

BIOGRAPHICAL SUMMARY OF QUAN QING

Department of Physics
College of Liberal Arts and Sciences
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ACADEMIC TRAINING

2006-2012	Postdoctoral Research Associate	Harvard University
2001-2006	Ph.D. in Physical Chemistry	Peking University
1997-2001	B.S. in Chemistry	Peking University

PROFESSIONAL EXPERIENCE

2025/01-2025-02	Interim Chair, Physics Department, Arizona State University
2023-present	Associate Chair, Physics Department, Arizona State University
2019-present	Associate Professor, Honors Faculty Arizona State University
2013-2019	Assistant Professor, Honors Faculty Arizona State University

ACADEMIC AND PROFESSIONAL AWARDS

Award for Progress of Science and Technology, Third Prize, Beijing, China (2008), Natural Science Award, First Prize, Ministry of Education, China (2007), Outstanding Graduate Research Award, CCME, Peking University (2006), Samsung Fellowship Award, Peking University (2005), Bao Gang Fellowship Award, Peking University (2001), Guanghua Fellowship Award, Peking University (2000), Chuying Fellowship Award, Peking University (1998), Wusi Fellowship Award, Peking University (1997-1999)

RESEARCH INTERESTS

My main research interest lies in the interdisciplinary area of nanoscience and biology/biophysics. I focus on rational synthesis and assembly of low-dimensional materials into functional devices, and innovations of bio-probes based on nanoscale building blocks to bridge solid-state electronics and fluidic structures with biological systems at molecular and cellular levels.

Specifically, ongoing research projects include:

- Chemical vapor deposition of Si nanowires and 1D Si/Ge heterostructures
- Nanoscale field-effect transistors based on 1D semiconductive nanomaterials
- Label-free protein/DNA/RNA sensing in physiological environments
- Solid-state nanopore sensors embedded within metal nanoelectrode pairs (NanoElectroPore) for single-molecule level DNA mapping and sequencing
- Spatiotemporally modulated electric field tuning the intra-/inter-cellular signaling pathways to study the coupling of the biochemical, electrical and mechanical (BEM) networks
- Implantable ultra-small bio-probes for interfacing with functional cell circuitries, creating hybrid structures of nanoscale electronics and living cell networks/tissues for bidirectional communication and biomimetic information processing

GRANTS & FUNDING

ASU-Mayo Seed Grant Qing(PI) \$100,000, 2023–2024
Q-NEP for CAR T-cell biomarker detection
Role: Single PI

MURI Z8165001 Losert (PI) 04/01/2016-03/31/2019, \$4,497K total, \$1,050K for my group.
Extension of support for another two years approved in 2019, \$700K for my group 04/01/2019-03/31/2021
DOD / AFSOR
Additional support for 12 months awarded, \$350K for my group 04/01/2021-03/31/2022
DOD / AFSOR
Understanding and Controlling the Coupled Electrical, Chemical, & Mechanical Excitable Networks of Living Systems
Role: Subaward PI

NIH HG011079-01 Lindsay (PI) 6/1/2020-5/31/2023
Sequencing by Direct Electrical Measurements of Polymerase Fluctuations
Role: Co-Investigator

ASUCF Catalyst Award Qing (PI) 2022/04-2023/03, \$20,236
Tunneling Enhanced Raman Spectroscopy Using NanoElectroPore Devices for Direct DNA Sequencing
Role: Single PI

DURIP Qing (PI) 02/01/2021-01/31/2022, \$185K
DOD / AFSOR
Customized Imaging System For Precise Manipulation Of Neuronal Differentiation And Neuroplasticity By Spatiotemporally Encoded AC EF
Role: Single PI

R21 EB020822 Qing (PI) 09/01/2015-08/31/2018, \$381K
NIH / NIBIB
Freestanding Nanowire Transistor Probes for Intracellular and Implanted Recording
Role: PI

R21 HG009363 Qing (PI) 01/01/2017-12/31/2018, \$389K
NIH / NHGRI
Scalable Fabrication and Recognition Tunneling Sequencing Study of Gated Nanopore Self-embedded in Transverse Metal Nanojunctions
Role: PI

Pending support

R61 CA302654 Qing (PI) 07/01/2025-06/30/2028
NIH / NCI

Detection and quantification of key biomarkers in CAR-T cell therapy with Quantum-NanoElectroPore (Q-NEP)

Role: PI

R43 HG014441 Zhang(PI) 04/01/2025-03/31/2026

NIH / NHGRI

Parallel Mapping of Modified Cytosines in Genomic DNA Using Quantum-NanoElectroPore Devices

Role: consortium PI

PUBLICATIONS

Summary: 34 peer-reviewed papers and 14 issued patents and patent applications.

