

## Curriculum Vitae

### Hao Yan

#### Education

Ph.D. in Chemistry	New York University, New York, NY Advisor: Nadrian C. Seeman	August 2001
B.S. in Chemistry	Shandong University, Jinan, P.R.China	July 1993

#### Employment and Appointment

- 09/2013 to Present Director, Center for Molecular Design and Biomimetics  
Biodesign Institute, Arizona State University, Tempe, AZ
- 09/2015 to Present Inaugural Milton D. Glick Distinguished Professor  
School of Molecular Sciences & Biodesign Institute, Arizona State University, Tempe, AZ
- 01/2012 to 08/2015 Inaugural Milton D. Glick Distinguished Professor  
Department of Chemistry and Biochemistry & Biodesign Institute, Arizona State University, Tempe, AZ
- 2016 to present Co-Founder and VP of Materials, Gemneo Bioscience Inc.
- 08/2008 to 01/2012 Professor  
Department of Chemistry and Biochemistry & Biodesign Institute, Arizona State University, Tempe, AZ
- 08/2004 to 08/2008 Assistant Professor  
Department of Chemistry and Biochemistry & Biodesign Institute, Arizona State University, Tempe, AZ
- 09/2001 to 07/2004 Assistant Research Professor  
Department of Computer Science, Duke University, Durham, NC

#### Awards and Honors

- Member of Editorial Board, Nano Research, 2014 to Present
- Member of Editorial Board, Nature Scientific Report, 2016 to Present
- The Rozenberg Tulip Award in DNA Computing, 2013
- Elected President, International Society for Nanoscale Science, Computation and Engineering, 2013
- Arizona Technology Enterprise Achievement Award, 2014

- Finalist, Arizona State University Outstanding Doctoral Mentor Award, 2013
- Inaugural Milton D. Glick Distinguished Professor in Chemistry and Biochemistry, 2012
- Member of Editorial Advisory Board, *Langmuir*, 2011 to 2015
- Member of Steering Committee, International Meeting on DNA Computing and Molecular Programming, 2012 to present
- Arizona State University Promotion and Tenure Faculty Exemplar, 2008
- Alfred P. Sloan Research Fellowship, 2008
- Air Force Office of Scientific Research Young Investigator Award, 2007
- National Science Foundation CAREER Award, 2006
- Arizona Technology Enterprise Innovator of Tomorrow Award, 2006
- New York University GSAS Dean's Dissertation Fellowship, 2006

## Research Bibliography

### Journal Publications

**Google scholar profile:** <http://scholar.google.com/citations?user=arJVgNsAAAAJ&hl=en>

**h-index** as of Feb. 2018: 72

#### A. At Arizona State University

171. S. Li, Q. Jiang, C. Song, Y. Tian, J. Wang, S. Liu, Y. Zhang, Y. Zou, G. Anderson, J. Han, Y. Chang, Y. Liu, H. Yan\*, G. Nie\*, B. Ding, Y. Zhao\*, Drugging the Undrugifiable: A Therapeutic DNA Nanorobot with on-target Tumor Infarction for Cancer Therapy, *Nature Biotechnology*, in press (2018).
170. D. Han, X. Qi, C. Myhrvold, B. Wang, M. Dai, S. Jiang, M. Bates, Y. Liu, B. An\*, F. Zhang\*, H. Yan\*, P. Yin\* Single-stranded DNA and RNA Origami, *Science*, 358, 1402 (2017).
169. F. Zhang, H. Yan\* DNA Self-assembly scaled up, *Nature*, 552, 34 (2017).
168. Y.R. Yang; J. Fu, S. Wootten, X. Qi, M. Liu, H. Yan, Y. Liu\* 2D Enzyme Cascade Network with Efficient Substrate Channeling by Swinging Arms. *ChemBioChem*. DOI: 10.1002/cbic.201700613 (2017).
167. E. Boulais, N. Sawaya, R. Veneziano, A. Andreoni, S. Lin, N. Woodbury, H. Yan\*, M. Bathe\* Programmed coherent coupling in a DNA-based excitonic circuit, *Nature Materials*, in press (2017).
166. J. Li, A. A. Green, H. Yan, C. Fan, Engineering nucleic acid structures for programmable

- molecular circuitry and intracellular biocomputation, *Nature Chem.* DOI:10.1038/nchem.20405, in press (2017).
165. C. Simmons, F. Zhang, T. MacCulloch, N. Fahmi, N. Stephanopoulos, Y. Liu, N. Seeman, H. Yan, Tuning the Cavity Size and Chirality of Self-Assembling 3D DNA Crystals. *J. Am. Chem. Soc.* 139, 11254-11260 (2017).
  164. D. Mieritz, X. Li, A. Volosin, M. Liu, H. Yan, N. Walter, D. Seo, Tracking Single DNA Nanodevices in Hierarchically Meso-Macroporous Antimony-Doped Tin Oxide Demonstrates Finite Confinement, *Langmuir* 33, 6410-6418 (2017).
  163. H. Zhang, A. Carey, K. Jeon, M. Liu, T. Murell, J. Locsin, S. Lin, H. Yan, N. Woodbury, D. Seo, A Highly Stable and Scalable Photosynthetic Reaction Center-Graphene Hybrid Electrode System for Biomimetic Solar Energy Transduction, *J. Mater. Chem. A.* 5, 6038-6041, (2017).
  162. S. Jiang, F. Hong, H. Hu, H. Yan\*, Y. Liu\*, *Understanding the Elementary Steps in DNA Tile-based Self-assembly*, *ACS Nano.* 11, 9370-9381 (2017).
  161. H. Fan, F. Zhang, Y. Liu\*, H. Yan\*, DNA Origami, Scaffolds for Creating Higher Order Structures, *Chemical Reviews*, Chemical Review, in press (2017).
  160. F. Zhang, F. Hong, H. Yan\*, DNA Origami Tiles: Nanoscale Mazes, *Nature Nanotechnology.* 12, 189-190 (2017).
  159. Y. Dong, Y. Yang, Y. Zhang, D. Wang, X. Wei, S. Banerjee, Y. Liu, Z. Yang, H. Yan\*, D. Liu\*, Cuboid Vesicles Formed by Frame-guided Assembly on DNA Origami Scaffolds, *Angew Chem Int Ed.* 156, 1586-1589, (2017).
  158. A. Andreoni, S. Lin, H. Liu, R. E. Blankenship, H. Yan, N. Woodbury, Orange Carotenoid Protein as a Control Element in an Antenna System based on a DNA Nanostructure *Nano Letters*, 17, 1174-1180 (2017).
  157. F. Hong, S. Jiang, T. Wang, Y. Liu\*, H. Yan\*, 3D Framework DNA origami with Layered Crossovers, *Angew Chem Int Ed.* 128, 13024-13027, (2016).
  156. A. Carey, H. Zhang, D. Mieritz, A. Volosin, A. Gardiner, R. Cogdell, H. Yan, D. Seo, S. Lin, N. Woodbury\*, Photocurrent generation by photosynthetic purple bacterial reaction centers interfaced with a porous antimony-doped tin oxide (ATO) electrode, *ACS Appl. Mater. Interfaces* 8, 25104-25110, (2016).
  155. J. Fu\*, Y. Yang, S. Dhakal, Z. Zhao, M. Liu, T. Zhang, N. Walter, H. Yan, Assembly of Multi-Enzyme Complexes on DNA Nanostructures, *Nature Protocols* 11, 2243-2273, (2016).
  154. C. Simmons, F. Zhang, J. Birktoft, X. Qi, D. Han, Y. Liu, R. Sha, H. Abdallah, C. Hernandez, Y. Ohayon, N. Seeman\*, H. Yan\*, Construction and Structure Determination of a Three-dimensional DNA Crystal, *J. Am. Chem. Soc.* 138, 10047-10054, (2016).
  153. R. Veneziano, S. Ratanalert, K. Zhang, F. Zhang, H. Yan, W. Chiu, M. Bathe\*, Designer nanoscale DNA assemblies programmed from the top down, *Science* 10.1126/science.aaf4388 (2016).

