis Using Earth-Abundant Nanomaterials
2:20-2:45	Invited Talk	<b>Xiaogan Liang</b> , Mikai Chen, Sungjin Wi and Hongsuk Nam.	MoS <sub>2</sub> -Based Multi-Bit Memories Fabricated by Plasma-Induced Self-Formation of Charge Storage Layers
2:45-3:10	Invited Talk	<b>Alexander Weber-Bargioni.</b>	Mapping optoelectronic properties of nano building block assemblies at their native length scale via next generation nano optics
3:10-3:35	Invited Talk	<b>Hareem Maune</b> , Brian Lin, Bassam Degheim, Shu-Jen Han and Si-Ping Han.	DNA mediated self-assembly of nanoelectronics on mica and SiO <sub>2</sub>
3:35-4:10	<b>Refreshments and Combined Poster Session (Inorganic Nanostructures / Biomedical Nanotechnology)</b>		
<b>Posters: Track on Inorganic Nanostructures</b>			
	Poster	Stacy Copp, Danielle Schultz, Steven Swasey, James Pavlovich, Mark Debord, Alexander Chiu, Kevin Olsson and Elisabeth Gwinn.	DNA-templated silver nanoclusters: magic numbers lead to magic fluorescence colors
	Poster	Gang Chen, Di Liu and Yossi Weizmann.	Programmable Assembly of Colloidal Nanoparticles with Specific Bonding Directionality
	Poster	Wei Sun, Zhong Jin, Sumedh Surwade, Yonggang Ke, Jie Shen, Haitao Liu, Michael Strano and Peng Yin.	Digital Fabrication of Nanoscale Inorganic Materials with Prescribed Shapes
<b>Posters: Track on Biomedical Nanotechnology</b>			
	Poster	Wen Wang, Xiaojin He and Yongli Mi.	A DNA-Based pH-Responsive Nanocarrier System for Targeted Drug Delivery
	Poster	David Schaffert, Anders Okholm, Rasmus Schøler Sørensen, Jesper Sejrup Nielsen, Anne Louise Bank Kodal, Christian Bech Rosen, Thomas Tørring, Kurt Gothelf and Jørgen Kjems.	Intracellular Delivery of a Planar DNA Origami Structure by Exploitation of the Transferrin-Receptor Internalization Pathway
	Poster	Mathias Vinther, Jesper Sejrup Nielsen, Rasmus Schøler Sørensen and Jørgen Kjems.	Examining the structural flexibility of the mannan-binding lectin's carbohydrate binding domains

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Poster	Alan Shaw, Vanessa Lundin, Ekaterina Petrova, Ferenc Fördös, Erik Benson, Ana Teixeira and Björn Högberg.	Binding Kinetics of Ephrin DNA-Origami Nano-calipers
Poster	Ann Delaney, Natalya Hallstrom, Jeunghoon Lee, Bernard Yurke, William Hughes and Elton Graugnard.	Thermodynamic Design Optimization of DNA-Based Chemical Reaction Networks with Shielded Internal Toeholds

### 15 April 2014 - Track on Biomedical Nanotechnology; Track Chair: Thom LaBean, North Carolina State University

4:10-4:50	Keynote	<b>Nicholas Kotov.</b>	Terminal and Extended Assemblies of Nanoparticles
4:50-5:15	Invited Talk	<b>Anders Okholm</b> , Jesper Sejrup Nielsen, Mathias Vinther, Rasmus Schøler Sørensen, David Schaffert and Jørgen Kjems.	Functionalizing DNA origami for cellular and in vivo delivery
5:15-5:45	Contributed Talk	<b>Chun Geng</b> and Paul Paukstelis.	DNA crystals as containers for biocatalysis
5:45-7:15	<b>Refreshments and Combined Poster Session (Monday and Tuesday Tracks)</b>		

