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DOB: July 20, 1970

Education

Ph.D. Chemistry	California Institute of Technology	1999
B.A. Chemistry (<i>summa cum laude</i>)	Seton Hall University	1994

Professional experience

President	Chan Zuckerberg Biohub Chicago	2023 - present
Neena Schwartz Professor	Northwestern University	2021 - present
University Professor	University of Toronto	2018 - 2021
Professor	University of Toronto	2006 - 2018
Professor	Boston College, Chemistry	2006
Assistant Professor	Boston College, Chemistry	2000 - 2006
NIH Postdoctoral Fellow	Scripps Research Institute, Mol. Bio.	1999 - 2000

Awards and honors

Member, National Academy of Inventors	2023
Member, American Academy of Arts and Sciences	2023
Guggenheim Fellowship	2022
ACS Doolittle Award	2022
Fellow, Royal Society of Canada	2021
Order of Ontario	2021
AFPC Pfizer Research Career Award	2020
University Professor Award, University of Toronto	2018
Distinguished Visiting Fellow, Rowland Institute, Harvard University	2018
ACS Inorganic Nanoscience Award	2017
Gabor A. and Judith K. Somorjai Visiting Miller Professorship (UC Berkeley)	2017
NSERC Brockhouse Prize	2016
SLAS Innovation Award	2016
Fellow, American Institute of Biological and Medical Engineers	2016
Fellow, Canadian Academy of Health Sciences	2016
Fulbright Canada Chair at the California NanoSystems Institute, UCLA	2013
Distinguished Professor Award, University of Toronto	2013
Queen Elizabeth II Diamond Jubilee Medal	2012
ORION Leadership Award	2012
Steacie Prize	2011
University of Toronto Inventor of the Year	2011
NSERC E.W.R. Steacie Fellowship	2010
Named one of "Canada's Top 40 under 40"	2009
Pittsburgh Conference Achievement Award	2006
Camille Dreyfus Teacher-Scholar Award	2005
TR100: Voted a top 100 innovator by MIT's Technology Review	2004
Alfred P. Sloan Fellowship	2004
NSF CAREER award	2004
Research Corporation Innovation Award	2000
Dreyfus New Faculty Award	2000

Herbert Newby McCoy Thesis Award (Caltech)	1999
Everhart Distinguished Graduate Student Award (Caltech)	1998

Professional activities

Editorial Advisory Boards, ACS Nano and Nano Letters, 2020 – present.
Chemistry Advisory Board, Stealth Biotherapeutics, 2020 – 2022.
Founder and Board Director CTRL Therapeutics, 2019 – present.
Founder and Board Director, Arma Biosciences, 2020 – present.
Scientific Advisory Board, Sartorius AG, 2019 – present.
Scientific Advisory Committee, Argonne National Laboratory, 2018 – 2023.
Board Director, Fight Against Cancer Trust, 2017 – 2023.
Board Director, Canadian Academy of Health Sciences, 2017 - 2021.
Editorial Advisory Board, Journal of the American Chemical Society, 2016 – present.
Executive Leadership Team & Co-Director, Medicine by Design (CFREF), 2016 – 2021.
Director, PRiME – A Precision Medicine Initiative, 2019 – 2021.
Associate Editor, ACS Sensors, 2015 – present.
Board Director, Ontario Genomics, 2016 – 2019.
Program Committee, ACS Biological Chemistry Div., 2016 – 2019.
Co-Founder and Board Director, Xagenic Inc., 2010 - 2017 (acquired by General Atomics).
Co-Founder and Consultant, GeneOhm Sciences, 2000 - 2006 (acquired by Becton Dickinson).
Board Director, Ohio Children's Foundation, 1995 - 2000

Publications from Kelley Research Group (> 25,000 citations)

