

**IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF WISCONSIN**

AFFYMETRIX, INC. and  
GREGORY L. KIRK,

Plaintiffs,

v.

ILLUMINA, INC.,

Defendant.

Civil Action No. \_\_\_\_\_

**COMPLAINT FOR CORRECTION OF INVENTORSHIP**

Plaintiffs Affymetrix, Inc. (“Affymetrix”) and Gregory L. Kirk (“Kirk”), for their  
Complaint, aver as follows:

1. This is an action for correction of inventorship of U.S. Patent No. 7,510,841 (“the ‘841 patent”) and U.S. Patent No. 7,612,020 (“the ‘020 patent”) pursuant to 35 U.S.C. § 256. This action arises out of the failure by defendant Illumina, Inc. (“Illumina”) to name Kirk as an inventor of the ‘841 and ‘020 patents.

2. This action is related to a prior consolidated action filed in this judicial district, entitled *Illumina, Inc. v. Affymetrix, Inc.*, Civil Action Nos. 09-cv-277-bbc and 09-cv-665-bbc, in which Illumina asserted claims for alleged infringement of the ‘841 and ‘020 patents.

**Parties**

3. Affymetrix is a Delaware corporation with its principal place of business in Santa Clara, California. Affymetrix is a licensee of Kirk’s rights under the ‘841 and ‘020 patents, and Affymetrix holds an undivided, one-half interest in Kirk’s rights in the ‘841 and ‘020 patents.

4. Kirk is an individual residing in Pleasanton, California.

5. Upon information and belief, Illumina is a Delaware corporation with its principal place of business in San Diego, California.

### **Jurisdiction and Venue**

6. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

7. This Court has personal jurisdiction over Illumina because Illumina has purposely availed itself of the benefits of the Wisconsin courts by bringing a lawsuit as a plaintiff in this Court to enforce the '841 and '020 patents. Illumina is engaged in substantial activities within the state of Wisconsin, including the initiation of litigation and, upon information and belief, the development, manufacture and sale of products in Wisconsin. Upon information and belief, Illumina has a place of business at 726 Post Road, Madison, Wisconsin.

8. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391(b).

### **Factual Background**

9. The '841 patent is entitled "Methods of making and using composite arrays for the detection of a plurality of target analytes" and issued on March 31, 2009. A copy of the '841 patent is attached as Exhibit A hereto. The '841 patent identifies John Stuelpnagel ("Stuelpnagel"), Mark Chee ("Chee") and Steven Auger ("Auger") as inventors, but fails to name Kirk as an inventor. Stuelpnagel, Chee and Auger have assigned their rights in the '841 patent to Illumina.

10. The '020 patent is entitled "Composite arrays utilizing microspheres with a hybridization chamber" and issued on November 3, 2009. A copy of the '020 patent is attached

as Exhibit B hereto. The '020 patent identifies Stuelpnagel, Chee and Auger as inventors, but fails to name Kirk as an inventor. Stuelpnagel, Chee and Auger have assigned their rights in the '020 patent to Illumina.

11. The '841 and '020 patents state: "The present invention is directed to the formation of very high density arrays that can allow simultaneous analysis, i.e. parallel rather than serial processing, on a number of samples. This is done by forming an 'array of arrays', i.e. a composite array comprising a plurality of individual arrays, that is configured to allow processing of multiple samples." This approach is implemented in the '841 and '020 patents using bead-based array technology that was developed in part by David Walt ("the Walt technology"). Illumina obtained a license to the Walt technology in May 1998.

12. In the fall of 1997, Stuelpnagel visited the laboratory of David Walt at Tufts University and learned of the Walt technology. The Walt technology included a bundle of optical fibers. Collectively, the optical fibers in the bundle formed an array of optical fibers. Each optical fiber in the bundle had a small well etched in one end, into which a small bead was placed. Attached to each bead was a bioactive agent. The bundle of optical fibers containing beads with bioactive agents was inserted into a test tube containing a target analyte solution. Then a CCD camera was used to detect whether the bioactive agent on each bead had bound with the target analyte.

13. After visiting the Walt laboratory in the fall of 1997, Stuelpnagel was intrigued by the potential commercial applications of the Walt technology and believed that the Walt technology could form the foundation for a new company. To that end, Stuelpnagel began negotiating with Tufts University to acquire an exclusive license to the Walt technology. In late

April 1998, Stuelpnagel incorporated Illumina, and in May 1998, Illumina and Tufts University executed an agreement by which Illumina acquired an exclusive license to the Walt technology.