### Wednesday 16 April 2014

### 16 April 2014 - Track on DNA Nanostructures II; Track Chair: Nadrian Seeman, New York University

8:30-8:55	Invited Talk	Di Liu, Gang Chen and <b>Yossi Weizmann.</b>	Creating Complex Molecular Topologies by Configuring DNA Four-Way Junctions
8:55-9:20	Invited Talk	Randy Patton, Alexander Marras, Lifeng Zhou, Michael Hudoba, Haijun Su and <b>Carlos Castro.</b>	Modifying DNA origami structure and function using single-stranded DNA
9:20-9:45	Invited Talk	Keitel Cervantes-Salguero, Shogo Hamada, Shin-Ichiro M. Nomura and <b>Satoshi Murata.</b>	Shape-variable monomers for reconfiguring closed molecular clusters
9:45-10:35	<b>Refreshments and Combined Poster Session (DNA Nanostructures II / Principles and Theory of Self-Assembly)</b>		
<b>Posters: Track on DNA Nanostructures II</b>			

Poster	Michael Hudoba, Carlos Castro and Michael Poirier.	Design of Force-Sensitive DNA Origami Components
Poster	Haitao Liu, Feng Zhou, Karen Ricardo, Wei Sun and Yin Peng.	DNA Nanostructure as Template for High Temperature Solid State Reactions
Poster	Tsai-Chin Wu, Masudur Rahman and Michael Norton.	Design of Length Specific 1D Arrays Using Origami Tiles
Poster	Elias Lindau, Huizheng Huang, William Klein, William Knowlton, Jeunghoon Lee, Elton Graugnard, William Hughes, Bernard Yurke and Wan Kuang.	Twisting Effect of Intercalation on DNA Origami Nanorail
Poster	Christopher O'Kane and Mateus Webba Da Silva.	Designed Self-Assembly of G-Wires from Short Bimolecular Quadruplex Subunits
Poster	Reza M. Zadegan, Mette De. Jepsen, Victoria Birkedal and Jørgen Kjems.	Developing all Boolean DNA Logic Gates

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Poster	Anne Louise Bank Kodal, Flemming Besenbacher, Kurt Gothelf, Jakob Bach Knudsen, Lei Liu, Jie Song, Jesper Vinther, Qiang Li, Abhichart Krissanaprasit, Mikael Madsen, Anton Allen Abbotsford Smith, Ryosuke Ogaki, Alexander N. Zelikin and Mingdong Dong.	Alignment of Conducting Polymers on DNA Origami
Poster	Roman Jerala, Vid Kočar, Nino Bašić, Tomaž Pisanski and Helena Gradišar.	Design of the folding pathway of single chain DNA nanostructures

### Posters: Track on Principles and Theory of Self-Assembly

Poster	Angela Edwards, Alessio Andreoni, Hao Yan and Yan Liu.	Thermodynamics and Kinetics of Parallel DNA Crossovers Probed by Förster Resonance Energy Transfer
Poster	Atsushi Nakajima, Hitoshi Miura, Shogo Hamada, Shin-Ichiro Nomura and Satoshi Murata.	Experiments and Analyses of DNA Lattice Nucleation on Substrate using Crystal Growth Theory
Poster	Cade Markegard, Iris Fu and Hung Nguyen.	Elucidation of DNA Self-Assembly Kinetics via Molecular Dynamics Simulations
Poster	Tianqi Song and John Reif.	Analog Computation by DNA Circuits
Poster	Katherine Dunn, Frits Dannenberg, Jonathan Bath, Thomas Ouldrige, Marta Kwiatkowska and Andrew Turberfield.	The folding pathways of a polymorphic DNA origami tile
Poster	Damien Woods, Joy Hui and Erik Winfree.	Nucleation, melting and growth of DNA tile nanotubes

### 16 April 2014 - Track on Principles and Theory of Self-Assembly; Track Chair: Rebecca Schulman, Johns Hopkins University

10:35-11:15	Keynote	<b>Zvonimir Dogic</b> , Stephen Decamp, Daniel T. N. Chen and Timothy Sanchez.	Spontaneous flows and oscillations in far-from-equilibrium active matter
11:15-11:40	Invited Talk	<b>Jonathan Doye</b> .	Coarse-grained modelling for DNA nanotechnology
11:40-12:05	Invited Talk	<b>Damien Woods</b> .	Simple self-replicating nanostructures
12:05-12:25	Contributed Talk	<b>Niranjana Srinivas</b> , Thomas Ouldrige, Petr Sulc, Joseph Schaeffer, Bernard Yurke, Ard Louis, Jonathan Doye and Erik Winfree.	On the biophysics and kinetics of toehold-mediated DNA strand displacement
12:25-1:30	<b>Lunch</b>		