152. F. Zhang\*, S. Jiang, W. Li, A. Hunt, Y. Liu\*, H. Yan\*, Self-assembly of Complex DNA Tessellations using low symmetry multi-arm DNA tiles, *Angew Chem Int Ed.* 55, 8860–8863 (2016).
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149. S. Dokal, M. Adendorff, M. Liu, H. Yan\*, M. Bathe\*, N. Walter\*, Rational design of DNA-actuated enzyme nanoreactors guided by single molecule analysis, *Nano Scale* 8, 3125-3137 (2016).
148. W. Li, F. Zhang, H. Yan\*, Y. Liu\*, DNA Based Arithmetic Function: Half Adder Based on DNA Strand Displacement, *Nanoscale* 8, 3775-3784 (2016).
147. Z. Zhao, J. Fu, S. Dokal, A. Johnson-Buck, M. Liu, Y. Liu, N. Woodbury, N. Walter, H. Yan\*, Nancaged Enzymes with Enhanced Catalytic Activity and Increased Stability Against Protease Digestion, *Nature Communications* 7, 10619 (2016).
146. C. Zhang, J. Yang, S. Jiang, Y. Liu\*, H. Yan\*, DNAzyme-based Logic Gate-mediated DNA Self-assembly, *Nano Letters*, 16, 736–741, (2016)
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144. Y. Yang, Y. Liu, H. Yan\*, DNA nanostructures as programmable biomolecular scaffolds, *Bioconjugate Chemistry*, 26, 1381-1395 (2015). (Featured as Front Cover of the Journal)
143. J. F. Georges, X. Liu, J. Eschbacher, J. Nichols, M. A. Mooney, A. Joy, R. F. Spetzler, B. G. Feuerstein, M. C. Preu, T. Anderson, H. Yan, P. Nakaji\*, Use of a Conformational Switching Aptamer for Rapid and Specific Ex Vivo Identification of Central Nervous System Lymphoma in a Xenograft Model. *PLoS one*, 10(4), e0123607 (2015).
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139. F. Zhang, J. Nangreave, Y. Liu, H. Yan\*, Structural DNA Nanotechnology: State of the Art and Future Perspective, *J. Am. Chem. Soc.*, 136, 11198–11211 (2014).

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- 127 S. Pal, P. Dutta, H. Wang, Z. Deng, S. Zou, **H. Yan**, and Y. Liu, Quantum Efficiency Modification of Organic Fluorophores Using Gold Nanoparticles on DNA Origami Scaffolds, *J. Phys. Chem. C*, 117, 12735–12744, (2013).
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- 116 D. Han, S. Pal, Y. Yang, S. Jiang, J. Nangreave, Y. Liu, and **H. Yan**. DNA Gridiron Nanostructures Based on Four-Arm Junctions, *Science*, 339, 1412-1415 (2013).
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- 114 Z. Deng, A. Sanmanta, J. Nangreave, **H. Yan**, and Y. Liu, Robust DNA Functionalized Core/Shell Quantum Dots with Fluorescent Emission Spanning from UV-Vis to Near IR and Compatible with DNA Directed Self-Assembly, *J. Am. Chem. Soc.*, 134, 17424-17427 (2012).
- 113 Y. Yang, D. Han, J. Nangreave, Y. Liu, and **H. Yan**, DNA Origami with Double-Stranded DNA As a Unified Scaffold, *ACS Nano*, 6, 8209-8215 (2012).
- 112 N. Lu, H. Pei, Z. Ge, C. R. Simmons, **H. Yan**, and C. Fan, Charge Transport within A Three-Dimensional DNA nanostructure Framework, *J. Am. Chem. Soc.*, 134, 13148-13151 (2012).
- 111 Q. Jiang, C. Song, J. Nangreave, X. Liu, L. Lin, D. Qiu, Z. Wang, G. Zou, X. Liang, **H. Yan**, and B. Ding, DNA Origami as a Carrier for Circumvention of Drug Resistance, *J. Am. Chem. Soc.*, 134, 13396-13403 (2012).
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- 106 J. Fu and **H. Yan**, Controlled Drug Release by a Nanorobot, *Nature Biotechnol.* 30, 407–408 (2012).
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- 104 Z. Li, L. Wang, **H. Yan**, and Y. Liu, Effect of DNA Hairpin Loops on the Twist of Planar DNA Origami Tiles, *Langmuir*, 28, 1959–1965 (2012).
- 103 A. Pinheiro, D. Han, W. M. Shih, and **H. Yan**, Challenges and Opportunities for Structural DNA Nanotechnology. *Nature Nanotechnology.* 6, 763-772, 2011.
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- 95 S.Pal, R. Varghese, **H. Yan**, and Y. Liu, Site Specific Synthesis and in-situ Immobilization of Fluorescent Silver Nanoclusters on DNA Nanoscaffolds Using Tollens Reaction, *Angew Chem Int Ed*, 50, 4176-4179, 2011.
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  - 91 Z. Zhao, Y. Liu, and **H. Yan**, Encapsulation of Gold Nanoparticles in a DNA Origami Cage, *Angew Chem Int Ed*, 50, 2041-2044, 2011.
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  - 89 D. Han, S. Pal, Y. Liu, and **H. Yan**, Folding and Cutting DNA into Reconfigurable Topological Nanostructures, *Nature Nanotechnology*, 5, 712-717, 2010.
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### **Patents and Patent Applications**

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U.S. Patent issued #7,612,184, Issue date: November 03, 2009.  
Inventors: N. C. Seeman, H. Yan, X. Zhang and Z. Shen
- 2 “DNA Nanostructures that Promote Cell-Cell Interaction and Use Thereof”  
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Inventors: Yung Chang and Hao Yan
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PCT/US61/771,728  
Inventors: Hao Yan, Yan Liu, Zhengtao Deng, Anirban Samanta
  9. Methods for Obtaining Information from Single Cells Within Populations using DNA Origami Nanostructures Without the Need for Single Cell Sorting  
PCT/US 61/834,270  
Inventors: Joseph BLATTMAN, Hao YAN, Louis SCHOETTLE, Xixi WEI
  - 10 Quantum Dots, Rods, Wires, Sheets, and Ribbons, and Uses Thereof  
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PCT/US 60/846,539  
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  - 17 Aptamer Probe for Locating Molecules and Method of Use  
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## Invited Presentations

