

HYONGSOK (TOM) SOH

Professor of Electrical Engineering
 Professor of Radiology
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EDUCATION

June 1999	Ph.D.	Stanford University, Stanford, CA	Electrical Engineering
June 1995	M.S.	Stanford University, Stanford, CA	Electrical Engineering
May 1993	M.Eng.	Cornell University, Ithaca, NY	Electrical Engineering
May 1992	B.S.	Cornell University, Ithaca, NY	Double Major with Distinction in Mechanical Engr. & Materials Science

EMPLOYMENT

1/16 - Present	Professor , Department of Chemical Engineering, by courtesy Stanford University, Stanford, CA
7/15 - Present	Professor , Department of Electrical Engineering and Radiology Stanford University, Stanford, CA
10/11 - 6/15	Associate Director , California NanoSystems Institute (CNSI), University of California, Santa Barbara
7/11 - 6/15	Professor , Department of Mechanical Engineering & Department of Materials, University of California, Santa Barbara
3/11 - 6/15	Ruth Garland Endowed Chair at the University of California, Santa Barbara
5/08 - 6/15	Co-Director , Center for Stem Cell Biology and Engineering, University of California, Santa Barbara
7/11 - 7/13	(By Courtesy), Department of Molecular & Medical Pharmacology, David Geffen School of Medicine, University of California, Los Angeles
7/07 - 7/11	Associate Professor , Departments of Mechanical Engineering & Materials, University of California, Santa Barbara
4/03 - 6/07	Assistant Professor , Departments of Mechanical Engineering & Materials, University of California, Santa Barbara
8/00 - 4/03	Technical Manager , MEMS Device Research Group Bell Laboratories, Lucent Technologies, Murray Hill, NJ and Agere Systems R&D group, Agere Systems, Allentown, PA
12/99 - 7/00	Member of Technical Staff , MEMS Research group, Physical Sciences Division, Bell Laboratories, Lucent Technologies, Murray Hill, NJ
6/99 - 12/99	Research Associate , Prof. C.F. Quate Laboratory Department of Electrical Engineering, Stanford University, Stanford CA

RESEARCH INTERESTS

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- *In vitro* directed evolution of functional molecules
 - Biosensors and integrated molecular diagnostics
 - Bio-separations and cell sorting technologies using microfluidics
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MAJOR AWARDS AND HONORS

- 2017 Elected to National Academy of Inventors (NAI)
 - 2017 Chan Zuckerberg Biohub Senior Investigator
 - 2014 Fellow of the American Institute for Medical and Biological Engineering (AIMBE)
 - 2012 Humboldt Research Fellowship
 - 2011 Ruth Garland Endowed Chair at UCSB
 - 2011 NIH Edward Nagy Award
 - 2010 John Simon Guggenheim Fellowship
 - 2009 NIH Director's TR01 Award
 - 2009 ALA Innovator Award
 - 2005 Beckman Young Investigator Award
 - 2004 ONR Young Investigator Award
 - 2002 MIT Technology Review – World's Top 100 Young Innovator Award (TR100)
 - 2000 Bell Labs President's Award - Gold Medal (Team award)
 - 1997 Samsung Thesis Competition - Gold Medal
 - 1995 Leland Edwards Fellowship at Stanford University
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PROFESSIONAL SERVICE AND ACTIVITIES

Industrial Activities:

Co-founder: CytomX

Co-Founder: Cynvenio Biosystems

Society Membership: AAAS, AACR, ACS, AIChE, AIMBE, IEEE, MRS

Journal Reviews:

Approximately ~20 reviews per year for multiple journals including: *Nature Materials*, *Nature Nanotechnology*, *Nature Biotechnology*, *Nature Chemistry*, *Nature Communications*, *PNAS*, *Angewandte Chemie Int'l Ed.*, *JACS*, *Analytical Chemistry*, *ACS Nano*, *Lab on a Chip*, *Accounts of Chemical Research*, *Nature Chemistry*, *Chemistry & Biology*, and others.

Funding Reviews:

Approximately ~3 funding review panels per year for NIH and DOD

Professional Service

<i>Years</i>	<i>Position</i>	<i>Types of Service</i>	<i>Organization</i>
2018	Organizer	SystemX workshop on Bio-Interfaces	Stanford SystemX Alliance
2016	Co-Organizer	Workshop on Bio-Interfaces	Stanford SystemX Alliance
2015	Session Chair	Diagnostics/Biosensors/Chemistry	ASGCT Aptamers Symposium
2015	Reviewer	New Innovator Award Program	National Institutes of Health
2014	Reviewer	Young Investigators Review Panel	Beckman Foundation
2014	Co-Organizer	RNA Consortium	UCSB College of Engineering
2012	Session Chair	Biological Devices/Biosensors and Molecular Diagnostics	International Conference on Bioengineering & Nanotechnology
2012	Co-Organizer	Joint Workshop on Nanobiotechnology	California NanoSystems Institute and Karolinska Institute
2011	Session Chair	Biophysical measurements in microfluidic systems	Gordon Conference on Microfluidics

