

# The Prelaw Journal

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## **Affirmative action: Division or Reconciliation?**

*By Neta Shwartz, Junior, Molecular Biology and Bioinformatics Major*

A country cannot deny its historical involvement in segregation and discrimination if it plans to respect all of its citizens and civilians. With the recent decision in *Schuette v. Coalition to Defend Affirmative action (BAMN)* (2014) to allow states to ban race- and sex-based discrimination in public university admissions in its state constitution, what does the future path of affirmative action's role in American society hold? Is affirmative action still necessary and, if so, is it being implemented in the correct way? The implementation of affirmative action in the university admission processes is well intentioned in admitting racial minorities that are historically victims of discrimination, and thus including greater diversity within the student body. However, it has led to a greater pronouncement of race and its role in society as a function of advantage or disadvantage, which contradicts the goal of affirmative action implementation to end discrimination. Instead of ending discrimination, affirmative action perpetuates it.

The constitutional grounds cited for banning such practices are questionable. What is ruled equal or unequal protection of the laws is greatly subjective when reviewed by the strict scrutiny test, and backed by the Fourteenth amendment's Section 1, which states that "no state shall make or enforce any law which shall . . . deny to any person within its jurisdiction the equal protection of the laws."

Several Supreme Court decisions have indicated that some mechanisms are unacceptable, but that affirmative action should still be implemented through "goals" and "timetables." In *Regents of the University of California v. Bakke* (1978), the Court decided that having separate admission tracks, one for whites and another for non-whites, was unconstitutional. The question that the Supreme Court considered stated: "Does the Constitution allow government to classify on the basis of race if the law is intended to benefit a previously discriminated against minority?"

The future of affirmative action in state implementation has been decided most recently in the *Schuette* decision. Michigan voters approved the Michigan Civil Rights Initiative, also

known as Proposal 2, in 2006. The people voted to amend the state constitution to render affirmative action illegal in public employment, public education, or public contracting purposes, except in actions mandated by federal law or necessary for institutions to receive federal funding. Justice Anthony Kennedy wrote for the Court that there is “no authority for the Judiciary power to set aside state laws” committing voters to their preferences. Justice Antonin Scalia’s concurring opinion unpacks the very question that opponents to affirmative action have wanted to know from the beginning. First, he questions whether the Equal Protection Clause forbids what its text requires, and that answer can be found in his opinion in *Grutter v. Bollinger* (2003): “the Constitution forbids government discrimination on the basis of race, and state-provided education is no exception.”

Michigan joins a growing number of states to end affirmative action through state legislation and voter approval: California, with Proposition 209 in 1996 (though this might change with the newly proposed Senate Constitutional Amendment of 2014); Washington, through its Initiative 200 in 1998 that set to “achieve diversity [with] consideration of individual merit”; Nebraska, with the Nebraska Civil Rights Initiative 424 in 2008, which is similar to Michigan in that voters passed a constitutional ban on government-sponsored affirmative action; Arizona, with Proposition 107, similar in nature and situation to Nebraska and Michigan; New Hampshire, with House Bill 623 of 2012, in that affirmative action is not allowed in college admissions and employment; and Oklahoma, which passed an amendment in 2012 that voted to end affirmative action in college admissions and employment. All votes to end or ban affirmative action by those various states are now affirmed to be constitutional with *Schuette*.

There does not seem to be a traditional partisan split in states that have banned affirmative action versus those that have not yet done so. This indicates what justices have in the past enjoyed referring to as the “evolving standards of decency” hypothesis, first proposed in *Trop v. Dulles* (1958). It is clear that in the past fifteen years, eight states have passed or voted on legislation to end affirmative action in university admissions.

The underlying question remains is whether affirmative action is still necessary? The history of a nation should be understood and embraced as the bedrock of legislation, but so should following the very principles laid out in its Constitution, specifically by the Fourteenth amendment. A student of UCLA remarked in the school paper, *the Daily Bruin* that “affirmative action is racial division, not racial reconciliation.” Affirmative action’s goal to promote diversity, to right past wrongs, to essentially benefit racial minorities who in the past were victims of discrimination, illustrates the powerful and well-intentioned “ends” to a healthier society. Nevertheless, the “means” to achieve these results through the mechanisms that affirmative action employs causes greater separation, rather than the originally intended integration.