1. "Dual-Chronoamperometry Drift Correction for Electrochemical Sensors" K.T. Riordan, K.F. Yang, E. Brazelton, M.A. Eslami, A. Copenhaver, F. Esmaeili, C.D. Flynn, Z.W. Wu, S.E. Isaacson, D.R. Chang, M.D. Cabezas, V.Juska, J. Das, E.H. Sargent, S.O. Kelley.
ACS Sensors, **2025**, 10, 9, 7051-7059.
2. "Going with the Flow: Circulating Tumor-Reactive Lymphocytes Stream into Cancer Therapy" R. Alvarez-Rodriguez, A. Vuchkovska, Z. Wang, C. Chartier, K. Hege, M. Kalos, S.O. Kelley.
Clinical Cancer Research **2025**, OF1-OF10
3. "Programming Aptamer-Protein Complexation Kinetics via Modulation of G-Quadruplex Secondary Structure" C.D. Flynn, D.R. Chang, Y. Lee, S.E. Isaacson, Z.W. Wu, J. Rivnay, S.O. Kelley.
Journal of the American Chemical Society, **2025**, 147, 38, 34204-34210.
4. "ELOVL6 activity attenuation induces mutant KRAS degradation" X.Y. Hue, R.S. Atwal, X. Xiao, S.U. Ahmed, Z.J. Wang, C.L. Zhao, H. Wang, S.O. Kelley.
Nature Chemical Biology, **2025**, DOI10.1038/s41589-025-01998-x.
5. "Microsystem technologies for accelerating the discovery and translation of immunotherapies" Z.J. Wang C. Liu, K.F. Chen Song, J. S.O. Kelley.
Nature Reviews Drug Discovery, **2025**, DOI10.1038/s41573-025-01268-4
6. "Continuous insulin monitoring using an antibody-protecting zwitterionic microneedle patch" A. GhavamiNejad, C.D. Flynn, A. Geraili, S. Mirzaie, F. Esmaeili, H. Zaragartalebi, S. Ahmed, V.B. Juska, J. Das, A. Abdrabou, Y.Y. Zhang, E.H. Sargent, S.O. Kelley
Nature Biomedical Engineering **2025**, 1-13.
7. "Nanobody Receptors Enable High-Sensitivity Monitoring of IL-6 Using Molecular Pendulum Bioanalysis" C.D. Flynn, Z. Wu, A. Bantle, S.E. Isaacson, D. Chang, A. Mahmud. H. Yousefi, J. Das, S.O. Kelley.

8. "Transcription coupled repair occurrence in Trypanosoma cruzi mitochondria" B.M. Repoles, W.R.R. Ferreira, et.al.
Mitochondrion, **2025**, 83.
9. "Mesothelioma cell heterogeneity identified by single cell RNA sequencing" L. Wu, Z. Wang, S.O. Kelley, M. de Perrot.
Scientific Reports, **2025**, 15, 1, 8725.
10. "Mitochondria-Targeted Temozolomide Probe for Overcoming MGMT-Mediated Resistance in Glioblastoma" D. Szames, S.O. Kelley.
ChemBioChem, **2025**, 26, 6, e202400935.
11. "Antifouling Spiky Nanoelectrodes Enhance Detection of Bacterial mRNA" Y.L. Wu, J. Jia, J. Das, K.T. Riordan, C.D. Flynn, Y. Wang, S.O. Kelley, T.W. Odom.
Journal of the American Chemical Society, **2025**, 147, 90, 7868-7874.
12. "Microfluidic technologies for enhancing the potency, predictability and affordability of adoptive cell therapies" Z. Wang, S.O. Kelley.
Nature Biomedical Engineering, **2025**, 1-19.
13. "How to build the virtual cell with artificial intelligence: Priorities and opportunities" C. Bunne, Y. Roohani, et.al.
Cell, **2024**, 187, 25, 7045-7063.
14. "Identification of VISTA regulators in macrophages mediating cancer cell survival" A.M. Abdrabou, S.U. Ahmed, M. J. Fan, B.T.B. Duong, K. Chen, P. Lo, J.M. Mayes, F. Esmaeilie, A. GhavamiNejad, H. Zargartalebi, R.S. Atwal, S. Lin, S. Angers, S.O. Kelley
Science Advances, **2024**, 10, 48.
15. "Active-reset protein sensors enable continuous in vivo monitoring of inflammation" H. Zargartalebi, S. Mirzaie, A. GhavamiNejad, S.U. Ahmed, F. Esmaeili, A. Geraili, C.D. Flynn, D. Chang, J. Das, A. Abdrabou, E.H. Sargent, S.O. Kelley
Science, **2024**, 38, 6726, 1146-1153.
16. "Highly Stable Biotemplated InP/ZnSe/ZnS Quantum Dots for In Situ Bacterial Monitoring" H. Yousefi, L.K. Sagar, A. Geralili, D. Chang, F.P. Garcia de Arquer, C.D. Flynn, S. Lee, E.H. Sargent, S.O. Kelley
ACS Applied Materials & Interfaces, **2024**, 16, 41, 55086-55096.
17. "Identification of Cellular Determinants Impacting Mesangial Cells in IgA Nephropathy: TH-PO540" R.S Atwal, S.E. Quaggin, H.H. Hasan, S.O. Kelley.
Journal of the American Society of Nephrology, **2024**, 35.
18. "Mitochondrial Probe for Glutathione Depletion Reveals NME3 Essentiality for Mitochondrial Redox Response" P. Dhavarasa, T. Sack, C.P. Cerrato, A.P. Cheng, Y.Y.Zhang, K. Chen, S.O. Kelley
ACS Chemical Biology, **2024**, 19, 9, 2012-2022.
19. "Spiky Gold Nanoparticles, a Nanoscale Approach to Enhanced Ex Vivo T-Cell Activation" F. Esmaeilie, Y.L. Wu, Z. Wang, A. Abdrabou, V.B. Juska, H. Zargartalebi, C.D. Flynn, T.W. Odom, E.H. Sargent, S.O. Kelley
ACS Nano, **2024**, 18, 32, 21554-21564.
20. "Self-Healing Materials for Bioelectronic Devices" C. Liu, S.O. Kelley, Z. Wang
Advanced Materials, **2024**, 26, 35, 2401219.