2008	Member	Technical Committee	Korea Research Foundation (Global Alliance Program)
2005	Member	Technical Committee	UKC 2005 Conference, Nanosciences Division
2004	Member	Technical Committee	ASME MEMS Division
2003	Member	Technical Committee	ASME Nano Institute

University Service – UCSB (Bold indicates administrative position)

<i>Years</i>	<i>Position</i>	<i>Type of Service</i>	<i>Organization</i>
2014	Member	Graduate Symposium Judging Panel	Chemical Engineering
2014	Member	California Advisory Board	Cal-BRAIN Oversight Board
2014	Member	Central Fellowship Review Committee	UCSB Campus-wide
2014-15	Chair	Elings Fellowship Committee	California NanoSystems Institute
2013	Member	CSEP Review Committee	California NanoSystems Institute
2013-14	Member	Graduate Affairs Committee	Chemical Engineering
2013	Interim Director	Biological Nanostructures Laboratory	California NanoSystems Institute
2013	Chair	Search Committee for Director of BNL	California NanoSystems Institute
2013	Chair	Faculty Search Committee	Mechanical Engineering
2012	Member	Central Fellows Panel Discussion	College of Engineering
2012	Member	Advisory Committee on Space	Mechanical Engineering
2012-	Member	Chair's Advisory Committee on Planning	Mechanical Engineering
2012-	Member	Graduate Committee	Mechanical Engineering
2012-	Member	Department Development Committee	Mechanical Engineering
2012-	Member	CIRM Training Grant Review Committee	UCSB Campus-wide
2011-12	Member	Merits and Promotions Committee	Mechanical Engineering
2011-14	Member	Errett Fisher Fellowship Committee	UCSB Campus-wide
2011-	Associate Director		California NanoSystems Institute
2010-	Member	Executive Committee	California NanoSystems Institute
2010-12	Chair	Seminar Committee	Center for BioEngineering
2010-11	Member	Seminar Committee	California NanoSystems Institute
2010-12	Member	Mellichamp Chair Search Committee	UCSB Campus-wide
2010-11	Member	Graduate Admissions Committee	Mechanical Engineering
2009-10, 2013	Member	CIRM Fellowship Committee	UCSB Campus-wide
2009-10	Member	CNSI Graduate Fellowship Committee	UCSB Campus-wide
2008-09	Member	Advisory Committee on Space	Mechanical Engineering
2008-09	Member	Advisor for 1st Year Graduate Students	Mechanical Engineering
2008- 2008-	Member Co-Director	Bioengineering Building Committee	UCSB Campus-wide Center for Stem Cell Biology & Engineering

2008-09	Member	Biotechnology Space Planning Committee	UCSB Campus-wide
2008-09	Member	CNSI Fellowship Committee	UCSB Campus-wide
2007-09	Member	Graduate Screening Exam Committee	Mechanical Engineering
2006-07	Member	KAIST-UCSB Joint Undergraduate Program Committee	UCSB Campus-wide
2006-08	Member	Advisory Committee on Planning	Mechanical Engineering
2006-08	Member	Graduate Admissions Committee	BioMolecular Science & Engineering
2005-06	Member	UCSB Stem Cell Initiative Committee	UCSB Campus-wide
2005-07	Chair	Academic Advisor to all graduate students (Micro/Nano research area)	Mechanical Engineering
2005-07	Member	Faculty Search Committee	Mechanical Engineering
2005-06	Member	Faculty Search Committee	BioMolecular Science & Engineering
2005-06	Member	International Advisory Committee	College of Engineering
2005-06	Member	UCSB/Santa Barbara Cancer Center Committee	UCSB Campus-wide
2005-06	Member	Life Sciences Building Committee	UCSB Campus-wide
2004-06	Member	Graduate Screening Exam Committee	Mechanical Engineering
2004-05	Member	Proposition 71 Committee	UCSB Campus-wide
2004-05	Member	Mann Institute Development Committee	UCSB Campus-wide
2004-05	Member	NSF LEAPS Fellowship Panel	UCSB Campus-wide
2004-05	Member	Advisory Committee on Strategy Planning	Mechanical Engineering
2004-05	Member	Graduate Program Committee	Mechanical Engineering
2004-05	Member	Seminar Committee	BioMolecular Science & Engineering
2004-05	Member	CNSI Fellowship Committee	UCSB Campus-wide

University Service – Stanford

<i>Years</i>	<i>Position</i>	<i>Type of Service</i>	<i>Organization</i>
2018	Member	Faculty Search Committee	Department of Electrical Engineering
2018	Member	Faculty Evaluation Unit Committee	Department of Radiology
2018	Member	Catalyst Advisory Committee	School of Engineering
2017	Coordinator	Graduate Admissions Committee	Department of Electrical Engineering
2017	Co-Chair	Faculty Search Committee	Department of Radiology (Canary Center)
2017	Member	Faculty Ad Hoc Committee	Department of Radiology
2017	Examiner	Qualifying Exam Committee	Department of Electrical Engineering
2016	Member	“Leading the Biomedical Revolution” Faculty Committee	University-wide
2016	Member	Faculty Search Committee	Department of Chemical Engineering
2016	Member	Committee on Biomedical Research at Stanford	University-wide
2016	Chair	Faculty Search Committee	Department of Radiology (Canary Center)
2016	Member	Graduate Admissions Committee	Department of Electrical Engineering
2016	Member	Faculty Search Committee	Molecular Imaging Program at Stanford (MIPS)/Department of Radiology