127. “Designer DNA Nanostructures for Programmable Self-assembly”, College of Chemistry, Changsha, China, August 29, 2017.
126. “Designer DNA Nanostructures for Programmable Self-assembly”, Sixth International Meeting on DNA Nanotechnology, Beijing, China, August 27-28, 2017.
125. “Self-replicating DNA nanostructures”, ONR PI meeting, Arlington, DC, August 2-4, 2017.
124. “DNA Nanostructure Directed Excitonic Networks”, DOE Biomolecular Materials PI meeting, August 2-4, 2017.
123. “DNA Actuated Enzyme Nanoreactors”, SRC/IBM Workshop on Biological pathways for electronic nanofabrication and materials, San Jose, Nov. 17-18, 2016.
122. “Single Stranded DNA and RNA Origami”, RNA Nanotechnology Conference, Berkshire, UK, August 4-8, 2016.
121. “Designer DNA Architectures for Programmable Self-assembly”, 5<sup>th</sup> International Conference on DNA Nanotechnology, Nanjing, China, May 7-9, 2016.
120. “Designer DNA Architectures for Programmable Self-assembly”, Molecular Engineering and Sciences Institute, U. of Washington, Seattle, May 17, 2016.
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118. “Designer DNA Architectures for Programmable Self-assembly”, Department of Chemistry, Tsinghua University, Beijing, Dec. 2, 2015.
117. “Designer DNA Architectures for Programmable Self-assembly”, Department of Chemistry, Peking University, Beijing, Dec. 1, 2015.
116. “Designer DNA Architectures for Programmable Self-assembly”, Workshop on DNA Meets Plasmonics, Bad Honnef, Germany, Dec. 8-10, 2015.
115. “Designer DNA Architectures for Programmable Self-assembly”, Department of Nanoengineering, UCSD, San Diego, Nov. 18, 2015.
114. “Designer DNA Architectures for Programmable Self-assembly”, Nanoday of the 21<sup>st</sup> International Meeting on DNA Computing and Molecular Programming, Boston, August, 21, 2015.
113. “Designer DNA Architectures for Programmable Self-assembly”, KSI Meinsberg, Meinsberg, Germany, June 22, 2015.
112. “Designer DNA Architectures for Programmable Self-assembly”, Department of Physics, Leipzig University, Leipzig, Germany, June 9, 2015.
111. “Designer DNA Architectures for Programmable Self-assembly”, Department of Chemistry, Technical University Dresden, Dresden, Germany, June 4, 2015.
110. “Complex Wireframe DNA Origami Architectures Self-assembled from Multi-arm Junction Vertices”, The 4<sup>th</sup> International Conference on DNA Nanotechnology, Xi’an,

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109. “Designer DNA Architectures for Programmable Self-assembly”, Materials Beyond Symposium, Fudan University, Shanghai, China, April 27-28, 2015.
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  - 104 “Designer DNA Nanoarchitectures for Programmable Self-assembly”, Department of Chemistry, U. of Pittsburgh, Oct.2, 2014.
  - 103 “DNA Origami and the Different Functionalization Techniques”, Plasmonics: Manipulating Light-Matter Interaction at the Nanoscale, Gordon Research Conference, Newry, ME, July 6-11, 2014.
  - 102 “Designer DNA Nanoarchitectures for Programmable Self-assembly”, The Third International DNA Nanotechnology Conference, Suzhou, China, May 25-28, 2014. Co-Chair of Organizing Committee and Plenary speaker.
  - 101 “Designer DNA Nanoarchitectures for Programmable Self-assembly”, International Workshop on DNA-Based Nanotechnology: Digital Chemistry, Dresden, Germany, May 5-9, 2014. Co-Organizer and Invited speaker.
  - 100 “Designer DNA Nanoarchitectures for Programmable Self-assembly”, 40<sup>th</sup> Annual Naff Symposium on Chemistry and Molecular Biology, April 25, 2014. (Keynote speaker).
  - 99 “Designer DNA Nanoarchitectures for Programmable Self-assembly”, Department of Chemistry, U. of Michigan, April 1, 2014.
  - 98 “Designer DNA Nanoarchitectures for Programmable Self-assembly”, Department of Chemistry, U. of Chicago, March 31, 2014.
  - 97 “New Innovations in Biotechnology: Molecular Design and Biomimicry”, Presidential Engagement Program, Building Solutions to Grand Challenges: Creating Societal Impact Through Use-Inspired Research, Arizona State University, March 13, 2014.
  - 96 “Designer DNA Architectures for Programmable Self-assembly”, Bio-Inspired Computing: Theories and Applications 2013 (BIC-TA 2013), Huangshan, China, July 12-14, 2013. (Keynote speaker).
  - 95 “Designer DNA Architectures for Programmable Self-assembly”, 10<sup>th</sup> Annual Conference, Foundation of Nanoscience, Self-assembled Achitectures and Devices, Snowbird, Utah, April 15-18, 2013. (Keynote speaker)
  - 94 “Designer DNA Architectures for Programmable Self-assembly”, Wyss Institute of Bioinspired Engineering, Harvard University, May 13, 2013.

- 93 “Designer DNA Architectures for Programmable Self-assembly”, Department of Bioengineering, MIT, May 9, 2013.
- 92 “Designer DNA Architectures for Programmable Self-assembly”, Department of Chemistry, Penn State Univ, April 3, 2013.
- 91 “Designer DNA Architectures”, DNATEC workshop, Aarhus, Denmark, August 13, 2012.
- 90 “Designer DNA Nanostructures for Nanobiotechnology”, Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA, May 9, 2012.
- 89 “Designer DNA Nanostructures”, Department of Chemistry, University of Nebraska - Lincoln, NE, April 6, 2012.
- 88 “Designer DNA Nanostructures”, Seminar Series in Chemical Biology, Yale University – New Heaven CT, April 4, 2012.
- 87 “Designer DNA Architectures for Nanotechnology”, the 243rd ACS National Meeting, San Diego, CA, March 25, 2012.
- 86 “Designer DNA Architectures”, DNA Nanotechnology Conference: From Structure to Function, Shanghai, China, March 16-19, 2012.
- 85 “Designer DNA Nanostructures”, the 14th IUPAC conference on Polymers and Organic Chemistry, Doha, Qatar, Jan. 6-9, 2012.
- 84 “Designer DNA Nanostructures”, the 17th International Conference on DNA Computing and Molecular Programming, Pasadena, CA, Sept. 19-23, 2011. (Plenary Talk).
- 83 “Designer DNA Nanostructures”, Symposium In Honor of Ned Seeman, The 8th meeting for Foundations of Nanoscience: Self-assembled Architectures and Devices, Snowbird, Utah, April 11-15, 2011.
- 82 “Designer DNA Nanostructures”, iNANO, University of Aarhus, Aarhus, Denmark, Feb. 7. 2011.
- 81 “Designer DNA Nanostructures for Nanobiotechnology”, The 8th iCeMS International Symposium on Meso-Control of Functional Architecture, Kyoto, Japan. November 9-11, 2010.
- 80 “Designer DNA Nanostructures for Nanobiotechnology”, Graduate summer school in molecular self-assembly hosted by the Interdisciplinary Nanoscience Center at Aarhus University, Denmark, Aug. 7-12, 2010.
- 79 “Designer DNA Nanostructures for Nanobiotechnology”, Gordon Research Conference on Nobel Metal Nanoparticles, Mount Holyoke College, MA, June 20-25, 2010.
- 78 “Designer DNA Nanostructures for Nanobiotechnology”, School of Chemistry and Molecular Engineering, East China University of Science & Technology, Shanghai, China, June 13, 2010.
- 77 “Designer DNA Nanostructures for Nanobiotechnology”, Fifth Sino-US Nano Forum, Suzhou Institute of Nanotechnology and Nanobioncs (SINANO), Chinese Academy of Sciences, June 5-7, 2010.
- 76 “Designer DNA Nanostructures for Nanobiotechnology”, Changchun Institute of Applied

