IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CORNELL UNIVERSITY, CORNELL RESEARCH FOUNDATION, INC., LIFE TECHNOLOGIES CORPORATION and APPLIED BIOSYSTEMS, LLC, Plaintiffs, v. ILLUMINA, INC., Defendant.	C.A. No. 10-433-LPS JURY TRIAL DEMANDED

ILLUMINA'S ANSWER AND COUNTERCLAIMS TO PLAINTIFFS' COMPLAINT

Defendant Illumina, Inc. answers the Complaint of Cornell University, Cornell Research Foundation, Inc., Life Technologies Corporation, and Applied Biosystems, LLC (collectively, "Plaintiffs") as follows:

ANSWER AND DEFENSES TO PLAINTIFFS' COMPLAINT

NATURE OF THE ACTION

1. This is an action arising under the patent laws of the United States (35 U.S.C. §271 et seq.) based upon infringement by Defendant Illumina, Inc. ("Illumina") of patents owned by Cornell. Exclusive rights in and to each of the patents-in-suit have been granted to Life Technologies. Plaintiffs seek a preliminary injunction, damages for Defendant's infringement, and a permanent injunction restraining Defendant from further infringement.

ANSWER: Illumina admits that the Complaint purports to state an action arising under the patent laws of the United States, 35 U.S.C. § 271, *et seq.*, and alleges infringement of patents by Illumina. Illumina denies that any such infringement has occurred. Illumina admits that Plaintiffs purport to seek a preliminary injunction, damages for Illumina's alleged infringement, and a permanent injunction restraining

Illumina. Illumina is without sufficient knowledge to admit or deny the remaining allegations of this paragraph, and on that basis denies them.

THE PARTIES

2. Plaintiff Cornell University is a private university located in Ithaca, New York. Plaintiff Cornell Research Foundation, Inc. is a New York non-profit corporation, having its principal place of business at 395 Pine Tree Road, Suite 310, Ithaca, New York 14850. Cornell Research Foundation, Inc. is a wholly owned subsidiary of Cornell University, whose mission is to manage the intellectual property invented by Cornell University employees under Cornell University's Inventions and Related Property Rights Policy, including obtaining patent, trademark or copyright protection where appropriate and licensing intellectual property for commercial development and use.

ANSWER: Upon information and belief, Illumina admits that Cornell University is a private university located in Ithaca, New York. Upon information and belief, Illumina admits that Cornell Research Foundation, Inc. is a New York non-profit corporation, having its principal place of business at 395 Pine Tree Road, Suite 310, Ithaca, New York 14850. Illumina is without sufficient knowledge to admit or deny the remaining allegations of this paragraph, and on that basis denies them.

3. Plaintiff Life Technologies Corporation is a Delaware corporation with a principal place of business at 5791 Van Allen Way, Carlsbad, California 92008. Plaintiff Applied Biosystems, LLC is a wholly-owned subsidiary of Life Technologies Corporation. Life Technologies serves the life science industry and research community by developing and marketing instrument-based systems, consumables, software, and services. Its customers use these tools to analyze nucleic acids (DNA and RNA), small molecules, and proteins to make scientific discoveries and develop new pharmaceuticals. Life Technologies' products also serve the needs of some markets outside of life science research, in applied markets, such as the fields of: human identity testing (forensic and paternity testing); "biosecurity," which refers to products needed in response to the threat of biological terrorism and other malicious, accidental, and natural biological dangers; and quality and safety testing, for example in the food and drug environment.

ANSWER: Upon information and belief, Illumina admits that Life Technologies Corporation is a Delaware corporation with its principal place of business at 5791 Van Allen Way, Carlsbad, California 92008. Upon information and belief, Illumina admits that Applied Biosystems, LLC is a wholly-owned subsidiary of Life Technologies Corporation. Illumina is without sufficient knowledge to admit or deny the remaining allegations of this paragraph, and on that basis denies them.

4. Upon information and belief, Illumina, Inc., is a Delaware corporation, with its principal place of business located at 9885 Towne Centre Drive, San Diego, CA 92121-1975.

ANSWER: Admits.

JURISDICTION AND VENUE

5. This is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code.

ANSWER: Illumina admits that the Complaint purports to state an action for patent infringement arising under the patent laws of the United States. Illumina denies that such infringement occurred.

6. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

ANSWER: Admits.

7. Venue is proper in this judicial district under 28 U.S.C. §§ 1391 and 1400(b) because, upon information and belief, Illumina has, among other things, committed infringing acts in this district and does business in this district generally.

