

Case 2024-01419
U.S. Patent No. 11,840,730

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ILLUMINA INC.,
Petitioner

v.

MOLECULAR LOOP BIOSCIENCES, INC.,
Patent Owner

Case IPR2024-01419
Patent 11,840,730

DECLARATION OF DR. GREGORY PORRECA, PH.D.

I, Gregory Porreca, declare as follows:

1. I make this declaration in support of Molecular Loop's Patent Owner Response to attest to facts relating to the conception of the invention claimed in U.S. Patent No. 11,840,730 (the "'730 patent") at least by March 6, 2009, and the exercise of reasonable diligence from at least April 29, 2009 through May 18, 2009.

2. I am the founder and CEO of Molecular Loop Biosciences, Inc., a life science tools company that is dedicated to unlocking the potential of DNA sequencing through its innovative solutions. In addition to expanding the use of next generation sequencing (NGS) technologies, Molecular Loop designs, manufactures, and sells kits for applications including human genetic sequencing, and infectious disease surveillance such as SARS-CoV-2, H5N1 bird flu, RSV, monkeypox, and more.

3. In 2007, I earned my Ph.D. in Genetics from Harvard University. I have authored or co-authored over 18 academic papers, including in high-impact journals such as Science and Nature Biotechnology, and my published research has been cited over 2,600 times. As a graduate student, I worked in George Church's influential genetics technology lab (the "Church lab") where I co-developed the Polony next-generation DNA sequencing platform. This innovation was among the first embodiments of the concepts underpinning

modern NGS technologies which continue to serve as a vital tool for researchers and remains the gold standard for present day highly multiplex parallel sequencing. Additionally, while in the Church lab, I co-led the development of the Polonator, another DNA sequencing device applying polony sequencing techniques. The Polonator aimed to facilitate genome sequencing accessibility and promote genetic research by making sequencing more affordable.

4. Following my work with the Church lab, I co-founded and served as the CTO of Good Start Genetics, a diagnostics company which was focused on helping to advance positive pregnancy outcomes through its tests that were based on innovative clinical sequencing. Good Start Genetics provided its customers with more affordable diagnostic tools for heritable genetic disorder screening and embryo testing. After its launch in 2012, Good Start Genetics processed over 1.7 million tests before being acquired by Invitae in 2017. EX2017.

5. Having worked as a leader, inventor and entrepreneur in the life science and genetics technology space, I have developed multiple inventions, products, and genetic innovations. In the United States, I conceived of the inventions recited in the claims of the '730 patent at least by March 6, 2009 while working for Good Start Genetics.

6. After conception, I diligently worked in the United States toward reducing the claimed inventions to practice as evidenced by the filing of Application No. 61/179,358 on May 18, 2009. EX1008.

7. In January 2009, I joined Good Start Genetics as an advisor and consultant. On April 1, 2009, I became the Director of Technology at Good Start Genetics and a full-time employee. In early 2009, Good Start Genetics was a new company focused on establishing itself as a business. During the spring of 2009, I was one of approximately four employees at Good Start Genetics and my work ranged across various tasks including activities related to raising capital, business scientific and technology planning, designing algorithms and writing , software, leading and discussing research and development, recruiting talent, and obtaining intellectual property rights, among other roles. I diligently worked with Uri Laserson and the attorneys and staff at Wolf Greenfield (Mr. Patrick Waller and Mr. Daniel Young) between March 6, 2009 and May 18, 2009, within the reasonable limits of my schedule to finalize the patent application by May 18, 2009.

8. The conception of the inventions in the '730 patent is reflected in the draft patent application titled "Methods for Reducing Bias in Preparations of Nucleic Acids." EX2006 is a true and accurate copy of this draft (the "March 6 Application"). The March 6 Application's metadata corroborates that it was

completed and last edited on March 5, 2009 at 4:43pm. EX2009 is a true and accurate copy of the metadata associated with the March 6 Application. EX2007 and EX2008 (March 6 Figures) contain true and accurate copies of the figures created to accompany the March 6 Application. The figures' metadata corroborates that figure 1 was completed and last edited on March 6, 2009 at 12:52:23 AM and figure 2 was completed and last edited on March 6, 2009 at 1:52:36 AM. EX2010 (Figure 1 metadata); EX2011 (Figure 2 metadata). Based on my review, I sent the March 6 Application and its accompanying figures to Patrick Waller at Wolf Greenfield on March 6, 2009. Additionally, both the March 6 Application and accompanying figures were kept in the ordinary course of business since their respective dates, and I certify that the corresponding metadata reflected in EX2009, EX2010, and EX2011 are authentic and unaltered. EX2009; EX2010; EX2011.

