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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte XIANG LI, HONG LU, HSIAOMEI LU, KELLY GONZALEZ,
MELISSA PARRA, WENQI ZENG, ELIZABETH CHAO, and
CHARLES DUNLOP

Appeal 2017-010059
Application 13/629,517
Technology Center 1600

Before DONALD E. ADAMS, MICHAEL J. FITZPATRICK, and
JOHN G. NEW, *Administrative Patent Judges*.

Opinion for the Board filed by *Administrative Patent Judge* FITZPATRICK.

Opinion concurring filed by *Administrative Patent Judge* ADAMS.

FITZPATRICK, *Administrative Patent Judge*.

DECISION ON APPEAL

Xiang Li, Hong Lu, Hsiaomei Lu, Kelly Gonzalez, Melissa Parra,
Wenqi Zeng, Elizabeth Chao, and Charles Dunlop (“Appellants”)¹ appeal
under 35 U.S.C. § 134(a) from a decision finally rejecting claims 1, 2, 4–14,
16–18, 20–22, 25, 27, and 29–36. We have jurisdiction under 35 U.S.C.
§ 6(b).

We affirm.

¹ The real party in interest is Ambray Genetics. App. Br. 2.

STATEMENT OF THE CASE

The Specification

“Sequencing of a genome or portion thereof of individuals affected by a disease or with a trait of interest may be performed to determine the cause of common, complex traits.” Spec. ¶2.

Appellants disclose a computer-implemented process that filters out portions of the genome that do not play a role in the etiology of a particular disease “in order to assist scientists and molecular diagnosticians to classify human variants and ultimately identify the underlying mutation leading to patients’ genetic disease.” Spec. ¶5.

The Rejected Claims

Claims 1, 2, 4–14, 16–18, 20–22, 25, 27, and 29–36 stand rejected.
Final Act. 1. Claim 1 is representative² and reads as follows:

1. A computer-implemented method of forming, from a master list of genetic variants, an index list comprising one or more remaining variants relating to a condition in an individual, comprising:

(1) receiving, from a client device and at a server, (a) a selection of a Mendelian inheritance model based on a family history of the individual, and (b) the family history; the model

² Appellants do not argue the rejected claims separately. Accordingly, we discuss below only claim 1 and group the other claims with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

selected from the group consisting of autosomal dominant, autosomal recessive, and sex-linked;

(2) by a processor, forming the master list of genetic variants from a whole exome of the individual;

(3) removing from the master list (a) variants that are present in unaffected controls below a first specified frequency; (b) variants that are present in unaffected controls above a second specified frequency; and (c) variants that are present in unaffected controls below a specified number of occurrences; each of the specified frequencies and number being determined by inputs to the processor;

(4) removing from the master list variants that are in intergenic regions;

(5) removing from the master list deep intronic variants that do not have corresponding records in a database containing (a) known genetic variants and (b) disease conditions corresponding to the known genetic variants;

(6) removing from the master list synonymous variants that do not have corresponding records in the database;

(7) after the removing of (3)–(6), removing from the master list variants that exist in an unaffected family member and/or do not exist in an affected family member;

(8) after the removing of (7), removing from the master list variants that are present in a normal control that is based on exome data of at least one unaffected individual;

(9) after the removing of (8) and by the processor, forming the index list with one or more remaining variants in the master list, and identifying, by the processor and from the database, a condition corresponding to the one or more remaining variants of the index list; and

(10) by the processor and to the client device having a display, transmitting an indicator of the condition for visual representation on the display.

Appeal Br. 25–26.

As summarized by the Examiner, claim 1 is “directed to obtaining a master list of all exomic genetic variants from an individual, and through correspondence with other sets of previously known data, removing elements that match, until only unique elements remain.” Final Act. 3.

The Appealed Rejection

The following rejection is before us for review: claims 1, 2, 4–14, 16–18, 20–22, 25, 27, and 29–36 as ineligible under the judicial exception to 35 U.S.C. § 101. Final Act. 2.