- Chemistry, Chinese Academy of Sciences, China, June 1, 2010.
- 75 “Designer DNA Nanostructures for Nanobiotechnology”, School of Chemistry, Shandong University, Jinan, China, May 21, 2010.
  - 74 “Designer DNA Nanostructures for Nanobiotechnology”, Workshop on Bio-directed Assembly, Keystone, CO, May 17-18, 2010.
  - 73 “Designer DNA Nanostructures for Directed Self-assembly”, Center for Nanofabrication, U. of Washington, Seattle, WA, May 4, 2010.
  - 72 “Designer DNA Nanostructures for Nanobiotechnology”, Department of Biomedical Engineering, U. of Washington, Seattle, WA, May 3, 2010.
  - 71 “Designer DNA Nanostructures for Nanobiotechnology”, Foundations of Nanoscience: Self-assembled Architectures and Devices, Snowbird, Utah, April 27-29, 2010. (Keynote speaker).
  - 70 “Designer DNA Nanostructures for Nanobiotechnology”, Symposium OO: Hierarchical Self Assembly of Functional Materials from Nanoscopic- to Mesoscopic-Length Scales: 2010 Material Research Society Spring Meeting, San Francisco, CA, April, 5-9, 2010.
  - 69 “Designer DNA Nanostructures for Nanobiotechnology”, Workshop on Soft Nanomaterial Synthesis, Molecular Foundry, Lawrence Berkeley National Lab, CA, March 19-20, 2010.
  - 68 “Designer DNA Nanostructures for Nanobiotechnology”, Symposium on “Probing the BioNano Self-assembly World”, Pittcon 2010, Orlando, FL, Feb. 28-March 5, 2010.
  - 67 “Designer DNA Nanostructures for Nanobiotechnology”, Session on “DNA Nanomachines in Vitro and Inside Living Cells”, 54<sup>th</sup> Annual Biophysical Society Meeting, San Francisco, CA, Feb. 20-24, 2010.
  - 66 “Designer DNA Nanostructures for Nanobiotechnology”, Biophysics Seminar, Dept. of Physics and Astronomy, Rice University, Houston, TX, Nov. 6, 2009.
  - 65 “Designer DNA Nanostructures for Nanobiotechnology”, nanoUtah2009: 5<sup>th</sup> Annual Utah Statewide Nanotechnology Conference, Salt Lake City, Utah, Oct.16, 2009.
  - 64 “Designer DNA Nanostructures for Nanobiotechnology”, Dept. of Chemical and Nuclear Engineering, U. of New Mexico, Albuquerque, NM, Sept. 29, 2009.
  - 63 “Designer DNA Nanostructures for Nanobiotechnology”, DNA Nanotechnology workshop, National Center for Nanoscience and Technology, Beijing, July 16, 2009.
  - 62 “Designer DNA Nanostructures for Nanobiotechnology”, Dept. of Chemistry, Univ. of Science and Technology of China, Hefei, July 10, 2009.
  - 61 “Designer DNA Nanostructures for Nanobiotechnology”, Institute of Applied Physics, CAS, Shanghai, July 8, 2009.
  - 60 “Designer DNA Nanostructures for Nanobiotechnology”, Materials Science and Engineering Department, Iowa State University, Ames, IA, April. 9, 2009.
  - 59 “Designer DNA Nanostructures for Nanobiotechnology”, Mini-symposium of Center for DNA Nanotechnology, Duke University, Durham, NC, March. 20, 2009.

- 58 “Designer DNA Nanostructures for Nanobiotechnology”, Department of Chemistry, Florida State University, Tallahassee, FL, Feb. 27, 2009.
- 57 “Designer DNA Nanostructures for Nanobiotechnology”, Joint MIT and Harvard Inorganic Chemistry Seminar Series, Department of Chemistry, MIT, Cambridge, MA, Jan. 21, 2009.
- 56 “Designer DNA Nanostructures for Nanobiotechnology”, Departments of Material Science and Mechanical Engineering, UC Santa Barbara, Santa Barbara, CA Oct. 31, 2008.
- 55 “Designer DNA Nanostructures for Nanobiotechnology”. the Joint Symposium of 18th International Roundtable on Nucleosides, Nucleotides and Nucleic Acids (IRTXVIII) and 35th International Symposium on Nucleic Acids Chemistry (SNAC), Kyoto, Japan, September 8th – 12th, 2008.
- 54 “Designer DNA Nanostructures for Nanobiotechnology”. SPIE Optics and Photonics Meeting (Biosensing Symposium), San Diego, CA, August 10-14, 2008.
- 53 “Structural DNA Nanotechnology: Information Guided Self-assembly”, Gordon Research Conference, Session on Bioorganic Chemistry (Organizer: W. A. Van Der Donk & P. L. Richardson), Andover, NH, June. 15-20, 2008.
- 52 “Designer DNA Nanostructures for Nanobiotechnology”. Conference of International Materials and Technologies (CIMTEC08: Symposium E), Sicily, Italy, June 8-13, 2008.
- 51 “Designer DNA Nanostructures for Nanobiotechnology”. International Symposium for DNA based nanodevices, Jena, German, May 29-30, 2008.
- 50 “Designer DNA Nanostructures for Nanobiotechnology”. Foundations of Nanoscience: Self-assembled Architectures and Devices (FNANO08), Snowbird, Utah, April 22-25, 2008.
- 49 “DNA based Nanscale Scaffolds, Assembly and Molecular Robotics”. Office of Naval Research Workshop on DNA based Nanofabrication, Washington DC, April 11, 2008.
- 48 “Designer DNA Nanostructures for Nanobiotechnology”. 3<sup>rd</sup> Annual Arizona Nanotechnology Cluster Symposium, Scottsdale, AZ, April 10, 2008.
- 47 “Designer DNA Nanostructures for Nanobiotechnology”. Department of Chemistry, Texas A &M University, College Station, TX, April 4, 2008.
- 46 “Structural DNA Nanotechnology: Information Guided Self-assembly”, Department of Chemistry and Biochemistry, Brigham Young University, Provo, Utah, March. 27, 2008.
- 45 “Designer DNA Nanostructures for Nanobiotechnology”, 2008 William H. Nichols Symposium, New York Section of the American Chemical Society, White Plains, NY, March. 14, 2008.
- 44 “Structural DNA Nanotechnology: Information Guided Self-assembly”, Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, March. 12, 2008.
- 43 “Structural DNA Nanotechnology: Information Guided Self-assembly”, Department of Chemistry, U. of Central Florida, Orlando, FL, Oct. 12, 2007.
- 42 “DNA Based Self-assembly of Nanostructures”, Symposium MM: Biomolecular and