21. "Phenotypic Targeting Using Magnetic Nanoparticles for Rapid Characterization of Cellular Proliferation Regulators" Z. Wang, H. Wang, S. Lin, S. Angers, E.H. Sargent, S.O. Kelley
Science Advances, **2024**, 19, eadj1468.
22. "Self-Assembled Monolayer Transporters Enable Reagentless Analysis of Small Molecule Analytes" C. Flynn, K. Riordan, T. Young, D. Chang, Z. Wu, S. Isaacson, H. Yousefi, J. Das, S.O. Kelley
bioRxiv, **2024**
23. "CRISPR Screening in Tandem with Targeted mtDNA Damage Reveals WRNIP1 Essentiality" T. Sack, P. Dhavarasa, D. Szames, S. O'Brien, S. Angers, S.O. Kelley
ACS Chem. Biol., **2023**, 18(12): 2599-2609.
24. "Digital Microfluidics as an Emerging Tool for Bacterial Protocols" C.R. Nemr, A.A Sklavonous, A.R. Wheeler, S.O. Kelley
SLAS Discov., **2023**, S2472-5552(23)00095-3.
25. "Apta FastZ: An Algorithm for the Rapid Identification of Aptamers with Defined Binding Affinities" Z. Wang, D. Chang, E.H. Sargent, S.O. Kelley
Analytical Chemistry, **2023**, 95(48):17438-17443.
26. "Self-Assembled Homopolymeric Spherulites from Small Molecules in Solution" Q. Song, Y. Li, Z. Jin, H. Liu, M.N. Creyer, W. Yim, Y. Huang, X. Hu, T. He, Y. Li, S.O. Kelley, L. Shi, J. Zhou J. V. Jokerst
J. Am Chem Soc., **2023**, 145(47):25664-25672.
27. "CRISPR Screening in Tandem with Targeted mtDNA Damage Reveals WRNIP1 Essentiality" T. Sack, P. Dhavarasa, D. Szames, S. O'Brien, S. Angers, S.O. Kelley
bioRxiv, **2023**.
28. "A Magneto-Activated Nanoscale Cytometry Platform for Molecular Profiling of Small Extracellular Vesicles" K. Chen, B.T.V Duong, S.U. Ahmed, P. Dhavarasa, Z. Wang, M. Labib, C. Flynn, J. Xu, Y.Y. Zhang. H. Wang, X Yang, J. Das, H. Zargartalebi, Y. Ma, S.O. Kelley
Nature Communication, **2023**, 11;14(1):5576.
29. "Isolation of Tumour-Reactive Lymphocytes from Peripheral Blood via Microfluidic Immunomagnetic Cell Sorting" Z. Wang, S. Ahmed, M. Labib, H. Wang, L. Wu, F. Bavaghar-Zaeimi, N. Shokri, S. Blanco, S. Karim, K. Dzarnecka-Kujawa, E.H. Sargent, A.J.R McGray, M. de Perrot, S.O. Kelley
Nature Biomedical Engineering, **2023**, 7(9):1188-1203.
30. "Efficient Delivery of Biological Cargos into Primary Cells by Electrodeposited Nanoneedles via Cell-Cycle-Dependent Endocytosis" Z. Wang, H. Wang, S. Lin, M. Labib, S. Ahmed, J. Das, S. Angers, E.H. Sargent, S.O. Kelley
Nano Letters, **2023**, 23(13):5877-5885.
31. "A High-Dimensional Microfluidic Approach for Selection of Aptamers with Programmable Binding Affinities" D. Chang, Z. Wang, C.D. Flynn, A. Mahmud, M. Labib, H. Wang, A. Geraili, X. Li, J. Zhang, E.H. Sargent, S.O. Kelley
Nature Chemistry, **2023**, 15(6):773-780.
32. "Biomolecular Sensors for Advanced Physiological Monitoring" C. Flynn, D. Chang, A. Mahmud, H. Yousefi, J. Das, K.T. Riordan, E.H. Sargent, S.O. Kelley
Nature Reviews Bioengineering, **2023**, 11:1-16.
33. "Monitoring Cardiac Biomarkers with Aptamer-Based Molecular Pendulum Sensors" M. Karlikow, E. Ama, S.O. Kelley
Angew Chem Int. Ed. Engl., **2023**, 62(20):e202213567.
34. "CRISPR-Induced DNA Reorganization for Multiplexed Nucleic Acid Detection" M. Karlikow, E. Amalfitano, X. Yang, J. Doucet, A. Chapman, P.S. Mousavi, P. Homme, P.