DISCUSSION

The Examiner rejected all pending claims under the judicial exception to 35 U.S.C. § 101. Final Act. 2; *see, e.g., Alice Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014) (“We have long held that this provision [35 U.S.C. § 101] contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.”).

In analyzing patent-eligibility questions under the judicial exception to 35 U.S.C. § 101, we “first determine whether the claims at issue are directed to a patent-ineligible concept.” *Alice*, 134 S. Ct. at 2355. This is

sometimes referred to as step 2a.³ If the claims are determined to be directed to an ineligible concept in step 2a, then, in step 2b, we “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 97 (2012)).

Pursuant to step 2a, the Examiner determined that the rejected claims are directed to the abstract idea of “data manipulation” and, in particular, “the abstract steps of analyzing genetic data, wherein information is received, compared using computer system elements, certain matching data is removed, and remaining genetic data is determined to be a contributing factor to a disease.” Final Act. 3.

Pursuant to step 2b, the Examiner found that the only non-abstract features of claim 1 are non-specific computer systems (e.g., “computer-” in the preamble and “a client device” and “a server” in the body) and steps (1) and (10) in which, respectively, data is received and displayed. Final Act. 7. The Examiner invoked *Alice*’s holding that “an instruction to apply [an] abstract idea . . . using some unspecified, generic computer . . . is not ‘enough’ to transform an abstract idea into a patent-eligible invention.”

³ Step 1 of *Alice* is determining whether the claims are directed to a “process, machine, manufacture, or composition of matter, or any new and useful improvement thereof” as recited in 35 U.S.C. § 101. The rejected claims pass step 1, and step 1 is not at issue here.

Alice Corp., 134 S. Ct. at 2360 (citation omitted); Final Act. 8. And the Examiner found that steps (1) and (10) were well understood and conventional in the art. Final Act. 7.

We have considered Appellants' arguments but find none of them persuasive of error in the Examiner's rejection of claim 1.

Appellants' initial arguments appear to be from a different matter. *See* Appeal Br. 14 (quoting limitations that do not appear in the rejected claims on appeal here).

With respect to step 2a, Appellants argue that "data manipulation" is not a "valid judicial exception," not an abstract idea. *Id.* at 15. We are not persuaded by Appellants' argument. The Federal Circuit has "recognize[d] that defining the precise abstract idea of patent claims in many cases is far from a 'straightforward' exercise." *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1150 (Fed. Cir. 2016) (quoting *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014)). However, "we continue to 'treat[] analyzing information . . . by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category.'" *Synopsys*, 839 F.3d at 1146–47 (quoting *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354 (Fed. Cir. 2016) (citations omitted)); *see also* *Electric Power Grp.*, 830 F.3d at 1353 ("[C]ollecting information, analyzing it, and displaying certain results of the collection and analysis" "fall[s] into a familiar class of claims 'directed to' a patent-ineligible concept," that of the abstract idea). The Federal Circuit has

recognized that “a claim for a *new* abstract idea is still an abstract idea.”
Synopsys, 839 F.3d at 1151.

With respect to step 2b, Appellants argue: (1) the claims do not preempt all ways to analyze genetic variants (Appeal Br. 18); (2) the Final Action improperly generalizes the claims (*id.* at 20); (3) the claims provide a specific improvement to the way computers operate (*id.* at 21); and (4) the claims are directed to the field of computation biology (*id.* at 22). We are not persuaded by Appellants’ arguments.

With respect to step 2b, Appellants present multiple arguments. First, they argue that the claims do not preempt all ways to analyze genetic variants. Appeal Br. 18. But Appellants cannot overcome the § 101 rejection by showing a lack of complete preemption. If they are to overcome the rejection, it must be by showing that the rejection is not warranted under the *Mayo/Alice* two-step test. *See Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015) (“While preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility. . . . Where a patent’s claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in this case, preemption concerns are fully addressed and made moot.”).