- Biologically-Inspired Interfaces and Assemblies, Fall 2007 Materials Research Society National Meeting, Boston, MA, Nov 27-Dec. 1, 2007.
- 41 “DNA Based Self-assembly of Nanostructures”, Symposium on Advances in Bio-based Nanostructures and Nanomaterials, 234<sup>th</sup> ACS National Meeting, Boston, MA, Aug. 19-23, 2007.
  - 40 “DNA Based Self-assembly of Nanostructures”, Mini-symposium on DNA based Nanotechnology University of Aarhus, Aarhus, Denmark, Aug. 17, 2007.
  - 39 “DNA Based Self-assembly of Nanostructures”, The Second Advanced Materials Workshop, Dalian, China, June 23-24, 2007.
  - 38 “DNA Based Self-assembly of Nanostructures”, Albany 2007: The 15<sup>th</sup> Conversation, Albany, New York, June 21, 2007.
  - 37 “DNA Based Self-assembly of Nanostructures”, NSF Center for Hierarchical Manufacturing, U. of Massachusetts, Amherst, MA, May 17, 2007.
  - 36 “DNA Based Self-assembly of Nanostructures”, Nanoscience and Nanotechnology Session 2006 SACNAS, Tampa, Fl, Oct. 27, 2006.
  - 35 “DNA Based Self-assembly of Nanostructures”, Bionanotechnology Symposium organized by Canadian institute for advanced research, Toronto, Canada, Oct. 14-15, 2006.
  - 34 “DNA Based Self-assembly of Nanostructures”, Department of Chemistry, Hunter College, CUNY, New York, NY, Sept. 29, 2006.
  - 33 “DNA Based Self-assembly of Nanostructures”, National Center for Nanoscience and Technology, Beijing, China, June 19, 2006.
  - 32 “DNA Based Self-assembly of Nanostructures”, Department of Chemistry, Tsinghua University, Beijing, China, June 19, 2006.
  - 31 “DNA Based Self-assembly of Nanostructures s”, Interdisciplinary Nanoscience Center (iNANO), University of Aarhus, Aarhus, Denmark, May 24, 2006.
  - 30 “DNA Based Self-assembly of Nanostructures”, Department of Physics, Leiden University, Leiden, Netherland, May 22, 2006.
  - 29 “DNA Based Self-assembly of Nanostructures”, International Symposium on DNA-Based Nanoscale Integration, Jena, Germany, May 18-20, 2006.
  - 28 “DNA Based Self-assembly of Nanostructures”, Symposium on Frontier of Nanoscience, Auburn University, Auburn, AL, May. 2, 2006.
  - 27 “DNA Based Self-assembly of Nanostructures”, NSF workshop: The Synthesis of Complex Chemical Systems, Oxfordshire, UK, March 19-21, 2006.
  - 26 “DNA Based Self-assembly of Nanostructures”, Department of Physics, University of Oxford, Oxford, UK, Mar. 17, 2006.
  - 25 “DNA Based Self-assembly of Nanostructures”, VIII Annual Linz Winter Workshop on Single Molecule Research, Linz, Austria, Feb. 3-7, 2006.
  - 24 “DNA Based Self-assembly of Hierarchical Nanostructures”, Arizona Nanocluster

- Symposium, Organized by Quanttera Co., Tempe, AZ, Jan. 26, 2006.
- 23 “DNA Based Self-assembly of Hierarchical Nanostructures”, Mini-Symposium on DNA Self Assembly and Robotics, Columbia University, New York, NY, Dec. 16, 2005.
  - 22 “DNA Based Self-assembly of Hierarchical Nanostructures”, NSF Workshop: Emerging Opportunities of Nanoscience to Energy Conversion and Storage, Arlington, VA, Nov 21-22, 2005.
  - 21 “DNA Based Nanobiotechnology”, Department of Biomedical Engineering, Cornell University, Ithaca, NY, Oct. 6, 2005.
  - 20 “DNA Based Nanobiotechnology”, Department of Chemical Engineering, Hong Kong University of Science and Technology, Hong Kong, Aug. 2, 2005.
  - 19 “DNA Based Nanobiotechnology”, 2005 Scanning Probe Microscopy, Sensors and Nanostructures Meeting, Cancun, Mexico, June 6, 2005.
  - 18 “DNA Based Nanobiotechnology”, Session on Developing Nano-Bio Interfaces, 2005 MRS Spring Meeting, San Francisco, CA. March 28-April 1, 2005.
  - 17 “DNA Based Nanobiotechnology”, 2005 Arizona Imaging and Microanalysis Society Annual Meeting, Tempe, AZ, March 22, 2005.
  - 16 “DNA Based nanotechnology: pattern and motion”, Engineering a DNA World, Workshop sponsored by California Institute of Technology, Center for Biological Circuit Design Rock Auditorium, Broad Center for Biological Sciences, Pasadena, CA, Jan. 7, 2005.
  - 15 “DNA Based Nanobiotechnology”, Structure of Nanocrystals Workshop Sponsored by Michigan State University, Tempe, AZ, Dec. 5-8, 2004.
  - 14 “DNA Based Nanotechnology: Pattern and Motion”. ACS Rocky mountain analytical section, Denver, CO, Aug. 2, 2004.
  - 13 “DNA Self-assembly, Nanoactuators and Autonomous Unidirectional DNA Motor”. Max Bergmann Zentrum fur Biomaterialien, Technische Universitat Dresden, Germany, May 18, 2004.
  - 12 “New Structures for DNA based Nanotechnology”. DNA-Based Molecular Electronics, International Symposium, Jena, Germany, May 15, 2004.
  - 11 “DNA Nanoactuator in Self-assembly”. Foundations of Nanoscience: Self-assembled Architectures and Devices, Snowbird, Utah, April 21-23, 2004.
  - 10 “DNA Self-assembly, Nanoactuators and Autonomous Unidirectional DNA Motor”. 320th WE-Heraeus-Seminar "Nano-Physics of DNA" Physikzentrum Bad Honnef, Germany, Mar. 23, 2004.
  - 9 “DNA Nanoactuators in Self-assembly”. DARPA IPTO Workshop for Molecular Architectures from Self-Assembled Nanostructures, Adelphi, MD, Feb. 3-5, 2004.
  - 8 “DNA self-assembly for nanoconstruction and molecular robotics”. Dept. of Chemistry and Chemical Biology, Harvard University, Cambridge, MA, Jan. 18, 2003.
  - 7 “Overview of New Structures for DNA-based Nanofabrication and Computation”. 6<sup>th</sup> International Conference on Computational Intelligence and Natural Computing, Cary, NC,

- Sept. 26-30, 2003.
- 6 “Self-assembly of DNA for Computing and Molecular Robotics”. Department of Chemistry, Duke University, Durham, NC, Sept. 12, 2003.
  - 5 “Self-assembly of DNA for Nanofabrication, Computing and Molecular Robotics”. Department of Quantum Molecular Devices. Osaka University, Osaka, Japan, Aug. 11, 2003.
  - 4 “Self-assembly of DNA for Nanofabrication and Molecular Robotics”. Graduate School of Arts and Sciences, College of Arts and Science, University of Tokyo, Tokyo, Japan, Aug. 9, 2003.
  - 3 “Self-assembly of DNA for Nanofabrication, Computing and Molecular Robotics”. Graduate School of Engineering, Hokkaido University, Sapporo, Japan, Aug. 5, 2003.
  - 2 “Tutorial: Self-assembly of Nanostructures”. 9<sup>th</sup> International Meeting on DNA Based Computers, Madison, WI, June 1, 2003.
  - 1 “Molecular Robotics for DNA Nanostructures”. DARPA IPTO/NSF Bio-Computation/QIS Joint PI Meeting, Fort Lauderdale, FL, May 16, 2003.

