

**Foundations of Nanoscience Meeting (FNANO 2017) - April 9-13 2017, Snowbird, UT
Snowbird Cliff Lodge**

Sunday 9 April 2017

3:00-5:00 REGISTRATION (Ballroom 3 Lobby)

Monday 10 April 2017

7:45-9:20 REGISTRATION (Ballroom 3 Lobby)

9:20-9:30 Introduction: John Reif, Conference Chair and Andrew Turberfield, Program Chair (Ballroom 2 & 3)

10 April 2017 - Track on DNA Nanostructures 1. Track Chair: Nadrian Seeman, New York University (Ballroom 2-3)

9:30-10:10	Keynote	<u>Friedrich Simmel</u> , Enzo Kopperger, and Jonathan List (Physics Department, TU München, Germany)	DNA-based mechanisms for hybrid molecular robotics
10:10-11:25	Refreshments and Poster Session (Primrose Room)		
Posters: Track on DNA Nanostructures 1			
	Poster	Divita Mathur, Anirban Samanta, Eunkeu Oh, Sebastián Díaz, Kimihiro Susumu, Mario Ancona and Igor Medintz (Center for Bio/Molecular Science and Engineering, U.S. Naval Research Laboratory, Washington DC, USA)	Quantum Dot Encapsulation Using a Peptide-Modified Tetrahedral DNA Cage
	Poster	Chanseok Lee, Jae Young Lee, Young-Joo Kim and Do-Nyun Kim (Department of Mechanical and Aerospace Engineering, Seoul National University, Korea)	Modular shape and stiffness variation of DNA origami bundle structures with minimum change of staple sets
	Poster	Jae Young Lee, Chanseok Lee, Young-Joo Kim and Do-Nyun Kim (Department of Mechanical and Aerospace Engineering, Seoul National University, Korea)	Investigating the mechanical properties of DNA nicks using molecular dynamics simulation
	Poster	Nayan Agarwal, Thorsten L Schmidt, Michael Matthies, Kensuke Osada and Fatih Nadi Guer (cfaed, Technische Universität Dresden, Germany)	Stabilization of DNA nanoarchitectures
	Poster	J.V. Le, Yi Luo, Michael Darcy, Michael Poirier and Carlos Castro (Interdisciplinary Biophysics Graduate Program, The Ohio State University, USA)	Probing Nucleosome Stability with a DNA Origami Caliper
	Poster	Joshua Johnson, Abhilasha Dehankar, Jessica Winter and Carlos Castro (Biophysics Program, The Ohio State University, USA)	Control of DNA Origami Mechanisms via Gold Nanoparticles
	Poster	Yeongjae Choi, Hansol Choi, Amos Lee and Sunghoon Kwon (School of Electrical Engineering and Computer Science, Seoul National University, Republic of Korea)	Shape reconfigurable wireframe DNA origami
	Poster	Abeer Eshra and John Reif (Department of Computer Science and Engineering, Menoufia University, Egypt)	A reversible DNA seesaw motif with hairpins
	Poster	Risheng Wang, Wenyan Liu, Ling Li, Shuo Yang and Jie Gao (Department of Chemistry, Missouri University of Science and Technology, USA)	Self-assembly of heterogeneously shaped nanoparticles into plasmonic metamolecules on DNA origami
	Poster	Yue Zhao, Ruojie Sha, Yudong Hao, Carina Hernandez, Jens J. Birktoft, David Rusling, Arun Chandrasekaran, Chengde Mao and Nadrian C. Seeman (Department of Chemistry, New York University, U.S.A.)	DNA Triplex Binding Examined in Self-Assembled DNA Crystals
	Poster	Shohei Kotani and William Hughes (Micron School of Materials Science & Engineering, Boise State University, USA.)	Multi-Arm Junctions for Dynamic DNA Nanotechnology
	Poster	Yuma Endo, Takeo Uchida, Ibuki Kawamata, Yuki Suzuki, Shin-Ichiro Nomura and Satoshi Murata (Department of Robotics, School of Engineering, Tohoku University, Japan)	A DNA motif for a membrane-like structure

Poster	Erik Benson, Abdulmelik Mohammed, Daniel Rayneau-Kirkhope, Andreas Gådin, Pekka Orponen and Björn Högberg (Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Sweden)	Optimal design choices for wireframe DNA origami structures
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Continued: Track on DNA Nanostructures 1 (Ballroom 2-3)

