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Sent via the Guidance Mailbox (myriad-mayo_2014@uspto.gov)

Re: Guidance for Determining Subject Matter Eligibility of Claims Reciting or Involving Laws of Nature, Natural Phenomena, & Natural Products

I. AMP introduction

The Association for Molecular Pathology ("AMP") is an international medical and professional society representing over 2300 physicians, doctoral scientists, and medical laboratory scientists. Our members are dedicated to the development and implementation of molecular pathology procedures for the benefit of our patients in a manner consistent with the highest standards established by the Clinical Laboratory Improvement Amendments (CLIA), the College of American Pathologists (CAP), the American College of Medical Genetics (ACMG), and the Food & Drug Administration (FDA).

AMP members populate the majority of clinical molecular pathology laboratories in the United States, and our efforts are central to the generation of novel, high quality, molecular pathology procedures that are applied daily in medical decision-making. We perform assays that we design, develop and validate within our laboratories to establish diagnoses, prognoses, and risk of future disease, to predict response to therapy, and to monitor and otherwise assist in the management of our patients. Our work encompasses molecular oncology, inherited diseases, infectious diseases, and histocompatibility testing. In addition to developing and implementing such procedures, AMP members are experts in the interpretation of these assays.

Thank you very much for the opportunity to provide comments to the United States Patent and Trademark Office (USPTO) on the "Guidance for Determining Subject Matter Eligibility Of Claims Reciting Or Involving Laws of Nature, Natural Phenomena & Natural Products."

II. *Mayo* and *Myriad* have together rendered invalid patent claims that attempt to establish exclusive rights to testing for genetic mutations and their relationships to medically relevant physical or physiological parameters.

Molecular pathology testing (a.k.a. genetic testing) involves the detection of genetic changes that are associated with medically relevant physiological changes, and are used for diagnosis, or to identify such features as predisposition to disease, therapeutic responsiveness, medicinal side effects, histocompatibility, and tumor behavior. Historically, molecular pathology testing typically involved one or a small number of genes or mutations. Therefore, the harms of gene patents, although substantial for some patients, were primarily experienced by those affected with a relatively limited number of disorders, many of which are uncommon.

However, recent advances in gene sequencing technologies have allowed for simultaneous testing of the sequences of thousands of genes. Patents on gene sequences themselves, and on relationships between changes in those sequences and medically relevant physiological properties, stood as formidable barriers to the clinical introduction of large-scale sequencing such as whole exome sequencing or multi-gene sequencing panels. Judge William Bryson, who dissented in the Court of Appeals for the Federal Circuit's *Myriad* decision, recognized the potential threat gene patents posed for large-scale sequencing, writing: "[T]he court's decision, if sustained, will likely have broad consequences, such as preempting methods for whole-genome sequencing, even though Myriad's contribution is not remotely consonant with such effects. …" By its rulings in *Mayo* and *Myriad*, the Supreme Court has greatly helped facilitate the introduction of multi-gene sequencing into clinical practice, and has thereby encouraged the advancement, development and implementation of personalized medicine.

A. *Mayo v. Prometheus*

In *Mayo Collaborative Services v. Prometheus Laboratories, Inc*., 566 U.S. ___, 132 S.Ct. 1289, 101 USPQ2d 1961 (2012), Prometheus Labs sued Mayo Clinic for infringement of two patents covering the post-administration correlation of blood levels of the thiopurine metabolites 6-methyl mercaptopurine and 6-thioguanine with thiopurine efficacy and related side effects. Both patents were written in the form of stepwise processes, the relevant claims of which included the generic steps of: (1) administering the drug; (2) measuring the metabolite levels; (3) describing the metabolite concentrations above and below which are associated with an increased likelihood of toxicities or lack of efficacy respectively; then informing the ordering physician of the potential need to decrease or increase the drug dose. Thus, the patent in effect claimed the reference ranges for thiopurine drugs.

In a 9 - 0 decision authored by Justice Stephen Breyer, the Supreme Court held that the processes claimed in Prometheus' patents were not patent eligible. The Court recognized that an unpatentable biological correlation lay at the center of Prometheus' patent claims. In order to receive a process patent that purports to claim an application of a natural law, the Court noted, sufficient inventive effort must be added to the natural law so as to ensure that the patent is "significantly more than a patent upon the natural law itself." Moreover, the Court emphasized that appending routine steps cannot convert a natural law into a patent eligible process. As the Court explained, "If a law of nature is not patentable, then neither is a process of reciting a law of nature, unless that process has additional features that provide practical assurance that the process is more than a drafting effort designed to monopolize the law of nature itself."