Total citations: **6900** by Google Scholar (2025/04)

H-Index by Google Scholar (2025/04): **22**.

Search Method: <http://scholar.google.com/citations?user=C2k9lQQAAAAJ>

NCBI: <https://www.ncbi.nlm.nih.gov/myncbi/14I-ospo0Nu5-/bibliography/public/>

Peer-reviewed papers (original work)

Symbols: * Corresponding author, # Equal contribution, underscored name: from Qing group

Authors are listed in published order representing their contribution to the work from high to low (unless explicitly labeled as equal contribution) with the senior/corresponding authors listed last. Some journals, for example, *Nature* and its sister journals, and *PNAS* note explicitly the contribution of authors in a special section at the end of the paper.

Since employment at ASU

1. Hu M.#, Li H.#, Zhu K., Guo L., Zhao M., Zhan H., Devreotes P.N., Qing Q.*, Electric field modulation of ERK dynamics shows dependency on waveform and timing, *Scientific reports* 14 (1), 3167 (2024)
2. Yang, Q., Miao, Y., Banerjee, P., Hourwitz, M.J., Hu, M., Qing, Q., Iglesias, P.A., Devreotes, P.N., Fourkas, J.T., Losert, W., Nanotopography modulates intracellular excitable systems through cytoskeleton actuation, *PNAS* 120(19), e2218906120, (2023)
3. Zhu K., Guo L., Patel P., Albeck J., Qing Q., W Losert, M Zhao, Protocol for electrical modulation of ERK signaling dynamics in cell lines, *STAR protocols* 3 (4), 101752, (2022)
4. Wang, Y., Sadar, J., Tsao, C.W., Mukherjee, S., Qing, Q.*, Nanopore Chip with Self-Aligned Transverse Tunneling Junction for DNA Detection, *Biosensors and Bioelectronics* 193, 113552, (2021)
5. Guo, L.#, Li, H.#, Wang, Y., Li, Z., Albeck, J., Zhao, M.*, Qing, Q.*, Controlling ERK Activation Dynamics in Mammary Epithelial Cells with Alternating Electric Fields through Microelectrodes, *Nano Letters*, 19 (10), 7526-7533, (2019)
6. Jiao, X., Wang, Y., Qing, Q.*, Scalable Fabrication Framework of Implantable Ultrathin and Flexible Probes with Biodegradable Sacrificial Layers, *Nano letters* 17 (12), 7315-7322, (2017)
7. Sadar, J., Wang, Y., Qing, Q.*, Confined Electrochemical Deposition in Sub-15 nm Space for Preparing Nanogap Electrodes, *ECS Transactions* 77 (7), 65-72, (2017)
8. Liu, L., Li, Z., Xu, B., Gu, C., Chen, X., Sun, H., Zhou, Y., Qing, Q., Shum, P., Luo, Y., Ultra-Low-Loss High-Contrast Gratings Based Spoof Surface Plasmonic Waveguide, *IEEE Transactions on Microwave Theory and Techniques* 2008-2018 (2017)

9. Li, Z., Liu, L., Xu, B., Ning, P., Chen, C., Xu, J., Chen, X., Gu, C., Qing, Q., High-contrast gratings based spoof surface plasmons, *Scientific Reports*, 6, 21199, (2016)
10. Pang, P., Ashcroft, B.A., Song, W., Zhang, P., Biswas, S., Qing, Q., Yang, J., Nemanich, R.J., Bai, J., Smith, J.T., Reuter, K., Balagurusamy, V.S.K., Astier, Y., Stolovitzky, G., Lindsay, S., Fixed-gap tunnel junction for reading DNA nucleotides, *ACS Nano*, 8, 11994-12003 (2014).
11. Xu, L., Jiang, Z., Mai, L. and Qing, Q.^{*}, Multiplexed free-standing nanowire transistor bioprobe for intracellular recording: A general fabrication strategy, *Nano Lett.*, 14, 3602-3607 (2014).
12. Qing, Q.[#], Jiang, Z.[#], Xu, L., Gao, R., Mai, L., and Lieber, C.M., Free-standing kinked nanowire transistor probes for targeted intracellular recording in three dimensions, *Nature Nanotech.* 9, 142-147 (2014).
13. Xu, L.[#], Jiang, Z.[#], Qing, Q.[#], Mai, L., Zhang, Q., and Lieber, C.M., Design and synthesis of diverse functional kinked nanowire structures for nanoelectronic bioprobes, *Nano Lett.* 13, 746-751 (2013).