14. From at least January through early May 1998, Stuelpnagel attempted to recruit technically qualified scientists to join the company that would, and did, become Illumina, including Chee, Auger and Kirk. During this period of time, Stuelpnagel believed that Kirk would be a very valuable member of the Illumina technical team.

15. Kirk is a Princeton-trained Ph.D. physicist with extensive experience as a scientist in the biotechnology industry. He is named as an inventor on at least forty issued United States patents. Kirk “came highly recommended” to Stuelpnagel as someone who “had a good track record.” Before ever meeting Kirk, Stuelpnagel “was already interested in him based upon his reputation.” After they met and corresponded throughout the first quarter of 1998, Stuelpnagel was “excited” that Kirk would consider joining the company and thought he would be “a good addition to Illumina.”

16. As part of his recruiting effort, Stuelpnagel met with Kirk at the Newark airport on or about January 7, 1998, and they discussed aspects of the Walt technology. During the meeting, Stuelpnagel asked for Kirk’s assistance with certain technical issues relating to that technology, including methods of encoding and decoding. Kirk provided such assistance no later than January 12, 1998, when he sent to Stuelpnagel a paper he had written in 1997. On January 20, 1998, Stuelpnagel wrote to Kirk, thanked him for the paper, asked him for further assistance on the encoding/decoding issue, and also asked for assistance in identifying appropriate candidates for Illumina’s Scientific Advisory Board. Stuelpnagel also said that when the negotiations with Tufts University are complete, he would arrange for Kirk to get together with David Walt. Stuelpnagel was eager to have Kirk see the Walt technology and meet with David

Walt to further interest Kirk in joining Illumina. Stuelpnagel also was eager to receive Kirk's feedback and ideas about the Walt technology.

17. By March 1998, the negotiations with Tufts University had progressed to the point where Stuelpnagel believed that a license agreement would be agreed upon. Stuelpnagel then arranged for Kirk to get together with David Walt. On or about March 5, 1998, Kirk visited David Walt at Tufts University and was shown the Walt technology.

18. On March 9, 1998, Kirk sent an email to Stuelpnagel entitled "Feedback from Thurs Meeting at Tufts" ("the March 9, 1998 email"). Kirk sent the March 9, 1998 email to Stuelpnagel twice that day, at 8:14 am and again at 8:30 am. The March 9, 1998 email is 2½ pages long and is single-spaced. A copy of the March 9, 1998 email is attached as Exhibit C hereto.

19. Stuelpnagel received and read the March 9, 1998 email on or about March 9, 1998.

20. In the March 9, 1998 email, Kirk stated that he was writing it because "I want to share some brainstorming ideas" that he had conceived about the Walt technology. In the March 9, 1998 email, Kirk described one of the "brainstorming ideas" he had conceived as follows ("the Kirk conception"):

Test reagents can be loaded into fibers as beads or as a chemical "coating" step. Tests can be performed by a simple dipping step.

\* \* \*

The detection methods can be massively parallel. For instance: 1536 fiber bundles (with up to 6000 tests) can be fixtured to perform simultaneous testing of ALL wells in our new 1536 µl well plates! However, the readout is performed by ONE high-resolution CCD chip.

\* \* \*

Test samples can be prepared in separate wells until test fibers are ready to be dipped.

\* \* \*

Coupling to the fiber bundle method seems like a big winner. For instance, a low cost fixture can be fabricated that would arrange 1536 fiber bundles to line up with the wells of one of the new Costar plates.

21. On March 11, 1998, at the request of Stuelpnagel, Kirk sent a copy of the March 9, 1998 email to David Walt.

22. On March 19, 1998, Stuelpnagel sent an email to Kirk in which he stated that David Walt, the father of the Walt technology, was “impressed” with the brainstorming ideas described in Kirk’s March 9, 1998 email, and that both he and David Walt “appreciated your enthusiasm” as expressed in the March 9, 1998 email.

23. By May 4, 1998, Kirk had informed Stuelpnagel that he would not be able to join Illumina. Kirk never assigned to Illumina any of the ideas or inventions set forth in the March 9, 1998 email, including the Kirk conception.

24. Notwithstanding Kirk’s disclosure to Stuelpnagel of the Kirk conception in March 1998, Stuelpnagel has attempted to take credit for the Kirk conception by testifying that independent of the Kirk conception, he came up with the same conception in the summer of 1998. For example, at trial in March 2007 before the United States District Court for the District of Delaware, Stuelpnagel testified that:

In the summer of 1998, I mentioned that we were trying to think about ways in which we could format these BeadArrays into products that would be useful to customers.

And I was actually out for a run thinking and maybe obsessing a little bit about the Illumina technology, and started to realize that this array was fundamentally different in its physical form from everybody else’s arrays, too.