## **The United States Postal Service and Congress Face Competition**

### *By Emily Cunningham, Sophomore, Economics Major*

Mail your packages early so that the post office can lose them in time for Christmas.

-Johnny Carson

The Constitution allows Congress “to establish Post Offices and post roads.” Postal service supporters believe that the Post Office is a constitutionally mandated service, while opponents claim that Congress was simply given the option to create the service. While this clause might have been important during the early days of postal delivery and the high demand

for postal service, it is now outdated. According to the United States Postal Service (USPS) website, the company suffered a net loss of \$5 billion in 2013, making this its seventh consecutive year suffering a net loss. During Benjamin Franklin's time as the first Postmaster General, the Postal Service was highly a profitable system that facilitated communication and commerce. Over time, however, postal services became less of a priority to citizens and to the government. Immediate communication via the Internet has made the Post Office and its services increasingly irrelevant. While businesses continually improve to meet increasing demand in a technological society, the Post Office has failed to meet this demand.

Some have argued that the USPS is necessary for low pricing and keeping letters at a uniform rate across the country. If this uniform rate did not exist, some speculate that letters would cost less in densely populated areas than in areas that are rarely traveled, due to the expenses it would cost to reach those regions. To promote equality in these cases, the Post Office and its services would need to continue, despite its losses. No other company offers the extensive reach that the USPS does. However, no other company is even allowed to offer the same services. Private Express Statutes were created in case private businesses took many of the most profitable routes, leaving money losing routes to the Post Office. Congress did not want post office revenue to decrease, so they denied private businesses from entering the market.

These Private Express Statutes were upheld in the 1978 Supreme Court case *Brennan vs. USPS*. Paul and Patricia Brennan had a mail delivery system in Rochester, New York, that at the time charged ten cents per letter less than the Postal System's price of thirteen cents. They challenged the Private Express Statutes on the grounds that "the Constitution does not confer upon Congress exclusive power to operate the postal system." While the Supreme Court argued against Brennan's actions, it provided some proof that the USPS monopoly over the postal system is not always beneficial for citizens. Brennan could have offered lower prices and better service to her customers, but this was not allowed under the Private Express Statutes, which contributed to the demise of the postal service. Because no healthy competition for the company exists, it had no incentive to improve service or meet rising demand.

There has also been debate about whether postal services should close one more day per week to include Saturdays to make up for financial losses. But what happens to those who need immediate service on the days the post offices are closed? Daily digests would lose one more day of circulation, Mother's Day cards might not be sent on time, and last-minute bills might not reach the sender when intended. While it might cut down on costs, it would lose its competitive factor against carriers like UPS. Besides, USPS is the only service to deliver on Saturdays. Losing Saturday delivery may include diminishing service to the people and its loss as a business.

In the face of high debts, a better solution might be for the Post Office to open itself to competition. When private companies cannot afford to stay in business, they suffer the consequences. When the Post Office cannot afford to stay in business, it is simply given more government funding. There are no consequences for this dying business and there are no incentives for its improvement. Today, people who use postal services do so in very limited ways. Opening up letter services to competition might drive letter prices down. If it does not, however, an alternative is the Internet, a resource not around when USPS was created.

Countries like Australia, Finland, Germany, Great Britain, New Zealand and Sweden no longer have government monopolies in postal delivery. The United States Post Office does not have to go out of business. Post offices have long since been "established" in the United States, just as the Constitution provided. Now, these offices should be open to market competition and

improve their services to meet consumer demands to turn a profit. If this does not happen, however, maybe one day the term “Post Office” will only be seen in history books.

## **Legal Rights of Animals: Inadequately Addressed**

*By Reema Riaz, Junior, Political Science Major*

In theory we like to believe that we afford animals sufficient rights in their treatment. After all, most of us would agree that animals ought to be treated humanely and protected from unnecessary abuses. Despite agreement on these values, there is widespread acknowledgement that animal abuse continues unabatedly.

The current legal status of animals contributes to the irony of how we think animals should be treated. Animals, simply put, do not possess any rights under existing legal doctrines like that of “animal welfarism.” Although laws do prevent inhumane treatment, these laws do not afford animals rights in ways we normally use those words. Current law aimed at protecting animals merely regards only animal welfare rather than animal rights. Under such prevailing legal doctrine of “animal welfarism,” we are required to determine what humane treatment vs. unnecessary suffering is. This allows for a broad interpretation of what we consider humane and unnecessary in regard to animal treatment.