### 16 April 2014 - Track on Surface Chemistries for Nanoscale Fabrication; Track Chair: Robert Corn, University of California at Irvine

1:30-2:10	Keynote	Karole Blythe, Brittani Love, Eric Titus and <b>Katherine Willets</b> .	Super-resolution imaging of fluorophore-labeled DNA assembled on gold nanoparticles
2:10-2:35	Invited Talk	Lin Gan, Fernanda Camacho-Alanis and <b>Alexandra Ros</b> .	Insulator-based Dielectrophoresis of DNA Origami
2:35-3:00	Invited Talk	Eric Peterson, Doug Kriech, Michel Manhart and <b>Joel Harris</b> .	Surface Chemistries for Single-Molecule Measurements of DNA Hybridization and Yields of Interfacial Protein Binding

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3:00-3:25	Invited Talk	<b>Henry White</b> , Robert Johnson, Aaron Fleming, Qian Jin, Yun Ding and Cynthia Burrows.	Application of the Latch Sensing Zone in $\alpha$ -Hemolysin for Analysis of dsDNA
3:25-4:00	<b>Refreshments and Combined Poster Session (Surface Chemistries for Nanoscale Fabrication / Self-Assembly Across Scales)</b>		
<b>Posters: Track on Surface Chemistries for Nanoscale Fabrication</b>			
	Poster	Jonathan Pokorski.	Chemical Modification of Melt Extruded Polymer Nanofibers: Toward a New Biomaterial Scaffold
	Poster	Precious Cantu, Trisha L. Andrew and Rajesh Menon.	Nano-patterning via Optical Saturable Transitions
	Poster	Christopher So, Scott Walper, Rory Stine, Daniel Barlow and Kathryn Wahl.	Genetically Engineered Protein-Solid Interactions towards Rationally Designed Biointerfaces
	Poster	Masudur Rahman, David Neff and Michael Norton.	Contrast Switching in Plasma Patterning of Graphite using DNA Origami as a Lithography Mask
	Poster	Ashwin Gopinath and Paul W. K. Rothemund.	Directed self-assembly of covalently-coupled DNA origami nanoarrays
<b>Posters: Track on Self-Assembly Across Scales</b>			
	Poster	Jani-Markus Malho, Claudiane Ouellet-Plamondon, Ingo Burgert and Markus Linder.	The Behaviour of Nanofibrillated Cellulose and Fusion Proteins in Self-assembled Networks during Hydration
	Poster	Laura Thomas, Lars K. Petersen, Leif K. Larsen, Peter Blakskjær, Judith Dietvorst, Frank Sloek, Allan B. Christensen, Tara Heitner and Nils J. V. Hansen.	Synthesis of multi-million membered DNA-encoded chemical libraries using a self-assembled yoctoliter-scale reactor
	Poster	Ana Suárez, Lars Petersen, Leif Larsen, Peter Blakskjær, Judith Dietvorst, Frank Sløk, Allan Christensen, Johan Holmkvist, Tara Heitner and Nils Hansen.	Chemical synthesis in self-assembled DNA yoctoliter-scale reactor.
	Poster	Hao Qi, Ali Khademhosseini and Peng Yin.	DNA directed programmable mesoscale self-assembly of hydrogel
	Poster	Navneet Bhalla and Peter Bentley.	Towards Synthetic Development Via Physically Encoded Information
	Poster	Tobias Pirzer, Ali Aghebat Rafat, Max B. Scheible, Anna Kostina and Friedrich C. Simmel.	Surface Assisted Large Scale Ordering of DNA Origami Tiles
	Poster	Takamune Suzuki, Ibuki Kawamata, Shogo Hamada, Shin-Ichiro Nomura and Satoshi Murata.	DNA Hydrogel Coated Alginate Gel Beads Capable of Size Selective Loading of Single Stranded DNA
	Poster	Peter Allen, Cheulhee Jung and Andrew Ellington.	DNA-walker Based State Machine for Programmed Self Assembly
	Poster	Robert Metzger, Marcus Johnson, Daniell Mattern and Rajesh Kota.	A Janus Monolayer Rectifier
	Poster	Seung Hyeon Ko, Fernando Vargas-Lara, Paul Patrone, Samuel Stavis, Francis Starr, Jack Douglas and J. Alexander Liddle.	Design for Nanomanufacturing: DNA Origami-Gold Nanoparticle Constructs



