UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.,
Petitioner,

v.

THE CHINESE UNIVERSITY OF HONG KONG,
Patent Owner.

Case No. IPR2024-00028
Patent No. 11,091,794

PETITIONER'S UPDATED EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 11,091,794 to Lo ("the '794 patent")
1002	Declaration of Dr. Christophe Dessimoz
1003	Curriculum Vitae of Christophe Dessimoz, Ph.D.
1004	U.S. Patent Application No. 16/995,607 File History
1005	U.S. Patent Application No. 17/379,544 File History
1006	Flusberg, et al., "Direct Detection of DNA Methylation During Single-molecule, Real-Time Sequencing," *Nature Methods* 7(6) (2010) ("Flusberg")
1007	U.S. Patent No. 9,175,338 to Flusberg et al. ("Flusberg-338")
1008	Clark, et al. "Direct Detection and Sequencing of Damaged DNA Bases" *Genome Integrity* 2 (2011) ("Clark")
1009	Loomis et al., "Sequencing the Unsequenceable: Expanded CGG-repeat Alleles of the Fragile X Gene," *Genome Research* 23(1) (2013) ("Loomis")
1010	Schadt, et al., "Modeling Kinetic Rate Variation in Third Generation DNA Sequencing Data to Detect Putative Modifications to DNA Bases," *Genome Research* 23(1) (2013) ("Schadt")
1011	BAM Format Specification for PacBio, PacBioFileFormats 5.0 Documentation, http://web.archive.org/web/20170916112547/http://pacbiofileformats.readthedocs.io/en/5.0/BAM.html (archived Sep. 16, 2017) ("PacBio-BAM")
1012	SAM/BAM Specification Working Group, Sequence Alignment/Map Format Specification, http://web.archive.org/web/20180613134937/http://samtools.github.io/hts-specs/SAMv1.pdf (archived Jun. 13, 2018) ("SAM/BAM Specification")
1013	Davis et al., "Entering the Era of Bacterial Epigenomics with Single Molecule Real Time DNA Sequencing," *Current Opinion in Microbiology*, 16(2) (2013) ("Davis")
1014	*Take2 Tech, Ltd. v. Pac. Biosciences of Cal., Inc.*, DDE-1-22-cv-01595, Infringement Claim Chart for U.S. Patent No. 11,091,794 ("Take2 Infringement Contentions")

1015	Feng, et al, "Detecting DNA modifications from SMRT Sequencing Data by Modeling Sequence Context Dependence of Polymerase Kinetic," *PLoS Computational Biology*, 9(3) (2013) ("Feng")
1016	"Detecting DNA Base Modifications Using Single Molecule, Real-Time Sequencing," https://www.pacb.com/wp-content/uploads/2015/09/WP_Detecting_DNA_Base_Modifications_Using_SMRT_Sequencing.pdf (2012) ("PacBio White Paper")
1017	Zou et al., "A Primer on Deep Learning in Genomics" *Nature Genetics*, 51(1) (Jan. 2019)
1018	U.S. Patent Pub. No. 2016/0326593 to Clement et al. ("Clement")
1019	Pacific Biosciences Template Preparation and Sequencing Guide, https://www.pacb.com/wp-content/uploads/2015/09/Guide-Pacific-Biosciences-Template-Preparation-and-Sequencing.pdf (2015) ("PacBio Template Guide")
1020	U.S. Patent Publication No. 2016/0208241 to Tsai et al. ("Tsai")
1021	Pacific Biosciences kineticsTools Manual, http://web.archive.org/web/20170813085437/https://github.com/PacificBiosciences/kineticsTools/blob/master/doc/manual.rst (2018) ("kineticsTools manual")
1022	Liu et al., "Detection of DNA Base Nodifications by Deep Recurrent Neural Network on Oxford Nanopore Sequencing Data," *Nature Comms.* 10(1) (Jun. 4, 2019) ("Q. Liu")
1023	Eid et al., "Real-time DNA sequencing from single polymerase molecules," Science 323(5910) (2009)
1024	Int. Appl. Publ. No. WO 2012/065043 ("Flusberg PCT")
1025	Jonas Korlach & Stephen W. Turner, "Single-Molecule Sequencing" in *Encyclopedia of Biophysics* (2013) ("Korlach")
1026	GenomeWeb, "PacBio Reveals Beta System Specs for RS; Says Commercial Release is on Track for First Half of 2011," https://www.genomeweb.com/sequencing/pacbios-q3-losses-widen-it-readies-launch-rs-system (2010) ("GenomeWeb")
1027	Jacob Schreiber et al., "Error Rates for Nanopore Discrimination among Cytosine, Methylcytosine, and Hydroxymethylcytosine along Individual DNA Strands," *Proceedings of the National Academy of Sciences* 110(47) (2013) ("Schreiber")

