UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BRUKER SPATIAL BIOLOGY, INC.,
Petitioner,

v.

PRESIDENT AND FELLOWS OF HARVARD COLLEGE and 10X GENOMICS, INC.,
Patent Owner

Case IPR2024-00526
Patent 11,542,554

PETITIONER'S UPDATED EXHIBIT LIST

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Exhibit #	Description
EX1001	U.S. Patent No. 11,542,554 ("the '554 Patent")
EX1002	Declaration of Dr. Kirk Czymmek, Ph.D. under 37 C.F.R. § 1.68
EX1003	Kok Hao Chen et al., *Spatially resolved, highly multiplexed RNA profiling in single cells*, 348(6233) Science 412 (Research Article Summary) – aaa6090-1 - aaa6090-14 (2015) ("Zhuang")
EX1004	U.S. Patent No. 10,457,980 to Long Cai et al. ("Cai")
EX1005	Olympus Lifescience, *Instructions IX71/IX51 Inverted Research Microscope/Inverted Basic Microscope*, (2005) at https://www.ucc.ie/en/media/academic/anatomy/imagingcentre/icdocuments/OLYMPUSIX71_manual.pdf ("Olympus Manual")
EX1006	Bioptechs, *FCS2 (Focht Live-Cell Chamber System) Instructions*, 1-6 (2007) at http://www.bioptechs.com/Instructions/FCS2_i/fcs2-3_i.htm ("FCS2 Instructions")
EX1007	Sivaraj Sivaramakrishnan et al., *Shear Stress Induced Reorganization of the Keratin Intermediate Filament Network Requires Phosphorylation by Protein Kinase C* ζ, 20 Molecular Biology of the Cell 2755-2765 (2009) ("Sivaramakrishnan")
EX1008	Chatarina Larsson et al., *In situ detection and genotyping of individual mRNA molecules*, 7 Nature Methods 395-397 (2010) ("Larsson")
EX1009	Emmanuelle Querido and Pascal Chartrand, "Chapter 12 Using Fluorescent Proteins to Study mRNA Trafficking in Living Cells," 85 *Methods In Cell Biology*, Elsevier Inc. 273-292 (2008) ("Querido")
EX1010	Andrea M. Femino et al., "[13] Visualization of Single Molecules of mRNA in Situ," 361 *Methods in Enzymology*, Elsevier Science (USA) 245-304 (2003) ("Femino")
EX1011	Evan P. Perillo et al., *Enhanced 3D localization of individual RNA transcripts via astigmatic imaging*, 8950 SPIE 895003-1-895003-11 (2014) downloaded from https://www.researchgate.net/publication/263033754_Enhanced_3D_localization_of_individual_RNA_transcripts_via_astigmatic_imaging ("Perillo")
EX1012	Alison J. North, *Seeing is believing? A beginners' guide to practical pitfalls in image acquisition*, 172 The Journal of Cell Biology 9-18 (2006) ("North")
EX1013	US Patent Application Publication No. US 2015/0267251 A1 to Long Cai et al. ("Cai reference")
EX1014	Paul James, *Water Objectives A personal exploration… all is not what it seems*, Microscopy UK 1-8 (2004) at www.microscopy-uk.org.uk/mag/indexmag.html?http://www.microscopy-uk.org.uk/mag/artoct04/pjwater.html ("James")
EX1015	David L. Spector et al., "[75] Observation of Live Cells in the Light Microscope," *Cells A Laboratory Manual Volume 2: Light Microscopy and Cell Structure*, Cold Spring Harbor Laboratory Press, 75.1-75.13 (1998) ("Spector")