11:25-11:50	Invited	<u>Jong Hyun Choi</u> and Haorong Chen (School of Mechanical Engineering, Purdue University, USA)	Conformational Effects of UV Light on DNA Origami
11:50-12:10	Contributed	<u>Xiaojin He</u> , Yin Zhang, Rebecca Zhuo, Ruojie Sha, Nadrian Seeman and Paul Chaikin (Center for Soft Matter Research, New York University, USA)	Using DNA Origami to Program Emulsion Droplet Self-Assembly: Valency Control, Polymerization and Structure Folding
12:10-12:30	Contributed	<u>Carlos Castro</u> , Alexander Marras, Chao-Min Huang, Joshua Johnson, Hai-Jun Su and Lifeng Zhou (Department of Mechanical and Aerospace Engineering, The Ohio State University, USA)	DNA origami assemblies with cooperative and communicating conformational changes

12:30-1:40 Lunch (Golden Cliff Room - Meal Ticket Required)

10 April 2017 - Track on Biomedical Nanotechnology. Track Chair: Thomas LaBean, North Carolina State University (Ballroom 2-3)

1:40-2:20	Keynote	<u>Hicham Fenniri</u> (Department of Chemical Engineering, Northeastern University, USA)	Engineering Biomedical Function in Supramolecular Nanomaterials
2:20-2:45	Invited	<u>Ronit Freeman</u> and Samuel Stupp (Simpson Querrey Institute for BioNanotechnology, Feinberg School of Medicine, Northwestern University, USA)	Programmable Peptide-DNA Hybrids
2:45-3:10	Invited	<u>Nicole Steinmetz</u> (Case Western Reserve University School of Medicine, USA)	Plant VLP-based in situ vaccination technology
3:10-3:30	Contributed	<u>Rebecca Schulman</u> (Department of Chemical Engineering and Computer Science, Johns Hopkins University, USA)	Programming Hydrogel Shape with DNA Signals

3:30-4:30 Refreshments and Poster Session (Primrose Room)

Posters: Track on Biomedical Nanotechnology

Poster	Si-Ping Han, Lisa Scherer, Matt Gethers, Rebecca Mancusi, Ya-Huei Kuo, Guido Marcucci, John Rossi and William A. Goddard III (Dept of Molecular and Cellular Biology, City of Hope and Materials and Process Simulation Center, Caltech, USA)	Conditional small interfering RNAs that are programmable for selective intracellular activation by specific RNA sequences
Poster	Parsa Nafisi, Tural Aksel, Suraj Makhija and Shawn Douglas (Department of Cellular and Molecular Pharmacology, University of California – San Francisco, USA)	A phage-based system for generating custom single-stranded DNA scaffolds for DNA origami applications
Poster	Akinori Kuzuya, Shizuma Tanaka, Kenta Wakabayashi, Kazuki Fukushima, Shinsuke Yukami and Yuichi Ohya (Department of Chemistry and Materials Engineering, Kansai University, Japan)	Intelligent, Biodegradable and Self-Healing Hydrogels Utilizing DNA Quadruplex Formation
Poster	Ehsan Akbari, Molly Y. Mollica, Christopher R. Lucas, Sarah M. Bushman, Randy A. Patton, Jonathan W. Song and Carlos E. Castro (Department of Mechanical and Aerospace Engineering, The Ohio State University, USA)	Functionalization of Cell Membranes with a Programmable DNA Origami NanoPlatform

Posters: Track on Molecular Motors

Poster	Jing Pan and Jong Hyun Choi (School of Mechanical Engineering, Purdue University, USA)	Optical Tracking Platform for DNA Walkers
Poster	Yusuke Sato, Yuichi Hiratsuka, Ibuki Kawamata, Satoshi Murata and Shin-Ichiro Nomura (Department of Robotics, Tohoku University, Japan)	DNA devices and molecular motors control dynamic shape change of giant liposome in response to DNA signals
Poster	Nicholas Stephanopoulos, Minghui Liu and Rizal Hariadi (School of Molecular Sciences, Biodesign Center for Molecular Design and Biomimetics, Arizona State University, USA)	Photo-actuation of DNA Nanostructures Using Caged Nucleotides
Poster	Thomas Schaus, Sungwook Woo, Feng Xuan, Xi Chen and Peng Yin (Wyss Institute, Harvard University, USA)	A Biochemical Nanoscope via Auto-cycling Proximity Recording