ANSWER: Illumina admits that venue is proper in this district. Illumina denies that venue in this district is the most convenient for the parties and witness or serves the interests of justice in this action. Illumina denies that Illumina has committed infringing acts in this district. Illumina admits that Illumina does business in this district generally.

BACKGROUND

8. United States Patent No. 6,797,470 ("the '470 Patent"), entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," was issued by the United States Patent and Trademark Office ("PTO") on September 28, 2004. A copy of the '470 Patent is attached hereto as Exhibit A.

ANSWER: Illumina admits that Plaintiffs attached what appears to be a copy of the '470 patent to the Complaint as Exhibit A. Illumina admits that, on its face, Exhibit A states that the '470 patent is entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," and shows an issue date of September 28, 2004.

9. The '470 Patent issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

ANSWER: Illumina admits that, on its face, the '470 patent states that it issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

10. Cornell is the assignee of all right, title and interest in and to the '470 Patent. Life Technologies is the exclusive licensee of the '470 Patent.

ANSWER: Illumina is without sufficient knowledge to admit or deny the allegations of this paragraph, and on that basis denies them.

11. United States Patent No. 7,083,917 ("the '917 Patent"), entitled "Detection Of Nucleic Acid Sequence Differences Using The Ligase Detection Reaction With Addressable Arrays," was issued by the PTO on August 1, 2006. A copy of the '917 Patent is attached hereto as Exhibit B.

ANSWER: Illumina admits that Plaintiffs attached what appears to be a copy of the '917 patent to the Complaint as Exhibit B. Illumina admits that, on its face, Exhibit B states that the '917 patent is entitled "Detection Of Nucleic Acid Sequence Differences

Using The Ligase Detection Reaction With Addressable Arrays," and shows an issue date of August 1, 2006.

12. The '917 Patent issued in the names of Francis Barany, George Barany, Robert P. Hammer, Maria Kempe, Herman Blok, and Monib Zirvi, and contains claims to instruments.

ANSWER: Illumina admits that, on its face, the '917 patent states that it issued in the names of Francis Barany, George Barany, Robert P. Hammer, Maria Kempe, Herman Blok, and Monib Zirvi. Illumina denies that the '917 patent contains claims to instruments.

13. Cornell is the assignee of all right, title and interest in and to the '917 Patent. Life Technologies is the exclusive licensee of the '917 Patent.

ANSWER: Illumina is without sufficient knowledge to admit or deny the allegations of this paragraph, and on that basis denies them.

14. United States Patent No. 7,166,434 ("the '434 Patent"), entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," was issued by the PTO on January 23, 2007. A copy of the '434 Patent is attached hereto as Exhibit C.

ANSWER: Illumina admits that Plaintiffs attached what appears to be a copy of the '434 patent to the Complaint as Exhibit C. Illumina admits that, on its face, Exhibit C states that the '434 patent is entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," and shows an issue date of January 23, 2007.

15. The '434 Patent issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

ANSWER: Illumina admits that, on its face, the '434 patent states that it issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

16. Cornell is the assignee of all right, title and interest in and to the '434 Patent. Life Technologies is the exclusive licensee of the '434 Patent.

ANSWER: Illumina is without sufficient knowledge to admit or deny the allegations of this paragraph, and on that basis denies them.

17. United States Patent No. 7,312,039 ("the '039 Patent"), entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," was issued by the PTO on December 25, 2007. A copy of the '039 Patent is attached hereto as Exhibit D.

ANSWER: Illumina admits that Plaintiffs attached what appears to be a copy of the '039 patent to the Complaint as Exhibit D. Illumina admits that, on its face, Exhibit D states that the '039 patent is entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," and shows an issue date of December 25, 2007.

18. The '039 Patent issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

ANSWER: Illumina admits that, on its face, the '039 patent states that it issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

19. Cornell is the assignee of all right, title and interest in and to the '039 Patent. Life Technologies is the exclusive licensee of the '039 Patent.

ANSWER: Illumina is without sufficient knowledge to admit or deny the allegations of this paragraph, and on that basis denies them.

20. United States Patent No. 7,320,865 ("the '865 Patent"), entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," was issued by the PTO on January 22, 2008. A copy of the '865 Patent is attached hereto as Exhibit E.

ANSWER: Illumina admits that Plaintiffs attached what appears to be a copy of the '865 patent to the Complaint as Exhibit E. Illumina admits that, on its face, Exhibit E states that the '865 patent is entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," and shows an issue date of January 22, 2008.

