UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ILLUMINA INC.,
Petitioner,

v.

MOLECULAR LOOP BIOSCIENCES, INC.,
Patent Owner.

Case No. IPR2024-00964
Patent No. 11,041,852

REPLY DECLARATION OF GREGORY B. GLOOR, PH.D.

I, Gregory B. Gloor, Ph.D., declare as follows:

I. Introduction

1. My name is Gregory B. Gloor, Ph.D. I am a Professor of Biochemistry in the Schulich School of Medicine and Dentistry at the Western University located in London, Canada. I am over 21 years of age and have personal knowledge of the facts stated below. I am being compensated for my time in connection with this proceeding at my standard consulting rate of $350/hour. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of any proceeding.

2. I previously submitted a declaration in this proceeding (EX1002), in which I addressed whether my article titled "*Microbiome profiling by Illumina sequencing of combinatorial sequence-tagged PCR products*" ("*Gloor*") was made publicly available by the arXiv repository on July 29, 2010. I submit this declaration to further confirm my understanding that *Gloor* was publicly available as of that date.

3. Along with this declaration, I also submit several exhibits evidencing that *Gloor* became publicly available via the arXiv repository as of July 29, 2010. These exhibits are briefly described below.

4. EX1047 is a printout of the arXiv.org webpage titled, *To submit an article*, http://arxiv.org/help/submit, captured by the Internet Archive Wayback Machine on June 23, 2010.

5. EX1048 is a printout of the arXiv.org webpage titled, *To submit an article*, http://arxiv.org/help/submit, captured by the Internet Archive Wayback Machine on September 17, 2010.

6. EX1049 is a declaration of Mina Ching of the Internet Archive, attesting to the authenticity and accuracy of the captured webpages in EX1047 and EX1048.

7. EX1050 is a March 31, 2025 email from arXiv Technical Support (jira@arxiv-org.atlassian.net) to my Western University email address (ggloor@uwo.ca) titled, *AH-93225 Date of release of https://arxiv.org/abs/1007.5075*.

8. EX1051 is a printout of the search results on the arXiv.org website using keywords "microbiome" and "Illumina," conducted on May 20, 2025.

9. EX1052 is a printout of the mothur.org webpage titled, *paired-end reads pipeline (Illumina)*, https://forum.mothur.org/t/paired-end-reads-pipeline-illumina/373, accessed on March 28, 2025.

10. EX1053 is an article titled, *Introducing mothur: Open-Source, Platform-Independent, Community-Supported Software for Describing and Comparing Microbial Communities*, published in Applied and Environmental Microbiology on October 2, 2009.

II. Submission and Availability of *Gloor* on arXiv.org

11. I am familiar with arXiv.org as a user of the repository and a registered author of seven articles publicly available from the repository. EX1002, ¶12. While submission of articles to arXiv.org required registration as a member, use of the repository was open and free and did not require any prior registration. EX1047; EX1048; EX1049 ("We accept submissions only from registered authors."). I had been a user of arXiv.org and was familiar with the repository before I became a registered author to submit articles. In fact, it was my familiarity with the publication policy of arXiv.org, which ensured speedy public availability and ease of accessibility, that motivated me to submit *Gloor* to arXiv.org.

12. Based on my knowledge and experience, the arXiv repository makes submitted articles publicly available shortly after submission, typically within 1-2 business days. EX1002, ¶13. Consistent with my knowledge and experience, the arXiv.org website provides information regarding its publication policy to its users. As shown on archived webpages of the arXiv.org website, in both June and

September 2010, which flanked the dates on which I submitted *Gloor* and it was published on arXiv.org, the arXiv website displayed the publication policy regarding the "[a]vailability of submissions and announcement order." EX1047; EX1048; EX1049. This policy, updated in March 2010, stated that "[s]ubmission to arXiv are normally announced on a daily schedule, with no activity scheduled on weekends." EX1047; EX1048; EX1049. The publication policy provided examples, reproduced below, illustrating the timeline for when a submitted article would be made publicly available and announced in mailings to subscribers, who are typically persons interested in the paper's relevant field.

> **Example:** A submission made on Monday before 16:00 (US Eastern time, EDT/EST) will be publicly available on the web after 20:00 (US Eastern time, EDT/EST) on that day, and will appear in the Tuesday AM regular subject mailing.
>
> **Example:** A submission made on Friday before 16:00 (US Eastern time, EDT/EST) will be publicly available after 20:00 (US Eastern time, EDT/EST) of the following Sunday, and will appear in the Monday AM regular subject mailing.
>
> **Example:** A submission made on Friday at or after 16:00 (US Eastern time, EDT/EST) will be publicly available after 20:00 (US Eastern time, EDT/EST) of the following Monday, and will appear in the Tuesday AM regular subject mailing.

