UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ILLUMINA, INC.,
Petitioner,

v.

THE TRUSTEES OF COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK
Patent Owner.

IPR2020-01177 (Patent 10,435,742)

DECLARATION OF KENNETH A. JOHNSON, PH.D.

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I. INTRODUCTION AND QUALIFICATIONS

1. I have been retained on behalf of The Trustees of Columbia University in the City of New York ("Columbia") in connection with the challenge by Illumina, Inc. ("Illumina") to the claims of U.S. Patent No. 10,435,742 (the "patent-at-issue").

2. I am being compensated for my time consulting in this matter at the rate of $700 per hour. I have no financial interest in the outcome of this proceeding and my compensation is in no way contingent upon my opinions or the outcome of this proceeding.

3. I am the Roger Williams Centennial Professor of Biochemistry at the University of Texas at Austin and the President and founder of KinTek Corporation, a company noted internationally for its manufacture of instruments and software that I designed for advanced kinetic analysis.

4. I earned a Bachelor of Science in Chemistry with Honors and Highest Distinction from the University of Iowa in 1971. I earned a Ph.D. in Molecular Biology from the University of Wisconsin in 1975 for work done with Professor Gary Borisy.

5. From 1975 to 1979 I was a postdoctoral scholar working with Dr. Edwin W. Taylor at the University of Chicago Department of Biophysics and Theoretical Biology. During this time I was supported by fellowships from the National Institutes of Health and the Muscular Dystrophy Association.

6. Starting as an Assistant Professor in the Department of Biochemistry and Biophysics at The Pennsylvania State University in March 1979, I advanced to the rank of Paul Berg Professor of Biochemistry before leaving in August 1998.

7. Since August of 1998, I have been the Roger Williams Centennial Professor of Biochemistry at The University of Texas at Austin initially in the Department of Chemistry and Biochemistry, which was subsequently reorganized to the Department of Molecular Biosciences.

8. In 1987 I founded KinTek Corporation to manufacture and market instruments that I designed to perform single turnover and transient-state kinetic analysis. I also designed and worked closely with computer programmers to develop a novel approach for modeling and fitting kinetic data.

9. As a principal investigator, I have authored more than 175 original publications and review articles in peer-reviewed journals including Science, Nature, The Proceedings of the National Academy of Sciences, Journal of Biological Chemistry, Biochemistry, Journal of Molecular Biology, Journal of Cell Biology, Antimicrobial Agents and Chemotherapy, Nucleic Acids Research, Journal of Physical Chemistry, and Journal of the American Chemical Society. My publications have been cited more than 18,000 times.

10. I have been invited to present lectures on 188 occasions at universities, biotechnology and pharmaceutical companies and international conferences.

11. I received the Pfizer Award in Enzyme Chemistry and the Penn State Faculty Scholar Award, and I am a Fellow of The American Association for the Advancement of Science and a Fellow of the Biophysical Society. From 1983-1989 I was an Established Investigator of the American Heart Association. I was elected to organize Gordon Conferences in two fields and to organize the Enzyme Mechanisms Conference.

12. Since 1985 I have pioneered in the development and application of accurate methods to quantify DNA polymerase fidelity and establish structure/function relationships governing nucleotide selectivity. I have published 70 papers and review articles on DNA polymerase mechanisms and nucleotide selectivity involving studies on several enzymes: Klenow fragment of DNA polymerase I, T7 DNA polymerase, HIV reverse transcriptase, Taq polymerase, human mitochondrial DNA polymerase, dengue virus polymerase, hepatitis C viral RNA-dependent RNA polymerase.

13. In my work on DNA polymerases, I have provided novel insights into understanding nucleotide recognition and fidelity and the structure/function relationships governing discrimination of polymerases against nucleotide analogs. This work has included analysis of the evolution of resistance to nucleoside analogs by HIV reverse transcriptase and the toxic side effects of these nucleoside analogs due to their incorporation by the human mitochondrial DNA polymerase.

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