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EX1016	Hamilton, *HVXM 8-5 Valve | Laboratory Products*, (November 7, 2023) at https://www.hamiltoncompany.com/laboratory-products/valves/36766 ("Hamilton website")
EX1017	Clare O'Connor, *Fluorescence In Situ Hybridization (FISH)*, 1(1):171 Nature Education (2008) at https://www.nature.com/scitable/topicpage/fluorescence-in-situ-hybridization-fish-327/ ("O'Connor")
EX1018	Derek Toomre and Joerg Bewersdorf, *A New Wave of Cellular Imaging*, 26 Annu. Rev. Cell Dev. Biol. 285-287 (2010) ("Toomre")
EX1019	Robert S. Fischer et al., *Microscopy in 3D: a biologist's toolbox*, 21(12) Trends Cell Biol. 682-691 (2011) at https://pubmed.ncbi.nlm.nih.gov/22047760/ ("Fischer")
EX1020	Sheel Shah et al., *Dynamics and spatial genomics of the nascent transcriptome by intron seqFISH*, 174(2) Cell 363-376 (2018) at https://pubmed.ncbi.nlm.nih.gov/29887381/ ("Shah")
EX1021	Jeffrey R. Moffitt and Xiaowei Zhuang, *RNA Imaging with Multiplexed Error Robust Fluorescence in situ Hybridization*, 572 Methods Enzymol 1-49 (2016) at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5023431/ ("Moffitt")
EX1022	Steven M. Chirieleison et al., *Automated Live Cell Imaging Systems Reveal Dynamic Cell Behavior*, 27 Biotech. Prog. 913-924 (2011) ("Chirieleison")
EX1023	Michael D. Abràmoff et al., *Image Processing with ImageJ*, Biophotonics Int'l. 1-7 (2004) ("ImageJ")
EX1024	Erlend Hodneland et al., *CellSegm – a MATLAB toolbox for high-throughput 3D cell segmentation*, 8:16 Source Code for Biology and Medicine 1-24 (2013) ("Hodneland")
EX1025	Emilie A. Delaune et al., *Single-Cell-Resolution Imaging of the Impact of Notch Signaling and Mitosis on Segmentation Clock Dynamics*, 23 Developmental Cell, Elsevier Inc. 995-1005 (2012) ("Delaune")
EX1026	Duy Anh Bui and Peter C. Hauser, *Analytical devices based on light-emitting diodes – a review of the state-of-the-art*, 853 Analytica Chimica Acta 46-58 (2014) ("Bui")
EX1027	Jie Xiao, "Single-Molecule Imaging in Live Cells," *Handbook of Single-Molecule Biophysics*, Springer 43-93 (2009) ("Xiao")
EX1028	Allen Ehrlicher et al., "Chapter 21 Optical Neuronal Guidance," 83 *Methods in Cell Biology,* Elsevier Inc. 495-520 (2007) ("Ehrlicher")
EX1029	Christopher Fang-Yen et al., *Video-rate tomographic phase microscopy*, 16(1) Journal of Biomedical Optics 011005-1 – 011005-5 (2011) ("Fang-Yen")
EX1030	Marc J.P. Richard et al., *Cellular mechanisms by which lipoic acid confers protection during the early stages of cerebral ischemia: A possible role for calcium*, 69 Neuroscience Research 299-307 (2011) ("Richard")
EX1031	Harvard Apparatus, *PHD 22/2000 Syringe Pump Series User's Manual*, (1996) at https://www.harvardapparatus.com/media/harvard/pdf/702000_Syringe_Pumps_Manual.pdf ("Harvard Apparatus Manual")
EX1032	Feimo Shen et al., "[32] Digital Autofocus Methods for Automated Microscopy," 414 *Methods in Enzymology*, Elsevier Inc. 620-632 (2006) ("Shen")

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EX1033	Olympus Lifescience, *Inverted Research System Microscopes IX71/IX81 IX2 Series Manual Olympus IX-71*, (2009) at https://afns-labs.ualberta.ca/wp-content/uploads/sites/58/2018/05/Olympus-IX81-brochure.pdf.pdf
EX1034	Information Disclosure Statement (IDS) dated August 6, 2021, submitted by Applicant during prosecution of U.S. Patent Application No. 17/395,534 before the United States Patent and Trademark Office.
EX1035	Non-Final Rejection issued by the United States Patent and Trademark Office dated March 4, 2022, during prosecution of U.S. Patent Application No. 17/395,534
EX1036	Notice of Allowance issued by the United States Patent and Trademark Office dated June 21, 2022, during prosecution of U.S. Patent Application No. 17/395,534
EX1037	Pending and Amended claims filed by the Applicant on February 14, 2022, during prosecution of U.S. Patent Application No. 17/395,534 before the United States Patent and Trademark Office
EX1038	Applicant's Arguments and Remarks made in an Amendment, Amendment/Request for ReConsideration-After Non-Final Rejection and Claims filed by the Applicant on June 3, 2022, during prosecution of U.S. Patent Application No. 17/395,534 before the United States Patent and Trademark Office
EX1039	Kristen A. Brileya et al., *Bioflim growth mode promotes maximum carrying capacity and community stability during product inhibition syntrophy*, 5 Frontiers in Microbiology 1-13 (2014) ("Brileya")
EX1040	U.S. Patent Application Publication No. US 2011/0090562 A1 to Jeffrey S. Brooker ("Brooker")
EX1041	U.S. Patent Application Publication No. US 2011/0216953 A1 to Daniel E. Callahan and Bahram Pravin ("Callahan")
EX1042	U.S. Patent Application Publication No. US 2015/0098126 A1 to Phillip Johannes Keller and Raghav Kumar Chhetri ("Keller")
EX1043	Nikon MicroscopyU, *Culture Chambers for Live-Cell Imaging* (August 2015) at https://web.archive.org/web/20150810165805/http://www.microscopyu.com:80/articles/livecellimaging/culturechambers.html. ("Nikon")
EX1044	Cassandra S. Niman et al., *Controlled microfluidic switching in arbitrary time sequences with low drag*†, 13 Lab Chip 2389-2396 ("Niman")
EX1045	Thermo Fischer Scientific, *Fluorescence SpectraViewer*, at https://thermofischer.com/order/fluorescence-spectraviewer/#!/
EX1046	Gregory B. Sands et al., *Automated Imaging of Extended Tissue Volumes Using Confocal Microscopy*, 67 Microscopy Research and Technique 227-239 (2005) ("Sands")
EX1047	Caroline A. Schneider et al., *NIH Image to Image J: 25 years of Image Analysis*, 9(7) Nat. Methods 671-675 (2012) downloaded at https://pubmed.ncbi.nlm.nih.gov/22930834/ ("Schneider")
EX1048	Peder Skafte-Pedersen et al., *A self-contained, programmable microfluidic cell culture system with real-time microscopy access*, 14 Biomed Microdevices 385-399 (2012) ("Skafte-Pedersen")