Further, the Court wrote, "Our conclusion rests upon an examination of the particular claims before us in light of the Court's precedents. Those cases warn us against interpreting patent statutes in ways that make patent eligibility 'depend simply on the draftsman's art' without reference to the principles underlying the prohibition against patents for [natural laws]...They warn us against upholding patents that claim processes that too broadly preempt the use of a natural law...And they insist that a process that focuses upon the use of a natural law also contain other elements or a combination of elements, sometimes referred to as an 'inventive concept,' sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the natural law itself."

B. *AMP v. Myriad*

In *Association for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. ___, 133 S.Ct. 2107, 106 USPQ2d 1972 (2013), several medical and professional societies, health care providers, and breast cancer patients represented by the American Civil Liberties Union and the Public Patent Foundation sued Myriad Genetics, the University of Utah Research Foundation, and the USPTO seeking to invalidate key claims of patents covering wild-type and mutated sequences of the *BRCA1* and *BRCA2* genes, and correlations between genetic variants and the predisposition to breast and ovarian cancer.

In another 9 - 0 decision, this time authored by Justice Clarence Thomas, the Supreme Court held that naturally occurring DNA sequences are "products of nature" that cannot be patented. The Court acknowledged Myriad's contributions in identifying the precise chromosomal locations and sequences of *BRCA1* and *BRCA2*, but recognized that these discoveries were not patent-eligible inventions. "In this case … Myriad did not create anything," wrote Justice Thomas, "To be sure, it found an important and useful gene, but separating that gene from its surrounding genetic material is not an act of invention."

Moreover, the Court recognized that polymerase chain reaction (PCR) amplification, sequencing, and other techniques that Myriad applied in isolating the genes were in routine use at the time of the discoveries. "Had Myriad created an innovative method of manipulating genes …" the Court proclaimed, "it could possibly have sought a method patent. But the processes used by Myriad 'were well understood, widely used, and fairly uniform insofar as any scientist engaged in the search for a gene would likely have used a similar approach.'"

The Court clearly intended for its decision to negate genetic testing monopolies writing, "But isolation is necessary to conduct genetic testing, and Myriad was not the only entity to offer BRCA testing after it discovered the genes. The University of Pennsylvania's Genetic Diagnostic Laboratory (GDL) and others provided genetic testing services to women."

Finally, the Court confirmed that the fundamental essence of DNA is its information content. "Myriad's claims," the Court wrote, "are simply not expressed in terms of chemical composition, nor do they rely in any way on the on the chemical changes that result from the isolation of a particular section of DNA. Instead, the claims understandably focus on the genetic information encoded in the *BRCA1* and *BRCA2* genes. If the patents depended upon the creation of a unique molecule, then a would-be infringer could arguably avoid at least Myriad's patent claims on entire genes … by isolating a DNA sequence that included both the *BRCA1* or *BRCA2* gene and one additional nucleotide pair. Such a molecule would not be chemically identical to the molecule 'invented' by Myriad. But Myriad obviously would resist that outcome because its claim is concerned primarily with the information contained in the genetic sequence, not with the specific chemical composition of a particular molecule."

C. Combined impact of *Mayo* and *Myriad*

In both *Mayo* and *Myriad* the Supreme Court unanimously reaffirmed its longstanding prohibitions against patenting natural laws and products of nature. In *Mayo*, the Court was clear that characterizing a biological association as a process does not, without adding a truly inventive step, convert the association into a patent eligible application of a natural law. In *Myriad*, the Supreme Court found that naturally occurring human DNA sequences are not patent eligible, rendering patents on human genes invalid. When read together these two cases have clarified the patent ineligibility of claimed associations between genetic mutations and their relationships to medically relevant physical or physiologic effects, whether testing is for diagnosis, identification of predisposition to disease, therapeutic responsiveness, medicinal side effects, or tumor behavior.

In keeping with the holdings in *Mayo* and *Myriad*, the USPTO should include within its Guidance as an example of *patent ineligible* subject matter, a claim that asserts the right to exclude others from using or applying particular biological correlations between genetic variants and medically relevant physical or physiological parameters.