Before employment at ASU

14. Tian, B., Liu, J., Dvir, T., Jin, L., Tsui J.H., Qing, Q., Suo, Z., Langer, R., Kohane, D.S., and Lieber, C.M., Macroporous nanowire nanoelectronic scaffolds for synthetic tissues, *Nature Mater.*, 11, 986-994 (2012).
15. Jiang, Z.[#], Qing, Q.[#], Xie, P., Gao, R.X. and Lieber, C.M., Kinked p-n junction nanowire probes for high spatial resolution sensing and intracellular recording, *Nano Lett.*, 12, 1711-1716 (2012).
16. Cohen-Karni, T., Casanova D., Cahoon J., Qing, Q., Bell D. and Lieber, C.M., Synthetically-encoded ultrashort-channel nanowire transistors for fast, point-like cellular signal detection, *Nano Lett.*, 12, 2639-2644 (2012).
17. Gao, R., Strehle, S., Tian, B., Cohen-Karni, T., Xie, P., Duan, X., Qing, Q. and Lieber, C.M., Outside looking in: Nanotube transistor intracellular sensors, *Nano Lett.*, 12, 3329-3333 (2012).
18. Duan, X.J., Gao, R.X., Xie, P., Cohen-Karni, T., Qing, Q., Choe, H.S., Tian, B.Z., Jiang, X.C., and Lieber, C.M., Building nanotube junctions between live cells and nanoscale transistors, *Nature Nanotechnol.*, 7, 174-179 (2012).
19. Xie, P., Xiong, Q.H., Fang, Y., Qing, Q., Lieber, C.M., Nanowire-nanopore transistors for localized detection of DNA translocation, *Nature Nanotechnol.*, 7, 119-125 (2012).
20. Qing, Q., Pal, S.K., Tian, B., Duan, X.J., Timko, B.P., Cohen-Karni, T., Murthy, V.N. and Lieber, C.M., Nanowire transistor arrays for mapping neural circuits in acute brain slices, *Proc. Natl. Acad. Sci. USA*, 107, 1882-1887 (2010).
21. Cohen-Karni, T.[#], Qing, Q.[#], Li, Q., Fang, Y. and Lieber, C.M., Graphene and nanowire transistors for cellular interfaces and electrical recording, *Nano Lett.*, 10, 1098-1102 (2010).
22. Tian, B.Z., Cohen-Karni, T., Qing, Q., Duan, X.J., Xie, P. and Lieber, C.M., Three-dimensional, flexible nanoscale field effect transistors as localized bioprobes, *Science*, 329, 830-834 (2010).
23. Qing, Q., Nezich, D.A., Wu, Z.Y., Kong, J. and Liu, Z.F., Local gate effect of mechanically deformed crossed carbon nanotube junction, *Nano Lett.*, 10, 4715-4720 (2010).
24. Chen, F., Qing, Q., Xia, J.L. and Tao, N.J., Graphene field effect transistors: electrochemical gating, interfacial capacitance and biosensing applications, *Chem. Asian J.*, 5, 2144-2153 (2010).