Exhibit #	Description
EX1049	Leïla Tirichine et al., *3D fluorescent in situ hybridization using Arabidopsis leaf cryosections and isolated nuclei*, 5:11 Plant Methods 1-7 (2009) ("Tirichine")
EX1050	Johannes T. Wessels et al., *Light-Emitting Diodes in Modern Microscopy—From David to Goliath?*, 81A Cytometry Part A 188-197 (2012) downloaded at https://onlinelibrary.wiley.com/doi/10.1002/cyto.a.22023 ("Wessels")
EX1051	Michael H. Winer et al., *Application of a three-dimensional (3D) particle tracking method to microfluidic particle focusing*, 14 Lab Chip 1443-1451 (2014) ("Winer")
EX1052	Patrick JM Zessin et al., *A hydrophilic gel matrix for single-molecule super-resolution microscopy*, 2:4 Optical Nanoscopy 1-8 (2013) ("Zessin")
EX1053	Olympus Lifescience, *Research Inverted System Microscope IX71/IX81 IX2 Series*, (2005) at https://www.olympus-lifescience.com/data/olympusmicro/brochures/pdfs/ix71.pdf?rev=EABE
EX1054	Ilja Gerhardt et al., *Detection of Single Molecules Illuminated by a Light-Emitting Diode*, 11 Sensors 905-916 (2011) ("Gerhardt")
EX1055	Akifumi Hattori et al., *Single-molecule Imaging with an Inexpensive UV-LED Light Source*, 38 Chemistry Letters 234-235 (2009) ("Hattori")
EX1056	Jason S. Kuo et al., *High-power blue/UV light-emitting diodes as excitation sources for sensitive detection*, 25 Electrophoresis 3796-3804 (2004) ("Kuo")
EX1057	Thermo Fischer Scientific, *FluoSpheres™ Carboxylate-Modified Microspheres*, (January 9, 2024) at https://www.thermofisher.com/order/catalog/product/F8809
EX1058	Metadata for Ex.1005
EX1059	Metadata for Ex.1033
EX1060	Metadata for Ex.1053
EX1061	Stipulation and Order Amending Scheduling Order, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (December 20, 2023 D. Del.) (No. 231)
EX1062	Plaintiffs, 10x Genomics, Inc. and President and Fellows of Harvard College's Complaint, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (February 28, 2022 D. Del.) (No. 1)
EX1063	Plaintiffs, 10x Genomics, Inc. and President and Fellows of Harvard College's Second Amended Complaint, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (March 1, 2023 D. Del.) (No. 92)
EX1064	Defendant, NanoString Technologies, Inc.'s First Amended Answer, Affirmative Defenses, and Counterclaims to 10x and Harvard's Second Amended Complaint, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (July 18, 2023 D. Del.) (No. 157)
EX1065	Curriculum Vitae of Kirk J. Czymmek
EX1066	Defendant, NanoString Technologies, Inc.'s Status Report Regarding Bankruptcy-Related Developments, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (February 22, 2024 D. Del.) (No. 275)

