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Federal Circuit Review – Issue 292

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292-1. Federal Circuit Affirms PTAB’s Finding that Patent Application Directed to Determining Haplotype Is Subject Matter Ineligible

The United States Court of Appeals for the Federal Circuit recently affirmed a ruling from the Patent Trial and Appeal Board holding Stanford’s patent application directed to determining haplotype is ineligible subject matter. *See In re Bd. of Trs. of the Leland Stanford Junior Univ.,* No. 2020-1288, 2021 U.S. App. LEXIS 8741 (Fed. Cir. March 25, 2021) (Before Prost, *Chief Judge,* Lourie, and Reyna, *Circuit Judges*) (Opinion for the Court, Reyna, *Circuit Judge*).

The Board of Trustees of the Leland Stanford Junior University (Stanford) filed its Application No. 13/486,982 (the ‘982 application) in June of 2012 directed to “computerized statistical methods for determining haplotype phase.” The haplotype phase typically can function as an indicator as to from which parent a gene was inherited.

During prosecution of the ‘982 application, the Examiner issued a final rejection of claims 1 and 22-43 due to such claims being directed to ineligible abstract mathematic algorithms and mental processes. Subsequently, the Patent Trial and Appeal Board (PTAB) affirmed the rejection of the claims. In affirming the Examiner’s rejection, the PTAB applied the two-step framework established by *Alice*. First, the PTAB determined that representative claim 1 was directed to abstract ideas, and namely mathematical concepts, as the claim merely recites receiving genotype data and then performing particular mathematical and modeling operations. Stanford attempted to argue that the application of the steps in claim 1 provide improved computer functionality. However, the PTAB disagreed, noting that the specification did not identify any improved computer functionality. Additionally, the PTAB explained that, unlike in *McRO, Inc. v. Bandai Namco Games America Inc.*, 387 F.3d 1299, 1315 (Fed. Cir. 2016), here, claim 1 is “devoid of any specific step that applies the [haplotype] information in a useful way, such that the claimed calculations are ‘integrated’ into a practical application,” despite such disclosed technology being useful in genetics research. Second, the PTAB determined that claim 1 did not include any additional limitations that transformed the abstract idea into patent eligible subject matter. In particular, the PTAB noted that such abstract computational steps might be a “highly significant discovery in the field of haplotype prediction” but such discovery does not establish patent eligibility. Ultimately, Stanford appealed the PTAB’s decision affirming the Examiner’s rejection of claims 1 and 22-43 of the ‘982 application to the Federal Circuit.

On appeal, the Federal Circuit ultimately affirmed the PTAB’s decision. The Federal Circuit first agreed with the PTAB’s analysis under step one of *Alice* in that the claims of the ‘982 application are directed to mathematical calculations and statistical modeling. The Federal Circuit noted that “[c]ourts have long held that mathematical algorithms for performing calculations, without more, are patent ineligible under § 101. *See, e.g.*, *Parker v. Flook*, 437 U.S. 584, 595 (1978). The Federal Circuit discredited Stanford’s argument that the increase in haplotype

prediction accuracy using the mathematical calculations claimed in claim 1 resulted in claim 1 being directed to a practical application and not an abstract idea.

The Federal Circuit further agreed with the PTAB's analysis under step two of *Alice* in that the additional limitations of claim 1 did not transform the abstract idea into patent eligible subject matter. In particular, the Federal Circuit explained that the additional limitations in claim 1 involving steps of receiving, extracting, and storing data amount to "well-known, routine, and conventional steps taken when executing a mathematical algorithm on a regular computer." The Federal Circuit noted that the hardware limitations in claim 1 merely specify that a "computer system" with a "processor" and a "memory" is used. Lastly, the Federal Circuit noted that the remaining dependent claims did not include any claim limitations that transfer the abstract idea of a mathematical calculation and statistical model into a patent eligible application.

Accordingly, the Federal Circuit affirmed the PTAB's holding affirming the Examiner's rejection of claims 1 and 22-43 of the '982 application due to lack of subject matter eligibility under 35 U.S.C. § 101.

Although a particular patent application might present a significant discovery in a scientific field, such significant discovery cannot establish patent eligibility when the claim is directed merely to an abstract idea. Even if the claimed mathematical concept or algorithm is more efficient or provides different or better results than conventional mathematical concepts or algorithms, such differences do not establish patent eligibility.

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