Second, Appellants argue that the Final Action improperly generalizes the claims and, as a result, fails to support the conclusion that the elements,

in combination, are “well understood, routine, and conventional.” Appeal Br. 20. Appellants elaborate as follows:

The present claims recite more than merely receiving genetic data, comparing biomarkers versus a reference, removing matching data, and displaying an indicator of a condition. Instead, the claims recite, *inter alia*, forming a master list with particular variants from a whole exome of an individual, removing the variants in a particular order based on at least six specific and distinct criteria, and forming an index list with one or more remaining variants. By generalizing the claim recitations, the Office Action has failed to provide a reasoned explanation regarding how the recited combination of ordered steps is well-understood, routine, and conventional.

Id. This is the extent of Appellants’ argument, which we do not find persuasive.

The Examiner found that the only non-abstract features of claim 1 are non-specific computer systems (e.g., “computer-” in the preamble and “a client device” and “a server” in the body) and steps (1) and (10) in which, respectively, data is received and displayed. Final Act. 7.⁴ Appellants do not dispute that these features are well understood, routine, and conventional. *See* Appeal Br. 20. They argue, however, that “the Office Action has failed to provide a reasoned explanation regarding how the recited *combination* of ordered steps is well-understood, routine, and

⁴ In step 2a, the Examiner found that steps (2) through (8) were abstract. Final Act. 3.

conventional.” *Id.* (emphasis added). Put another way, Appellants argue that claim 1 has not been shown to be patent ineligible because it has not been shown to be well-understood, routine, and conventional, let alone merely anticipated. This is not the law.

It is true that, in *Alice* step 2b, the elements of a claim must be considered “both individually and ‘as an ordered combination’” but that is for purposes of “determin[ing] whether the additional [non-abstract] elements ‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 134 S. Ct. at 2355. During their individual consideration, we ask whether the non-abstract elements themselves are “well-understood, routine, [and] conventional.” *Id.* at 2359. We do not ask whether a claim as a whole is well-understood, routine, and conventional. *Id.* at 2359–60.

Third, Appellants argue that the “claims are directed to a specific improvement to the way computers operate.” Appeal Br. 21 (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016); *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)). Appellants identify the purported improvement as follows: “By first performing removing steps that do not apply information specific to the individual, the efficiency of the processor or processing module is improved during performance of subsequent steps that do apply information that is specific to the individual.” *Id.* at 22. We are not persuaded by this argument

or Appellants' related argument that "the computing aspects [of the claims] provide improvements to the field of computational biology." *See id.* at 23.

In *Enfish*, the Federal Circuit held that claims directed to "[a] data storage and retrieval system for a computer memory" were "not directed to an abstract idea within the meaning of *Alice*." *Enfish*, 822 F.3d at 1336. "Rather [(the Federal Circuit held)], they are directed to a specific improvement to the way computers operate, embodied in the self-referential table." *Id.* There is no aspect of the claims before us that corresponds to the self-referential table in *Enfish* or that otherwise improves the way a computer functions. Appellants' reliance on *Enfish* is misplaced.

In *McRO*, the Federal Circuit held that claims directed to "[a] method for automatically animating lip synchronization and facial expression of three-dimensional characters" were patent eligible because "[t]he claimed process use[d] a combined order of specific rules that renders information into a specific format that is then used and applied to create desired results: a sequence of synchronized, animated characters." *McRO*, 837 F.3d at 1307, 1315. Thus, in *McRO* "[t]he claim use[d] the limited rules in a process specifically designed to achieve an improved technological result in conventional industry practice." *Id.* at 1316. In contrast, claim 1 merely uses "a computer to accelerate an ineligible mental process[, which] does not make that process patent-eligible." *Bancorp Servs., L.L.C. v. Sun Life Assurance Co.*, 687 F.3d 1266, 1279 (Fed. Cir. 2012); *see also FairWarning IP, LLC v. Iatric Sys. Inc.*, 839 F.3d 1089,1093 ("[A]nalyzing information

by steps people go through in their minds, or by mathematical algorithms, without more,” are “essentially mental processes within the abstract-idea category”).