Moreover, the USPTO should make it clear that appending a generic amplification step or a mere PCR or hybridization reaction to a genetic correlation claim, does not constitute a significant transformation of matter. Such amplification or hybridization steps do not transform the genetic variant "into a different state or thing," and more important, are not central to the purpose for which the claimed process is performed. **(***Gottschalk v. Benson*, 409 U.S. 63 (1972)). Instead, the intermediary, ancillary, and, because of their routine nature, insignificant functions of such amplification or hybridization reactions is to increase the number of copies of a

genetic variant or enrich for a specific sequence so that its presence can be detected and the relevant biological correlation made.

Neither the genetic variant nor the claimed physical or physiologic association has been altered by DNA extraction, amplification or other forms of isolation. In fact, were these processes to transform the gene sequence variant they would preclude its detection and obviate the purpose of for which the processes were performed. The fundamental difference between this routine pre-solution activity and processes such as "tanning, dyeing, making waterproof cloth, vulcanizing India rubber, smelting ores" is that DNA extraction and amplification are merely performed to allow instruments to read a DNA sequence, whereas the latter processes are performed for the purpose of creating new or different articles or products. *Gottschalk v. Benson*, 409 U.S. 63 (1972).

III. The Guidance must adhere to the dictates of *Mayo* and *Myriad*.

In light of the need for the Guidance to adhere to the Supreme Court's decisions in *Mayo* and *Myriad*, AMP has several specific comments directed toward the Guidance and the examples described therein.

A. Page 1, USPTO Introductory Comments

We credit the USPTO for recognizing the breadth of the *Myriad* and *Mayo* holdings and their relevance for all subject matter eligibility determinations under Section 101 of the Patent Act. We agree that these cases impact threshold determinations for all claims involving natural laws, natural principles, natural phenomena, and natural products. However, USPTO in paragraph 3 states, "*Myriad* also clarified that not every change to a product will result in a marked difference, and that mere recitation of particular words (e.g., "isolated") in the claims does not automatically confer eligibility."

This language, including USPTO's emphasis on the word "automatically," appears to shift the requisite presumption away from the patent *ineligibility* of natural products, natural laws and natural phenomena, toward patent eligibility. Further, the introductory comments, which set the tone for the interpretation of the remainder of the document, should affirmatively emphasize the burden that applicants must overcome for patents that seek to claim subject matter involving natural products, natural laws, natural principles, and natural phenomena. Thus, "automatically" should be removed from the sentence, the words of which should instead read, "Myriad clarified that a change or series of changes to a natural product must result in a marked difference and that mere recitation of particular words (e.g., "isolated") in the claims will not result in eligibility unless a marked difference is present."

B. II. How To Analyze "Significantly Different"

USPTO on page 3 states that a significant difference in the proposed subject matter from a natural product, natural law, natural principle, or natural phenomena can be shown in multiple ways, "such as: (1) the claim includes elements or steps in addition to the judicial exception that practically apply the judicial exception in a significant way, e.g., by adding significantly more to the judicial exception; and/or (2) the claim includes features or steps that demonstrate that the claimed subject matter is markedly different from what exists in nature (and thus not a judicial exception)."

Although we agree with proposition (2) that the subject matter must be markedly different from what exists in nature, we are concerned about the use of the term "significantly more" in proposition (1). USPTO should clarify that "significantly more" is intended as a truly *qualitative* term that refers to additional functional features that render the subject matter a human invention rather than a patent on the law itself, and particularly that process claims involving routine additions to a natural law, natural principle, or natural phenomena, irrespective of their number, will not render the natural law patent eligible without such substantive functional change. This

clarification could be accomplished by removing the conjunction "or" that is between (1) and (2). The sentence would then read, "such as: (1) the claim includes elements or steps in addition to the judicial exception that practically apply the judicial exception in a significant way, e.g., by adding significantly more to the judicial exception; and (2) the claim includes features or steps that demonstrate that the claimed subject matter is markedly different from what exists in nature (and thus not a judicial exception)."

In the first full paragraph on page 4, with respect to its proposed factor-based analysis USPTO states, "The determination of eligibility is not a single, simple determination, but is a conclusion reached by weighing the relevant factors, keeping in mind that the weight accorded each factor will vary based upon the facts of the application." We are concerned that the approach conveyed by these words provides too much discretion and insufficient guidance to the examiner to ensure that she or he will adhere to the dictates of the *Mayo* and *Myriad* holdings.