For the most part, we oppose unnecessary cruelty, yet we ironically permit and resume inhumane practices like bow hunting, pigeon shoots, rodeos, and similar activities that seem considerably difficult to validate as necessary. There are far too many examples in which the cruel treatment of animals is classified as necessary because of the benefit or enjoyment that they give humans.

Our societal conceptions of necessity developed from how we historically and presently balanced what we see as two vastly different entities, namely human beings and animals. The predicament is rooted in that we have always seen animals as incapable of having rights, while we believe humans to be superior over nature. Perhaps such disparity comes from ancient Judeo-Christian philosophies such as those in the Book of Genesis, which gave man dominion over all the beasts of the earth. The standard meaning of this phrase is that human beings have a property right over animals. Most people thus believed God gave them these resources to benefit themselves.

Our present treatment toward animals is wholly unjustified. Today, meat is no longer considered necessary, in some quarters, for human health. Meat might even be dangerous for health, environmental, and moral reasons. Yet, we continue not only slaughtering billions of animals yearly, but also subject them to the most degrading treatment.

There is hope in protecting animal rights, however, as more people acknowledge that “speciesism,” the doctrine that human beings are superior to animals, prevents animals from receiving equal treatment under the law. Some argue that one day certain animals like apes might be able to testify on behalf of their rights through high tech methods of voice synthesizers or sign language. In the meantime, however, animals are powerless. They have no language or communication abilities to communicate with human beings. This leaves the task of protecting them up to us.

## **Immigration Reform: Federal Preemption vs. State Regulation**

*By Michael Ukoha, Senior, Biology Major*

Despite years of discussion, our government has failed to agree on the design of effective immigration reform. Consequently, individual states have attempted to resolve the problem. In doing so, states must navigate unclear precedent regarding the limits on their authority over immigration. While federal law has expanded over immigration, restricting the spectrum of possible state participation, this expansion has had a negative impact on state economic resources and healthcare support. In *Arizona v. United States* (2011), the Supreme Court indirectly enhanced this misallocation of resources to those unauthorized to be in the U.S. The Court's reasoning for this irresponsible expansion was based on the doctrine of preemption.

Preemption is grounded in the Constitution's Supremacy Clause, which mandates that federal law takes precedence over state laws and even disallows them in certain areas. A constantly shifting federalism line of state and federal authority forces states to continually reevaluate local immigration efforts. *Arizona* presented the United States Supreme Court with an opportunity to determine the proper line between state and federal immigration regulation. Arizona's proactive attempt to restrict unauthorized immigration was a valid procedure to potentially clarify the lingering questions about undocumented aliens.

*Arizona* presented the question of whether the federal government's immigration objectives preempted certain aspects of an Arizona immigration bill. Inadequate federal government measures and enforcement cause risks of unauthorized employment and increased criminal activity across the Arizona border. In 2010, faced with many of the consequences of failed federal immigration regulation, the Arizona legislature passed the Support Our Law Enforcement and Safe Neighborhoods Act, or Senate Bill 1070, to discourage the unlawful entry and presence of aliens. In seeking to enjoin the law, the United States challenged four sections of the law.

Section 2 allowed officers to attempt to verify a person's immigration status upon an arrest, detention, or stop; Section 3 created a state misdemeanor for failure to comply with federal alien-registration requirements; Section 5 created a state misdemeanor for an unauthorized alien to seek or engage in work in Arizona; and Section 6 gave authorization to state officers to arrest without a warrant for a person the officer has probable cause to believe has committed a public offense.

Of the four sections, the Court found three were preempted by federal law. The decision left states at a further disadvantage to curbing the national problem. The decision caused Arizona to use federal law that is lenient and weakly enforced to combat the unique circumstances of their state: the proximity of the state to Mexico and the rest of South America.

Section 3 attempted to create penalties for a federal crime, thus undermining federal prosecutorial discretion. This frustrated federal policies. Because section 3 did not allow for a probationary sentence while federal law did, the Court concluded that Arizona's law created conflict with the congressional plan.

Section 5 mirrored federal policies in discouraging employment of unauthorized aliens, but the methods conflicted again with U.S. law. It imposed penalties where Congress deemed it inappropriate, and due to this conflict, the section was preempted.