21. The '865 Patent issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

ANSWER: Illumina admits that, on its face, the '865 patent states that it issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

22. Cornell is the assignee of all right, title and interest in and to the '865 Patent. Life Technologies is the exclusive licensee of the '865 Patent.

ANSWER: Illumina is without sufficient knowledge to admit or deny the allegations of this paragraph, and on that basis denies them.

23. United States Patent No. 7,332,285 ("the '285 Patent"), entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," was issued by the PTO on February 19, 2008. A copy of the '285 Patent is attached hereto as Exhibit F.

ANSWER: Illumina admits that Plaintiffs attached what appears to be a copy of the '285 patent to the Complaint as Exhibit F. Illumina admits that, on its face, Exhibit F states that the '285 patent is entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," and shows an issue date of February 19, 2008.

24. The '285 Patent issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

ANSWER: Illumina admits that, on its face, the '285 patent states that it issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

25. Cornell is the assignee of all right, title and interest in and to the '285 Patent. Life Technologies is the exclusive licensee of the '285 Patent.

ANSWER: Illumina is without sufficient knowledge to admit or deny the allegations of this paragraph, and on that basis denies them.

26. United States Patent No. 7, 364,858 ("the '858 Patent"), entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," was issued by the PTO on April 29, 2008. A copy of the '858 Patent is attached hereto as Exhibit G.

ANSWER: Illumina admits that Plaintiffs attached what appears to be a copy of the '858 patent to the Complaint as Exhibit G. Illumina admits that, on its face, Exhibit G states that the '858 patent is entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," and shows an issue date of April 29, 2008.

27. The '858 Patent issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

ANSWER: Illumina admits that, on its face, the '858 patent states that it issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

28. Cornell is the assignee of all right, title and interest in and to the '858 Patent. Life Technologies is the exclusive licensee of the '858 Patent.

ANSWER: Illumina is without sufficient knowledge to admit or deny the allegations of this paragraph, and on that basis denies them.

29. United States Patent No. 7,429,453 ("the '453 Patent"), entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," was issued by the PTO on September 30, 2008. A copy of the '453 Patent is attached hereto as Exhibit H.

ANSWER: Illumina admits that Plaintiffs attached what appears to be a copy of the '453 patent to the Complaint as Exhibit H. Illumina admits that, on its face, Exhibit H states that the '453 patent is entitled "Detection of Nucleic Acid Sequence Differences Using Coupled Ligase Detection and Polymerase Chain Reactions," and shows an issue date of September 30, 2008.

30. The '453 Patent issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

ANSWER: Illumina admits that, on its face, the '453 patent states that it issued in the names of Francis Barany, Matthew Lubin, George Barany, and Robert P. Hammer.

31. Cornell is the assignee of all right, title and interest in and to the '453 Patent. Life Technologies is the exclusive licensee of the '453 Patent.

ANSWER: Illumina is without sufficient knowledge to admit or deny the allegations of this paragraph, and on that basis denies them.

32. Defendant's genetic analysis products and services infringe at least one claim of each of the '470, '917, '434, '039, '865, '285, '858 and '453 Patents (the "Patents-in-Suit").

ANSWER: Denies.

33. With the exception of the '917 Patent, which contains claims to instruments, all of the other Patents-In-Suit contain claims to polymerase chain reaction ("PCR") methods.

ANSWER: Denies.

FIRST CLAIM FOR RELIEF
(INFRINGEMENT OF THE '470 PATENT)

34. Plaintiffs incorporate ¶¶ 1-33 of this Complaint here.

ANSWER: Illumina incorporates ¶¶ 1-33 of this Answer here.

35. Illumina has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including detection of single nucleotide polymorphisms

("SNPs"), within the United States, thereby infringing, both directly and indirectly, at least one claim of the '470 Patent. Illumina's infringing activities include, without limitation, the making, using, selling and offering to sell instruments, reagents and kits to perform the Illumina GoldenGate Genotyping Assay and the Illumina "cDNA-mediated Annealing, Selection, Extension and Ligation Assay" (the "DASL Assay") and services using the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay. The GoldenGate Genotyping Assay and DASL Assay detect nucleic acid sequence differences using an improved PCR method that includes a ligase detection reaction, in a manner which infringes one or more claims of the '470 Patent.

ANSWER: Illumina admits that it has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including detection of single nucleotide polymorphisms ("SNPs"), within the United States. Illumina denies the remaining allegations of this paragraph.