In this paragraph USPTO also states, "These factors are not intended to be exclusive or exhaustive as the developing case law may generate additional factors over time." USPTO attempted to analogize the *Wands* factor-based analysis used for the evaluation of undue experimentation to the assessment of patent eligibility of claims involving natural products, natural laws, natural principles and natural phenomena. However, we do not believe that the detailed, technical, highly specific analysis of a narrow question of the patentability of predetermined patent eligible subject matter, however useful and appropriate in this patentability context, can be directly compared to a global threshold question such as patent eligibility. The determination of patent eligibility should demand far less subtlety of analysis and brighter lines of separation than does the assessment of undue experimentation.

In its factors weighing toward eligibility, USPTO states under factor (e) that the "Claim recites elements/steps in addition to the judicial exception(s) that include a particular machine or transformation of a particular article …" For process claims, USPTO should make it clear that transformations should be intimately involved with and central to the purpose for which the process is performed, not merely appended routine steps that although physically necessary to accomplish the process, are not in and of themselves related to the process' purpose. For example, "tanning, dyeing, making waterproof cloth, vulcanizing India rubber, or smelting ores," are performed for the purpose of physically transforming substances so as to create what are essentially new materials for their own sake. (*Gottschalk v. Benson*, 409 U.S. 63 (1972)). However, in molecular pathology testing although some physical transformations occur through necessary but routine pre-solution steps such as DNA extraction and PCR amplification, the purpose of the testing is to read or identify changes in the sequence of the DNA, not to transform it into something else.

In the first full paragraph on page 5, USPTO discusses the role of factors (a) and (g) in addressing the question of whether "something that initially appears to be a natural product is in fact non-naturally occurring and markedly different from what appears in nature, i.e., from naturally occurring products." USPTO cites *Myriad* for the proposition that merely breaking covalent bonds through DNA isolation does not effect a marked difference in structure because isolation does not change the DNA sequence. Although true, USPTO's interpretation is too limiting, because it fails to acknowledge the essence of the reasoning underlying the Court's conclusion that the structural changes occurring during DNA isolation are not significant. The Court recognized that the DNA's fundamental value lies in its unique ability to store information, and that the feature of importance is that the informational content stored within the DNA sequence has not changed. Thus, although USPTO indirectly arrives at a similar result through its sole consideration of the lack of change in the DNA sequence, applying the analysis in this example could lead USPTO to an erroneous conclusion if the claims are directed toward another chemical that does not play the unique informational role of the DNA molecule at issue.

Finally, factor (f) seems ambiguous as it does not discuss potential synergies among the additional elements or steps mentioned. Therefore, it is unclear whether, for example, "a feature that is more than well-understood, purely conventional or routine in the relevant field" refers only to the properties of the added elements or steps

in isolation, or whether it could include new features that arise from the combination of elements as in the discussions, for example, of factors (k) and (l) in relation to Claim 3 involving amazonic acid (see below). The latter approach seems more logical, and if the USPTO does not adopt it, the reasons for not doing so should be stated and explained.

C. III. B. Composition vs. Method Claims, Each Reciting A Natural Product

Analysis of Claims Involving Amazonic Acid

On page 7, USPTO begins its analysis of Claim 1 involving purified amazonic acid, and concludes that Claim 1 does not involve subject matter that is significantly different than natural amazonic acid. We disagree with this conclusion. Instead, we believe that the purified amazonic acid described in Claim 1 is markedly different than the amazonic acid that exists in nature because purification has changed its *functional* properties in a manner that is substantially different from the functional properties of amazonic acid in its natural, unpurified form. Following purification, concentrated amazonic acid can be administered in a pill form. Concentration is central to the functionality of amazonic acid, as it directly impacts the means of administration of this exogenous drug, and allows the patent applicant to control the manner and precise quantity in which the drug is given. This example is distinguishable from the naturally occurring nucleic acids at issue in *AMP v. Myriad*, because the integral functional property at stake in *Myriad* was the unchanged informational content of the DNA sequence. Moreover, in *Myriad*, the plaintiffs merely sought to access or "read" the information in the DNA. This information is stored within the sequence of base pairs and is not altered by isolating the DNA sequence. Thus, in contrast to Claim 1 involving amazonic acid, isolation had no impact on the function of the DNA for the purposes at issue, and the structural transformations described in *Myriad* were peripheral to the use of the DNA.

