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On behalf of **Illumina, Inc.**

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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

IPR2018-00291	Patent 9,718,852
IPR2018-00318	Patent 9,719,139
IPR2018-00322	Patent 9,708,358
IPR2018-00385	Patent 9,725,480*

**ILLUMINA'S REPLY TO PATENT OWNER'S OPPOSITION TO
MOTION TO EXCLUDE**

*This identical paper is being filed in each of these four IPRs.

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Illumina's motion to exclude is based upon, and consistent with, its timely objections to Ex. 2116 (Paper 35, 5-9)¹ and Ex. 2140 (Paper 54, 1). Illumina's previous papers addressed most of the arguments raised in Columbia's Opposition, and therefore Illumina will not repeat those points herein.

Dr. Menchen's Declaration (Ex. 2116) should be excluded

Columbia opposes the exclusion of Dr. Menchen's declaration by asserting it appropriately shielded Dr. Menchen from understanding the challenged claims and fundamental factual matters to insulate him from accountability during cross-examination. Columbia's cynical attempt to undermine the Board's Routine Discovery policies should be penalized by excluding Dr. Menchen's testimony. *See ePlus Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 523 (Fed. Cir. 2012) (affirming exclusion of testimony from a purported expert whose "analytical method was flawed and unreliable" and selectively "ignored" evidence of record).

Dr. Menchen testified that Columbia narrowly focused his attention on three portions of the challenged claims—(1) the chemically cleavability of 'R,' (2) whether an 'R' group is accepted as a polymerase substrate, and (3) the Y linker:

Q. I was asking you, did you make sure you understood Claim 1?

A. I made sure I understood Claim 1 in terms of the chemically cleavable part of it and in terms of the, acting as a substrate.

Q. Anything else?

¹ All citations to papers from IPR2018-00291. Any emphases have been supplied.

A. Those are the two things that I was supposed to focus on.

Q. Did you put in any effort into understanding the rest of the claim?

A. I have read it.

Q. Other than just reading it?

A. Yeah, the why [Y].

Q. Anything else?

A. Yeah, I mean the rest of it is pretty obvious.

Ex. 1112, 173:22-174:15. He avoided understanding the claimed “small” group:

Q. Okay. If you turn to column 35 [of Columbia’s patent], please. Do you see where it says "Wherein, R" and then "A represents a small chemically cleavable chemical group"? Do you see that?

A. I see that.

Q. And do you understand what small means there?

A. That wasn't something that -- that I really prepared for this.

Q. Do you have any idea what would qualify as small?

A. Yeah, I -- I can't answer that.

Id., 171:15-172:10; *id.*, 171:15-173:10, 176:14-177:10, 240:22-241:9. Dr.

Menchen did not consider whether the allyl capping group meets the claims:

Q. And based on all the work you've done in this case and your expertise in the field, do you have any reason to contest that statements of counsel that allyl would be an example of a capping group that meets the limitations of Claim 1 of the '985 patent?

A. Yeah. . . . I can't form an opinion on that.

Q. Do you have any information inconsistent with that or any basis to challenge it?

A. Yeah, I can't form an opinion on it.

Q. Why not?

A. Because it's not something that I was told to look at or review.

Ex. 1112, 248:13-249:14. Dr. Menchen avoided studying polymerases, and was unable to identify any polymerase for use with Columbia's claims:

Q. Can you identify any polymerase that fits in -- that meets the requirement of the claims of the Ju patents in any system?

A. In any system. I wasn't asked to study polymerases.

Q. But based on your work in this case do you know of any?

A. I don't know of any.

Ex. 1112, 178:22-179:6. Dr. Menchen testified that the extensive preparations with Columbia's attorneys avoided looking into whether any linker Y would meet the challenged claim, and he was unable to identify any such linker:

Q. In the Ju claims. And in terms of why [Y] in the Ju claims do you know of any linker that would actually satisfy the requirements of the Ju claims?

A. I wasn't asked -- I was only asked to determine what the -- what the scope of why [Y] is.

Q. Do you know of any though?

A. I wasn't asked to -- to look into that. I didn't study that.

Q. And, therefore, you don't know of any?

A. I don't know of any right now.

Q. When you say right now, you just spent eight or nine days preparing for the deposition. Today you don't know of any, correct?

A. I spent eight or nine days preparing for a deposition that didn't include looking into that.

Ex. 1112, 179:11-180:9. Dr. Menchen repeatedly admitted he was unable to answer basic questions about the scope and content of the claims. Paper 53, 1-2. On redirect, Columbia brazenly asked Dr. Menchen to confirm that he deliberately avoided forming opinions on the claims and contested factual matters. Ex. 1113, 394:12-397:25. Columbia's litigation tactics are especially problematic because Dr. Menchen admitted he is "not an expert on polymerases" (Ex. 1112, 270:2-16), which are the very polymerase incorporation reactions at issue. Dr. Menchen "admitted inexperience and unfamiliarity with the very subject on which [patent owner] sought to rely," and his declaration should be excluded. *Sport Dimension, Inc. v. Coleman Co.*, 820 F.3d 1316, 1323 (Fed. Cir. 2016).

¶¶31, 33-34, 38-39, 43, 51, 94-97, 109 of Ex. 1116 should be excluded

Columbia opposes exclusion of these paragraphs, which contain Dr. Menchen's opinion that a POSA would not be able to arrive at efficient polymerase incorporation or appropriate cleavage conditions. This testimony ignores that "[t]he normal desire of artisans to improve upon what is already generally known can provide the motivation to optimize variables." *In re Ethicon, Inc.*, 844 F.3d 1344, 1351 (Fed. Cir. 2017). The teachings of the prior art, such as Metzker, Dr. Menchen's patents, Hiatt, Qian, Boss, and Genet fit together to reinforce Tsien's disclosed advantages of the 3'-O-allyl capping group. Despite this, Dr. Menchen treats every reference individually as if a POSA would only apply its teachings

exactly as written. That is not realistic, nor does it address the legal standard:

KSR teaches that a person of ordinary skill is also a person of ordinary creativity, not an automaton. And it explains that the ordinary artisan recognizes that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.

ClassCo, Inc. v. Apple, Inc., 838 F.3d 1214, 1219 (Fed. Cir. 2016). As such, his testimony is confusing and irrelevant. It should be excluded.

¶¶100-106 of Ex. 1116 should be excluded

Columbia opposes exclusion of ¶¶100-106 by asserting that Gigg teaches a genus of allyl ethers. Gigg uses “the allyl ether” to refer to the $-\text{CH}_2\text{-CH=CH}_2$ group, which conforms with IUPAC nomenclature. Ex. 1046, 1903, 1905, 1906, 1907. Gigg refers to **substituted** allyl ethers with other appropriate nomenclature, such as “2-methylallyl ether” and “3-methylallyl (crotyl) ether.” *Id.*, 1907.

Dr. Romesberg’s testimony from Exhibit 2140

Columbia’s incomplete and misleading distortions of Dr. Romesberg’s testimony forced Illumina to move under FRE 106 and 401-403 to have the testimony considered within its full context or excluded. Columbia’s Opposition does not even attempt to harmonize its incomplete and misleading distortions of Dr. Romesberg’s testimony with his complete testimony, and therefore fails to rectify the numerous distortions identified in Illumina’s motion.

Respectfully submitted,

Dated: February 26, 2019

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **ILLUMINA REPLY TO OPPOSITION TO MOTION TO EXCLUDE COLUMBIA EVIDENCE** is being served on February 26, 2019, via e-mail to counsel for the Trustees of Columbia University, at the email addresses below:

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