- Sutryina, W. Chan, S. Lemak, A.F. Yakunin, A.G. Dolezal, S.O. Kelley, L.J. Foster, B.A. Harpur, K. Pardee
Nature Communication, **2023**, 14(1):1505.
35. "Identification of Druggable Regulators of Cell Secretion Via a Kinome-Wide Screen and High-Throughput Immunomagnetic Cell Sorting" M. Labib, Z. Wang, Y. Kim, S. Lin, A. Abdrabou, H. Yousefi, P.Y. Lo, S. Angers, E.H. Sargent, S.O. Kelley
Nature Biomedical Engineering, **2024**, 8 (3), 263-277.
 36. "nuPRISM: Microfluidic Genome-Wide Phenotypic Screening Platform for Cellular Nuclei" A.M. Abdrabou, B.T.V Duong, K. Chen, R.S. Atwal, M. Labib, S. Lin, S. Angers, S.O. Kelley
ACS Cent. Sci., **2022**, 8(12):1618-1626
 37. "Ultra-throughput Immunomagnetic Cell Sorting Platform." D.N. Philpott, K. Chen, R.S. Atwal, D. Li, J. Christie, E.H. Sargent, S.O. Kelley
Lab on a Chip, **2022**, 22, 4822-4830.
 38. "PillarX: A Microfluidic Device to Profile Circulating Tumor Cell Clusters Based on Geometry, Deformability, and Epithelial State." B.J. Green, M. Marazzini, B. Hershey, A. Fardin, Q. Li, Z. Wang, G. Giangreco, F. Pisati, S. Marchesi, A. Disanza, E. Martini, S. Magni, G.V. Beznoussenko, C. Vernieri, R. Lobefaro, D. Parazzoli, P. Maiuri, K. Havas, M. Labib, S. Sigismund, P.P. Di Fiore, R.H. Gunby, S.O. Kelley, G. Scita.
Small, **2022**, 2106097.
 39. "Capillary-Assisted Molecular Pendulum Bioanalysis" H. Zargartalebi, H. Yousefi, C.D. Flynn, S. Gomis, J. Das, T.L. Young, E. Chien, S. Mubareka, A. McGeer, H. Wang, E.H. Sargent, A.S. Nezhad, and S.O. Kelley.
J. Am. Chem. Soc., **2022**, 40, 18338-18349.
 40. "Genome-Wide in Vivo Screen of Circulating Tumor Cells Identifies SLIT2 as a Regulator of Metastasis." F. Xia, Y. Ma, K. Chen, B. Duong, S. Ahmed, R. Atwal, D. Philpott, T. Ketela, J. Pantea, S. Lin, S. Angers, S. O. Kelley.
Science Advances, **2022**, 35, eabo7792.
 41. "Nanoparticle Amplification Labeling for High Performance Magnetic Cell Sorting." Z. Wang, H. Wang, S. Lin, S. Ahmed, S. Angers, E.H. Sargent, S.O. Kelley,
Nano Letters, **2022**, 22, 4774-4783.
 42. "Challenges and Opportunities for Wearable Sensing Systems." S.O. Kelley
ACS Sensors, **2022**, 7, 345-346.
 43. "Efficient Recovery of Potent Tumor-Infiltrating Lymphocytes Through Quantitative Immunomagnetic Cell Sorting" Z. Wang, S. Ahmed, M. Labib, H. Wang, X. Hu, J. Wei, Y. Yao, J. Moffat, E.H. Sargent, S.O. Kelley
Nature Biomedical Engineering, **2022**, 6, 108-117.
 44. "Rapid On-Cell Selection of High-Performance Human Antibodies." D. Philpott, S. Gomis, H. Wang, R. Atwal, A. Kelil, T. Sack, B. Morningstar, C. Burnie, E.H. Sargent, S. Angers, S. Sidhu, S.O. Kelley
ACS Central Science, **2022**, 8, 102-109.
 45. "Phage-Based Profiling of Rare Single Cells Using Nanoparticle-Directed Capture." Y. Ma, K. Chen, F. Xia, R. Atwal, H. Wang, S.U. Ahmed, L. Cardarelli, I. Lui, B. Duong, Z. Wang, J.A. Wells, S.S. Sidhu, S.O. Kelley
ACS Nano, **2021**, 15, 19202-19210.
 46. "A Microfluidic Platform Enables Comprehensive Gene Expression Profiling of Mouse Retinal Stem Cells." M. Labib, B. Coles, M. Poudineh, B. Innes, J. Belair-Hickey, S. Gomis, Z. Wang, G. Bader, E.H. Sargent, S.O. Kelley, D. van der Kooy
Lab on a Chip, **2021**, 21, 4208-4222.