Poster	Angelo Cangialosi, Chang Kyu Yoon, Qi Huang, David Gracias and Rebecca Schulman (Department of Chemical & Biomolecular Engineering, Johns Hopkins University, USA)	Programming Hydrogel Shape with DNA signals
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10 April 2017 - Track on Molecular Motors. Track Chair: Andrew Turberfield, University of Oxford

4:30-5:10	Keynote	<u>Masami Hagiya</u> , Akihiko Konagaya, Satoshi Kobayashi, Hirohide Saito and Satoshi Murata (Department of Computer Science, University of Tokyo, Japan)	Amoeba and Slime: Molecular Robots with Sensors and Intelligence
5:10-5:35	Invited	<u>Rizal Hariadi</u> (Department of Physics, Arizona State University, USA)	Probing collective behaviors of molecular motors using DNA nanostructures
5:35-6:00	Invited	<u>Cheulhee Jung</u> , Peter Allen and Andrew Ellington (ICMB, University of Texas, at Austin, USA)	A stochastic DNA walker that traverses a microparticle surface
6:00-6:25	Invited	<u>Mitsuhiro Iwaki</u> , Shelley Wickham, Keigo Ikezaki, Toshio Yanagida and William Shih (Quantitative Biology Center, RIKEN, Japan)	A programmable DNA origami nanospring that reveals force-induced adjacent binding of myosin VI heads
7:00 pm	<i>The Track Chairs' dinner (at the back room of The Aerie Restaurant, at Level 10 of the Cliff Lodge)</i>		
<i>Dinner (On Your Own)</i>			

Tuesday 11 April 2017

7:45-8:30 REGISTRATION (Ballroom 3 Lobby)

11 April 2017 - Track on Nanophotonics and Superresolution. Track Chair: Tim Liedl, Ludwig Maximilians University, Munich

8:30-9:10	Keynote	<u>Ed Boyden</u> (Departments of Biological Engineering and Brain and Cognitive Sciences, Media Lab and McGovern Institute, MIT, USA)	Expansion Microscopy
9:10-9:35	Invited	<u>Elton Graugnard</u> , Christopher M. Green, Brett Ward, Kelly Schutt, Noah Morris, Reza Zadegan, William L. Hughes, and Wan Kuang (Micron School of Materials Science & Engineering, Boise State University, USA)	Metrology of DNA Arrays by Super-Resolution Microscopy
9:35-9:55	Contributed	<u>Carolin Vietz</u> , Sarah Ochmann, Birka Lalkens, Guillermo Acuna and Philip Tinnefeld (Institute for Physical and Theoretical Chemistry, and Braunschweig Integrated Centre of Systems Biology (BRICS), and Laboratory for Emerging Nanometrology (LENA), Braunschweig University of Technology, Germany)	Fluorescence enhancing self-assembled optical antennas for single molecule based detection of Zika

9:55-10:55 Refreshments and Poster Session - Primrose Room

Posters: Track on Nanophotonics and Superresolution

Poster	William Klein, Sebastián Díaz, Susan Buckhout-White, Joseph Melinger, Paul Cunningham, Mario Ancona, Ellen Goldman, Wan Kuang and Igor Medintz (Center for Bio/Molecular Science and Engineering, U.S. Naval Research Laboratory, USA)	Utilizing HomoFRET to Extend Photonic Networks and Increase Light Harvesting Capability
Poster	Anton Kuzyk, Maximilian Urban, Andrea Idili, Francesco Ricci and Na Liu (Department of Neuroscience and Biomedical Engineering, Aalto University School of Science, Finland)	Selective control of reconfigurable plasmonic metamolecules
Poster	Craig Laboda, Alvin Lebeck and Chris Dwyer (Department of Electrical and Computer Engineering, Duke University, USA)	Exploiting Dark Fluorophores in Resonance Energy Transfer Logic
Poster	Wooli Bae, Susanne Kempster, Maximilian T. Strauss, Ralf Jungmann and Tim Liedl (Faculty of Physics and Center for NanoScience, Ludwig-Maximilians-Universität, München, Germany)	Stop-and-go imaging of the assembly of DNA origami lattices with DNA PAINT super-resolution
Poster	Masudur Rahman, David Neff and Michael Norton (Department of Chemistry, Marshall University, USA)	The Sapphire (0001) Surface: A Transparent Substitute for Mica for DNA Nanostructure Imaging
Poster	Ashwin Gopinath, Chris Thachuk, Anya Mitskovets, David Kirkpatrick and Paul Rothemund (Department of Bioengineering, Caltech, CA, USA)	Absolute and arbitrary orientation of single molecule shapes
Poster	Mingjie Dai, Ralf Jungmann and Peng Yin (Department of Systems Biology, Harvard Medical School, USA)	Optical imaging of individual biomolecules in densely packed clusters
Poster	Christopher M. Green, Kelly Schutt, Noah Morris, William L. Hughes, Wan Kuang and Elton Graugnard (Micron School of Materials Science & Engineering, Boise State University, USA)	Metrology of DNA Arrays by Super-Resolution Microscopy