2015	Coordinator	Admissions Committee	Department of Electrical Engineering
2015	Co-Leader	SystemX Alliance (Bio Interfaces)	
2015	Member	Faculty Search Committee	Department of Radiology
2015-17	Member	Bio-X Affiliated Faculty	Bio-X program
2015-17	Member	ChEM-H Fellow	Chem-H Institute

TEACHING ACTIVITIES

- Head instructor, EE 235
- Courses developed at Stanford:
 - EE 235: “Analytical Biotechnology”
- UCSB Academic Senate Faculty Teaching Award nominee (2005)
- Courses developed at UCSB:
 - Mechanical Engineering (ME 6): “Basic Circuits”
 - Mechanical Engineering (ME 291): “Physics of Transducers - Electromagnetism”
 - BioMolecular Science and Engineering (BMSE 253): “Analytical Biotechnology”

Current Advisees

Dr. Peter Mage	Postdoc	Diana Wu	Ph.D. Student
Dr. Amani Hariri	Postdoc	Dan Mamerow	Ph.D. Student
Dr. Chelsea Lyons	Postdoc	Brandon Wilson	Ph.D. Student
Dr. Mahla Poudineh	Postdoc	Alex Yoshikawa	Ph.D. Student
Dr. Alexandra Rangel	Postdoc	Nicolo Maganzini	Ph.D. Student
		Vladimir Kesler	Ph.D. Student
		Alyssa Cartwright	Ph.D. Student
		Sharon Newman	Ph.D. Student
		Leighton Wan	Ph.D. Student
		Anusha Pusuluri	Ph.D. Student*
			*co-advised
		Vamsi Varanasi	Undergraduate Student

Former Advisees

Dr. Trevor Feagin	Research Scientist 2017 Postdoc 2017	Research Scientist, Los Alamos National Lab-Los Alamos, NM
Dr. Margaret Nakamoto	Postdoc 2017	Senior Scientist, Becton Dickinson-San Jose, CA
Dr. Jacob Hunho Jo	Postdoc 2017	Scientist, Innomed
Dr. Tracy Chung	Ph.D. 2017	Google
Dr. Dong-Wook Park	Postdoc 2017	Assistant Professor at Seoul University –South Korea
Dr. Andrew Csordas	Project Scientist 2017	Amgen, Thousand Oaks, CA
Dr. Faye Fong	Ph.D. 2017	
Dr. Michael Gotrik	Ph.D. 2017	Postdoc Stanford
Dr. Jinwen Yu	Postdoc 2017	R&D manager at Beijing Genomics Institute (BGI)
Dr. Jia Niu	Postdoc 2017	Assistant Professor at Boston College – Chestnut Hill, MA
Dr. Sandra Hu	Research Scientist	
Dr. Gurpreet Sekhon	2017 Research Scientist 2016	
Dr. Faye Walker	Ph.D. 2015	
Hao Qu	Postdoc 2015	Associate Professor (Food Science and Engineering) at Hefei University of Technology (HFUT) - Hefei, Anhui, China
Seung Soo Oh	Postdoc 2014, Ph.D. 2012	Assistant Professor (Materials Science) at Pohang University of Science and Technology (POSTECH) - Pohang, South Korea
J.P. Wang	Project Scientist 2014 Ph.D. 2013	CTO at Aptitude Medical Systems – Santa Barbara, CA
Scott Ferguson	Project Scientist 2013, Ph.D. 2011	CEO at Aptitude Medical Systems – Santa Barbara, CA
Yi Xiao	Research Scientist 2011	Assistant Professor (Chemistry) at Florida International University - Miami, FL
Jackelyn Alva	Project Scientist 2012	Research Associate at UCLA School of Medicine – Los Angeles, CA
Qiang (Jackson) Gong	Postdoc 2013	COO at Aptitude Medical Systems - Santa Barbara, CA
Minseon Cho	Postdoc 2013	
Kuangwen Hsieh	Postdoc 2013, Ph.D. 2012	Whitaker International Scholar, Taiwan
Anders Olsen	Postdoc 2012	Research Scientist at UC-Los Angeles
Stijn Deborggraeve	Postdoc 2011	Postdoctoral Researcher at Institute of Tropical Medicine - Antwerp, Belgium
Jean-Luc Fraikin	Postdoc 2011	Research Engineer at InDevR - Boulder, CO
Jianyuan Dai	Postdoc 2011	Postdoc at Florida International University - Miami, FL
Yun-Kyung Jung	Postdoc 2009	Postdoctoral Researcher at UC-Berkeley
Yanli Liu	Postdoc 2009	Research Scientist at Sandia Labs - Livermore, CA
Aren Gerdon	Postdoc 2008	Assistant Professor (Chemistry) at Emmanuel College - Boston, MA
Xinhui Lou	Postdoc 2008	Associate Professor (Chemistry) at Capital Normal University - Beijing, China
Keerthi Nawarathna	Postdoc 2007	Research Associate at UC-Irvine
Liz Pavlovic	Postdoc 2007	Scientist at R&D Biomaterials at Allergan Medical - Goleta, CA
James Swenson	Postdoc 2007	Research Scientist at Pacific Northwest National Laboratory - Richland, WA