Neither *Enfish* nor *McRO* supports Appellants’ patent eligibility arguments.

We have considered all of Appellants’ arguments but none of them persuades us the Examiner erred in rejecting claims 1, 2, 4–14, 16–18, 20–22, 25, 27, and 29–36 as patent ineligible under the judicial exception to 35 U.S.C. § 101.

CONCLUSION

For the reasons discussed, we affirm the Examiner’s rejection of all claims on appeal.

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte XIANG LI, HONG LU, HSIAOMEI LU,
KELLY GONZALEZ, MELISSA PARRA, WENQI ZENG,
ELIZABETH CHAO, and CHARLES DUNLOP
(APPLICANTS: AMBRY GENETICS)

Appeal 2017-010059
Application 13/629,517⁵
Technology Center 1600

Before DONALD E. ADAMS, MICHAEL J. FITZPATRICK, and
JOHN G. NEW, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*, concurring.

DECISION ON APPEAL

This Appeal under 35 U.S.C. § 134(a) involves claims 1, 2, 4–14, 16–18, 20–22, 25, 27, and 29–36 (App. Br.⁶ 4). Examiner entered a rejection under 35 U.S.C. § 101. This Panel has jurisdiction under 35 U.S.C. § 6(b).

⁵ Appellants identify “Ambry Genetics” as the real party in interest (App. Br. 2).

⁶ Appellants’ February 23, 2017 Appeal Brief.

STATEMENT OF THE CASE

Appellants disclose that “[a]spects of the subject technology relate to computational biology, genetics, and clinical diagnostics” (Spec. ¶ 1).

Claim 1 is representative and reproduced below:

1. A computer-implemented method of forming, from a master list of genetic variants, an index list comprising one or more remaining variants relating to a condition in an individual, comprising:

(1) receiving, from a client device and at a server, (a) a selection of a Mendelian inheritance model based on a family history of the individual, and (b) the family history; the model selected from the group consisting of autosomal dominant, autosomal recessive, and sex-linked;

(2) by a processor, forming the master list of genetic variants from a whole exome of the individual;

(3) removing from the master list (a) variants that are present in unaffected controls below a first specified frequency; (b) variants that are present in unaffected controls above a second specified frequency; and (c) variants that are present in unaffected controls below a specified number of occurrences; each of the specified frequencies and number being determined by inputs to the processor;

(4) removing from the master list variants that are in intergenic regions;

(5) removing from the master list deep intronic variants that do not have corresponding records in a database containing (a) known genetic variants and (b) disease conditions corresponding to the known genetic variants;

(6) removing from the master list synonymous variants that do not have corresponding records in the database;

(7) after the removing of (3)-(6), removing from the master list variants that exist in an unaffected family member and/or do not exist in an affected family member;

(8) after the removing of (7), removing from the master list variants that are present in a normal control that is based on exome data of at least one unaffected individual;

(9) after the removing of (8) and by the processor, forming the index list with one or more remaining variants in the master list, and identifying, by the processor and from the database, a condition corresponding to the one or more remaining variants of the index list; and

(10) by the processor and to the client device having a display, transmitting an indicator of the condition for visual representation on the display.

(App. Br. 25–26.)

Ground of rejection before this Panel for review:

Claims 1, 2, 4–14, 16–18, 20–22, 25, 27, and 29–36 stand rejected under 35 U.S.C. § 101

ISSUE

Does the evidence of record support Examiner’s finding that the method of Appellants’ claim 1 is directed to patent ineligible subject matter?

ANALYSIS

Appellants do not separately argue their claims. Therefore, claim 1, reproduced above, is representative.

The scope of 35 U.S.C. § 101 “is subject to an implicit exception for ‘laws of nature, natural phenomena, and abstract ideas,’ which are not patentable.” *Intellectual Ventures I LLC v. Capital One Financial Corp.*, 850 F.3d 1332, 1338 (Fed. Cir. 2017) (citing *Alice Corp. Pty. Ltd. v. CLS Bankint’l.*, 134 S. Ct. 2347, 2355 (2014)).