Posters: Track on Protein and Viral Nanostructures

Poster	John Collins, Ting Zhang, Sung Won Oh and Jinglin Fu (Department of Chemistry, Rutgers University - Camden, USA)	DNA Crowded Enzyme Complexes with Enhanced Activity and Stability
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11 April 2017 - Track on Protein and Viral Nanostructures. Track Chair: Nicole Steinmetz, Case Western Reserve University

10:55-11:35	Keynote	<u>Jon Pokorski</u> (Macromolecular Science and Engineering, Case Western Reserve University, USA)	Polymer Engineering of Viral Nanoparticles
11:35-12:00	Invited	<u>Milan Mrksich</u> (Biomedical Engineering, Northwestern University, USA)	Synthesis and Applications of MegaMolecules
12:00-12:20	Contributed	<u>Daniel Schiffels</u> , Veronika Szalai and J. Alexander Liddle (Center for Nanoscale Science and Technology, National Institute of Standards and Technology, USA)	Self-Assembled DNA-Protein Nanostructures with Molecular Precision

12:20-1:30 Lunch (Golden Cliff Room - Meal Ticket Required)

11 April 2017 - Track on Synthetic Biology. Track Chair: Alex Deiters, University of Pittsburgh

1:30-2:10	Keynote	<u>Jin Zhang</u> (Department of Pharmacology, University of California - San Diego, USA)	Illuminating Biochemical Activity Architecture of the Cell
2:10-2:35	Invited	<u>Michael Lin</u> , Xin Zhou, and Linlin Fan (Departments of Neurobiology and Bioengineering, Stanford University, USA)	A Generalizable Design for Single-chain Photoswitchable Kinases
2:35-2:55	Contributed	<u>Reza M Zadegan</u> and William L. Hughes (Micron School of Materials Science and Engineering, Boise State University, USA)	CAGE: Chromatin Analogous Gene Expression device
2:55-3:15	Contributed	<u>Jongmin Kim</u> , Alexander Green, Duo Ma, Pamela Silver, James Collins and Peng Yin (Wyss Institute for Biologically Inspired Engineering, Harvard University, USA)	Complex Cellular Logic Computation Using Ribocomputing Devices
3:15-4:15	<i>Refreshments and Poster Session (Primrose Room)</i>		

Posters: Track on Synthetic Biology

Poster	Bouran Sohrabi and John Ward (Department of Biochemical Engineering, University College London, UK)	DNA nanostructures for biotechnological applications
Poster	João Rosa and Björn Högberg (Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Stockholm, Sweden)	Nucleotide sequence preference analysis of BtsCI
Poster	Alex Stopar, Lucia Coral, Stefano Di Giacomo and Matteo Castronovo (Department of Chemical Sciences and Technologies, University of Rome "Tor Vergata", Italy)	Digital endonuclease reactions in planar DNA origami

Posters: Track on Computational Tools

Poster	Ze Shi, Carlos E. Castro and Gaurav Arya (Department of NanoEngineering, University of California San Diego, USA)	Coarse-Grained and Statistical Mechanics Modeling of Dynamic, Mechanically Compliant DNA Hinges
Poster	Nicholas Porubsky, Brian Wolfe, Joseph Zadeh, Robert Dirks and Niles Pierce (Division of Chemistry & Chemical Engineering, California Institute of Technology, USA)	Constrained Multistate Sequence Design for Nucleic Acid Reaction Pathway Engineering
Poster	Reza Zadegan, Kelsey Suyehira, Simon Llewellyn, Tim Andersen and William L. Hughes (Micron School of Materials Science and Engineering, Boise State University, USA)	A Biologically Inspired Coding Scheme for Nucleic Acid Memory
Poster	Amay Agrawal, Birva Patel, Dixita Limbachiya and Manish K. Gupta (Laboratory of Natural Information Processing, Dhirubhai Ambani Institute of Information and Communication Technology, India)	3DNA Printer : A Tool for Automated DNA Origami
Poster	Dixita Limbachiya, Dhaval Trivedi and Manish K. Gupta (Dhirubhai Ambani Institute of Information and Communication Technology, India)	DNA Image Pro - A Tool for Generating Pixel Patterns using DNA Tile Assembly
Poster	Hyungmin Jun, Tyson Shepherd, Sakul Ratanalert and Mark Bathe (Department of Biological, Massachusetts Institute of Technology, USA)	Rigid MegaDalton DNA Nanoparticles Programmed Autonomously from the Top Down
Poster	Sakul Ratanalert, Remi Veneziano, Tyson Shepherd and Mark Bathe (Departments of Biological Engineering and Chemical Engineering, Massachusetts Institute of Technology, USA)	DNA nanoparticles programmed from the top down with variable design motifs