36. Illumina provides to its customers instructions for the use of Illumina instruments, reagents and kits to perform the GoldenGate Genotyping Assay and DASL Assay. For example, these instructions recite the steps of: providing a nucleic acid sample; adding oligonucleotide probe sets designed to detect specific SNP loci; allowing said oligonucleotide probes to hybridize to the sample nucleic acid and ligation of said probes; amplifying said ligated oligonucleotide probes using PCR; hybridizing amplification products to Illumina's Sentrix Array Matrix, BeadChip or VeraCode beads; and detecting said products using Illumina's BeadStation, BeadArray Reader, iScan, HiScanSQ, BeadLab or BeadXpress Reader.

ANSWER: Admitted that Illumina provides to its customers instructions for the use of instruments, reagents, and kits to perform the GoldenGate Genotyping assay and the DASL assay. Illumina is without knowledge as to which "instructions" this paragraph refers, and therefore denies the remaining allegations of this paragraph.

SECOND CLAIM FOR RELIEF
(INFRINGEMENT OF THE '917 PATENT)

37. Plaintiffs incorporate ¶¶ 1-36 of this Complaint here.

ANSWER: Illumina incorporates ¶¶ 1-36 of this Answer here.

38. Illumina has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including SNP detection, within the United States, thereby infringing, both directly and indirectly, at least one claim of the '917 Patent. Illumina's infringing activities include, without limitation, the making, using, selling and offering to sell instruments for the detection of nucleic acid sequence differences using addressable arrays. The Sentrix Array Matrix, BeadChip, VeraCode beads, BeadStation, BeadArray Reader, iScan, HiScanSQ, BeadLab and BeadXpress Reader are instruments for the detection of nucleic acid sequence differences which infringe one or more claims of the '917 Patent.

ANSWER: Illumina admits that it has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including detection of single nucleotide polymorphisms ("SNPs"), within the United States. Illumina denies the remaining allegations of this paragraph.

THIRD CLAIM FOR RELIEF
(INFRINGEMENT OF THE '434 PATENT)

39. Plaintiffs incorporate ¶¶ 1-38 of this Complaint here.

ANSWER: Illumina incorporates ¶¶ 1-38 of this Answer here.

40. Illumina has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including SNP detection, within the United States, thereby infringing, both directly and indirectly, at least one claim of the '434 Patent. Illumina's infringing activities include, without limitation, the making, using, selling and offering to sell instruments, reagents and kits to perform the Illumina GoldenGate Genotyping Assay and the DASL Assay and services using the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay. The GoldenGate Genotyping Assay and DASL Assay detect nucleic acid sequence differences using an improved PCR method that includes a ligase detection reaction, in a manner which infringes one or more claims of the '434 Patent.

ANSWER: Illumina admits that it has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including detection of single nucleotide polymorphisms ("SNPs"), within the United States. Illumina denies the remaining allegations of this paragraph.

FOURTH CLAIM FOR RELIEF
(INFRINGEMENT OF THE '039 PATENT)

41. Plaintiffs incorporate ¶¶ 1-40 of this Complaint here.

ANSWER: Illumina incorporates ¶¶ 1-40 of this Answer here.

42. Illumina has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including SNP detection, within the United States, thereby infringing, both directly and indirectly, at least one claim of the '039 Patent. Illumina's infringing activities include, without limitation, the making, using, selling and offering to sell instruments, reagents and kits to perform the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay and services using the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay. The GoldenGate Genotyping Assay and DASL Assay detect nucleic acid sequence differences using an improved PCR method that includes a ligase detection reaction, in a manner which infringes one or more claims of the '039 Patent.

ANSWER: Illumina admits that it has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including detection of single nucleotide polymorphisms ("SNPs"), within the United States. Illumina denies the remaining allegations of this paragraph.

FIFTH CLAIM FOR RELIEF
(INFRINGEMENT OF THE '865 PATENT)

43. Plaintiffs incorporate ¶¶ 1-42 of this Complaint here.

ANSWER: Illumina incorporates ¶¶ 1-42 of this Answer here.

44. Illumina has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including SNP detection, within the United States, thereby infringing, both directly and indirectly, at least one claim of the '865 Patent. Illumina's infringing activities include, without limitation, the making, using, selling and offering to sell instruments, reagents and kits to perform the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay and services using the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay. The GoldenGate Genotyping Assay and DASL Assay detect nucleic acid sequence differences using an improved PCR method that includes a ligase detection reaction, in a manner which infringes one or more claims of the '865 Patent.