To determine whether the exception applies . . . a court must determine: (1) whether the claim is directed to a patent-

ineligible concept, i.e., a law of nature, a natural phenomenon, or an abstract idea [(the “abstract idea” step)]; and if so, (2) whether the elements of the claim, considered “both individually and ‘as an ordered combination,’” add enough to “‘transform the nature of the claim’ into a patent-eligible application [(the ‘inventive concept’ step)].”

Intellectual Ventures, 850 F.3d at 1338 (citing *Alice Corp.*, 134 S. Ct. at 2355).

Applying the *abstract idea step* to Appellants’ claim 1: There can be no doubt that Appellants’ claimed method is directed to a patent-ineligible concept, specifically, an abstract idea (*see* Final Act.⁷ 3 (Appellants’ claims “are directed to the judicial exception of an abstract idea”)).⁸

Appellants’ claimed method begins with pre-existing *data*, specifically, step (1): The receipt of information (*see* App. Br. 25). “[C]ollecting information, including when limited to particular content (which does not change its character as information), [is] within the realm of abstract ideas.” *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–1354 (Fed. Cir. 2016).

Appellants’ claimed method then recites a variety of *data manipulation* steps, specifically, steps (2)–(9) (*see id.* at 25–26). “Analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, [are] essentially mental processes within the abstract-idea category.” *Electric Power Group*, 830 F.3d at 1354; *see also CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir.

⁷ Examiner’s August 12, 2016 Final Office Action.

⁸ Examiner also finds that Appellants’ claim 1 is directed to “an additional judicial exception, a natural phenomenon” (Final Act. 6; *see id.* at 6–7).

2011) (“The mere manipulation or reorganization of data . . . does not satisfy the transformation prong.”); *see also* Ans. 10–11.

Appellants’ claimed method concludes with the *display* of data, specifically, step (10) (*see id.* at 26). “[M]erely presenting the results of abstract processes of collecting and analyzing information, without more . . ., is abstract as an ancillary part of such collection and analysis.” *Electric Power Group*, 830 F.3d at 1354.

Stated differently, without additional limitations, a process that employs mathematical algorithms to manipulate existing information to generation additional information for display is not patent eligible. “If a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory.” *Digitech Image Techs., LLC v. Elecs. For Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) (quoting *Parker v. Flook*, 437 U.S. 584, 595[] (1978) (internal quotations omitted)).

Applying the *inventive concept step* to Appellants’ claim 1: Examiner finds that when Appellants’ claimed method is considered both individually and as an ordered combination it does “not include additional elements that are sufficient to amount to significantly more than the judicial exception[]” (Final Act. 7). Specifically, Examiner finds that the steps of Appellants’ claimed invention are routine, well-understood and conventional steps of data analysis and display in the field of Appellants’ claimed invention (*see*

Final Act. 7 (citing Ng⁹ and Challis¹⁰); *see generally* Ans. 12–13).

Appellants do not dispute Examiner’s findings based on Ng and Challis (*see generally* App. Br. 19–20; *see also* Reply Br.¹¹ 5–6).

Examiner further finds that Appellants’ claim 1 “recite[s] the additional element of nonspecific computer systems,” i.e., a generic computer, which is not sufficient to “transform an abstract idea into a patent-eligible invention” (Final Act. 7–8). *See Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S.Ct. 1289, 1301 (2012) (“[S]imply implementing a mathematical principle on a physical machine, namely a computer, [is] not a patentable application of that principle.”). As in *Electric Power Group*, Appellants’ claim 1 does “not require any nonconventional computer, network, or display components, or even a ‘non-conventional and nongeneric arrangement of known, conventional pieces,’ but merely call for performance of the claimed information collection, analysis, and display functions ‘on a set of generic computer components’ and display devices.” *Electric Power Group*, 830 F.3d at 1355 (citing *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349–52 (Fed. Cir. 2016)).