1028	Langlotz, A Roadmap for Foundational Research on Artificial Intelligence in Medical Imaging: From the 2018 NIH/RSNA/ACR/The Academy Workshop, Radiology 291(3) (Apr. 16, 2019) ("Langlotz")
1029	Miotto et al., "Deep Learning for Healthcare: Review, Opportunities and Challenges," *Briefings in Bioinformatics*, 19(6) (2018) ("Miotto")
1030	Tse et al., "Genome-wide Detection of Cytosine Methylation by Single Molecule Real-time Sequencing," *Proceedings of the National Academy of Sciences*, 118(5) (2021) ("Tse")
1031	Tiernan Ray, "AI is Changing the Entire Nature of Compute," *ZDNet*, http://web.archive.org/web/20190630155704/https://www.zdnet.com/article/ai-is-changing-the-entire-nature-of-compute/ (June 30, 2019) ("Ray")
1032	Wenger et al., "Accurate Circular Consensus Long-read Sequencing Improves Variant Detection and Assembly of a Human Genome," *Nature Biotechnology*, 37(10) (Aug. 12, 2019) ("Wenger")
1033	Pacific Biosciences, PacBioFileFormats Documentation (Feb. 2022) ("PacBioFileFormats-2022")
1034	Lau et al., "LongISLND: *in silico* Sequencing of Lengthy and Noisy Datatypes," *Bioinformatics*, 32(24) (2016) ("Lau")
1035	Tahir et al., "iRNA-PseKNC(2methyl): Identify RNA 2'-O-methylation Sites by Convolution Neural Network and Chou's Pseudo Components," *Journal of Theoretical Biology*, 465 (2018) ("Tahir")
1036	DeepVariant Usage Guide, https://github.com/google/deepvariant/blob/42b9c777436d8306f6cb9d2e18da756fa370fcd8/docs/deepvariant-details.md ("DeepVariant")
1037	U.S. Patent Application No. 18/189,084 File History
1038	Liu et al., "Accurate Detection of m6A RNA Modifications in Native RNA Sequences," https://www.biorxiv.org/content/10.1101/525741v1 (Jan. 21, 2019) ("H. Liu")
1039	First Declaration of Nathaniel E. Frank-White
1040	Second Declaration of Nathaniel E. Frank-White
1041	Declaration of Mozhgan Novbakhtian
1042	GitHub, PacBio BAM 3.0, https://github.com/PacificBiosciences/PacBioFileFormats/blob/3.0/BAM.rst (Jan 25, 2017)

1043	GitHub, PacBio BAM 5.0, https://github.com/PacificBiosciences/ PacBioFileFormats/blob/5.0/BAM.rst (Jan 25, 2017)
1044	PacBio Sequencing – How it Works video file
1045	U.S. Patent No. 11,844,666 to Flusberg et al. ("Flusberg-666")
1046	U.S. Patent Application No. 17/891,899 File History

Respectfully submitted,

Dated: February 13, 2024

/Michael T. Rosato/
Michael T. Rosato, Lead Counsel
Reg. No. 52,182

CERTIFICATE OF SERVICE

The undersigned certifies that this paper and EX1001, EX1045-1046 were served today on the Patent Owner at the email correspondence addresses of the Patent Owner as follows:

Michael J. Wise
Joseph P. Hamilton
Yingli Wang
wise-ptab@perkinscoie.com
hamilton-ptab@perkinscoie.com
want-ptab@perkinscoie.com

Dated: February 13, 2024

/Michael T. Rosato/
Michael T. Rosato, Lead Counsel
Reg. No. 52,182