Section 6 allowed warrantless arrests. Federal laws establish that state officers may only make a warrantless arrest, however, when the alien violates an immigration law and is likely to

escape before a warrant can be obtained. Additionally, federal law already specifies instances when state officers may perform the functions of an immigration officer, and Arizona's law could expand those inquiries. The Court held that these expansions of state authority exceeded the authority granted under the federal laws. Meantime, the Court felt differently about Section 2 of the bill.

Section 2 required that a state officer stopping, arresting, or detaining a suspect determine the immigration status of the person if the officer has reasonable suspicion that the person was unlawfully present in the U.S. To perform these checks, state officers would contact the Immigrations and Customs Enforcement (ICE), which would determine the person's status by checking the federal database.

The U.S argued that because Section 2 regulates status checks, regardless of whether federal enforcement priorities made it unlikely that the Attorney General would seek removal, the statute interfered with the federal immigration scheme. The court, however, argued that Congress has made no limitation on when state officials may communicate with ICE about immigration status. Congress allows state officers to communicate with the federal government involving immigration status and requires the ICE to respond to such inquiries. Section 2 did not conflict with congressional legislation but, instead fell into a category of action encouraged by congress.

In 2011, the Obama administration issued a directive to the leadership of ICE. Citing limited resources, it instructed the ICE to focus its enforcement efforts on felons, gang members, and individuals with extensive records of immigration fraud. All other illegal immigrants were treated as low priority cases. As a result of the directive, the statistics from the Center for Immigration Studies (CIS) were surprising with respect to deportation.

An independent, non-partisan, non-profit, research organization, the CIS provides immigration policymakers, the academic community, news media, and concerned citizens with reliable information about the social, economic, environmental, security, and fiscal consequences of legal and illegal immigration in the United States. Ironically, in 2011 the total deportations numbered 715,495 – the lowest level since 1973. The highest number of deportations on record was in 2000, under the Clinton administration, when 1,864,343 aliens were deported. Additionally, Homeland Security Investigations (HSI), the division of ICE that is responsible for worksite enforcement, combating transnational gangs, overstay enforcement, anti-smuggling and any trafficking activity, contributes very little to immigration enforcement. In 2013, HSI produced only four percent of ICE deportations, making just a few thousand arrests per year throughout the entire country.

Forming a focus on criminals we do not want in the country was a step in the right direction for immigration reform, but should any alien without proper documentation remain in the United States? Is it fair to those unable to obtain citizenship through the appropriate means such as paying for immigration documentation and interviewing U.S. officials? With federal enforcement measures condensed, the directive left Arizona even more vulnerable to the effects of illegal immigration.

In his opinion for the Court, Justice Anthony Kennedy explained that "Arizona may have understandable frustration with the problems caused by illegal immigration while that process continues, but the state may not pursue policies that undermine federal law." Those understandable frustrations may be more incredibly complex than the federal government is willing to recognize and combat through legislation and enforcement.

Unauthorized immigration presents economic and social difficulties for the nation. States have indicated that the costs of educating students who do not speak English fluently are up to 40 percent higher than the costs incurred for native-born students. In the healthcare industry, the cost of uncompensated care is rising as unauthorized immigrants use those services at an increasing rate. The taxes paid by undocumented aliens are insufficient to cover the costs for federal and state resources being used. In fact, the Congressional Budget Office (CBO) has found that the tax income from unauthorized immigrants far from offsets their costs. The CBO is responsible for economic forecasting and fiscal policy analysis, scorekeeping, cost projections, and an Annual Report on the Federal Budget. Their studies have even claimed that federal aid programs cannot make up the financial gap formed from lack of taxation and resource costs.

The cost of living across the United States has risen considerably in the last twenty years, thus the monetary shortfall has exponentially increased as well. In 2000, counties that share a border with Mexico incurred almost \$190 million in costs for providing uncompensated care to unauthorized immigrants and those costs are increasing rapidly. As the cost of living rises and no accurate illegal immigration numbers can be sustained, clarification on this national issue must be implemented through a theory known as Collaborative Regulation.