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### 16 April 2014 - Track on Self-Assembly Across Scales; Track Chair: Marya Lieberman, University of Notre Dame

4:00-4:40	Keynote	Yunshan Wang, Shoupeng Liu, Yan Yu, Satyajyoti Senapati and <b>Hsueh-Chia Chang.</b>	Nanoparticle Assembly at Conic Nanostructures : Single-Molecular Enumeration with Plasmonic FRET NanoSensors
4:40-5:05	Invited Talk	Amir Khabibullin, Patrick Kolbay, Emily Fullwood and <b>Ilya Zharov.</b>	Reversible Assembly of "Hairy" Silica Nanoparticles into Nanoporous Membranes
5:05-5:25	Contributed Talk	<b>Ibuki Kawamata</b> , Satoshi Murata and Masami Hagiya.	Macro Scale Spatio-Temporal Gel-Sol Transition by Nano Scale DNA Hybridization Reaction
5:25-5:45	Contributed Talk	<b>Robert Metzger.</b>	Unimolecular Power Amplifier
6:00-8:00	<b>Reception and Combined Poster Session (Wednesday and Thursday Tracks)</b>		
8:00-9:00	<b>ISNSCE Award Address</b>		

### Thursday 17 April 2014

### 17 April 2014 - Track on Computational Tools for Self-Assembly; Track Chair: William Shih, Harvard University

8:00-8:40	Keynote	<b>Sjors Scheres.</b>	How self-assembly could exploit high-resolution cryo-TEM and vice versa
8:40-9:05	Invited Talk	Jejoong Yoo, Chen-Yu Li and <b>Aleksei Aksimentiev.</b>	Molecular dynamics of DNA origami
9:05-9:30	Invited Talk	<b>Zorana Zeravcic</b> and Michael Brenner.	Self-replicating colloidal clusters
9:30-9:55	Invited Talk	<b>Andrew Phillips.</b>	Modelling and inference of DNA strand displacement kinetics
9:55-10:30	<b>Refreshments and Combined Poster Session (Computational Tools for Self-Assembly / Protein and Viral Nanostructures)</b>		
<b>Posters: Track on Computational Tools for Self-Assembly</b>			
Poster		Stacy Copp, Petko Bogdanov, Mark Debord, Ambuj Singh and Elisabeth Gwinn.	Motif-based design of DNA templates for fluorescent silver clusters
Poster		Shikhar Gupta, Foram Joshi, Dixita Limbachiya and Manish Kumar Gupta.	3DNA: A tool for Lego Modeling
Poster		Keyao Pan, Do-Nyun Kim, Fei Zhang, Hao Yan and Mark Bathe.	Generalized Holliday Junction Model for Off-Lattice Prediction of DNA Nanostructure Solution Shape
Poster		Do-Nyun Kim, Keyao Pan and Mark Bathe.	Effects of electrostatics and Holliday junction geometry on DNA origami structure
Poster		Matthew Adendorff and Mark Bathe.	Molecular Investigation of the Dynamics of Nicked DNA Duplexes under Force
Poster		Matthew Adendorff, Soma Dhakal, Minghui Liu, Hao Yan, Nils Walter and Mark Bathe.	DNA Tweezer Dynamics: A Computational Study
<b>Posters: Track on Protein and Viral Nanostructures</b>			
Poster		Sourabh Shukla, Fabian Eber, Sabine Eiben, Christina Wege and Nicole Steinmetz.	Programmable self-assembly of tobacco mosaic virus (TMV) rods of varying aspect ratios and its biological fate