9. By early 2009, Good Start Genetics had retained the patent prosecution law firm Wolf, Greenfield & Sacks, P.C. in relation to the patent application that became the '730 patent. By March 2009, I began to prepare draft patent applications and figures with the help of my co-inventor Uri Laserson. On March 6, 2009, I sent a draft patent application and accompanying figures dated March 5, 2009 to Patrick Waller at Wolf Greenfield.

10. Based on my review of written correspondence, on April 24, 2009 I exchanged emails with the attorneys at Wolf Greenfield in relation to the March 6 Application. In the April 24 email exchange, I received a set of seven claims. EX2012 is a true and accurate copy of the May 5 email exchange.

11. Based on my review of written correspondence, on April 27, 2009 I sent an email to the attorneys at Wolf Greenfield and suggested further edits to the claims. On April 28, 2009, I received revised claims from the attorneys at Wolf Greenfield. EX2012 at 3.

12. Based on my review of written correspondence, on April 29, 2009 I called the attorneys at Wolf Greenfield to discuss the claims sent on April 24, 2009 and April 28, 2009. EX2012 at 3. On April 30, 2009, I sent the attorneys at Wolf Greenfield additional paragraphs to add to the application that issued as the '730 patent. EX2012 at 1–2.

13. Based on my review of written correspondence, on April 30, 2009 I sent a separate email to the attorneys at Wolf Greenfield information regarding the inventorship of the invention disclosed in the '730 patent. EX2013 is a true and accurate copy of the April 30, 2009 email.

14. Based on my review of written correspondence, on May 5, 2009 I sent the attorneys at Wolf Greenfield further examples to be added to the application

that became the '730 patent. Based on my review of the written correspondence, I received a response from the attorneys the same day. EX2012 at 1.

15. Based on my review of written correspondence, on May 6, 2009 I sent an email to the attorneys following up on a meeting that took place the previous day, May 5, 2009, in relation to the application that became the '730 patent. EX2014 is a true and accurate copy of the May 14 email exchange.

16. Based on my review of the written correspondence, on May 8, 2009 I sent an email setting up a call to discuss the application that became the '730 patent. EX2014 at 3. Based on my review of the written correspondence, a call relating to the application that became the '730 patent took place on May 9, 2009.

17. Based on my review of written correspondence, on May 11, 2009, I sent an email to the attorneys at Wolf Greenfield in relation to the status of the '730 patent. EX2014 at 2. Based on my review, I also received a response from the attorneys from Wolf Greenfield the same day. EX2014 at 1.

18. Based on my review of written correspondence, on May 13, 2009 I exchanged emails with the attorneys of Wolf Greenfield relating to the status of the application that became the '730 patent. EX2014 at 1.

19. Based on my review of written correspondence, on May 14, 2009 I received an email from the attorneys at Wolf Greenfield relating to the finalization of the application that became the '730 patent. Based on my review

of written correspondence, the attorneys at Wolf Greenfield scheduled a call with me on May 14, 2009 and then sent me a draft application and related figures for the application that became the '730 patent. EX2016 is a true and accurate copy of the May 15 email exchange.

20. Based on my review of written correspondence, on May 15, 2009, I sent an edited version of the draft patent application back to the attorneys at Wolf Greenfield. EX2015 at 1. EX2015 is a true and accurate copy of the May 15 email exchange.

21. Based on my review of written correspondence, on May 15, 2009 I sent further edits to the May 14 Application in an email to the attorneys at Wolf Greenfield. EX2016 at 1.

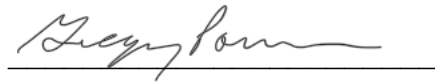
22. I understand that the attorneys at Wolf Greenfield filed the provisional application on May 18, 2009. I confirm that EX1008 is also a true and accurate copy of the May 18 patent application that I conceived of by at least March 6, 2009. EX1008.

23. I put in rigorous effort to review and edit the draft applications the attorneys at Wolf Greenfield prepared and I provided feedback and answers to their questions. I declare under the penalty of perjury under the laws of the United States that the foregoing is true and correct. Executed on July 17, 2025 in Ocean City, New Jersey.

I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

July 17, 2025

Date



Gregory Porreca