Eric Lagally	Postdoc 2006	Assistant Professor (BioE) at University of British Columbia - Vancouver, BC
Sanghyun Oh	Postdoc 2006	Associate Professor (ECE) at University of Minnesota, Twin-Cities - Minneapolis, MN
Yanting Zhang	Postdoc 2006	Senior Engineer at Cynvenio Biosystems - Westlake Village, CA
Sandra Hu	Postdoc 2005	Member of Technical Staff at Applied Materials - Santa Clara, CA
Sangho Lee	Postdoc 2005	Member of Technical Staff at KITECH National Labs - Korea
Philip Tavernier	Postdoc 2004	Member of Technical Staff at Intel Corporation - Beaverton, OR
Kareem Ahmad	Ph.D. 2012	Scientist at Illumina - La Jolla, CA
Jonathan Adams	Ph.D. 2010	Postdoc at École Polytechnique Fédérale de Lausanne (EPFL) - Switzerland
Unyoung (Ashley) Kim	Ph.D. 2009	Assistant Professor (BioE) at Santa Clara University - Santa Clara, CA
Jiangrong (Karen) Qian	Ph.D. 2008	Researcher at CTEC - Hefei, China
Lisan Viel	M.S. 2007	Business Analytics Associate Consultant at ZS Associates - Los Angeles, CA
Amarendra Singh	M.S. 2006	Black Rock Investments - New York, NY
Paul Banicevic	M.S. 2005	Aerospace Engineer at NASA Langley Research - Hampton, VA
Emily Gruber	Lab Intern 2012-2013	Student at University of Waterloo - Waterloo, ON
Forrest McClellan	Lab Intern 2012-2013	Student at Harvard Law School - Cambridge, MA
Ki Soo Park	Lab Intern 2012	Korea Advanced Institute of Science & Technology (KAIST)
Patrick Thevoz	Lab Intern 2012	Project Manager (Strategy, Marketing and R&D, Life Sciences) at Alcimed - Lausanne, Switzerland
Nupur Maheshwari	Lab Intern 2011-13	Research Assistant at University of Waterloo - Waterloo, ON
David Hoggarth	Lab Intern 2011-2012	Student at University of Waterloo - Waterloo, ON
Mayra Perez	Lab Intern 2009	Masters Student in Biomedical Sciences at San Francisco State University - San Francisco, CA
Steven Buchsbaum	Lab Intern 2009	Ph.D. candidate at UC Irvine
Kory Plakos	Lab Intern 2009	Ph.D. candidate at University of Oregon

THESIS COMMITTEES

Yashar Rajavi	Department of Electrical Engineering, Stanford University
Jamin Koo	Department of Chemical Engineering, Stanford University
Xiaolin Hu	Department of Electrical Engineering, Stanford University
Anthony Hung Yu Ho	Department of Genetics, Stanford University
Jose Padovani	Department of Electrical Engineering, Stanford University
Sarah Edwards	Department of Chemistry, Stanford University, Stanford University
Yuhong Cao	Department of Materials Science and Engineering
Punnag Pahy	Department of Electrical Engineering, Stanford University

INVITED TALKS & SEMINARS

2018: Jan. 12— Stanford Diabetes Research Center, Diabetes Bioengineering & Behavioral Sciences Affinity Group (Stanford, CA); Jan. 12— Stanford University, Material Science & Engineering Department Colloquium (Stanford, CA); Feb. 13— Harvard School of Engineering & Applied Sciences (Cambridge, MA); Feb 14- MIT department of Mechanical Engineering (Cambridge, MA); Mar. 7—Stanford Center for Translational Research and Applied Medicine (Stanford, CA); Mar. 18-22— 255th ACS National Meeting, (New Orleans, LA); April 12— Texas A&M University, Department of Chemistry (College Station, TX) May 6-8—Stanford Neurosciences Institute Retreat (Stanford, CA); May 9-10— Gates Pilot Projects, Gates Foundation (Seattle, WA); May 14-16—Micro & Bio Fluidics, Lab-on-Chip at NanoTech 2018 (Anaheim, CA); May 19— Graduate Alumni Day, Stanford University (Stanford, CA); May 22—Stanford Bio-X Frontiers in Interdisciplinary Biosciences Seminar (Stanford, CA); Nov. 15—The Korean Society of Industrial and Engineering Chemistry (Seoul, Korea); Dec. 12-16—IEEE EMBS Micro and Nanotechnology in Medicine Conference (Kauai, HI)