### Past Research Support

<i>National Science Foundation</i> “Molecular Robotics for DNA Nanostructures” Award amount: \$349,950 Role: PI	8/02-08/06
<i>National Science Foundation</i> “NANO: Combinatorial Self-assembly of Nanocircuit on Addressable DNA Nanoscaffolds” Award amount: \$300,000 Role: PI	8/04-07/07
<i>AZTE Innovation Catalyst Fund</i> “A Protein Detection Technology based on Aptamer Binding” Award amount: \$40,000 Role: PI	8/05-07/06
<i>National Science Foundation</i> “Career: DNA Directed-Self-assembly of Multicomponent Nanoarchitectures” Award amount: \$400,000 Role: PI	8/06-07/11
<i>National Institute of Health</i> “R21: Water-soluble Arrays for Personalized Medicine” Award amount: \$560,255 Role: co-PI; PI: S. Lindsay, co-PI: H. Yan, P. Zhang	9/06-08/09
<i>National Science Foundation</i>	9/06-08/10

“NIRT: Self-assembly at Photonic and Electronic Scale”  
 Award amount: \$1,100,000  
 Role: co-PI; PI: S. Lindsay, co-PI: H. Yan, D. Gust, R. Diaz  
*Office of Naval Research* 12/06-11/09  
 “Nanodisplay: A Self-assembly Approach to Inorganic Nanoarrays”  
 Award amount: \$450,000  
 Role: PI; co-PI: J. Chaput  
*Air Force Office of Scientific Research* 1/07-11/09  
 AFOSR-YIP “Self-assembled Combinatorial Encoding Nanoarrays  
 for Multiplexed Biosensing”  
 Award amount: \$355,533  
 Role: PI  
*National Science Foundation* 08/07-07/10  
 “Material World Network: Self-assembled DNA Nanotubes: Biomimetic  
 Design, Controlled Surface Alignment and Templated Nanowire Formation”  
 Award amount: \$276,000  
 Role: PI  
*National Science Foundation* 09/07-08/10  
 “Emerging Model Technology: Self-assembled Inductors: A New Paradigm for  
 Nanoelectronic Designs”  
 Award amount: \$650,001  
 Role: co-PI; PI: Hongbin Yu, co-PI: H. Yan, Y. Cao, B. Bakkaloglu  
*Alfred P. Sloan Foundation* 04/08-03/10  
 Research Fellowship  
 Award amount: \$50,000  
 Role: PI  
*National Institute of Health* 07/08-07/12  
 “1R01 DA026296-01: Feasibility Demonstration of an Artificial Electrocyte for Neuronal  
 Observation and Stimulation”  
 Award amount: \$1,200,000  
 Role: co-PI; PI: R. Diaz, co-PI: T. Moore  
*National Science Foundation* 07/08-07/12  
 “EMT-MISC: Behavior Based Molecular Robotics”  
 Award amount: \$2,200,000  
 Role: co-PI; PI: M. Stojanovic and 5 other co-PIs  
*Army Research Office* 08/08-07/11  
 “Self-assembling DNA architectures for Bio-inspired Engineering of Discrete and  
 Multifunctional Nanostructures”  
 Award amount: \$300,000  
 Role: PI; co-PI: Yan Liu

<p><i>Office of Naval Research</i>  “Guided DNA Fabrication of Nanometer Scale Electron Devices and Sensors”  Award amount: \$960,000  Role: co-PI; PI: N. C. Seeman, co-PIs: S. Chou, C. Mao</p>	<p>12/08-11/10</p>
<p><i>DOD-CDMRP</i>  “Multi-Specific Aptamer-nanoscaffolds to Induce Aptamer-dependent Cellular Cytotoxicity (ApDCC) against Breast Cancer Cells”  Award amount: \$106,848  Role: co-PI, PI: Yung Chang, co-PI: Yan Liu</p>	
<p><i>Office of Naval Research</i>  “Protein Arrays with Precisely Controlled Orientation and Position”  Award amount: \$470,000  Role: PI; co-PI: William Shih</p>	<p>01/10-12/12</p>
<p><i>Army Research Office</i>  “Workshop on Bio-Directed Assembly, Keystone, Co, 18-19 May 2010”  Award amount: \$49,500  Role: PI</p>	<p>03/10-08/10</p>
<p><i>National Institute of Health</i>  “1R21CA141021-01A2: Tunable DNA-nanostructure to Induce NK-mediated Killing of Tumor Cells”  Award amount: \$352,735  Role: co-PI; PIs: Y. Chang, co-PI: Y. Liu, H. Yan</p>	<p>05/10-04/12</p>
<p><i>Army Research Office</i>  “High School Student Training Opportunity in a Structural DNA Nanotechnology Laboratory”  Award amount: \$9,150  Role: PI</p>	<p>07/10-06/11</p>
<p><i>National Science Foundation</i>  Enzymology of Multi-enzyme Systems on Self-assembled Surfaces  Award amount: \$401,000  Role: Co-PI; PI: Neal Woodbury</p>	<p>12/10-11/13</p>
<p><i>National Institute of Health</i>  “R21 DA030045: Tunable Nicotine DNA-Nanovaccines”  Award amount: \$319,120  Role: co-PI; PI: Y. Chang, co-PI: H. Yan, S. Hecht</p>	<p>04/11-03/12</p>
<p><i>Office of Naval Research</i></p>	<p>06/11-06/12</p>

“High Speed Atomic Force Microscope for Real Time Imaging of Biomolecular Assembly”

Award amount: \$ 309,123

Role: PI

*Department of Energy*

08/09-07/14

EFRC: Bio-inspired Solar Fuel

Award amount: \$14.2 million

Role: co-PI with 10 others

*Office of Naval Research*

08/09-08/14

“DNA-based Three-dimensional Nanofabrication”

Award amount: \$3,200,000

Role: PI; co-PI: 8 others

*National Science Foundation*

09/11-08/14

“DNA Origami Nanostructures with Complex Curvatures in 3D Space”

Award amount: \$400,000

Role: PI; co-PI: Y. Liu

*National Institute of Health*

08/09-05/14

“1R01 GM088818-01: Water Soluble Nanoarrays for Single Cell Proteomics”

Award amount: \$1,500,000

Role: PI; co-PIs: S. Lindsay, Y. Liu, D. Meldrum

*National Science Foundation*

07/12-06/16

“INSPIRE: Mimicking the Functional Complexity of Biology with Man-Made Systems”

Award amount: \$1,000,000

Role: co-PI; PI: N. Woodbury, co-PI: H. Yan, S. Johnson, S. Lindsay

*Army Research Office*

05/11-05/15

“Molecular Engineering of Self-assembled Nanoreactors”

Award amount: \$470,000

Role: PI; co-PI: Y. Liu

## Current Research Support

*Army Research Office*

08/12-07/17

“MURI-Translating Biochemical Pathways to Non-cellular Environments”

Award amount: \$6,250,000

Role: PI; 5 other co-PIs

*National Institute of Health*

09/12-08/17

“1R01GM104960: NIH-Transformative Research Award: Theranostic Nano-objects: Basic Principles and Initial Applications”

Award amount: \$5,400,000

Role: co-PI; PI: Milan Stojanovic

*National Institute of Health*

04/13-03/17

“1R01DA035554-01: Rational Design and Targeted Selection of DNA-scaffolded Nicotine Vaccines”

Award amount: \$3,350,000

Role: co-PI; PI: Yung Chang

*National Science Foundation*

01/14-12/17

“DMREF: Computational Design Principles for Functional DNA-Based Materials”

Award amount: \$1,706,468

Role: co-PI; PI: M. Bathe, co-PI: P. Yin

*National Science Foundation*

07/14-7/17

“Self-assembling Quasi-crystals from DNA Tiles”

Award amount: \$390,000

Role: PI; co-PI: Y. Liu

*Office of Naval Research*

09/15-08/18

“Self-replicating DNA Nanostructures”

Award amount: \$450,000

Role: PI; co-PI: Y. Liu

*National Science Foundation*

08/15-07/17

“EAGER: Collaborative Research: Algorithmic Design Principles for Programmed DNA Nanocages”

Award amount: \$145,000

Role: PI

*National Institute of Health*

08/15-07/17

“Single Cell Technologies for Rapid Detection of Tumor Heterogeneity”

Award amount: \$796,130

Role: Co-I; PI: Karen Anderson, co-PI: Joseph Blattman

*National Institute of Health*

06/16-05/18

“DNA Origami Nanostructures for Single-Cell Multi-Gene Analysis Without Single Cell Sorting”