Collaborative regulation is a joint effort recognizing federal immigration policy and state interests with respect to the issue. Congress would encourage and define proper state participation while retaining ultimate legislative authority through an approval process. Collaborative regulation encourages express authorization, but some deem this regulation possibility inefficient because it forces states to wait for congressional approval before implementing a plan. However, the current process forces states to wait years while their immigration laws are challenged in court. While state interests are valid, there are legitimate concerns about completely leaving immigration regulation in state hands as it may interfere with national foreign policy.

Foreign affairs preemption represents the Court recognized need for a single national voice when dealing with other nations. To avoid the potential foreign relation conflicts, the federal government should focus on collaborating with states, accommodating the need for a uniform federal policy while also addressing problems specific to particular states and regions. Most federal programs already contain some degree of state involvement. For example, even national defense incorporates the state national guards. Immigration regulation should be no different.

As individuals from around the world make strides for a better life in the United States, we can no longer allow them to remain present in the country illegally. The negative outcome and associated problems will outgrow the life, liberty, and pursuit of happiness that exists in this country. A larger state role is crucial to effective immigration policies across the United States.

## **Gene Patenting**

*Leili Zamini, Junior, Chemistry Major*

While it has been established that laws of nature, physical phenomena, and abstract ideas are not patentable, many claim that isolated genes extracted by scientists are also not inherently different from our natural occurring genes. With the rise in genomic biotechnology and the demand for research involving the use of isolated genes, requests for patents on our human genome have gained much attention since the Supreme Court ruling in *Diamond v. Chakrabarty* in 1980. This case set the precedent allowing companies to seek patents on genetically modified

organisms, or living things. However, the modification of organisms can mean many things in the biological world.

Before the recent Supreme Court ruling in *Pathology v. Myriad Genetics* (2013), a scientist with the knowledge to purify and isolate a gene sequence could patent the gene because isolated genes were thought to be inherently unique and unobtainable without the scientist's application. The ability to patent isolated, naturally occurring segments of the human genome is illogical because the process used to isolate genes does not fall under the guidelines of a unique invention or method. Also, the discovery of the exact location of naturally occurring genes that all humans share is not enough evidence to allow such genes to fall under patentable entities.

Patents on isolated genes have led to adverse health effects and have added unnecessary roadblocks to patients seeking information about their own genes. In addition, due to the restricted access to patented materials, scientists have grown discouraged and unmotivated to find new inventions and methods on already patented naturally occurring genes, which damage society even more. The *Myriad* case demonstrates this.

The demand for genetic research and emerging fields in the biotechnology industry have caused more scientists to deviate from the standard image of an inventor who is granted a patent for his new, innovative model. When the Founding Fathers authorized Congress to issue patents to promote human ingenuity, they never thought that segments of the human genome would be eligible for a patent. Thomas Jefferson, an innovative inventor of his time, urged that the U.S. Constitution include a provision for the development of science, art, and invention. However, Jefferson was not fond of issuing patents on inventions and feared that such rights granted to inventors would result in monopolies.

In contrast, James Madison believed patents motivated inventors by creating healthy competition among scientists. He persuaded Jefferson that monopolies resulting from patents were only a small sacrifice to better society. Ultimately, the Constitution granted Congress the right to issue patents in Article 1, Section 8, which states, "The Congress shall have the power to promote the progress of science and useful arts by securing for a limited time to authors and inventors the exclusive right to their respective writing and discoveries." But when do the sacrifices from patents outweigh the benefits to society? The *Myriad* case shows that patents obtained by the company on two naturally occurring genes overstepped the boundaries by turning their promising discovery into a monopoly nightmare.

*Myriad* scientists did not fit the image of the typical inventor when the Founding Fathers developed rights to patents in the Constitution and Title 35 U.S Code (U.S.C), Section 101. Section 101, a federal law developed in 1926, states that "whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

In recent times, guidelines for what a patent can be awarded have expanded to include segments of the human genome that may not be completely modified using a "nonobvious" method. Perhaps this stretch is due to the loose language that Congress used when it granted rights to what can and cannot be patented. The Senate's version of Section 101 reiterates that patents may be granted to people whose inventions "may include anything under the sun that is made by man, but it is not necessarily patentable under Section 101 unless the conditions of the title are fulfilled." This interpretation was made after Congress recodified the patent laws in 1952. Senate language reveals that the guidelines created by the Congress were not exclusive.

Given the broad language on what Congress can and cannot patent, is it alarming that segments of the human genome shared by all *Homo sapiens* have also been granted patents since 1980? Have the guidelines been stretched too far? If so, then where should the government draw the line?