2017:

Jan. 26—Agilent Technologies, Inc. (Santa Clara, CA); Feb. 13—Stanford University Department of Bioengineering (Stanford, CA); Feb. 22—Stanford Translational Research and Applied Medicine Program (Stanford, CA); Feb. 27—University of California, Santa Cruz Department of Electrical Engineering (Santa Cruz, CA); Mar. 13-15—8th Alpbach Workshop on Affinity Proteomics (Alpbach, Austria); April 3— University of California, Los Angeles (Los Angeles, CA); April 28—California Institute of Technology (Pasadena, CA); May 5-6—City of Hope 12th RNA Consortium Meeting (Duarte, CA); June 21— Stanford Institute for Immunity, Transplantation and Infection Seminar Series (Stanford, CA); June 28— Verily Life Sciences (San Francisco, CA); Aug 21—Stanford Translational Oncology Program (Stanford, CA); Nov. 6— Genentech, Inc. (San Francisco, CA); Nov. 8-9—Medical MEMS and Sensors 2017 Conference (Santa Clara, CA); Nov. 9—Biohub Investigators Meeting (San Francisco, CA); Dec. 6 — TIMtalks, BD Biosciences (San Jose, CA)

2016:

Jan. 29—University of Missouri (Columbia, MO); Mar. 25—Applied Materials, Inc. (Santa Clara, CA); Mar. 29—University of Washington (Seattle, WA); Apr. 11-14—Keynote Speaker, Foundations of Nanoscience (Snowbird, UT); Apr. 19—UCSF Diabetes Center (San Francisco, CA); Apr. 20—Radiological Science Laboratory at Stanford (Stanford, CA); Apr. 23—City of Hope RNA Consortium (Duarte, CA); May 13—Stanford University Department of Genetics (Stanford, CA); May 26—Early Detection Seminar Series (Palo Alto, CA); June 24-25—APTAMERS 2016 (Bordeaux, France); June 30—Keynote Lecture, Qualcomm's QTech Forum (San Diego, CA); July 19-22—Keynote Speaker, International Symposium on Environmental Analytical Chemistry (Hamburg, Germany); July 21-23—European Molecular Biology Laboratory (EMBL) Microfluidics Conference (Heidelberg, Germany); Aug. 28-30—Roche Symposium "Molecular Monitoring on a Chip" (Buonas, Switzerland); Sept. 21-23—13th Key Symposium 2016: Bioelectronic Medicine (New York, NY); Sept. 25-28—12th Annual Meeting of the Oligonucleotide Therapeutics Society (Montreal, QC); Nov. 11—Merck (Kenilworth, New Jersey); Dec. 12-16—IEEE EMBS Micro and Nanotechnology in Medicine Conference (Waikoloa, HI)

2015:

Feb. 1—Gordon Research Conference on RNA Nanotechnology (Ventura, CA); Feb. 7—RNA Consortium (San Diego, CA); Feb. 22—Cal-BRAIN Workshop (La Jolla, CA); Mar. 11—Alpbach Workshop on Affinity Proteomics (Alpbach, Austria); Apr. 17—SRI International Bioscience Seminar (Menlo Park, CA); Apr. 24—Nano Seminar Series (Berkeley, CA); May 10-11—ASCGT Symposium (New Orleans, LA); May 28-29—10th OOAC Symposium (Toronto, ON); Jun. 2—Molecular Engineering Seminar Series (Seattle, WA); Aug. 6-7—9th Peptoid Summit (Berkeley, CA); Oct. 11-14—Korean Society for Biotechnology and Bioengineering Fall

Meeting and International Symposium (Incheon, Korea); Oct. 15—Korea University (Seoul, Korea); Nov. 30—Stanford University Department of Chemistry (Stanford, CA); Dec. 15-20—2015 International Chemical Congress of Pacific Basin Societies (Honolulu, HI)

2014:

Feb. 8—Co-organizer and presenter, RNA Consortium (Santa Barbara, CA); Feb. 22—Board of Trustees talk (UCSB); Mar. 19—Feinstein Institute for Medical Research Centricity Symposium (Manhasset, NY); Apr. 4-5—American Association for Cancer Research annual meeting (San Diego, CA); Apr. 10—Center for Bioengineering Seminar Series (UCSB); Apr. 21-23—Materials Research Society Spring meeting (San Francisco, CA); Apr. 25—American Association for Clinical Chemistry 46th Annual Oak Ridge Conference (San Jose, CA); Apr. 27—Experimental Biology 2014 (San Diego, CA); May 15—Merck Pharmaceuticals (Rahway, NJ); May 30—University of California Irvine (Irvine, CA); Aug. 12—University College (London, UK); Sept. 10—University of North Carolina (Chapel Hill, NC); Dec. 8—IEEE EMBS Micro/Nanotechnology in Medicine Conference (Honolulu, HI)

2013:

Jan. 26—RNA Consortium (Duarte, CA); Feb. 5—Materials Research Outreach Symposium (UCSB); Feb. 14—Molecular, Cellular and Developmental Biology Symposium (UCSB); Mar. 11-16—Affinity Proteomics Workshop (Alpbach, Austria); Mar. 19—ETH (Basel, Switzerland); May 10—Max Planck Institute (Berlin, Germany); July 18—University of Augsburg (Augsburg, Germany); Aug. 26—Agilent Technologies (Santa Clara, CA); Sept. 12—Stanford School of Medicine (Stanford, CA); Oct. 4—Targeted RNA Therapeutics and Diagnostics Conference (Naples, Italy); Dec. 16-17—Bioelectronic Medicines Summit (New York, NY); Dec. 3—SuperFACS Seminar, Sogang University (Seoul, Korea)

2012:

Jan. 30—CNSI Karolinska workshop (Los Angeles, CA); Feb. 4—RNA Consortium (Miami, FL); Feb. 16—Chemical Eng. (UCSB); Mar. 1—ICB Army-Industry Collaboration Conference (Santa Barbara, CA); Apr. 16—Future Diagnostics Conference (Irvine, CA); May 9—Keynote Speaker - MedImmune Science Days (Gaithersburg, MD); June 24-26—International Conference on Bioengineering and Nanotechnology (Berkeley, CA); Sept. 14—Department of Biomedical Engineering, Columbia University (New York, NY); Oct. 26—MIT Mechanical Engineering Colloquium (Cambridge, MA); Dec. 10—Protein Capture Consortium (Rockville, MD)

2011:

Jan. 20—UCSB-SBMRI workshop (La Jolla, CA); Feb. 9—ICB Army-Industry Collaboration Conference (Santa Barbara, CA); Mar. 12—Aptamer Symposium (City of Hope, Duarte, CA); Mar. 30—UC Berkeley; Apr. 12—E. Nagy Award Lecture at NIH (Bethesda, MD); Apr. 22—Harvard University (Cambridge, MA); June 26—Gordon Conference on Microfluidics (Waterville Valley, NH); Aug. 29—Korea Advanced Institute of Science and Technology (Taejon, Korea); Sept. 2—Seoul National University (Seoul, Korea); Oct. 20—Purdue University (West Lafayette, IN); Nov 17—Nanohealth Symposium (Seoul, Korea); Dec. 15—Protein Capture Meeting at NIH (Bethesda, MD)

2010:

Jan. 13—Armed Forces Institute for Regenerative Medicine (St. Petersburg, FL); Jan. 28—Burnham Institute for Medical Research (La Jolla, CA); Feb. 24—UCLA School of Medicine, Pediatrics; Mar. 11—U. of Twente, (Enschede, the Netherlands); Mar. 30—BioEngineering at Berkeley (Berkeley, CA); Apr. 15—Michigan State University (East Lansing, MI); Apr. 21—AACC Oakridge Conference (San Jose, CA); May 18—California Institute of Technology (Pasadena, CA); Sept. 21—Young Presidents' Organization (Santa Barbara, CA); Oct. 20—Vanderbilt University (Nashville, TN); Nov. 15—NanoBioTech 2010 (Montreux, Switzerland)

2009:

Feb. 19—ECE colloquium (U. of Minnesota); Mar. 5—Musculoskeletal Seminar at Cleveland Clinic (Cleveland, OH); Apr. 20—SomaLogic (Boulder, CO); Apr. 22—City of Hope Colloquium (Duarte, CA); Center on Proteolytic Pathway at Burnham Institute for Medical Research (La Jolla, CA); May 13—ALA-ACHEMA (Frankfurt, Germany); June 25—Korean Molecular Biology Society Meeting (Seoul, Korea); Sept. 3—Beckman-Coulter, Inc. (Miami, FL); Oct. 26—BioEngineering Insights (UCSB); Nov. 3—Society for Biomolecular Sciences conference (San Diego, CA); Dec. 3—University of Wisconsin (Madison, WI); Dec. 9—UCLA School of Medicine (Los Angeles, CA)

2008:

Jan. 18—UCLA Dept. Bioengineering; Mar. 24—Dept. Bioengineering at KAIST (Daejeon, Korea); June 27—Errett Fisher Foundation (Santa Barbara, CA); Aug. 20—Armed Force Institute for Regenerative Medicine (Pittsburgh, PA); Aug. 30—Arnold & Mabel Beckman Foundation (Irvine, CA); Sept. 22—Molecular Imaging Program at Stanford (Stanford, CA); Oct. 7— Mechanical Engineering at Cornell University (Ithaca, NY); Oct. 13— CRUMP Institute for Molecular Imaging at UCLA Medical School (Los Angeles, CA)

2007:

Mar. 5—McGowan Inst. of Regenerative Medicine (Pittsburgh, PA); June 28—DARPA workshop (Washington, DC); Sept. 7—Chemistry & Biochemistry, Arizona State University (Phoenix, AZ); Sept. 25—General Dynamics (San Diego, CA); Oct. 8—MicroTAS conference (Paris, France); Nov. 15—The Lasker Foundation for Regenerative Medicine (Palo Alto, CA)