So in addition to being different in how we manufactured it, they were different in form. And what was unique about these arrays is that you could take this fiber bundle and put it into a sample.

Everybody else took a sample and poured it onto the array. So I started thinking about that and what you could do that would be different from what everybody else was doing.

I came back and started talking. My colleagues we were brainstorming. And after that brainstorming session, we realized that what we could do is use this array and insert it into a microtiter plate.

25. Stuelpnagel also has testified that at the time of “his” conception in the summer of 1998, he recognized that it was the “fundamental invention” at Illumina. For several years thereafter, Illumina’s business was based on this “fundamental invention,” and at least Stuelpnagel regarded this “fundamental invention” as an extremely valuable asset of Illumina.

26. On or about December 28, 1998, Illumina filed Provisional Patent Application No. 60/113,968 (“the ‘968 application”), which included a description of the subject matter of the Kirk conception. The ‘968 application is the first application in the chain of applications that led to the issuance of the ‘841 and ‘020 patents. The ‘968 application (and all subsequent applications in the chain that led to the ‘841 and ‘020 patents) identifies Stuelpnagel, Chee and Auger as inventors, all of whom were employed by Illumina at the time that the ‘968 application was filed, and all of whom assigned their ownership rights in the ‘968 application and subsequent applications to Illumina. However, the ‘968 application fails to name Kirk as an inventor.

27. Because Kirk declined to join Illumina and had not assigned to Illumina the Kirk conception disclosed to Stuelpnagel in the March 9, 1998 email, had Kirk been named as an inventor, Illumina would have to acknowledge Kirk’s ownership interest in the ‘968 application, and Illumina would not have been able to claim exclusive control of the application. Upon information and belief, at least Stuelpnagel deliberately excluded Kirk as a named inventor of

the '968 application in an attempt to secure for Illumina exclusive ownership rights to that application and any patents that may issue from that application.

28. On July 13, 2010, Stuelpnagel was deposed in then-pending litigation in this Court. A redacted version of Stuelpnagel's deposition transcript that was publicly released by Illumina is attached as Exhibit D hereto. In his deposition, Stuelpnagel testified that in the March 9, 1998 email, Kirk disclosed to him the Kirk conception which "is very similar in concept with what [he] came up or claim to have come up with in the summer of 1998." Stuelpnagel further testified that there is one, and only one, alleged difference between the subject matter described in the March 9, 1998 email and the subject matter recited in claim 1 of the '841 patent and claim 1 of the '020 patent. More specifically, Stuelpnagel testified that the only alleged difference is that according to "his" conception in the summer of 1998, the "second substrate" claimed in claim 1 of both patents was a "plate" and the March 9, 1998 email does not disclose a "plate." However, the specification of the '841 and '020 patents never mentions that the "second substrate" (or any substrate) is limited to a "plate." To the contrary, in the specification of the patents, Stuelpnagel described the term "substrate" as "any material that can be modified to contain discrete individual sites appropriate for the attachment or association of beads and is amenable to at least one detection method." This definition of "substrate" encompasses the "fixture" of fiber bundles that Kirk disclosed in the March 9, 1998 email.

29. On July 23, 2010, Chee was deposed in then-pending litigation in this Court. A redacted version of Chee's deposition transcript that was publicly released by Illumina is attached as Exhibit E hereto. In his deposition, Chee testified that claim 1 of the '841 patent and claim 1 of the '020 patent cover the subject matter disclosed in the March 9, 1998 email.



In light of the subject matter disclosed in the March 9, 1998 email that he had before him at his deposition, Chee also testified that he could no longer swear that he (and the two other named co-inventors on the patents-in-suit, Stuelpnagel and Auger) were the first and original inventors of the subject matter claimed in the patents-in-suit.

30. During prosecution before the U.S. Patent and Trademark Office, the applicants argued to the examiner that the claimed invention was distinguishable over the prior art because it had a plurality of arrays on projections with “the ability to do parallel analysis rather than sequential analysis of arrays.” Kirk contributed this very aspect of the claims, as corroborated by the March 9, 1998 email in which Kirk explained to Stuelpnagel that fiber-optic bundles having arrays could be arranged to allow “massively parallel” detection and “simultaneous testing” of all wells of a microtiter plate.

31. Affymetrix raised the issue of Kirk’s inventorship in connection with its invalidity counterclaims asserted in the related prior action, *Illumina, Inc. v. Affymetrix, Inc.*, Civil Action Nos. 09-cv-277-bbc and 09-cv-665-bbc. The parties to the prior action had a full and fair opportunity to take discovery, including expert discovery, on the issue of inventorship. Based on the evidence adduced in the prior action, this Court concluded that Affymetrix “made a prima facie showing that Kirk is a joint inventor of the patents,” which necessitated “a hearing to determine whether the patent should be corrected under 35 U.S.C. § 256.” Prior to a final determination of inventorship, however, the prior action was dismissed on the ground of noninfringement, and therefore, Affymetrix’s invalidity counterclaims were dismissed as moot.