25. Timko, B.P., Cohen-Karni, T., *Qing, Q.*, Tian, B. and Lieber, C.M., Design and implementation of functional nanoelectronic interfaces with biomolecules, cells and tissue using nanowire device arrays, *IEEE Trans. Nanotech.*, 9, 269-280 (2010).
26. Chen, F., *Qing, Q.*, Xia, J.L., Li, J.H. and Tao, N.J., Electrochemical gate-controlled charge transport in graphene in ionic liquid and aqueous solution, *J. Am. Chem. Soc.*, 131, 9908-9909 (2009).
27. Timko, B.P., Cohen-Karni, T., Yu, G.H., *Qing, Q.*, Tian, B.Z. and Lieber, C.M., Electrical recording from hearts with flexible nanowire device arrays, *Nano Lett.*, 9, 914-918 (2009).
28. Chen, F., *Qing, Q.*, Ren, L., Tong, L.M., Wu, Z.Y. and Liu, Z.F., Formation of nanogaps by nanoscale Cu electrodeposition and dissolution, *Electrochimica Acta*, 52, 4210-4214 (2007).
29. *Qing, Q.*, Chen, F., Li, P.G., Tang, W.H., Wu, Z.Y. and Liu, Z.F., Finely tuning metallic nanogap size with electrodeposition by utilizing high-frequency impedance in feedback, *Angew. Chem. Inter. Ed.*, 44, 7771-7775 (2005).
30. Chen, Z., Yang, Y.L., Chen, F., *Qing, Q.*, Wu, Z.Y. and Liu, Z.F., Controllable interconnection of single-walled carbon nanotubes under ac electric field, *J. Phys. Chem. B*, 109, 11420-11423 (2005).
31. Chen, F., *Qing, Q.*, Ren, L., Wu, Z.Y. and Liu, Z.F., Electrochemical approach for fabricating nanogap electrodes with well controllable separation, *Appl. Phys. Lett.*, 86, 123105 (2005).
32. Zhang, J., Zou, H.L., *Qing, Q.*, Yang, Y.L., Li, Q.W., Liu, Z.F., Guo, X.Y. and Du, Z.L., Effect of chemical oxidation on the structure of single-walled carbon nanotubes, *J. Phys. Chem. B*, 107, 3712-3718 (2003).
33. Zou, H.L., Yang, Y.L., Wu, B., *Qing, Q.*, Li, Q.W., Zhang, J. and Liu, Z.F., Purification and characterization of single-walled carbon nanotubes synthesized by chemical vapor deposition, *Acta Physico-chimica Sinica*, 18, 409-413 (2002).

Issued Patents and Patent Applications

(provisional patents and patent applications are listed separately)

Since employment at ASU

1. Qing Q., "High density and multiplexed nanopore devices with transverse tunneling junction for biomolecule detection and sequencing", US Patent 12,241,857 (2025)
2. Qing Q., Tsao C., Zhang P., "Apparatus and methods for synthesizing biopolymers", US Patent 12,017,195 (2025)
3. Qing Q., P Zhang P., "Direct sequencing biomolecules and modifications thereof with tunneling enhanced optical spectroscopy on nanopore chip", US Patent App. 18/709,791 (2025)
4. Qing, Q., Albeck, J., Guo, L., Zhao, M., Li, H. "Cell signaling pathway activation by local AC electric field", US Patent 11,634,702, (2023)
5. Qing, Q., Wang, Y., Sadar, J., "Nanopore devices for sensing biomolecules", US Patent 11,673,136, (2023)
6. Quan Qing, "Direct Sequencing Biomolecules and Modifications with Tunneling Enhanced Raman Spectroscopy on a Solid-state Nanopore Chip", United States patent application, 63/279,496, filed on Nov. 15, 2022