Exhibit #	Description
EX1067	Oral Order Staying Case, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (March 14, 2024 D. Del.) (No. 279)
EX1068	Stipulation and Order Lifting Stay, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (June 14, 2024 D. Del.) (No. 286)
EX1069	Joint Status Report, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (June 28, 2024 D. Del.) (No. 298)
EX1070	Joint Status Report Attachment A – Proposed Schedules for the 261 and 1375 Cases, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (June 28, 2024 D. Del.) (No. 298-1)
EX1071	Oral Order Advancing Trial Date to September 16, 2024, *10X Genomics, Inc. and President And Fellows of Harvard College v. Nanostring Technologies Inc.*, C.A. No. 22-261-MFK (December 13, 2023 D. Del.) (No. 227)
EX1072	United States District Courts — National Judicial Caseload Profile (https://www.uscourts.gov/sites/default/files/fcms_na_distprofile1231.2023_0.pdf) last visited on June 30, 2024.
EX1073	U.S. Patent No. 12,209,327
EX1074	Tatjana Trcek et al., *mRNA quantification using singte-motecute FISH in Drosophtla embryos*, 12 Nature Protocols 1326-48 (2017)
EX1075	Andrew G. York, et al., *Confined activation and subdiffractive localization enables whole-cell PALM with genetically expressed probes*, Nature Methods (2011)
EX1076	Seema S. Lakdawala et al., *Influenza A Virus Assembly Intermediates Fuse in the Cytoplasm*, 10 PLOS Pathogens e1003971 (2014)
EX1077	Nico Battich, et al., *Image-based transcriptomics in thousands of single human cells at single-molecule resolution*, 10 Nature Methods 1127-1133 (2013)
EX1078	Supplementary Information for Nico Battich, et al., *Image-based transcriptomics in thousands of single human cells at single-molecule resolution*, 10 Nature Methods 1127-1133 (2013)
EX1079	Supplementary Table 5 for Nico Battich, et al., *Image-based transcriptomics in thousands of single human cells at single-molecule resolution*, 10 Nature Methods 1127-1133 (2013)
EX1080	CosMx™ SMI for Single-Cell Imaging at https://nanostring.com/products/cosmx-spatial-molecular-imager/single-cell-imaging-overview/
EX1081	National Cancer Institute Center For Cancer Research "10x Genomics Xenium Analyzer" at https://ostr.ccr.cancer.gov/emerging-technologies/spatial-biology/xenium/
EX1082	Transcript of the Deposition of Hari Shroff, Ph.D.
EX1083	Transcript of the Deposition of Julie Davis
EX1084	Google Scholar Search Results: “3D microscopy”
EX1085	Fei Chen et al., *Expansion Microscopy*, 347 Nature Reports 543-48 (2015)

Exhibit #	Description
EX1086	Reply Declaration of Dr. Kirk Czymmek, Ph.D. under 37 C.F.R. § 1.68
EX1087	**[Confidential]** Settlement Agreement
EX1088	**[Confidential]** Collateral Agreement
EX1089	**[Confidential]** Collateral Agreement
EX1090	**[Confidential]** Collateral Agreement

Dated: May 19, 2025

Respectfully submitted,

/Derek C. Walter/

Derek C. Walter (Reg. No. 74,656)
Lead Counsel for Petitioner
Jones Day
555 California St.
26th Floor
San Francisco, CA 94104

CERTIFICATE OF SERVICE

I hereby certify that on May 19, 2025, a true and correct copy of **PETITIONER'S UPDATED EXHIBIT LIST** is being served via electronic mail upon the following:

David H. Holman, Ph.D., Reg. No. 61,205 Pratibha Khanduri, Reg. No. 81,318 Robert Greene Sterne, Reg. No. 28,912 Gaby L. Longsworth, Reg No. 47,756 STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1101 K Street NW, 10th Floor Washington DC 20005 T: (202) 371-2600 dholman@sternekessler.com pkhanduri-PTAB@sternekessler.com rsterne-PTAB@sternekessler.com glongs-PTAB@sternekessler.com PTAB@sternekessler.com	Ruben J. Rodrigues, Reg. No. 66,905 FOLEY & LARDNER LLP 111 Huntington Avenue Boston, Massachusetts 02199 617.342.4000 (telephone) 617.342.4001 (facsimile) rrodrigues@foley.com BOST-F-10Xv.Nanostring@foley.com Sarah E. Rieger FOLEY & LARDNER LLP 777 East Wisconsin Avenue Milwaukee, WI 53202 T: (414) 271-2400 F: (414) 297-4900 srieger@foley.com

Dated: May 19, 2025

/Derek C. Walter/
Derek C. Walter,
Lead Counsel for Petitioner
Reg. No. 74,656