11 April 2017 - Track on Computational Tools for Self-Assembly. Track Chair: William Shih, Wyss Institute and Harvard Medical School

4:15-4:55	Keynote	<u>Michael Brenner</u> (Harvard University, USA)	Towards Synthetic "Living" Materials: Computational Strategies
4:55-5:20	Invited	<u>Joseph Yesselman</u> , Daniel Eiler, Alexandra Ooms, Wipapat Kladwang, Xuesong Shi, David Costantino, Daniel Herschlag, Jeffrey Kieft and Rhiju Das (Department of Biochemistry, Stanford University School of Medicine, USA)	Automated Design of Three-Dimensional Asymmetric RNA Structures at Near-Atomic Accuracy
5:20-5:40	Contributed	<u>Scott Michael Slone</u> , Chen-Yu Li, Jejoong Yoo and Aleksei Aksimentiev (Department of Materials Science, University of Illinois at Urbana-Champaign, USA)	Molecular mechanics of DNA bricks: in situ structure, mechanical properties and ionic conductivity
5:40-7:40	Refreshments and Combined Poster Session (all Monday and Tuesday posters) The Eagles Nest & Golden Cliff Rooms		
7:45-8:00	ISNSCE Business Meeting (The Eagles Nest & Golden Cliff Rooms)		
8:00-8:35	Robert Dirks Prize Presentation (Ballrooms 2-3)		

Wednesday 12 April 2017

12 April 2017 - Track on Principles and Theory of Self-Assembly. Track Chair: Rebecca Schulman, Johns Hopkins University

8:30-9:10	Keynote	<u>Yan Liu</u> , Shuoxing Jiang, Fan Hong and Hao Yan (Arizona State University, USA)	Thermodynamics and Kinetics of Single Tile Attachment in DNA Tile-Based Self-Assembly
9:10-9:35	Invited	<u>Daphne Klotsa</u> , Department of Applied Physical Sciences, University of North Carolina-Chapel Hill, USA	Spheres form strings
9:35-10:00	Invited	<u>Jason Rocks</u> , Nidhi Pashine, Irmgard Bischofberger, Carl P. Goodrich, Andrea J. Liu and Sidney R. Nagel (Department of Physics and Astronomy, University of Pennsylvania, USA)	Creating function from disorder in mechanical networks
10:00-10:20	Contributed	<u>Damien Woods</u> , David Doty, Cameron Myhrvold, Joy Hui, Felix Zhou, Peng Yin and Erik Winfree (Inria, France)	Iterated circuit computation by DNA self-assembly in a field-programmable gate array architecture

10:20-11:20 Refreshments and Poster Session (Primrose Room)

Posters: Track on Principles and Theory of Self-Assembly

Poster	Huan Cao, Gary Abel and Tao Ye (School of Natural Sciences, University of California, Merced, USA)	Surface-Seeded Folding of DNA Origami Structures
Poster	Daniel Schiffels, Michael Zwolak and J. Alexander Liddle (Center for Nanoscale Science and Technology, National Institute of Standards and Technology, USA)	Prediction and Measurement of Folding Temperatures
Poster	Tianqi Song, Sudhanshu Garg, Hieu Bui, Reem Mokhtar and John Reif (Department of Computer Science Duke University, USA)	Interfacing Analog and Digital DNA Circuits
Poster	Carl Goodrich and Michael Brenner (Applied Math, Harvard University, USA)	Using active colloids as microscopic self-assembly machines to weave and braid
Poster	Brett Ward, Christopher Green, Bernard Yurke, William L. Hughes and Elton Graugnard (Micron School of Materials Science and Engineering, Boise State University, USA)	Thermodynamics and Kinetics of DNA Origami Cross-Tile Array Formation