2006:

Feb. 2—Chemical Biodefense Center at Walter Reed Army Institute of Research (Silver Spring, MD); Feb. 7— UW Nanoscience & Technology Seminar (Seattle, WA); Feb. 17—UCB Nanoscience & Engineering Seminar (Berkeley, CA); Apr. 10—Cal Tech Workshop on Biological Large Scale Integration (Pasadena, CA); May 4—Interdepartmental Seminar at Université of Neuchâtel (Neuchâtel, Switzerland); May 5—École polytechnique fédérale de Lausanne (Lausanne, Switzerland); May 8—IMTEK (Freiburg, Germany); May 9—Fraunhofer Institute (Freiburg, Germany); July 24—Physics at KAIST (Daejeon, Korea); Sept. 11—UCD Joint workshop Nano/Cancer Biotechnology at the Cancer Center (Davis, CA); Oct. 26— Engineering Directorate meeting at Lawrence Livermore National Lab (Livermore, CA)

2005:

Jan. 20—Mechanical Engineering at UCLA (Los Angeles, CA); Feb. 7—Mechanical Engineering at UCSD (La Jolla, CA); May 19—World Presidents' Organization Meeting (UCSB); June 2—Army Research Lab (Adelphi, MD); June 20—Stanford University Medical School (Stanford, CA); Sept. 28—U. of Wisconsin Medical School (Madison, WI); Nov. 2—Dept. Molecular & Medical Pharmacology at UCLA Medical School (Los Angeles, CA); Nov. 8—MEMS & BioMEMS conference (San Francisco, CA); Dec. 12—Winter School at KAIST (Daejeon, Korea)

2004:

Oct. 4— Chemical & Materials Division at Lawrence Livermore National Lab (Livermore, CA); Oct. 17—UC Biotechnology Research & Education Program workshop (Davis, CA); Oct. 27— Electrical Engineering at USC (Los Angeles, CA)

CONTRACTS & GRANTS**Current Funding**

<i>Years</i>	<i>Source</i>	<i>Title</i>	<i>Amount</i>	<i>Role</i>
2018-2022	NIH	Integrated Instrument for non-natural aptamer generation	\$1,280,000	PI
2017-2022	NIH	Canary Cancer Research Education Summer Training (Canary Crest) Program	\$1,198,935	PI
2017-2022	Chan Zuckerberg Biohub	Chan Zuckerberg Biohub Investigator Program	\$1,432,500	PI
2018-2020	CRUK Cambridge Centre/Canary Foundation	Early cancer detection through transcriptomic analysis of host immune cells	\$66,000	Co-PI
2018-2019	NIH	Real-time biosensor for mapping the function of the pancreas	\$541,401	PI
2018	Stanford Diabetes Research Center (SDRC)	Real-time biosensor for continuous in vivo detection of glucose	\$25,000	PI
2017-2018	Gates Center for Human Systems Immunology	Multiplexed, high-resolution detection of cytokines in complex samples	\$100,000	PI

Recent Funding

<i>Years</i>	<i>Source</i>	<i>Title</i>	<i>Amount</i>	<i>Role</i>
2016-2017	DARPA	Binder-Finder through Machine-Learning (BMFL)	\$1,095,126	PI
2016-2017	Merck Sharp & Dohme Corp	Evaluation of differential protein expression in Jurkat T cell model of HIV latency	\$145,569	PI
2014-2017	DARPA	Encode-Sort-Decode (ESD): Integrated System for Discovery of Non-Natural Affinity Reagents	\$3,989,992	PI
2010-2017	Army Research Office (ARO)	Systems Biology of Coagulation and Trauma-Induced Coagulopathy	\$1,127,377	Co-PI
2014-2017	Keck Foundation	Continuous Real-Time Measurements of Psychoactive Molecules in the Brain	\$1,000,000	Co-PI
2009-2016	NIH	U01: Midwestern Progenitor Cell Consortium	\$927,238	Co-PI
2011-2016	MedImmune	Detection of Host Cell Proteins	\$1,383,185	PI
2010-2015	NIH	R01: Rapid Detection of Diagnostic Chemokines	\$982,701	Co-PI
2009-2014	NIH	R01: Polypeptide Design with Proteomic Scope via Microfluidic mRNA Display	\$670,790	MPI
2008-2014	Army Research Office (ARO)	High Throughput Selection of Protein-Based Affinity Reagents via Microfluidic Separation	\$834,499	PI
2011-2013	Army Research Office (ARO)	Technology of Continuous Real-Time Monitoring of Biomarkers in Living Organisms	\$48,750	PI
2010-2013	Sanford Burnham Institute	Hybrid Nanotechnologies for Detection and Synergistic Therapies for Breast Cancer	\$200,000	PI
2009-2013	NIH	R01: Strain Specific Detection of Influenza at the Point-of-Care	\$1,542,874	PI
2009-2010	NIH	R21: Micromagnetic Aptamer PCR System for Ultrasensitive Multiplexed Protein Detection	\$328,422	PI