The distinction between unique inventions involving genetically modified organisms and the application of scientific knowledge to isolate and purify naturally occurring genes was settled thirty-three years after the *Diamond* ruling. The court decision in *Pathology v. Myriad Genetics* made in June 2013 ruled that isolated genes with no unique modifications did not fall under the criteria of patentable entities. While this decision was a huge disappointment for many biotech industries, it relieved much of the financial constraint many researchers faced by having to purchase patented, isolated genes for the purposes of research.

The *Myriad* case proved that patenting genes with no inherent modifications resulted in troublesome issues. First, patented genes restricted public access to critical health care services. Second, researchers were faced with financial constraints while conducting experiments on already patented genes. And last, patented genes raised an ethical question of whether segments of the human genome should really be owned by any individual or genomic company. *Pathology v. Myriad Genetics* posed these three issues.

Myriad Genetics, a genetic company in Utah, filed a patent on two key genes known to allow genetic testing on breast and ovarian cancer. Mutations in these two genes, named BRCA1 and BRCA2, were hypothesized to increase the risk of developing breast or ovarian cancer. Myriad Genetics found that their discovery of the exact location of these genes obligated them to file a patent for the exclusive right to isolate an individual's BRCA1 and BRCA2 genes and the right to synthesize them. Testing a patient's risk for developing breast or ovarian cancer required, however, the isolation of the individual's genes for which Myriad Genetics held a patent. As soon as Myriad learned of other companies using their genes, they sent written threats to warn the companies faced infringement of their patents.

The University of Pennsylvania's Genetic Diagnostic Laboratory (GDL) was one of the first centers to receive such threats. As a result, many health centers dropped their testing methods for the risk assessment of developing such cancer due to the headache of dealing with Myriad and the risk of facing infringement charges. While companies commonly battle one another over patent violations, the patent holder's invention must be unique and not entail already known methods used as common knowledge by others in the field. This is where the conflict became unethical for other facilities that were denied access to use the BCRA genes. Because Myriad did not propose a new mechanism for isolating the genes, their patents should not have been granted the patents in the first place.

The development of breast or ovarian cancer is not uncommon among women. That Myriad was the only testing center with the right to assess whether patients had a high risk developing such cancers became problematic. Women with mutations in their BCRA1 or BCRA2 gene have up to a 40 percent chance of developing ovarian cancer. Thus, patients who wished to determine their risk level of developing such cancers had a limited option available to them because Myriad was the only genetics company offering the test. In some cases, patients fortunate to have access to Myriad's testing were still denied by the company because they did not accept the patient's insurance. In other scenarios, patients who wished to obtain a second opinion after testing positive for a mutation in their BCRA1 or BCRA2 genes were unable to do so because Myriad was the only testing company offering such results.

These examples demonstrate a fraction of the struggles patients experienced due to the patents held by Myriad Genetics on two medically important genes. The fate of some patient's lives solely depended on their access to genetic testing only Myriad could do. At this point, it seemed that Thomas Jefferson's fear of monopolies from patents came to life. The attention shifted from Myriad's promising medical discovery to a battle between Myriad and all other testing centers, such as GDL, and whether they had the right to provide crucial testing methods to their patents. Patients were denied information about their naturally occurring genes present in their own bodies because Myriad held a patent for their genetic material. The effects of the Myriad discovery were initially deemed beneficial to society, yet their patents forced other genomic companies to turn patients away from evaluating their BCRA genes for mutations.

Patients facing cancer diagnosis were not the only ones affected by Myriad Genetics' patent. The British National Health Service (NHS), a national agency based in the United Kingdom, also faced high costs if they wished to use Myriad's genes to develop tests for breast and ovarian cancer. Myriad previously licensed their genes to another British biotech company known as Rosgen. Therefore, if the NHS did not wish to obtain a license from Myriad, they had the alternative to conduct their testing at Rosgen. NHS could not, however, keep up with the high costs that Myriad demanded, charging almost \$1,500 more than NHS for the conducting two tests on breast cancer genes. As a result, many agencies like NHS found themselves having to bargain their way through patent holders such as Myriad.

Should access to scientific knowledge really be a matter of negotiating a price? The answer should be no in all cases. However, patents on genes that are recognized as a composition of matter have led national agencies to fall under large genomic companies who allow access to their biological discoveries for a price.