Posters: Track on Integrated Chemical Systems

Poster	Huan Cao, Gary Abel and Tao Ye (Chemistry and Chemical Biology, School of Natural Sciences, University of California, Merced, USA)	Single molecule chemistry for nucleating DNA origami folding on solid surfaces
Poster	Madushani Dharmawardana, Mukunda Ghimire, Hengameh Fallah, Brooke Otten, Usharee Kapia, Bhargav Arimilli, Gregory McCandless, Thomas Cundari, Mohammad Omary and Jeremiah Gassensmith (Department of Chemistry and Biochemistry, University of Texas at Dallas, USA)	Colossal Anisotropic Thermal Expansion and Thermochromism in a Single Crystal Organic Semiconductor
Poster	Wenqi Liu, César Gómez-Durán and Bradley Smith (Department of Chemistry & Biochemistry, University of Notre Dame Notre Dame, USA)	Fluorescent Neuraminidase Assay Based on Supramolecular Dye Capture After Enzymatic Cleavage
Poster	Joshua Fern, Angelo Cangialosi and Rebecca Schulman (Department of Chemical and Biomolecular Engineering, Johns Hopkins University, USA)	Modular DNA Strand-Displacement Controllers for DNA-Crosslinked Hydrogel Expansion

12 April 2017 - Track on Integrated Chemical Systems. Track Chair: Jeremiah Gassensmith, University of Texas, Dallas

11:20-12:00	Keynote	<u>Jonathan L Sessler</u> (Dept. of Chemistry, The University of Texas, USA)	Adventures in Self-Assembly: Is There Logic Here?
12:00-12:25	Invited	<u>Bradley Smith</u> (Department of Chemistry and Biochemistry, University of Notre Dame, USA)	Synthetic Mimic of Biotin/Avidin Self-Assembly For Fluorescence Imaging and Diagnostics
12:25-12:50	Invited	<u>Natalia Shustova</u> , Ekaterina Dolgoplova, and Allison Rice (Department of Chemistry and Biochemistry, University of South Carolina, USA)	A Rigid Mimic of the Green Fluorescent Protein β -barrel: Chromophore Dynamics Defined by a Rigid Metal-Organic System

12:50-2:00 Lunch (Golden Cliff Room - Meal Ticket Required)

12 April 2017 - Track on DNA Nanostructures 2. Track Chair: Nadrian Seeman, New York University.

2:00-2:25	Invited	<u>Yuki Suzuki</u> , Ibuki Kawamata and Satoshi Murata (Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan)	Self-assembly of two-dimensional DNA origami lattices on lipid membranes
2:25-2:50	Invited	<u>Peng Yin</u> , Luvena Ong, Nikita Hanikel, Casey Grun, Maximilian T. Strauss, Patrick Bron, Josephine Lai-Kee-Him, Florian Schueder, Bei Wang, Pengfei Wang, Jocelyn Y. Kishi, Cameron A. Myhrvold, Allen Zhu, Ralf Jungmann, Gaetan Bellot, Yonggang Ke and Omar K. Yaghi (Department of Systems Biology, Harvard University, USA)	Programmable self-assembly of three-dimensional nanostructures from 10 ⁴ unique components
2:50-3:10	Contributed	<u>Amelie Heuer-Jungemann</u> , Carolin Hartl, Tao Zhang and Tim Liedl (Faculty of Physics and Center for Nanoscience (CeNS), Ludwig-Maximilians-Universität München, Germany)	Site-specific placement of gold nanoparticles in 3D DNA origami lattices
3:10-3:30	Contributed	<u>Grigory Tikhomirov</u> , Philip Petersen and Lulu Qian (Bioengineering, California Institute of Technology, USA)	Fractal assembly of micron-scale uniquely-addressable DNA origami arrays

3:30-4:45 Refreshments and Poster Session (Primrose Room)