We also disagree with components of the analysis of Claim 3, which begins on page 8 of the Guidance. Specifically, in considering factors favoring patent eligibility of the process of treating colon cancer with amazonic acid, USPTO's analysis of factor (b) seems overly simplistic. If, for example, there is only a single dosage range or regimen that could safely and effectively be used to treat colon cancer patients with amazonic acid, the claim would preempt all uses of amazonic acid to treat colon cancer. Therefore, if the analysis and conclusion provided is retained in the Guidance, the example should stipulate in the background section that other dosages, amounts or regimens are acceptable, or highly likely to be acceptable for use of amazonic acid to treat colon cancer, rather than relegating this key fact to the analysis of factor (i), as USPTO has done.

In its analysis of factor (c), USPTO states that the generic step of administering is "significantly related to the judicial exception "because … amazonic acid is manipulated in a particular and specific way." However, because "administering" the drug is a generic step, this explanation appears unsatisfactory and to some extent untrue. It is better said that administration of the drug is integral to and inseparable from the overall process of the therapeutic treatment regimen, and central to the purpose for which it is performed. This is implied in the analysis of factor (h), and appears to be the reason for which the USPTO states that factor (k) is satisfied. The USPTO should acknowledge that an "administering" step can be considered insignificant extra-solution activity in other contexts, as it was in the patent claims at issue in *Mayo v. Prometheus*. Finally, in the analysis of factor (l), whether or not the claim represents a field of use is dependent on how broadly that field is defined. For example, if the field of use is defined as the ability to treat colon cancer with amazonic acid, and a claimed single dose for a specific length of time is the only possible way to treat colon cancer with amazonic acid, the claim would represent a "field of use." Thus, USPTO's analysis potentially risks forcing patent examiners to engage in circular reasoning in order to arrive at and defend decisions.

D. III. D. Composition Claim Reciting Multiple Natural Products

Beginning on page 10, USPTO provides an example of a claim for an inoculant that combines non-inhibitive strains of different species of Rhizobium bacteria. However, the claim and accompanying background material fail to provide any added functionality for the combination of the Rhizobium species. This forces patent eligibility evaluation of the inoculant to proceed through analysis of each individual Rhizobium species as if it were presented in isolation. However, in this respect the example differs from the subject matter at issue in *Funk Brothers Seed Co. v. Kalo Inoculant Co.,* 333 U.S. 127 (1948), which the USPTO cited as the example's source. In *Funk Brothers*, a new utility was created by the combination of species. Therefore, in order to truly reflect the ruling in *Funk Brothers*, the new feature contained in the isolate, which relates to ability to package and deliver the Rhizobium species, should be analyzed using the proposed factor-based analysis.

E. III E. Composition vs. Method Claims, Each Reciting Two Natural Products

Example Claim 1 on page 11 describes 2 "primers." We agree that Claim 1 is not patent eligible. However, the analysis of factor (a) is straightforward, as the example describes the primers as naturally occurring DNA sequences, and naturally occurring DNA sequences are not patent eligible. Therefore, we disagree that a full factor-based analysis is appropriate for considering patent eligibility of these DNA sequences.

Claim 2 describes a PCR reaction utilizing specific primers. Assuming as part of this example that this was the initial PCR patent, we agree that the subject matter would be patent eligible. However, in light of the awarded PCR patent (Mullis, et al. 4,683,202), and particularly given the subsequent ubiquitousness and centrality of PCR to molecular pathology testing, we do not believe that primer-specific PCR reactions are patent eligible. Because in practice the primary use of these primers would be in PCR, and because primers are necessary to perform PCR, Claim 2 in effect represents an alternative way of claiming the patent ineligible primer sequences themselves. Taken to its logical conclusion, the example suggests that an applicant could claim multiple or all possible primer sets needed to amplify a specific gene, thereby acquiring a monopoly on the ability to amplify and read the sequence of that gene using contemporarily available technology. Moreover, such a patent holder would have effective control over the biological associations between genetic changes and medically relevant physical characteristics or physiological changes.

The example should be confined to the legitimately patentable, broadly applicable process of PCR itself. In addition, similar to previous comments we have made regarding USPTO's analysis using proposed factor (f) on page 13, although there is nothing remarkable about the individual steps of heating and cooling themselves, in the context of the PCR reaction the combination of these steps should be considered to add new, synergistic functional features that are reflected in the process as a whole.