A difference exists between patent ineligible claim, as here, that focuses “on asserted advances in uses to which existing computer capabilities could be put” and patent eligible claims that focus “on a specific

⁹ Ng et al., *Exome sequencing identifies the cause of a mendelian disorder*, 42 NATURE GENETICS 30–35 (2010).

¹⁰ Challis et al., *An integrative variant analysis suite for whole exome next-generation sequencing data*, 13 BMC BIOINFORMATICS 1–12 (2012).

¹¹ Appellants’ July 21, 2017 Reply Brief.

improvement . . . in how computers could carry out one of their basic functions of storage and retrieval of data.” *Electric Power Group*, 830 F.3d at 1354 (discussing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335-36 (Fed. Cir. 2016); see also *Research Corp. Technologies Inc. v. Microsoft Corp.*, 627 F.3d 859, 865 (Fed. Cir. 2010) (“higher quality halftone images [were produced] while using less processor power and memory space.”). Therefore, Appellants’ contentions relating to *Enfish* and *DDR Holdings, LLC v. Hotels.com L.P.*, 773 F.3d 1245 (Fed. Cir. 2014) are not persuasive (see App. Br. 14–15; cf. Ans.¹² 9–10 and 13). In contrast to Appellants’ claim 1, “the claims at issue [in *Enfish*] focused not on asserted advances in uses to which existing computer capabilities could be put, but on a specific improvement—a particular database technique—in how computers could carry out one of their basic functions of storage and retrieval of data.” *Electric Power Group*, 830 F.3d at 1354. Further, as Appellants recognize, in contrast to Appellants’ claim 1, *DDR Holdings*, overcame “a problem specifically arising in the realm of computer networks” (see App. Br. 15). Similarly, Appellants’ contentions regarding *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016) are not persuasive (see App. Br. 19 and 21). Unlike the claims on this record, “[t]he claims in *McRO* were not directed to an abstract idea,” to the contrary, “the claimed improvement . . . [was] allowing computers to produce ‘accurate and realistic lip synchronization and facial expressions in animated characters’ that previously could only be produced by human animators.” *FairWarning*

¹² Examiner May 23, 2017 Answer.

IP, LLC v. Iatric Systems, Inc., 839 F.3d 1089, 1094 (Fed. Cir. 2016)
(internal citation omitted)

For the reasons set forth above, Appellants’ contention that claim 1 is “not directed to . . . an abstract idea,” is not persuasive (*see* App. Br. 15–17; *see also* Reply Br. 4 (“Claim 1 is not merely directed to collecting information”)).

Appellants’ contentions regarding preemption are not persuasive (*see* App. Br. 19; Reply Br. 6; *cf.* Ans. 12). Although “preemption may signal patent ineligible subject matter, the absence of complete preemption does not demonstrate patent eligibility.” *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1379 (Fed. Cir. 2015). Where claims are deemed to recite only patent-ineligible subject matter under the two-step Alice analysis, as they are here, “preemption concerns are fully addressed and made moot.” *Id.*

Appellants’ field of use contentions are not persuasive (*see* App. Br. 22–23 (“The Claims are Directed to the Field of Computational Biology”) (emphasis omitted); *cf.* Ans. 14). *See Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010) (“[T]he prohibition against patenting abstract ideas ‘cannot be circumvented by attempting to limit the use of the formula to a particular technological environment’ or adding ‘insignificant postsolution activity’”) (quoting *Diamond v. Diehr*, 450 U.S. 175, 191–92 (1981)); *Intellectual Ventures I LLC v. Erie Indent. Co.*, 850 F.3d 1315, 1328–29 (Fed. Cir. 2017) (“While limiting the index to XML tags certainly narrows the scope of the claims, in this instance, it is simply akin to limiting an abstract idea to one field of use or adding token post solution components that do not convert the otherwise ineligible concept into an inventive concept.”))

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CONCLUSION

The evidence of record support Examiner's finding that the method of Appellants' claim 1 is directed to patent ineligible subject matter.