Posters: Track on DNA Nanostructures II

Poster	Wei Sun, Zhao Zhao, Jie Shen, Hareem Maune, William Shih and Peng Yin (Wyss Institute for Biologically Inspired Engineering, Harvard University, USA)	Scaling multi-channel CNT transistors: A case study using structural DNA nanotechnology in ultra-scaled technology nodes.
Poster	Tatiana Fedotova and Dmitry Kolpashchikov (Department of Chemistry, University of Central Florida, USA)	Creating DNA Computer: 5 Integrated NAND Gates with Half-Adder Function
Poster	Takeo Uchida, Keita Abe, Yuma Endo, Satoru Akita, Shosei Ichiseki, Shiyun Liu, Sho Aradachi, Taiyo Kikkawa, Masataka Saito, Akihiko Fukuchi, Ibuki Kawamata, Yuki Suzuki, Shin-Ichiro Nomura and Satoshi Murata (Department of Robotics, Graduate school of Engineering, Tohoku University, Japan)	Linear Nanostructure with Limited Length by Revolving Vernier Mechanism
Poster	Enzo Kopperger, Jonathan List, Sushi Madhira, Florian Rothfischer, Don C. Lamb and Friedrich Simmel (Physics Department, Technical University Munich, Germany)	Movement of a DNA Based Robotic Arm
Poster	Donglei Yang, Zhenyu Tan, Yongli Mi and Bryan Wei (School of Chemical Science and Engineering, Tongji University, China)	DNA nanostructures constructed with multi-stranded motifs
Poster	Alasdair Clark, Gabriella Flynn, Gerard Macias, Jamie Withers, Jon Cooper, Glenn Burley and Sarah Henry (University of Glasgow, UK)	Assembling nanoplasmonic metasurfaces using DNA-origami-tiles
Poster	Shalin Shah, Hieu Bui, Abeer Eshra and John Reif (Department of Electrical and Computer Engineering, Duke University, US)	Towards Reversible Localized DNA Hybridization Chain Reactions
Poster	Alena Khmelinskaia, Eugene P. Petrov, Henri G. Franquelim and Petra Schwille (Cellular and Molecular Biophysics, Max-Planck Institute of Biochemistry, Germany)	Isotropic-anisotropic phase transitions of elongated DNA nanoparticles on supported lipid bilayers
Poster	Masayuki Endo, Prakash Shrestha, Sagun Jonchhe, Tomoko Emura, Kumi Hidaka, Hiroshi Sugiyama and Hanbin Mao (Institute for Integrated Cell-Material Sciences, Kyoto University, Japan)	Observation of single biomolecule properties in a DNA nanospace
Poster	Tyler Westover, Bibek Uprety and Robert Davis (Department of Physics, Brigham Young University, USA)	Resistivity of gold plated DNA origami templates—impact of anisotropic metallization and annealing
Poster	Domen Presern, Bastian Joffroy, Thorsten-Lars Schmidt and Jonathan P. K. Doye (Physical and Theoretical Chemistry Laboratory, Department of Chemistry, University of Oxford, UK)	Explaining the size-dependent kinetics of Phi29 polymerase rolling circle amplification
Poster	Raul Vyas and Chris Dwyer (Department of Electrical and Computer Engineering, Duke University, USA)	Energy Migrating DNA Self-Assembled Molecular FRET Wires
Poster	Megan Engel, David Smith, Markus Jobst, Martin Sajfutdinow, Philipp Nickels, Tim Liedl, Domen Presern, Ard Louis and Jonathan Doye (Rudolf Peierls Centre for Theoretical Physics, University of Oxford, UK)	Pushing and pulling: DNA origami response to internal and external force probed by simulation and experiment

12 April 2017 - Track on Nucleic Acid Nanostructures In Vivo. Track Chair: Yamuna Krishnan, University of Chicago

4:45-5:10	Invited	<u>Neal Devaraj</u> (Department of Chemistry and Biochemistry, University of California, San Diego)	Bioorthogonal Reactions for Detecting Nucleic Acids
5:10-5:30	Contributed	<u>Aneesh Tazhe Veetil</u> , Yamuna Krishnan and Kasturi Chakraborty (Department of Chemistry and Grossman Institute of Neuroscience, University of Chicago, USA)	Cell targetable DNA nanocapsules for spatiotemporal release of caged neuroactive molecules
5:30-7:40	Refreshments and Combined Poster Session (all Wednesday and Thursday posters) The Eagles Nest & Golden Cliff Rooms		
7:45-8:45	ISNSCE Award Address (Ballrooms 2-3)		

Thursday 13 April 2017

Track on DNA Nanotechnology and Analytical Methods. Track Chair: Andrew Ellington, University of Texas at Austin