Award amount: \$440,000

Role: co-PI; PI: Joseph Blattman

*National Institute of Health*

03/16-02/18

“Switchable Molecular Nanoprobes for Fast and Specific Intraoperative Diagnosis of Brain Tumors”

Award amount: \$410,000

Role: PI; co-PI: Peter Nakaji

*National Science Foundation* 04/16-03/20  
“AF: Medium: Collaborative Research: Top-down algorithmic design of structured nucleic acid assemblies”  
Award amount: \$560,755  
Role: PI

*Department of Energy* 08/16-06/19  
“DNA nanostructure directed designer excitonic networks”  
Award amount: \$899,000  
Role: PI; co-PIs: Neal Woodbury, Mark Bathe, Yan Liu, David Whitten

*National Science Foundation* 08/16-07/19  
“Bilateral NSF/BIO-BBSRC: Synthetic DNA Nanopores for Selective Transmembrane Transport”  
Award amount: \$500,000  
Role: PI

*Office of Naval Research* 8/16-8/17  
“Mass Spectrometry Instrument for Mass Determination of Protein and Nucleic Acid Conjugates”  
Award amount: \$300,000  
Role: PI

*National Science Foundation* 8/16-8/17  
“DMREF: Computational Design of Next-generation Nanoscale DNA-based Materials”  
Award amount: \$1,600,000  
Role: co-PI

## Teaching Experience

### A. Courses Taught

Year	Semester	Course	Title	Credit hours	Enrollment
2017	Spring	BCH361	Principle of Biochemistry	3	170
2016	Fall	BCH461	General Biochemistry	3	105
2016	Spring	BCH361	Principle of Biochemistry	3	157

2014	Fall	CHM460	Biological Chemistry	3	14	
2012	Fall	BCH461	Biochemistry	3	134	
2011	Fall	BCH461	Biochemistry	3	108	
2011	Spring	BCH494	Bionanotechnology	3	24	
2010	Fall	Sabbatical				
2009	Spring	Teaching Release				
2009	Fall	BCH461	Biochemistry	3	85	
2009	Spring	CHM598	Bionanotechnology	3	24	
2008	Fall	CHM461	Biochemistry	3	140	
2008	Spring	BCH598	Bionanotechnology	3	14	
2007	Fall	CHM460	Biological Chemistry	3	20	
2007	Spring	BCH598	Bionanotechnology	3	6	
2006	Fall	CHM460	Biological Chemistry	3	15	
2006	Spring	BCH561	Advanced Topics in Biochemistry	3	11	
2006	Spring	BCH598	Nucleic Acid and Nanobiotechnology	3	23	
2005	Fall	<i>Approved Release Before Tenure</i>				
2005	Spring	<i>Approved Release Before Tenure</i>				
2004	Fall	BCH501	Current Topics in Biochemistry	1	21	
2004	Fall	CHM598	Nucleic Acid and Nanobiotechnology	3	24	

## B. Graduate Student Mentees

Student	Year Enrolled	Research Area
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Kyle Lund	Fall 04	Self-assembled DNA Molecular Pegboards and Spiral Tubes
Rahul Chhabra	Fall 04	DNA Tweezer and Templated Nanoparticle Assembly
Sherri Harvey	Fall 04	<i>in-vivo</i> Replication of DNA Nanostructures
Yonggang Ke	Spring 05	Water-soluble Nanoarrays for Gene Expression Detection
Chenxiang Lin	Spring 05	Combinatorial Barcode Nanoarrays
Jaswinder Sharma	Spring 05	Quantum Dot Based Nanoassembly and Biosensing
Jeanette Nangreave	Fall 07	Thermodynamics and Kinetics of DNA Nanostructures
Zhe Li	Fall 07	Higher Order Assembly of DNA Nanostructures
Zhao Zhao	Fall 08	Complementary Geometry for Self-assembly
XiXi Wei	Fall 08	Interfacing DNA nanostructures with live cells
Minghui Liu	Fall 08	Multi-enzyme Cascade Engineering
Suchetan Pal	Fall 08	DNA templated Nanophotonics
Xiaowei Liu	Fall 08	DNA Nanostructure Vaccines
Wei Li	Fall 09	DNA Computing
Palash Dutta	Fall 09	Multifunctional and Multicomponent Nanostructures
Dongran Han	Fall 09	3D DNA Origami with Complex Curvatures
Anirban Samanta	Fall 09	Quantum Dot Nanobiotechnology
Fei Zhang	Fall 10	Complex DNA Nanostructures
Shuoxing Jiang	Fall 11	Kinetics of DNA Self-assembly
Yuhe Yang	Fall 11	DNA Directed Enzyme Cascades
Saswata Banerjee	Fall 12	Theranostic Nanorobots
Angela Edwards	Fall 12	Thermodynamics and Kinetics of DNA Nanostructures
Yu Zhou	Fall 13	Single cell Analysis
Fan Hong	Fall 14	Dynamic DNA nanotechnology
Swarup Dey	Fall 15	DNA nanopore
Raghu Narayanan	Fall 15	DNA-peptide hybrid materials
Xu Zhou	Fall 16	DNA-directed excitonic networks

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**Other Student Thesis Committees (current total: 32):** Lisha Lin, Margaret Barnhart, Devendra Chauhan, Vikas Garg, Netra Joshi, Rawiwan Laocharoensuk, Yun Xiang, Sandip Shinde, Balakumar Thangaraj, Yang Li, Christopher Bley, Justin York, Jessica Troxel, Jinglei Zhang, Shahid Oamar, Mingyi Xie, Di Wu, Xiaodong Qi, Qin Yan, Yinan Liu, Berea

Williams, Jennifer Watkins, Qiang Fu, Wen Wen, Terannie Vazquez-Alvarez, Su Zhang, Kaushik Gurunathan, Smitha Pillai, Jinglin Fu, Brandon Forrest, Linda Stearns, Jeanine Cordova, Anindya Roy, Jesse Bergkamp, Benjamin Sherman, Katherine Wong, Robin Paul, Justin Flory, Hao Liu, Annie Tang, Yangyang Tang

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**C. Postdoctoral Researcher Mentees:** Dr. Junping Zhang, Dr. Qiangbin Wang, Dr. Xiaojun Guan, Dr. Zhengtao Deng, Dr. Reji Varghese, Dr. Yang Yang, Dr. Jinglin Fu, Dr. Alessio Andreoni, Dr. Ryan Nangreave, Dr. Sarah Henry, Dr. Xiaodong Qi, Dr. Zhilei Ge, Dr. Xiaowei Liu, Dr. Nour Eddine, Dr. Xiang Lan, Dr. Zhi Zhao

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**D. Undergraduate Student Mentees:** David Hirschak, Thuy Thong, Bruce Norish, Mike Pease, Henry Lu, Christina Calhoun, Enoch Chiang, Danielle Niren, Sam Gowland, Ashely Hunt, Lucas Johnson

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**E. High School Student and Teacher Mentees:** Robert Barish, Patrick Vedeou, Alex Foyer, Tom Bundy, Jimmy Wang, Sharon New (Barsha High School teacher).