47. "Bacterial Classification and Antibiotic Susceptibility on an Integrated Microfluidic Platform." A. Sklavounos, C.R. Nemr, S.O. Kelley, A.R. Wheeler
Lab on a Chip, **2021**, 21, 4464-4476.
48. "Cell-Free DNA and Circulating Tumor Cell Kinetics in a Pre-Clinical Head and Neck Cancer Model Undergoing Radiation Therapy." N. Muhanna, D. Eu, H.H.L. Chan, C. Douglas, J.L. Townson, M.A. Di Grappa, R.M. Mohamadi, S.O. Kelley, S.V. Bratman, J. Irish
BMC Cancer, **2021**, 143, 15606-15615.
49. "Bright and Stable Light-Emitting Diodes Based on Perovskite Quantum Dots in Perovskite Matrix." Y. Liu, Y. Dong, T. Zhu, D. Ma, A. Proppe, B. Chen, C. Zheng, Y. Hou, S. Lee, Y. Liu, Y. Dong, T. Zhu, D. Ma, A. Proppe, B. Chen, C. Zheng, Y. Hou, S. Lee, B. Sun, E. Hyuk Jung, F. Yuan, Y. Wang, L. K. Sagar, S. Hoogland, F. Pelayo García de Arquer, M.-J. Choi, K. Singh, S.O. Kelley, O. Voznyy, Z.-H. Lu, and E.H. Sargent
Journal of the American Chemical Society, **2021**, 143, 15606-15615.
50. "Multifunctional 3D-Printed Wound Dressings." M. Alizadehgiashi, C.R. Nemr, M. Chekini, D. Pinto Ramos, N. Mittal, S.U. Ahmed, N. Khuu, S.O. Kelley, E. Kumacheva
ACS Nano, **2021**, 15, 12375-12387.
51. "AbCellera's Success is Unprecedented: What Have We Learned?"
D. Sinton, S.O. Kelley
Lab Chip, **2021**, 21(12):2330-2332.
52. "Multication Perovskite 2D/3D Interfaces Form via Progressive Dimensional Reduction."
A.H. Proppe, A. Johnston, S. Teale, A. Mahata, R. Quintero-Bermudez, E. H. Jung, L. Grater, T. Cui, T. Filleter, C.-Y. Kim, S.O. Kelley, F. De Angelis, E.H. Sargent
Nature Communications, **2021**, 12, 3472.
53. "Circulating Tumor Cell Profiling for Precision Oncology" M. Labib, S.O. Kelley
Molecular Oncology, **2021**, 15, 1622-1646.
54. "Mitochondrial ATP Fuels ABC Transporter-Mediated Drug Efflux in Cancer Chemoresistance."
E.L. Giddings, D.P. Champagne, M.H. Wu, J.M. Laffin, T.M. Thornton, F. Valenca-Pereira, R. Culp-Hill, K.A. Fortner, N. Romero, J. East, P. Cao, H. Arias-Pulido, K. S. Sidhu, B. Silverstrim, Y. Kam, S. Kelley, M. Pereira, S.E. Bates, J.Y. Bunn, S.N. Fiering, D.E. Matthews, R.W. Robey, D. Stich, A. D'Alessandro, M. Rincon
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55. "Reagentless Biomolecular Analysis Using a Nanoscale Molecular Pendulum"
J. Das, S. Gomis, J.B. Chen, H. Yousefi, S. Ahmed, A. Mahmud, W. Zhou, S.O. Kelley
Nature Chemistry, **2021**, 14, 428-434.
56. "COVID-19: A Crisis Creating New Opportunities for Sensing"
S.O. Kelley
ACS Sens., **2021**, 6(4):1407.
57. "Strategies for Biomolecular Analysis and Continuous Physiological Monitoring"
A. Clifford, J. Das, H. Yousefi, A. Mahmud, J.B. Chen, S.O. Kelley
Journal of the American Chemical Society, **2021**, 143, 5281-5294.
58. "Detection of SARS-CoV-2 Viral Particles Using Direct, Reagent-Free Electrochemical Sensing."
H. Yousefi, A. Mahmud, D. Chang, J. Das, S. Gomis, J.B. Chen, H. Wang, T. Been, L. Yip, E. Coomes, Z. Li, S. Mubareka, A. McGeer, N. Christie, S. Gray-Owen, A. Cochrane, J.M. Rini, E.H. Sargent, and S.O. Kelley
Journal of the American Chemical Society, **2021**, 143, 1722-1727.
59. "Ultrasensitive Detection of Rare Leukemic B Cells in T Cell Populations."
Z. Wang, E.H. Sargent, S.O. Kelley
Analytical Chemistry, **2021**, 93, 2327-2335.