F. III F. Process Claim Involving A Natural Principle And Reciting Natural Products

The example claim describes the process of diagnosing a neurodegenerative disorder through the detection of a misfolded blood protein by the routine step of flow cytometry, utilizing a specifically named synthetic antibody. *Mayo* and *Myriad* reinforce the legal rule that natural, biological relationships used to diagnose diseases must remain freely available for use by physicians, laboratorians, and researchers. In our view, the synthetic antibody is clearly patent eligible. Moreover, the process itself appears to be patent-eligible because it utilizes a particular synthetic antibody, XYZ, to accomplish the diagnosis. However, USPTO should make it clear that were the claim to be described in such a manner that it would actually or in practice assert the right to prevent others from utilizing *all* antibodies that bind to the misfolded protein, it would be overbroad and this subject matter should not be deemed patent eligible. Such a patent would at a minimum grant exclusivity over the natural association of a disease-related abnormal epitope and the principle of detection through antibody binding in combination with the routine step of flow cytometry, and in practice would, depending on the circumstances,

potentially risk granting an exclusive right to use the association between the misfolded protein and the subject neurodegenerative disease.

Further, USPTO's analysis of factor (h) on page 14 is inapposite in its statement, "For example, others can still apply and use the natural principle in other methods, such as a method of treatment or a method of assessing whether a particular treatment regimen has resulted in a decrease in the amount of misfolded protein ABC in a patient's blood." Although true, this statement exceeds the boundaries of the natural law at issue in the claim, i.e. the association of misfolded protein ABC and degenerative disease X *as used in diagnosis*. USPTO should be clear that a patent cannot claim exclusive rights over a law of nature used to diagnose a disease.

G. III G. Process Claims Involving A Natural Principle

Claim 2 on page 15 describes a method of treating a mood disorder by exposing a patient to synthetic white light. In the analysis of factor (b) on page 16, we disagree that exposing a person to a synthetic source of white light meaningfully limits the claim, and believe that such a view risks foreclosing others from using or applying the natural principle of utilizing white light to treat patients with a mood disorder. USPTO contends that exposing a person to sunlight is another way to apply the relationship of exposure to white light for the treatment of a mood disorder. However, the only way to definitively and affirmatively control a patient's white light exposure and treatment, including time and place, is likely through the application of synthetic light. For example, there may be many cloudy days in some regions, which would preclude application of the natural law by exposure to sunlight. Consequently, we believe USPTO's analysis potentially allows others to be in practice foreclosed from use of the principle. USPTO's analysis in (h) appears to support this view stating, "the claim covers substantially all practical applications of using white light in combination with the natural principle that white light affects human neuronal activity," and appears to be inconsistent with USPTO's analysis of factors (b) and (i).

Claim 3 describes the treatment of a patient with a mood disorder using filtered, synthetic white light applied to a patient at a particular distance from the light for a specified time. The analysis fails to take into account the practical ramifications of stated limitations on application of the natural law on effective ownership of the natural law. Assuming the natural law is the relationship of white light exposure to improvement in mood disorders, if in practice the only way to control and consistently apply white light is by filtering light from a synthetic source at the distances and times specified in the claim, then such a claim forecloses others from using the natural law and the subject matter of the claim is not patent eligible. For example, in its analysis of factor (i) USPTO again suggests that an alternative way for physicians to use the natural law in question is through exposure to sunlight, which as previously mentioned cannot be controlled or manipulated. The existence of actual or likely differences in position or lengths of time that can be used with equivalent efficacy should be stated in the background information provided in the example, so as to make it clear that what is claimed is merely one of many possible treatment regimens. Otherwise, the claim is not patent eligible.

IV. Conclusion

Thank you again for the opportunity to comment on USPTO's Guidance for Determining Subject Matter Eligibility Of Claims Reciting Or Involving Laws of Nature, Natural Phenomena & Natural Products. We ask that USPTO acknowledge and adhere to the unanimous Supreme Court holdings in *Mayo* and *Myriad*. This means that USPTO should provide guidance making it clear that patent claims that attempt to assert ownership over natural products, natural laws, natural principles of products of nature are presumptively ineligible for patenting under 35 U.S.C. § 101. Specifically, the USPTO should make it clear that applications that attempt to claim the associations between genetic changes and physical characteristics or physiological effects, whether through process claims that in effect claim these natural relationships, or through claims on the gene sequences themselves, are directed toward patent ineligible subject matter. If you have any questions about these comments, please do not hesitate to contact Mary Williams, Executive Director of AMP, at mwilliams@amp.org.

Sincerely,

Elaine Lyon
President
Association for Molecular Pathology

The following organizations have officially endorsed this letter and wish to co-sign:
American Society for Clinical Pathology (ASCP)
Breast Cancer Action

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