Besides genetic testing centers and health care providers, the patents on the BCRA genes held by Myriad have also affected researchers. In the past, researchers have been able to slide under patents on genetic material due to their sole interest in gaining more knowledge over the material. The courts have ruled since the 1800s that researchers are exempt from patent laws. If researchers planned to develop new methods of using patented genetic material for commercialized purposes, they would be subject to patent infringement if they did not obtain a license from the patent holder. Today, this serves a major problem for many university researchers funded by industry. The rise in academic-industry collaborations has led to genomic companies voiding the patent exemption from academic and nonprofit institutions.

This was the case in 1988 when researchers at University of Pennsylvania's genetics laboratory shut down their breast cancer testing program to avoid patent infringement from using the BCRA genes. Once again, a price on scientific knowledge hindered the pace of researchers and other companies who wished to provide similar services to patients. While patents were initially implemented to encourage human inventiveness, they have now become a nightmare for scientists who want to further explore already patented genetic material for the betterment of society. The right to patent naturally occurring genes is too broad for strict guidelines and has thus discouraged researchers from using patented genes all together. The decreased motivation to conduct genetic research by academic facilities is counterproductive to the original intention behind issuing patents, which is to promote human ingenuity.

The ability to hold the exclusive right to genetically modified material has become an unsettling phenomenon since the 1980 Supreme Court ruling. The first living animal to be issued a patent was the Harvard oncomouse. Patents on human cell lines and embryonic stem cells were issued shortly afterwards. Artificially developed embryos without the use of sperm from

mammalian eggs could also be issued patents because such embryos are not naturally occurring. Some have questioned whether allowing embryos to count as patentable entities could one day lead to human embryos falling under the same category. While this idea is absurd, patents on human genes raise similar concerns. Should any individual hold rights to isolated and purified genes found in the human genome? After all, the human gene consists of four nucleotides bases in different order.

The Court's decision in *Pathology v. Myriad Genetics* settled much of the debate regarding whether isolated and purified genes are legitimate patentable entities. The majority opinion included all justices except Justice Antonin Scalia, who concurred in part and concurred in judgment.

Justice Clarence Thomas delivered the opinion of the Court, stating that isolated genes were naturally occurring and thus ineligible for a patent. The knowledge required to isolate and purify the BCRA1 and BCRA2 genes were not unique, and therefore the method used to purify them were also ineligible for a patent. Thomas emphasized that the court's ruling did not apply to complementary DNA (cDNA), which, he explained, "cDNA is patent eligible because it is not naturally occurring." The science behind the cDNA exception is that the sequence only includes the protein-coding genes known as exons, which are not naturally occurring in our bodies. Therefore, under section 101 cDNA is not a "product of nature" and may be patented.

While the Supreme Court ruling relieved much of the obstacles faced by researchers and patients seeking to evaluate their risk of contracting breast or ovarian cancer, the decision did not answer all the questions. Thomas intentionally noted in part III of this opinion that

first, there are no method claims before this Court. Had Myriad created an innovative method of manipulating genes while searching for the BRCA1 and BRCA2 genes, it could possibly have sought a method patent.... Similarly, this case does not involve patents on new applications of knowledge about the BRCA1 and BRCA2 genes. Judge Bryson aptly noted [below] that, "as the first party with knowledge of the [BRCA1 and BRCA2] sequences, Myriad was in an excellent position to claim applications of that knowledge. Many of its unchallenged claims are limited to such applications.

It is important to note that patents on genetically modified material could result in similar adverse effects on society as patents on naturally occurring genes. It is equally important to protect intellectual property and promote human ingenuity. Without patents, the incentive to conduct research in important fields such as genetics and the biotechnology industry would be lost. As James Madison noted, sacrifices will have to be made by our society as a result of patents. And yet, the benefits should always outweigh the costs from patents and patents should not question the ethics of who has the right to own a segment of your DNA or any part of an individual's body present in its naturally occurring state.

The Supreme Court ruled that Myriad did not have enough originality in their proposed patent to win the exclusive right to isolate and synthesize the BCRA genes. While this case solved the question of patenting naturally occurring genes, the Court may well have to face far more obstacles to find the right balance for patent guidelines that are neither too restrictive now nor too broad for interpretation.



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