7. Quan Qing, "High Density and Multiplexed Nanopore Devices with Transverse Tunneling Junction for Biomolecule Detection and Sequencing", PCT/US22/20441, Filed on March 05, 2022
8. Qing, Q., Zhang, P., "Direct Sequencing Biomolecules And Modifications With Tunneling Enhanced Raman Spectroscopy On A Solid-State Nanopore Chip" United States provisional patent application No. 63/279,469 filed on Nov. 15, 2021
9. Qing, Q., "High Density And Multiplexed Nanopore Devices With Transverse Tunneling Junction For Biomolecule Detection And Sequencing", United States provisional patent application No. 63/161,681, filed on March 16, 2021
10. Qing, Q., "Methods to construct sharp and stable tip contacts with nanometer precision in a confined nanoscale confined space between two microfluidic chambers", United States provisional patent application No. 63/107,687 filed on Oct. 30, 2020
11. Qing, Q., "Method For Constructing Magnetic Tunneling Junction Devices And Use Of Device For Spin-Dependent Transport Characterization Microfluidic Chambers", United States provisional patent application No. 63/049,477 filed on July 8, 2020
12. Qing, Q., "System and Method for Delivering and Linking Molecules between Tunable Metal Nanogaps and Measuring Electrical and Optical Properties", United States provisional patent application 64/049,481 filed on July 8, 2020
13. Stuart L., Sadar, J. Qing, Q., "Electronic Devices, Systems Comprising Them, And Methods For Making Them", United States provisional patent application No. 62/975,748 filed on Feb. 12, 2020
14. Qing Q., Zhao M., Albeck J., Li H., "Cell Signaling Pathway Activation By Local AC Electric Field", United States non-provisional patent application filed on Nov. 06, 2019
15. Qing Q., Zhang P., Tsao C.W., "Apparatus and methods for synthesizing biopolymers", International (PCT) patent application no. PCT/US19/40206, filed July 01, 2019.
16. Qing Q., Zhao M., Albeck J., Li H., "Cell Signaling Pathway Activation By Local AC Electric Field", United States provisional patent application no.62/756,342 filed on Nov. 06, 2018
17. Qing Q., Zhang P., Tsao C.W., "Digital DNA Writer by Localized Electrochemical Activation" United States provisional patent application no. 62/693,037 filed July 02, 2018
18. Qing Q., Sadar J., Wang Y., "Nanopore Device for Sensing Biomolecules" United States utility patent application no. 15/945,717 filed April 4, 2018.
19. Qing Q., Sadar J., Wang Y., "Nanopore Device for Sensing Biomolecules" United States provisional patent application no. 62/481,467 filed April 4, 2017.
20. Qing Q., Jiao X.B., Wang Y., "Implantable Thin-Film Probes" International (PCT) patent application no. PCT/US18/29811 filed April 27, 2018
21. Qing Q., Jiao X.B., Wang Y., "Implantable Thin-Film Probes" United States provisional patent application no. 62/490,960 filed April 27, 2017.
22. Lieber C.M., Tian B.Z., Xie P., Kempa T.J., *Qing Q.*, Cohen-Karni T., Duan X.J., "Bent nanowires and related probing of species" **US Patent 9,297,796, 2016**
23. Lieber C.M., Gao R.X., Strehle S., Duan X.J., Tian B.Z., Cohen-karni I., Xie P., *Qing Q.*, Cohen-Karni T., Duan X.J., "Nanoscale sensors for intracellular and other applications" **US Patent 9,638,717, 2017**

Before employment at ASU

24. Chen, F., Qing, Q., Wu, Z.Y., Liu, Z.F., “Feedback controlling system for producing nanometer gap electrode” Chinese Patent CN1778998A, CN100572613C

SELECTED CONFERENCE/SEMINAR/WORKSHOP PRESENTATIONS

Since employment at ASU (*presentations outside ASU are labeled with “*”*)

1. 2024/03/04, Qing, Q., “Quantum-NanoElectroPore for single-molecule characterization”, Bioelectronics and Biosensors symposium, Biodesign, ASU
2. 2023/01/10, Qing, Q., “Programming Cells by Electrostatic Modulation”, AFOSR Center of Excellence Pitching, organized by UMD, **invited talk**
3. 2022/11/14, Qing, Q., “Inhibition of Proliferation and Motility through Electrostatic Modulation of ERK Signaling Pathway”, “Label-free Multi-Omics Analysis On a Single Microchip”, **invited talks**, UMD seminar and MURI Review meeting, 2022
4. 2022/10/27, Qing, Q., “Inhibition of proliferation and motility through electrostatic modulation of ERK signaling pathway”, Wound Healing Conference at UCDavis (organized by American Wound Healing Society), **invited talk**
5. 2022/03/15, Mukherjee S., Qing, Q., “Bayesian Image Analysis to Quantify the Perturbation of Cell Membrane by Exogenous AC Electric Field”, APS March Meeting 2022
6. 2022/03/15, Tsao C.W., Qing Q., “Nanopore Chip with Self-Aligned Transverse Tunneling Junction for Biomolecule Detection and Sequencing”, APS March Meeting, 2022
7. 2021/11/30, Qing, Q., “Electrostatically Modulate Membrane-Protein Initiated Signaling Pathways”, **invited talk**, UMD seminar and MURI Review meeting, 2021
8. 2021/10/21, Qing, Q., “Scalable nanopore chip with self-aligned transverse tunneling junction for biomolecule detection”, “Electrostatic Modulation of Signaling at the Cell Membrane: Electric Control of ERK Dynamics”, Defense TechConnect Virtual Innovation Summit & Expo, 2021
9. 2021/04/22, Qing, Q., “Electrostatic Modulation of Signaling at the Cell Membrane - Waveform- and Time-Dependent Electric Control of ERK Dynamics”, MRS Annual Spring meeting, 2021
10. 2021/02/25, Qing, Q., “Electrostatic Modulation Of Signaling At The Membrane Waveform- And Time-Dependent Electric Control Of ERK Dynamics”, Biophysics Society Annual Meeting, 2021
11. 2019/04/20, Qing, Q., “A New Way to Modulate Protein Dynamics in Live Cells? Precisely Regulate ERK Signaling Pathway with Local Electric Fields”, CML Symposium, **invited talk**, Harvard University, 2019
12. 2019/04/08, Qing, Q., “Precise modulation of ERK signaling pathway by electric field”, Biophysics Seminar, **invited talk**, University of Maryland College Park, 2019
13. 2019/03/30, Qing, Q., “Precise Control of ERK Signaling Pathway with Local Electric Fields”, **invited talk**, APS March Meeting, Boston, 2019
14. 2018/11/30, Qing, Q., “Precise control of ERK activation in epithelial cells by local AC electric fields”, MRS Fall Meeting 2018, talk
15. * 2018/10/09 Qing, Q., “Precise modulation of ERK signaling pathway by electric field”, Biomedical Engineering Seminar, **invited talk**, Tufts University, Boston
16. 2018/04 Brown, S., Qing, Q., , “Electroaxial and topological guidance of dictyostelium discoideum cells”, Undergraduate Research Poster Symposium, CLAS ASU, 2018