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Poster	Gregory Bedwell, Ziyou Zhou, Masaki Uchida, Trevor Douglas, Arunava Gupta and Peter Prevelige.	Biom mineralization of TiO <sub>2</sub> within a 60 nm Protein Cage
Poster	Amy Wen, Yunmei Wang, Kai Jiang, Alice Yang, Huiyun Gao, Xin Yu, Daniel Simon and Nicole Steinmetz.	Dual-Modality Imaging Using Thrombus-Targeted Rod-Shaped Viral Nanoparticles
Poster	Michael Bruckman, Allen Vanmeter and Nicole F. Steinmetz.	Development of spherical nanoparticles formed from rod-shaped tobacco mosaic virus for future applications in nanotechnology

### 17 April 2014 - Track on Protein and Viral Nanostructures; Track Chair: Nicole Steinmetz, Case Western Reserve University

10:30-11:10	Keynote	<b>Bogdan Dragnea.</b>	Mechanically-constrained virus shells
11:10-11:35	Invited Talk	<b>Roman Jerala</b> , Vid Kočar, Sabina Božič Abram, Tibor Doles, Helena Gradišar, Nino Bašič and Tomaž Pisanski.	Design of polypeptide polyhedral nanostructures based on concatenated coiled-coil modules
11:35-12:00	Invited Talk	<b>Brian Bothner.</b>	Biophysical Measures of Virus Particle Stability and Dynamics
12:00-12:25	Invited Talk	<b>Peter Prevelige.</b>	Bacteriophage P22 Derived Protein Cages as Templates for Bio-mineralization
12:25-1:25	<b>Lunch On Your Own</b>		

### 17 April 2014 - Track on Synthetic Biology; Track Chair: Carston R. Wagner, University of Minnesota

1:25-2:05	Keynote	<b>Alexander Deiters.</b>	Conditional Control of DNA Logic Gate Function in Human Cells
2:05-2:30	Invited Talk	<b>Zev Gartner</b> , Noel Jee and Michael Todhunter.	Rapid prototyping of complex 3D tissue architecture by DNA programmed assembly
2:30-2:50	Contributed Talk	<b>Hongzhou Gu</b> and Ronald Breaker.	Small, highly-active DNAs that hydrolyze DNA
2:50-3:20	<b>Refreshments and Combined Poster Session (Synthetic Biology / Molecular Motors)</b>		
<b>Posters: Track on Synthetic Biology</b>			
Poster	Shalin Shah, Dixita Limbachiya and Manish Kumar Gupta.	DNACloud: A Potential Tool for storing Big Data on DNA	
Poster	Akira Saito, Toshihiko Ogura, Kei Fujiwara, Satoshi Murata and Shin-Ichiro Nomura.	Introducing Large DNA Nanostructures Into Living Cells Mediated by Cell-GUV Electrofusion	
Poster	Rizki Mardian, Kosuke Sekiyama and Toshio Fukuda.	Model of Reusable DNA Circuit that is Capable of Decision Making	
Poster	Cosimo Ducani, Giulio Bernardinelli and Björn Högberg.	Possible strand-drift during Phi29 polymerase rolling circle amplification	
<b>Posters: Track on Molecular Motors</b>			
Poster	Tae-Gon Cha, Jing Pan, Xiang Li, Chengde Mao and Jong Hyun Choi.	Understanding Translocation Kinetics of Carbon Nanotube based DNA Walkers	
Poster	Daiki Komatsu, Akira Saito, Kei Fujiwara, Satoshi Murata and Shin-Ichiro Nomura.	Cell Crawler: Giant Magnetoliposome Controlled by External Rotating Magnetic Field	
Poster	Alexandra Lucas, Jonathan Bath and Andrew Turberfield.	A Reversible Synthetic Motor	

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17 April 2014 - Track on Molecular Motors; Track Chair: Andrew Turberfield, University of Oxford			
3:20-4:00	Keynote	<b>Carlos Bustamante.</b>	Division of Labor and Coordination Among the Subunits of a Nearly Perfect Biological Machine
4:00-4:20	Contributed Talk	<b>Rizal Hariadi</b> , Mario Cale and Sivaraj Sivaramakrishnan.	Collective movement of nano-patterned groups of molecular motors on DNA origami
4:20-4:45	Invited Talk	Tung-Chun Lee, Mariana Alarcón-Correa, Andrew Mark, John Gibbs and <b>Peer Fischer.</b>	Chemically powered nanomotors