EX1047; EX1048; EX1049. The publication policy was freely accessible on the arXiv.org website and did not require any prior registration.

13. The publication policy of the arXiv repository around the time of *Gloor*'s submission and publication is consistent with my knowledge and experience with typical publication practice of arXiv.org in 2010 and is also consistent with the emails I received from arXiv.org regarding the public availability of *Gloor* as of July 29, 2010.

14. As stated in my previous declaration, I received an email from arXiv.org on July 29, 2010, confirming the public availability of *Gloor* as of that date and stating that the abstract "will appear in today's mailing." EX1002 ¶17, Ex. E. Consistent with my knowledge and experience, while the mailing itself only includes the abstract of a published article, the full text of the article is made available to the public on the arXiv.org website by the time the announcement of publication is made in the mailing sent to subscribers. I have never experienced a situation where I was unable to access an article on the arXiv.org website when its publication had been announced in the mailing.

15. On March 21, 2024, arXiv Technical Support confirmed in an email to me that *Gloor*'s publication "would have been announced on Thursday, July 29, 2010." EX1002 ¶17; Ex. F. On March 31, 2025, I received another email from arXiv clarifying that the "announcement process can take a few hours" and *Gloor* "would have appeared online on 2010-07-30 sometime after midnight or 1AM

UTC," which corresponded to 8PM or 9PM Eastern Time on July 29, 2010. EX1050. The email also stated that the time of *Gloor*'s public availability "has been confirmed by [arXiv's] database records," although "that part of the data" was not "in the publicly displayed record." *Id.*

16. Consistent with my experience, once articles have been made publicly available by the arXiv repository, the general public can locate them on the arXiv.org website in various ways, including performing simple searches using the website's search function, which was in place in 2010, with keywords, author names, fields of interest, and other identifiable information. EX1002 ¶14; Ex. I. For example, a search using the keywords "microbiome" and "Illumina" on the arXiv.org website returned two automatically generated hits, one of which was *Gloor*. EX1051. Each search result provides links to the article, including a direct link to obtain a .pdf file of the article. *Id.* Each search result also provides the dates of when the article was "[s]ubmitted" and when the publication was "originally announced." *Id.* Consistent with my understanding that *Gloor* was publicly available as of July 29, 2010, the automatically generated search result for *Gloor* indicates that it was submitted on July 28, 2010, and that its publication was "originally announced" in July 2010. *Id.*

17. Based on my knowledge, *Gloor* was the subject matter in a discussion in a public forum called mothur.org as of October 2010, and I was a participant in

that discussion. EX1052. Mothur is an open-source software package for the analysis of sequence data, and it was introduced in 2009 by Patrick Schloss of the University of Michigan. EX1053. The mothur.org website provided a forum where professionals in the field of using high-throughput sequencing technologies for microbiome studies, including myself, could discuss issues regarding sequence data analysis. I was familiar with mothur.org and became a member of the forum in 2010 using the screen name "ggloor." EX1052. Based on my knowledge and experience, the mothur.org forum recorded and displayed timestamps for posts as a matter of routine practice.

18. I recall seeing a discussion on the mothur.org forum around October and November 2010 regarding a software pipeline for analyzing paired-end reads generated from the Illumina platform. EX1052. In October 2010, a user with the screen name "umberar7" discussed several articles from my research group, including *Gloor*, stating that I was "in the process of publishing a methodology paper on analyzing paired ends. You can find the paper at http://arxiv.org/abs/1007.5075." *Id.* Consistent with my knowledge, the "methodology paper" this user mentioned referred to an article I submitted to PLoS ONE in July 2010 for publication there. As the review process for methodology papers in PLoS ONE could take months based on my experience, I submitted the same article to the arXiv repository for its

speedy public availability and ease of accessibility, without prejudicing its publication in PLoS ONE. The article was published on arXiv.org as *Gloor* on July 29, 2010. The URL address mentioned in the discussion (http://arxiv.org/abs/1007.5075) is the link to *Gloor* and is the same URL address that arXiv listed in its July 29, 2010 email confirming the public availability of *Gloor*. *Id.*; EX1002 Ex. E. In November 2010, following the publication of the "methodology paper" in PLoS ONE on October 26, 2010 (EX1024), which was substantially identical to *Gloor*, I posted a response in the discussion that "[w]e have now published the methods paper." EX1052.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

DATE: June 24, 2025 By: _____
Gregory B. Gloor, Ph.D.