32. The Kirk conception that was conveyed to Stuelpnagel in March 1998 is relevant to the claims of the ‘841 patent because it reveals that Kirk contributed to at least the following: (i) in independent claim 1: “providing a first substrate with a surface comprising a plurality of

assay wells,” “providing a second substrate comprising a plurality of array locations,” and “dipping the projections of said second substrate into said assay wells such that each array location of said second substrate contacts sample solution in a different well of said first substrate under conditions suitable for binding of said different target analytes to said different bioactive agents, thereby processing said sample solutions in parallel”; (ii) in dependent claim 20: “said assay wells comprise wells of a microtiter plate”; and (iii) in dependent claim 23: “said plurality of assay wells comprises 1536 wells.”

33. The Kirk conception that was conveyed to Stuelpnagel in March 1998 is relevant to the claims of the '020 patent because it reveals that Kirk contributed to at least the following: (i) in claims 1-76: “array of arrays”; (ii) in independent claim 1: “a first substrate with a surface comprising a plurality of assay wells comprising samples”; (iii) in independent claims 36, 51 and 64: “a first substrate with a surface comprising a plurality of wells”; (iv) in independent claims 1, 36, 51 and 64: “a second substrate comprising a plurality of projections, each projection comprising an array location”; (v) in independent claim 20: “a plate having wells and a substrate comprising a plurality of projections, each projection comprising an array location,” and “projections of said substrate are fitted into wells of said plate”; (vi) in independent claim 1: “said first substrate and said second substrate are arranged such that projections of said second substrate are fitted into assay wells of the first substrate”; (vii) in independent claim 36: “projections of said second substrate are fitted into wells of the first substrate”; (viii) in independent claim 51: “said plurality of projections is configured to be dipped from above into said wells”; (ix) in independent claim 64: “said plurality of projections is configured to be dipped from above into said plurality of wells”; (x) in dependent claim 3: “said assay wells comprise wells of a microtiter plate”; (xi) in dependent claims 6 and 23: the array of arrays “comprising

1536 wells”; and (xii) in dependent claims 39, 54 and 68: “said first substrate comprises 1536 wells.”

### **First Claim for Relief**

#### **(Correction of Inventorship of the ‘841 Patent)**

34. Affymetrix and Kirk restate paragraphs 1 to 33 as if fully set forth herein.

35. Kirk made a significant contribution to the conception of the claims of the ‘841 patent. His contribution is not insignificant in quality, when that contribution is measured against the dimension of the full claimed invention.

36. Kirk acted jointly with one or more of the named inventors to arrive at the claims of the ‘841 patent.

37. The ‘841 patent fails to name Kirk as an inventor.

38. The error of omitting Kirk as an inventor of the ‘841 patent arose without any deceptive intention on Kirk’s part.

39. Because Kirk is an inventor of the ‘841 patent, the Court should issue an order directing the U.S. Patent and Trademark Office to issue a certificate correcting the ‘841 patent to add Kirk as a named inventor.

### **Second Claim for Relief**

#### **(Correction of Inventorship of the ‘020 Patent)**

40. Affymetrix and Kirk restate paragraphs 1 to 33 as if fully set forth herein.

41. Kirk made a significant contribution to the conception of the claims of the ‘020 patent. His contribution is not insignificant in quality, when that contribution is measured against the dimension of the full claimed invention.

42. Kirk acted jointly with one or more of the named inventors to arrive at the claims of the '020 patent.

43. The '020 patent fails to name Kirk as an inventor.

44. The error of omitting Kirk as an inventor of the '020 patent arose without any deceptive intention on Kirk's part.

45. Because Kirk is an inventor of the '020 patent, the Court should issue an order directing the U.S. Patent and Trademark Office to issue a certificate correcting the '020 patent to add Kirk as a named inventor.

#### **Prayer for Relief**

WHEREFORE, Affymetrix and Kirk pray for a judgment that:

- A. Orders correction of the '841 patent to add Kirk as a named inventor;
- B. Orders correction of the '020 patent to add Kirk as a named inventor;
- C. Awards Affymetrix and Kirk their attorneys' fees and costs; and
- D. Awards Affymetrix and Kirk such other and further relief as the Court may deem proper.

Dated: March 14, 2011

Respectfully submitted,

/s/ James R. Troupis

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