60. "2021: A Year Starting Full of Hope"
J.J. Gooding, N. Camasso, E. Bakker, S.O. Kelley, M. Sailor, M. Merkx, L. Mao, H. Clark, R. Maboudian, J.F. Masson, A. DeMello, M. Li, S.M. Liu
ACS Sens, **2021**, 6(1):1-2.
61. "Tracking the Expression of Therapeutic Protein Targets in Rare Cells by Antibody-Mediated Nanoparticle Labelling and Magnetic Sorting." M. Labib, Z. Wang, S.U. Ahmed, R.M. Mohamadi, B. Duong, B. Green, E.H. Sargent, S.O. Kelley
Nature Biomedical Engineering, **2021**, 5, 41-52.
62. "Mitochondrial Targeting of Probes and Therapeutics to the Powerhouse of the Cell" C. Ma, S.O. Kelley
Bioconjug Chem., **2020**, 12(1):2804
63. "A Liquid Biopsy for Detecting Circulating Mesothelial Precursor Cells: A New Biomarker for Diagnosis and Prognosis in Mesothelioma" B.T.V Duong, L. Wu, B.J. Green, F. Bavaghar-Zaeimi, Z. Wang, M. Labib, Y. Zhou, F.J.P Cantu, T. Jeganthan, S. Popescu, J. Pantea, M. dePerrot, S.O. Kelley
EBioMedicine, **2020**
64. "Fluorescent Droplet Cytometry for On-Cell Phenotype Tracking."
X. Yang, W. Liu, D. C.-H. Chan, S.U. Ahmed, H. Wang, Z. Wang, C.R. Nemr, S.O. Kelley
Journal of the American Chemical Society, **2020**, 142, 14805-14809.
65. "Celebrating Rising Stars in Sensing"
S.O. Kelley
ACS Sensors, **2020**
66. "Magnetic Ranking Cytometry: Profiling Rare Cells at the Single-Cell Level."
M. Labib, D.N. Philpott, Z. Wang, C. Nemr, J.B. Chen, E.H. Sargent, S.O. Kelley
Accounts of Chemical Research, **2020**, 53, 1445-1457.
67. "Dimensional Mixing Increases the Efficiency of 2D/3D Perovskite Solar Cells"
S. Teale, A.H. Proppe, E.H. Jung, A. Johnston, D.H. Parmar, B. Chen, Y. Hou, S.O. Kelley, E.H. Sargent
J. Phys Chem Lett., **2020**
68. "Nanostructured Architectures Promote the Mesenchymal–Epithelial Transition for Invasive Cells." Z. Wang, F. Xia, M. Labib, M. Ahmadi, H. Chen, J. Das, S.U. Ahmed, S. Angers, E.H. Sargent, S.O. Kelley
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69. "Ultrasensitive and Rapid Quantification of Rare Tumorigenic Stem Cells in hPSC-Derived Cardiomyocyte Populations." Z. Wang, M. Gagliardi, R.M. Mohamadi, S.U. Ahmed, M. Labib, L. Zhang, S. Popescu, Y. Zhou, E.H. Sargent, G.M. Keller
Science Advances, **2020**, 6, eaay7629.
70. "High-Performance Nucleic Acids Sensors for Liquid Biopsy Applications."
J. Das and S.O. Kelley
Angew. Chem. Intl. Ed. **2020**, 59, 2554-2564.
71. "A Multiplexed, Electrochemical Interface for Gene Circuit-Based Sensors."
P. Sadat Mousavi, S.J. Smith, J.B. Chen, M. Karlikow, A. Tinafar, W. Liu, D. Ma, A.A. Green, S.O. Kelley,* K. Pardee*
Nature Chemistry, **2020**, 12, 48-55.
72. "A New Era in Liquid Biopsy: From Genotype to Phenotype." S.O. Kelley and K. Pantel,
Clinical Chemistry, **2020**, 66, 89-96.
73. "Analyzing Proteins at the Single-Cell Level: The Challenge of the Proteome."
M. Labib and S.O. Kelley
Nature Reviews Chemistry, **2020**, 4, 143-158.