17. * 2017/08/14 Qing, Q., “Nanopore device with self-aligned nanogap electrodes for DNA characterization”, Advances in Functional Materials Conference, UCLA 2017, talk and poster
18. * 2017/05/30 Qing, Q., “Bottom-up preparation of nanopore devices with self-aligned nanogap electrodes for single biomolecule characterization”, Electrochemical Society Semi-annual Meeting Spring 2017, **invited talk**
19. 2017/04/22 Li, H., Qing, Q., “Activation of MAPK/ERK in epithelial cells by localized AC electric field”, Biophest 2017, talk
20. * 2016/12/01 Jiao, X., Qing, Q., “Ultra-small flexible bio-probes with biologically degradable sacrificial layer for accurate implantation”, MRS Fall Meeting 2016, talk
21. 2016/10/17 Sadar, J., Qing, Q., “Bottom-up preparation of nanopore array with self-aligned transverse electrodes for DNA sequencing”, APS Annual Meeting 2016 4C section, talk
22. 2015/10/16 Jiao, X., Sadar, J., Wang, Y., Qing, Q., “Ultra-small implantable probes with bend-up micro-electrodes”, “Preparation of a sub-10 nm fluidic system with self-aligned nanogap electrodes for biomolecule characterization”, “Label-free Silicon Nanowire Field Effect Transistor for High Frequency Impedance Sensing of Molecules”, APS Annual Meeting 4C section, posters
23. * 2015/09/10 Qing, Q., Bridging nanoelectronics and biology, BMS Seminar Series, The University of Arizona College of Medicine - Phoenix, **invited talk**
24. 2015/05/02 Sadar, J., Jiao, X.B., Wang, Y., Qing, Q., Nanopore sensors embedded in metal nanogaps for DNA mapping and sequencing, BioPhest 2015, ASU, talk and posters
25. * 2015/03/12 Qing, Q., Bridging nanoelectronics and biology, Biomedical Seminar, Oregon Health & Science University, **invited talk**
26. * 2014/10/23, Qing, Q., Multiplexed Free-standing Nanowire Transistor Bioprobes for Intracellular Studies, 2014 BMES Annual Meeting, talk
27. * 2014/05/13, Qing, Q., Bridging Nanoelectronics and Biology, 3rd Annual NeuroEngineering Workshop, McGill University, **invited talk**
28. 2014/01/13, Qing, Q., Nanoelectronic probes for neural interface, Dublin City University/ASU Workshop, talk
29. 2013/08/12, Qing, Q., Gateable solid-state nanopore embedded in tunneling junction for DNA sequencing, Workshop of Center for Bioelectronics and Biosensors, Biodesign Institute, ASU, **invited talk**
30. * 2013/04/30, Qing, Q., Bridging Nanoelectronics and Biology, Workshop at Los Alamos National Lab, **invited talk**
31. 2013/04/20, Qing, Q., Nanoelectronics for Biosensing, BioPhest, ASU, talk
32. 2013/01/30, Qing, Q., Bridging Nanoelectronics and Biology, Center for Biological Physics Seminar, ASU, **invited talk**