8:30-9:10	Keynote	<u>Roy Bar-Ziv</u> (Department of Materials and Interfaces, Weizmann Institute of Science, Israel)	Programmable On-Chip DNA Compartments as 'Artificial Cells'
9:10-9:35	Invited	<u>Yamuna Krishnan</u> , Krishna Dan and Aneesh T Veetil (Department of Chemistry and The Grossman Institute for Neuroscience, Quantitative Biology and Human Behavior, The University of Chicago, USA)	Quantitative, spatiotemporal mapping of enzyme function in vivo
9:35-10:00	Invited	<u>David Taylor</u> , Megan Hochstrasser, Jack Kornfeld, Anna Simon, Arti Pothukuchy, Jimmy Gollihar, Janelle Leggere, Jillian Gerberich, Eva Nogales, Jennifer Doudna and Andrew Ellington (Department of Molecular Biosciences, University of Texas at Austin, USA)	Hierarchical assembly of CRISPR-Cas complexes and biological materials
10:00-10:25	Invited	<u>Sjibren Otto</u> (Centre for Systems Chemistry, Stratingh Institute, University of Groningen, the Netherlands)	Autocatalytic Formation of Nanostructures by Self-Assembly driven Self-Replication

10:25-11:25 Refreshments and Poster Session (Primrose Room)

Posters: Track on DNA Nanotechnology and Analytical Methods

Poster	Thanapop Rodjanapanyakul, Ibuki Kawamata, Fumi Takabatake, Shin-Ichiro M. Nomura and Satoshi Murata (Department of Robotics, Graduate School of Engineering, Tohoku University, Japan)	Controlling diffusion coefficient of DNA via dynamic interaction with anchoring matrix
Poster	Cosimo Ducani and Björn Högberg (Department of Medical Biochemistry and Biophysics, Karolinska Institutet, Sweden)	Towards in situ cell by cell tracking of splicing variants by Proximity Dependent Hybridization Chain Reaction
Poster	Sung Won Oh, Adriana Pereira, Ting Zhang, Ariel Lane and Jinglin Fu (Center for Computational and Integrative Biology, Rutgers University – Camden, USA)	Logic-Gated Catalytic Circuits for Sensing Bio-Targets
Poster	Irina Nesterova, James Briscoe and Siddieg Elsiddieg (Department of Chemistry, Louisiana State University, USA)	The analytical power of DNA i-motif
Poster	Sadao Takabayashi, Shohei Kotani, Juan Flores-Estrada, Jennifer E. Padilla, Lizandra C. Godwin, Elton Graugnard, Wan Kuang, Scott Sills and William L. Hughes (Micron School of Materials Science & Engineering, Boise State University, USA)	Physical Adsorption and Surface Diffusion of DNA Origami onto Boron-Implanted Silicon Substrates
Poster	Michael Tobiason and William Hughes (Micron School of Materials, Boise State University, USA)	Quantifying Kinetic Variation in Model DNA Systems
Poster	Xiaoping Olson, Shohei Kotani, Bernard Yurke, Elton Graugnard and William Hughes (Micron School of Materials Science & Engineering, Boise State University, USA.)	DNA Strand Displacement Kinetics with Locked Nucleic Acid

Posters: Track on Modified DNA

Poster	Elisha Krieg and William Shih (Wyss Institute for Biologically Inspired Engineering at Harvard, USA)	Nascent Polymer Sequestration and Release (NPSR) for Scalable Production of Long Single-Stranded DNA
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13 April 2017 - Track on Modified DNA. Track Chair: Floyd Romesberg, Scripps Research Institute

11:25-12:05	Keynote	<u>Ichiro Hirao</u> (Institute of Bioengineering and Nanotechnology (IBN), A*STAR, Singapore)	Expansion of the genetic alphabet of DNA by unnatural base pair systems
12:05-12:30	Invited	<u>Eriks Rozners</u> , Dziyana Hnedzko, Dennis McGee, Thomas Zengeya, Tamaki Endoh and Naoki Sugimoto (Department of Chemistry, Binghamton University, USA)	Sequence selective recognition of double-stranded RNA by cationic nucleobase and backbone-modified peptide nucleic acids
12:30-12:50	Contributed	<u>Gabriella Flynn</u> , Alasdair Clark, Jonathan Cooper, Gerard Macias, Sarah Henry, Jamie Withers and Glenn Burley (Biomedical Engineering Research Division, University of Glasgow, UK)	Reversible Immobilisation of DNA onto Micro-Patterned Surfaces using the Fluorous Effect