74. "High-Throughput Genome-Wide Phenotypic Screening via Immunomagnetic Cell Sorting." B. Mair, P.M. Aldridge, R.S. Atwal, D. Philpott, M. Zhang, S.N. Masud, M. Labib, A.H.Y. Tong, E.H. Sargent, S. Angers, J. Moffat, S.O. Kelley, *Nature Biomed. Eng.* **2019**, 3, 796-805.
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Post-doctoral and graduate research publications

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Invited Conference Lectures (last 10 years)

Pittcon, Chicago, IL (3/17), ACS National Meeting, San Francisco, CA (4/17), Canadian Society for Chemistry National Meeting (5/17), Next Generation Dx, Washington, DC (8/17), ACS National Meeting, Washington, DC (8/17), Liquid Biopsies and Minimally Invasive Diagnostics, San Diego, CA (10/17), Targeting Mitochondria, Berlin, Germany (10/17), Molecular Medicine Tri-Conference, San Francisco, CA (2/18), Pittcon, Orlando, FL (2/18), Bioengineering, Innovations in Microfluidics and Synthetic Biology, Boston, MA (3/18), Electrochemical Society National Meeting, Seattle, WA (5/18), United Mitochondrial

Diseases Symposium, Nashville, TN (6/18), EMBO Chemical Biology Workshop, Heidelberg, Germany (7/18), Gordon Conference on Drug Resistance, Providence, RI (7/18), ACS National Meeting, Boston, MA (8/18), Micro and Nanoengineering in Medicine Conference, Kauai, HI (12/18), Pittcon, Philadelphia, PA (3/19), Nature Biomedical Engineering Conference on In Vitro Diagnostics, Nanchang, China (3/19), ACS National Meeting, Orlando, FL (3/19), Bioelectrochemical Society Meeting, Limerick, Ireland (5/19), Canadian Society for Chemistry, Quebec City (6/19), Next Generation Dx, Washington DC (8/19), ACS National Meeting, San Diego, CA (8/19), CRUK-AACR Joint Conference on Engineering and Physical Sciences in Oncology, London (10/19), Cold Spring Harbor Single Analysis Meeting, NY (11/19), Mitochondrial Medicine, Wellcome Genome Campus, Cambridge, UK (12/19), UT Austin Centre for Electrochemistry Annual Conference, Austin, TX (2/20), Pittcon, Chicago, IL (3/20), Molecular Medicine Tri-Con, San Francisco, CA (3/20), ACS National Meeting (Virtual) (4/20), Pittcon (Virtual) (2/21), ACS National Meeting (Virtual) (3/21), AIChE, Boston, MA (11/21), Pacificchem (Virtual) (12/21), Materials Research Society, Honolulu (5/22), Bioengineering Solutions for Biology and Medicine, Munich (7/22), American Chemical Society, Chicago, IL (8/22), Asilomar Bioelectronics Meeting, Asilomar (9/22), Jonas Center Cell Therapy Symposium, Chicago, IL (9/22), Discovery on Target, Boston, MA (11/22), Micro and Nanotechnology in Medicine Conference, Hawaii (12/22), GRC Physics and Chemistry of Microfluidics, Italy (6/23), Bioelectrochemical Society meeting plenary speaker, Salt Lake City (6/23), Sartorius SAB, Germany (8/23), NMIN, Vancouver (1/24), Science to the Street Translational Research Symposium, New York, NY (4/24), GRC Cardiac Regulatory, London, UK (6/24), Termis world Congress, Seattle, WA (6/24), ACS Fall 2024, Denver, CO (8/24), IEEE Chicago Biosensors, Chicago, IL (10/24), Wefren, Waltham, MA, (10/24), Fasano Longevity Conference, Washington DC (11/24), International Conference on Biomedical Engineering, Singapore (12/24), Pittcon 20205, Boston MA (3/25).