2008-2011	DOD/AFIRM	Army Institute of Regenerative Medicine (AFIRM): High Purity Magnetophoretic Sorting for Transplant Therapies	\$525,000	PI
2008-2011	Office of Naval Research (ONR)	Ready-To-Use Aptamer Biosensors (RAB) for DNT and RDX	\$637,435	PI
2008-2010	NIH	R21: Rapid Generation of High Affinity Protein Sensor Elements	\$405,000	PI
2007-2009	Errett Fisher Foundation	Directed Evolution of Molecules in Microfluidic Systems	\$150,000	PI
2007	CIRM	UCSB Laboratory for Stem Cell Biology and Engineering	\$2,263,000	Co-PI
2006-2009	Army Research Office (ARO)	Rapid Affinity Reagent Isolation for Pathogen Detection	\$2,100,000	PI
2006-2008	DOE/LLNL	Integrated Aptamer Based Protein Sensor II	\$320,000	PI
2006-2007	DOD/USAMRIC	Aptamers as Bioscavengers	\$125,000	PI
2006-2007	University of California	Instructional Improvement Grant for ME 6	\$6,241	PI
2005-2008	DOE/LLNL	Disposable Affinity Ligand Isolation of Pathogens	\$150,000	PI
2005-2008	Arnold & Mabel Beckman Foundation*	Electrokinetic Methods for Ultrahigh Throughput Separation of Human Hematopoietic Stem Cells for Autologous Transplantation Therapy	\$264,000	PI
2005-2008	Army Research Office (ARO)	Development of a Portable Microfabricated Biosensor	\$2,100,000	Co-PI
2005-2006	DOE/LLNL	Integrated Aptamer Based Protein Sensor I	\$400,000	PI
2005-2006	UC – Cancer Research	Specific Conjugation of Mammalian Cells to Dielectrophoretically Engineered Beads**	\$50,000	PI
2005-2006	DARPA	Center for Nano Initiative in Defense from Serotyping to Genotyping	\$130,000	PI
2005-2006	Army Research Office (ARO)	High Purity Microbial Cell Sorting on Chip	\$110,000	PI
2004-2007	Office of Naval Research (ONR)*	Disposable, Ultrahigh Performance Rare Cell Sorting Device	\$300,000	PI
2004-2006	University of California	Biotechnology Research and Education Program: Dielectric Labeling and Manipulation of Cells	\$100,000	PI
2004-2005	University of California	Regent's Junior Faculty Fellowship: Mammalian Cell Sorting	\$10,000	PI
2004-2005	DARPA/DMEA	Center for Nano Initiative in Defense from Serotyping to Genotyping	\$130,552	PI
2004-2005	Samsung Corporation	Samsung Research Fellowship Award: BioMEMS Technology	\$110,000	PI
2004-2005	University of California	Regent's Junior Faculty Fellowship: Micromachined Cell Sorter	\$10,000	PI
2004-2005	Army Research Office (ARO)	Characterization of Piezoelectricity in Biological Materials	\$133,000	PI

LIST OF PUBLICATIONS

Patents: 10 issued patents (available upon request)

Book:

H. T. Soh, K. Wilder-Guarini, C.F. Quate. *Scanning Probe Lithography*, Kluwer Academic Publishers, Norwell, MA, 2001
ISBN: 0-7923-7361-8

Journal Articles: (in reverse chronological order)

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- J. McGivney, A. Csordas, F. Walker, E. Bagley, E. Gruber, P. Mage, J. Casas-Finet, M. Nakamoto, M. Eisenstein, C. Larkin, R. Strouse, **H. T. Soh**. "A Strategy for Generating Sequence-Defined Aptamer Reagent Sets for Detecting Protein Contaminants in Biotherapeutics." *Analytical Chemistry* 90 (5), 3262-3269 (2018)
- P.L. Mage, B.S. Ferguson, D. Maliniak, K.L. Ploense, T.E. Kippin, and **H.T. Soh** "Closed-loop Control of Circulating Drug Levels in Live Animals." *Nature Biomedical Engineering* 114 (4) 645-650 (2017)
- J. Niu, D. J. Lunn, A. Pusuluri, J.I. Yoo, M.A. O'Malley, S. Mitragotri, **H. T. Soh***, C. J. Hawker* "Engineering live cell surfaces with functional polymers via cytocompatible controlled radical polymerization." *Nature Chemistry* 9, pages 537-545 (2017)
- T. Chuong, A. Pallaoro, C. Chaves, Z. Li, J. Lee, M. Eisenstein, G.D. Stucky, M. Moskovits, and **H. T. Soh** "A dual-reporter SERS-based biomolecular assay with reduced false-positive signals." *Proceedings of the National Academy of Sciences* 114(34) 9056-9061 (2017)
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- A. Csordas, A. Jorgensen, J.P. Wang, E. Gruber, Q. Gong, E. Bagley, M. Nakamoto, M. Eisenstein, and **H.T. Soh**. "High-throughput discovery of aptamers for sandwich assays." *Analytical Chemistry* 88 (22) 10842-10847 (2016)
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