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**F. Current Status of Lab Alumni:**

Chengxiang Lin, Assistant Professor, Yale University  
Qiangbin Wang, Professor, Suzhou Institute of Nanotech and Nano-bionics, CAS, China  
Baoquan Ding, Professor, National Center of Nanoscience and Nanotechnology, CAS, China  
Reji Varghese, Assistant Professor, Indian Institute of Science Education and Research  
Kyle Lund, Liaison Officer and Biodefense Scientist at Centre de Transfusion Sanguine des Armées  
Yonggang Ke, Assistant Professor, Joint Bioengineering Department, Emory and Georgia Tech.  
Jaswinder Sharma, Staff Scientist, Oak Ridge National Lab  
Rahul Chhabra, Senior Scientist, Nanoanalytics Inc.  
Sherri Rinker, Research Scientist II at AIT Bioscience  
Suchetan Pal, Postdoc, Brookhaven National Lab  
Dongran Han, Postdoc, Harvard University  
Zhengtao Deng, Professor, Nanjing University  
Jinglin Fu, Assistant Professor, Rutgers University, Camden  
Zhe Li, Postdoc, Yale University  
Jeanette Nangreave, Teaching faculty, ASU  
Ryan Nangreave, Teaching faculty, ASU  
Andre Pinheiro, Consultant at ICON P&MA  
*Junping Zhang*, Material Scientist, Carestream Health-Advanced Materials  
Zhao Zhao, Postdoc, Harvard Medical School  
Anirban Samanta, Postdoc, Naval Research Laboratory  
Palash Dutta, Postdoc, Emory University  
Yuhe Yang, Postdoc, Scripps Research Institute  
Alessio Andreoni, Postdoc, NIH

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## Other Service

### University and Departmental Service

Biodesign Institute Executive Directorate Committee (2015-present)  
President Crow's Academic Council (2014-present)  
Member: Faculty Search Committee for Cryo-EM faculty search (2015)  
Chair: Faculty Mentoring Committee, SMS (2016-present)  
Chair: Faculty Search Committee for Molecular Design and Biomimetics (2016)  
Co-Chair: Faculty Search Committee for Molecular Design and Biomimetics (2015)  
Chair: Faculty Search Committee for Molecular Design and Biomimetics (2014)  
Chair: Faculty Search Committee for Molecular Design and Biomimetics (2013)  
Member: Faculty Search Committee for Joint Physics/Biodesign Biophysics Appointment (2011&2012)  
Member: Departmental Strategic Planning Committee (2012-present)  
Member: Departmental Graduate Program Committee (2010 - 2012)  
Chair: Departmental Seminar Committee (2008 - 2010)  
Co-chair: Biodesign Institute Personnel Committee (2009-present)  
Member: Departmental Seminar Committee (2006-2008)  
Member: Departmental Seminar Committee (2004-2005)  
Member: Departmental Septannual Review Committee (2005)  
Member: Faculty Search Committee for biophysical theory position (2005)

### Outside of ASU

#### A. Conference Program Committees:

President, International Society for Nanoscale Science, Computation and Engineering (2013-2015).  
Co-organizer and Scientific Coordinator for DNATEC17, Dresden, Germany (2017).  
Co-organizer for the Fifth International DNA Nanotechnology Conference, Nanjing, China (2016).  
Co-organizer for the Fourth International DNA Nanotechnology Conference, Xi'an, China (2015).  
Co-organizer for the Third International DNA Nanotechnology Conference, Suzhou, China (2014).  
Co-organizer for DNATEC14: Digital Chemistry, Dresden, Germany (2014).  
Chair of Organizing Committee for the 19<sup>th</sup> International Meeting in DNA Computing and

Molecular Programming (2013).

Member of Steering Committee for International Meeting in DNA Computing and Molecular Programming (2013).

Co-organizer, Symposium “DNA Nanotechnology” MRS Spring Meeting (2012).

International Advisory Board Member of *Symposium H "Mining Smartness from Nature"* of CIMTEC (2012).

Chair, Symposium in Honor of Ned Seeman, Snowbird, Utah, April 11 (2011).

Member of Steering Committee, International Conference on Bio-Inspired Computing: Theory and Applications (*BIC-TA*) (2011).

Chair, Workshop on “Bio-directed Assembly”, Keystone, CO, May 18-19 (2010).

Chair, Session on “DNA Nanomachines *in vitro* and Inside Living Cells”, 54<sup>th</sup> Annual Biophysical Society Meeting, San Francisco, CA, Feb. 20-24 (2010).

Co-Organizer, DNA Nanotechnology Workshop, Beijing, China, July 15-18 (2009).

Co-Organizer, International Workshop on DNA-based Nanotechnology: Construction, Mechanics, and Electronics, Dresden, Germany, May 11-15 (2009).

International Advisory Board Member: 3<sup>rd</sup> International Conference on “Smart Materials, Structures and Systems”--Symposium E: “Mining Smartness from Nature”, Sicily, Italy (2008).

Treasurer, International Society for Nanoscale Science, Computation and Engineering (2008).

Program track co-Chair, Track on Self-assembled DNA nanostructures, Fifth Conference on Foundations OF Nanoscience: Self-assembled Architectures and Devices (FNANO08), Snowbird, Utah (2008).

Program Committee Member: the 16<sup>th</sup> International Meeting for DNA Computing, Hong Kong (2010).

Program Committee Member: the 15<sup>th</sup> International Meeting for DNA Computing, Little Rock, Arkansas (2009).

Program Committee co-Chair: the 13<sup>th</sup> International Meeting for DNA Computing, Memphis (2007).

Program Committee Member: the 12<sup>th</sup> International Meeting for DNA Computing, Seoul, Korea (2006).

Program Committee Member: the 11<sup>th</sup> International Meeting for DNA Computing, London, Ontario, Canada (2005).

Program Committee Member: the 10<sup>th</sup> International Meeting on DNA-based Computers, Milano, Italy (2004).

Program Committee Member: DNA-Based Semantic Information Processing, KES'04- 8th Int'l Conference on Knowledge-Based Intelligent Information & Engineering Systems, Wellington, New Zealand (2004).

Session Chair: The Seventh International Meeting on Scanning Probe Microscopy, Cancun, Mexico (2005).

**B. Editorial:**

Member of Editorial Board, Nano Research, 2014 to Present

Member of Editorial Board, Nature Scientific Report, 2016 to Present

Editorial Advisory Board Member, Langmuir (2012-present).

Guest Co-editor: Natural Computing: Special Issue: DNA Computing Conference (2007).

Guest editor: *Proc. Natl. Acad. Sci.*

Guest co-editor: *Accounts of Chemical Research* special issue on DNA nanotechnology

**C. Grant Review Panel:**

Panelist and Ad Hoc Reviewers for National Science Foundation (2003-2013).

Panelist: National Institute of Health (2004).

Ad Hoc Reviewer: ACS petroleum fund (2005).

Ad Hoc Reviewer: Research Cooperation (2007).

Ad Hoc Reviewer: Department of Energy (2010-present).

Invited Member of Review Panel at the Molecular Foundry in Lawrence Berkeley Laboratory.

Invited Member of Review Panel at the Los Alamos National Laboratory.

**D. Manuscript Review:**

Review of manuscripts for: *Science*, *Nature*, *Nature Materials*, *Nature Nanotechnology*, *Nature Protocols*, *Nature Chemistry*, *Nature Communication*, *Nature Methods*, *Proc. Natl. Acad. Sci.*, *J. Am. Chem Soc.*, *Angew Chem. Int. Ed.*, *Nano Letter*, *Small*, *ACS Nano*, *Advanced Material*, *Advanced Functional Materials*, *Nanotechnology*, *Chemistry of Materials*, *Chem. Comm*, *Biomacromolecules*, *Langmuir*, *ChemBioChem*, *ChemPhysChem*, *Nanomedicine*, *Nucleic Acid Research*

**E. Professional Affiliations:**

Member of American Chemical Society, Material Research Society, American Association for the Advancement of Science, International Society for Nanoscale Science, Computation and Engineering.