Invited Lectures at Universities/Companies/Government Agencies (last 10 years)

University of Montreal (3/16), University of California, Davis (3/16), Purdue University (4/16), National Institute of Standards and Technology (4/16), University of Washington (5/16), Chinese Academy of Sciences, Shanghai, China (9/16), University of Connecticut (10/16), Ohio State University (10/16), Northwestern University (12/16), University of Rochester (2/17), California Institute of Technology (2/17), Georgia Institute of Technology (4/17), University of California, Berkeley (8/17), Harvard University (10/17), California Institute of Technology (10/17), Yale University (10/17), University of Michigan (11/17), Georgia State University (1/18), University of Victoria (2/18), University of British Columbia (2/18), Simon Fraser University (2/18), University of Arizona (3/18), University of Akron (5/18), University of California, Irvine (5/18), Cambridge University (5/18), University of British Columbia (5/18), University of Stockholm (6/18), Brown University (9/18), Mayo Clinic/U. Minnesota (10/18), Northwestern University (11/18), McMaster University (11/18), McGill University (2/19), University of Illinois, Urbana-Champaign (2/19), Boston College (4/19), North Carolina State University/U. North Carolina (11/19), University of Washington (1/20), U. Ottawa (10/20), Stony Brook (10/20), Carnegie Mellon University (10/20), UC Davis (11/20), Western University (12/20), Oregon Health Sciences University (1/21), University of British Columbia (3/21), U. Chicago (11/22), University of Chicago (2/23), University of Illinois, Urbana-Champaign (4/23), University of Wisconsin (4/23), NIH Emerging Technologies (4/23), Carleton College (4/23), University of Texas (9/23), Abbvie (10/23), University of Illinois, Urbana-Champaign (10/23), TEDxChicago (10/23), University of Chicago (10/23), Chicago BioCapital (11/23) Friends of Lurie (11/23), Emory University (2/24), University of Chicago (5/24), National Autonomous University of Mexico (8/24), Boston University (10/24), University of Vermont (10/24), University of Pennsylvania (11/24), University of Illinois Urbana Champaign (12/24), University of Southern California (2/25), Caltech (2/25), University of Illinois Urbana Champaign (4/25), University of Washington (4/25).

Selected Patents and Patent Applications

Issued

6,649,350	Electrochemical sensor using intercalative, redox-active moieties (US, Germany)
6,461,820	Electrochemical sensor using intercalative, redox-active moieties (US, Germany)
6,221,586	Electrochemical sensor using intercalative, redox-active moieties (US, Germany)
6,958,216	DNA-bridged carbon nanotube arrays (US)
7,202,037	Electrochemical sensor using intercalative, redox-active moieties (US, Germany)
7,741,033	Electrocatalytic nucleic acid hybridization detection (US, Germany, Spain, France, UK, Ireland, Italy)
7,361,470	Electrocatalytic nucleic acid hybridization detection (US, Canada, Germany, Spain,

	<i>France, UK, Ireland, Italy)</i>
8,888,969	Nanostructured microsensors and biosensing devices employing same (<i>US, Canada, China, Germany, Spain, France, UK, Italy, Netherlands, Hong Kong, India, Japan, Singapore)</i>
9,173,952	Mitochondrial penetrating peptides as carriers for antimicrobials (<i>US, China)</i>
9,132,198	Mitochondrial penetrating peptides as carriers for anticancer compounds (<i>US, China)</i>
9,335,289	Bioprobes and methods of use thereof (<i>US)</i>
9,217,179	Systems and methods for multiplexed electrochemical detection (<i>US, UK, Germany, France)</i>
9,772,329	Protein detection method (<i>US, China, Hong Kong, Russia, Germany, France, Spain, UK, Ireland, Italy)</i>
10,073,079	Device for Capture of Particles in Flow (<i>US, Canada)</i>