Before employment at ASU

33. 2012/09/17, Qing, Q., Bridging Nanoelectronics and Biology, Workshop on Materials Science and Materials Chemistry for Energy, Peking University, China, **invited talk**
34. 2011/11/28-12/02, Qing, Q., Nelson, E., Jiang, Z., Gao, R., Lieber, C.M., Nanowire transistor three-dimensional probes for intracellular and tissue recording, 2011 MRS Fall Meeting & Exhibit, talk
35. 2010/05/25, Quan, Q., Lieber, C.M., Developing nano-bio interfaces from the bottom-up, Bioelectronics and Biosensors Seminar, Biodesign Institute, ASU, **invited talk**

36. 2009/11/30-12/4, Qing, Q., Pal, S.K., Tian, B., Duan, X., Timko, B.P., Cohen-Karni, T., Murthy, V.N., Lieber, C.M., Nanowire transistor arrays for high spatiotemporal resolution recording in acute brain slices, 2009 MRS Fall Meeting & Exhibit, talk
37. 2009/10/07-10, Qing, Q., Tian, B., Duan, X., Timko, B.P., Cohen-Karni, T., Pal, S.K., Murthy, V.N., Lieber, C.M., Nanoelectronic-biology interfaces: Ultrasensitive detection and study of functional cell networks, BMES 2009 Annual Fall Meeting, **invited talk**
38. 2009/09/24-25, Qing, Q., Pal, S.K., Tian, B., Duan, X., Timko, B.P., Cohen-Karni, T., Murthy, V.N., Lieber, C.M., Nanowire transistor arrays for functional neural network recording, Fifth Annual NIH Director's Pioneer Award Symposium, Poster
39. 2009/06/14-16, Qing, Q., Tian, B., Timko, B.P., Cohen-Karni, T., Duan, X., Yu, G., Lieber, C.M., Nanoelectronic interfaces with functional bionetworks, Janelia Workshop: Technical Challenges in Extracellular Electrophysiology, **invited talk**
40. 2009/06/07-12, Qing, Q., Pal, S.K., Tian, B., Duan, X., Timko, B.P., Cohen-Karni, T., Murthy, V.N., Lieber, C.M., Nanowire transistor arrays for studying functional neural network, Gordon Research Conference on Neural Circuits & Plasticity, Poster

TEACHING

- Courses taught in Arizona State University

Spring semester, 2025	Electronic Circuits and Measurements (PHY 333)
Fall semesters, 2023-2024	Electronic Circuits and Measurements (PHY 333)
Spring semester, 2024	University Physics II (PHY 131)
Spring semesters, 2016~2023	University Physics II with lab (PHY 131H/132H) Honors class
Fall semesters, 2016~2022	University Physics I with lab (PHY 121H/122H) Honors class
Spring Semesters, 2013~2016	General Physics (PHY 111)
Fall Semesters, 2013~2015	General Physics (PHY 111)
- Training on teaching and mentoring

2015/02	CLAS Workshop for New Faculty, ASU
2014/11	2014 International Learning Assistant Workshop
2013/06	New Faculty Workshop organized by the American Association of Physics Teachers

MENTORING

Arizona State University

Postdoc

Previous:

Houpu Li (2017/09/01-2021/01/15), now working as research associate at UCDavis

Yuan Wang (2021/05/10~2021/09/24), now working Qitan Technology

Graduate Students

Current:

C.W. Tsao (RA Fall 2016-),

Graduated:

J. Xiang (2013-2018), J. Sadar (NSF GRFP 2013-2019), Y. Wang (2014-2021), M. Hu (RA Fall 2017-2023), S. Mukherjee (TA Fall 2017-2024)

Rotational students:

Q. Shang (rotation student Fall 2014), A. Cochran (rotation student Fall 2015)
 R. Jani (Professional Science Master's in Nanoscience program, Fall 2013), X. Su (Master Fall 2015), Robert Mecham (rotation student Fall 2018), M. Darrow (2018-2019)

Undergraduate Students

Undergraduate Research:

A. Slyder (Fall 2013), K. Ngo (Fall 2013-Spring 2014), A. Echeverri (Fall 2013-Fall 2014), Ryan Schmoll (Spring 2015), Christy Contreras (**NASA/ASU Space Fellowship** Spring 2015-), K. Kunitsky (Fall 2015), K. Siddik (Fall 2015), S. Brown (Fall 2015, **ASU CLAS USE Scholarship** Summer 2016), A. Wang (Fall, 2015), J. Lopez (Spring, 2017)

Barrett Honors Credits:

M. Sharma (Fall 2014), T. Ahmed (Fall 2015), C. Anigwe (Fall 2015), H. Azcarate (Fall 2015), S. Mao (Fall 2015), V. Patel (Fall 2015), W. Ridley (Fall 2015), E. Tiedemann (Fall 2015)

High school Students (SCENE project)

Hersh Nanda (2020-2021), Siva Bubby (2019-2020), Michelle Hu (2022-2023)

PROFESSIONAL SERVICES AND MEMBERSHIPS**Manuscript and Grant Review**

Editor for Bioelectricity (Mary Ann Liebert, Inc.) starting from 2018

Editor for Biosensors (MDPI) starting from 2020

Reviewer for Nano Lett. (since 2006), Ultramicroscopy (since 2013), J. Biomed. Nanotechnol. (since 2014), Trans. IEEE Nanotechnol. (since 2015), J. Phys. Chem. (since 2015), Reviewer for ACS Sensors (since 2016), Reviewer for MDPI Sensors (since 2016)

Reviewer for full proposals to Great Lakes Protection Fund (2013)

Professional Memberships

Member, Material Research Society (2007-present)

Member, American Chemical Society (2009-present)

Member, Biological and Medical Engineering Society (2009-present)

Member, Biophysics Society (2018-present)

University and Department Service (since joining ASU)

Member of Governance Board of the ASU NanoFab Core Facility (Spring 2017-2019)

Member of the Graduate Program Committee (Fall 2017-2020)

Member of the Graduate Examination Committee (Fall 2013-2017)

Member of the Colloquium Committee (Fall 2015)

Member of the Dissertation Committee of Yanan Zhao (Spring 2014)

Member of the Supervisory Committee of Weisi Song (since Fall 2014)

Member of the Dissertation Committee of Weisi Song (Spring 2015)

Member of the Supervisory Committee of Ji Zhang (since Fall 2015)
Member of the Supervisory Committee of Gejian Zhao (since Fall 2015)
Member of the Dissertation Committee of Gejian Zhao (Spring 2018)
Member of the Dissertation Committee of Yu Yang (Spring 2018)
Member of the Committee on Committees (2019)
Member of the Graduate Program Committee (2019)
Member of Personal Committee (Fall 2020-Spring 2022)
Member of The Budget and Policy Committee (Fall 2022)
Member of The College Senate (Fall 2021-2022)
Member of The University Senate (Fall 2021-2022)

Member of the Oral Comprehensive Exam Committee of A. Blake (Fall 2013), J. Gallagher (Fall 2013), M. Kolopanis (Fall 2013), J. Martinez (Fall 2013), S.S. Seyedi (Fall 2013), X. Su (Fall 2013), R. Gonzalez (Spring 2014), J. Homes (Spring 2014), N. Garrett (Spring 2014), R. Chen (Spring 2014), A. Adams (Fall 2014), V.F. Hagh (Fall 2014), N. Mathis (Fall 2014), G. Randall (Fall 2014), P.Y. Wang (Fall 2014), A. Ward (Fall 2014, Spring 2015), J. Zhang (Fall 2014), S. Sadjadi (Fall 2014), R. Strausbaugh (Spring 2015), Y. Cai (Spring 2015), A. Svesko (Fall 2015), C. Brown (Fall 2015), N. Monga (Fall 2015), S. Ray (Fall 2015, Spring 2016), S. Zhou (Fall 2015), T. Modi (Fall 2015), P. Campitelli (Spring 2016), A. Cochran (Fall 2016), C. Zhang (Fall 2016), J. Liu (Fall 2016), Q. Wang (Spring 2017), Y. Kentaro (Fall 2017), Z. Armin (Fall 2017)

CURRENT COLLABORATIONS

Nanopore and biosensors:

Dr. Stuart Lindsay, Biodesign Institute, Arizona State University

Modulation of cell signaling pathways, and physiological outcomes (migration, differentiation):

Dr. Min Zhao, University of California Davis
Dr. Wolfgang Losert, University of Maryland
Dr. Peter Devreotes, Johns Hopkins University
Dr. John Fourkas, University of Maryland
Dr. Patrick Kanold, University of Maryland

Diamond and ultra-high bandwidth material based spintronics:

Dr. Robert Nemanich, Physics, Arizona State University

Surface plasma resonance based biosensors:

Dr. Zhuo Li, Nanjing University of Aeronaut & Astronaut, China