ANSWER: Illumina admits that it has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including detection of single nucleotide polymorphisms ("SNPs"), within the United States. Illumina denies the remaining allegations of this paragraph.

SIXTH CLAIM FOR RELIEF
(INFRINGEMENT OF THE '285 PATENT)

45. Plaintiffs incorporate ¶¶ 1-44 of this Complaint here.

ANSWER: Illumina incorporates ¶¶ 1-44 of this Answer here.

46. Illumina has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including SNP detection, within the United States, thereby infringing, both directly and indirectly, at least one claim of the '285 Patent. Illumina's infringing activities include, without limitation, the making, using, selling and offering to sell instruments, reagents and kits to perform the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay and services using the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay. The GoldenGate Genotyping Assay and DASL Assay detect nucleic acid sequence differences using an improved PCR method that includes a ligase detection reaction, in a manner which infringes one or more claims of the '285 Patent.

ANSWER: Illumina admits that it has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including detection of single nucleotide polymorphisms ("SNPs"), within the United States. Illumina denies the remaining allegations of this paragraph.

SEVENTH CLAIM FOR RELIEF
(INFRINGEMENT OF THE '858 PATENT)

47. Plaintiffs incorporate ¶¶ 1-46 of this Complaint here.

ANSWER: Illumina incorporates ¶¶ 1-46 of this Answer here.

48. Illumina has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including SNP detection, within the United States, thereby infringing, both directly and indirectly, at least one claim of the '858

Patent. Illumina's infringing activities include, without limitation, the making, using, selling and offering to sell instruments, reagents and kits to perform the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay and services using the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay. The GoldenGate Genotyping Assay and DASL Assay detect nucleic acid sequence differences using an improved PCR method that includes a ligase detection reaction, in a manner which infringes one or more claims of the '858 Patent.

ANSWER: Illumina admits that it has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including detection of single nucleotide polymorphisms ("SNPs"), within the United States. Illumina denies the remaining allegations of this paragraph.

EIGHTH CLAIM FOR RELIEF
(INFRINGEMENT OF THE '453 PATENT)

49. Plaintiffs incorporate ¶¶ 1-48 of this Complaint here.

ANSWER: Illumina incorporates ¶¶ 1-48 of this Answer here.

50. Illumina has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including SNP detection, within the United States, thereby infringing, both directly and indirectly, at least one claim of the '453 Patent. Illumina's infringing activities include, without limitation, the making, using, selling and offering to sell instruments, reagents, kits and services to perform the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay and services using the Illumina GoldenGate Genotyping Assay and the Illumina DASL Assay. The GoldenGate Genotyping Assay and DASL Assay detect nucleic acid sequence differences using an improved PCR method that includes a ligase detection reaction, in a manner which infringes one or more claims of the '453 Patent.

ANSWER: Illumina admits that it has been and is making, using, selling, and offering to sell instruments, reagents, kits and services for genetic analysis, including detection of single nucleotide polymorphisms ("SNPs"), within the United States. Illumina denies the remaining allegations of this paragraph.

AFFIRMATIVE DEFENSES

1. Each of the claims for relief in the Complaint is barred, in whole or in part, because Illumina has not infringed and does not infringe any valid, enforceable claim of the '470, '917, '434, '039, '865, '285, '858, or '453 patents, either literally or by equivalence, under any theory, including direct infringement, infringement by inducement, or contributory infringement.

2. Upon information and belief, each of the claims for relief in the Complaint is barred, in whole or in part, because each of the asserted claims of the '470, '917, '434, '039, '865, '285, '858, and '453 patents is invalid for failure to comply with one or more provisions of Title 35 of the United States Code, including without limitation §§ 101, 102, 103, and/or 112.

3. Each of the claims for relief in the Complaint is barred, in whole or in part, under the doctrine of laches.

4. Each of the claims for relief in the Complaint is barred, in whole or in part, under the doctrine of estoppel.

5. Each of the claims for relief in the Complaint is barred, in whole or in part, under the doctrine of waiver.

Demand for Jury Trial

Pursuant to Fed. R. Civ. P. 38(b), Illumina hereby requests a trial by jury on the Complaint as to all issues so triable.

COUNTERCLAIM FOR DECLARATORY JUDGMENT

Pursuant to 28 U.S.C. §§ 2201 and 2202, Illumina counterclaims against all of the Plaintiffs for declaratory judgments of invalidity and non-infringement of the patents asserted in the Complaint.

PARTIES

1. Illumina, Inc. is a Delaware corporation with its principal place of business at 9885 Towne Centre Drive, San Diego, California 92121.

2. Upon information and belief, Counterclaim Defendant Cornell University is a private university located in Ithaca, New York.

3. Cornell University does not sell a product embodying the invention of one or more of the '470, '917, '434, '039, '865, '285, '858, or '453 patents (collectively, the "Patents-in-Suit.")

4. Cornell University does not sell a product that directly competes with the products Cornell University accuses of infringing the Patents-in-Suit.

5. Upon information and belief, Counterclaim Defendant Cornell Research Foundation, Inc. is a New York non-profit corporation having its principal place of business at 395 Pine Tree Road, Suite 310, Ithaca, New York 14850.

6. Cornell Research Foundation does not sell a product embodying the invention of one or more of the Patents-in-Suit.

7. Cornell Research Foundation does not sell a product that directly competes with the products Cornell University accuses of infringing the Patents-in-Suit.

8. Upon information and belief, Counterclaim Defendant Life Technologies Corporation is a Delaware corporation with its principal place of business at 5791 Van Allen Way, Carlsbad, California 92008.

9. Life Technologies does not sell a product embodying the invention of one or more of the Patents-in-Suit.

10. Life Technologies does not sell a product that directly competes with the products Cornell University accuses of infringing the Patents-in-Suit.

11. Upon information and belief, Counterclaim Defendant Applied Biosystems, LLC is a wholly-owned subsidiary of Life Technologies Corporation.

JURISDICTION AND VENUE

12. This Court has subject matter jurisdiction of this Counterclaim pursuant to 28 U.S.C. §§ 1331 and 1338.

13. This Court has personal jurisdiction over Cornell University, Cornell Research Foundation, Life Technologies Corporation, and Applied Biosystems, LLC because each entity has purposefully availed themselves of the privilege of conducting activities within this State and District by filing the present action against Illumina. 10 Del.C. § 3104.

14. Venue in this District could lie under 28 U.S.C. §§ 1391 and 1400(b). Upon information and belief, venue in this district is not the most convenient for the parties and witness and does not serve the interests of justice in this action.

COUNT 1

DECLARATORY JUDGMENT OF INVALIDITY

15. Illumina incorporates ¶¶ 1-14 of its Counterclaim here.

16. The Plaintiffs/Counterclaim Defendants have alleged that the '470, '917, '434, '039, '865, '285, '858, and '453 patents were assigned and/or exclusively licensed to them.

17. There is an actual and justiciable controversy within the meaning of 28 U.S.C. §§ 2201 and 2202 between Illumina and the Plaintiffs/Counterclaim Defendants with respect to the validity of the '470, '917, '434, '039, '865, '285, '858, and '453 patents.

18. Upon information and belief, the '470, '917, '434, '039, '865, '285, '858, and '453 patents are invalid because they fail to satisfy the conditions for patentability set forth in the Patent Act, 35 U.S.C. §§ 1, *et seq.*, including but not limited to §§ 101, 102, 103, and 112.

COUNT II

DECLARATORY JUDGMENT OF NON-INFRINGEMENT

19. Illumina incorporates ¶¶ 1-18 of its Counterclaim here.

20. There is an actual and justiciable controversy within the meaning of 28 U.S.C. §§ 2201 and 2202 between Illumina and the Plaintiffs/Counterclaim Defendants with respect to infringement of the '470, '917, '434, '039, '865, '285, '858, and '453 patents.

21. Illumina has not infringed any valid, enforceable claim of the '470, '917, '434, '039, '865, '285, '858, and '453 patents, either literally or by equivalence, or under any theory, including direct infringement, infringement by inducement, or contributory infringement.

REQUEST FOR RELIEF

WHEREFORE, Illumina requests that this Court enter judgment in its favor against Plaintiffs/Counterclaim Defendants as follows:

A. Dismissing the Complaint with prejudice, and denying all relief sought in the Complaint;

B. Finding that the claims of the '470, '917, '434, '039, '865, '285, '858, and '453 patents are invalid;

C. Finding that Illumina has not and does not infringe any valid, enforceable claim in the '470, '917, '434, '039, '865, '285, '858, and '453 patents;

D. Finding that this is an exceptional case under 35 U.S.C. § 285 and ordering Plaintiffs/Counterclaim Defendants to reimburse Illumina for its attorneys' fees and costs incurred in this action;

E. Granting Illumina further relief as this Court deems just and reasonable under the circumstances.

ASHBY & GEDDES

/s/ Caroline Hong

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