UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

ASSOCIATION FOR MOLECULAR PATHOLOGY; AMERICAN COLLEGE OF MEDICAL GENETICS; AMERICAN SOCIETY FOR CLINICAL PATHOLOGY; COLLEGE OF AMERICAN PATHOLOGISTS; HAIG KAZAZIAN, MD; ARUPA GANGULY, PhD; WENDY CHUNG, MD, PhD; HARRY OSTRER, MD; DAVID LEDBETTER, PhD; STEPHEN WARREN, PhD; ELLEN MATLOFF, M.S.; ELSA REICH, M.S.; BREAST CANCER ACTION; BOSTON WOMEN'S HEALTH BOOK COLLECTIVE; LISBETH CERIANI; RUNI LIMARY; GENAE GIRARD; PATRICE FORTUNE; VICKY THOMASON; KATHLEEN RAKER, Plaintiffs, v. UNITED STATES PATENT AND TRADEMARK OFFICE; MYRIAD GENETICS; LORRIS BETZ, ROGER BOYER, JACK BRITTAIN, ARNOLD B. COMBE, RAYMOND GESTELAND, JAMES U. JENSEN, JOHN KENDALL MORRIS, THOMAS PARKS, DAVID W. PERSHING, and MICHAEL K. YOUNG, in their official capacity as Directors of the University of Utah Research Foundation, Defendants	Civil Action No. 09-4515 (RWS) **DECLARATION OF HARRY OSTRER, M.D.**

1. My name is Harry Ostrer, M.D.. I am Professor of Pediatrics, Pathology, and Medicine at New York University School of Medicine and also the Director of the Human Genetics Program in the Department of Pediatrics and Director of the Molecular Genetics Laboratory of NYU Langone Medical Center. In 2007, I was

appointed Associate Director of Genetic Epidemiology for the NYU Clinical Translational Science Institute. I am one of the plaintiffs in this case.

2. I received my B.S. from the Massachusetts Institute of Technology in 1972 and my M.D. from Columbia University in 1976. I completed a post doctoral internship and residency at Johns Hopkins Hospital in 1976 and 1978, respectively. I was a Clinical Associate in the Neonatal and Pediatrics Medicine Branch & Laboratory of Molecular Genetics for the National Institute of Child Health and Human Development of the National Institutes of Health from 1978 to 1981. I was then a Postdoctoral Fellow in Genetics in the Department of Pediatrics at Johns Hopkins University School of Medicine from 1981 to 1983. After serving on the Medical faculty at the University of Florida, I was appointed to the faculty of Pediatrics, Pathology, and Medicine at New York University School of Medicine in 1990, and Director of the Human Genetics Program in the Department of Pediatrics. In that capacity, I established the Molecular Genetics Laboratory of NYU Langone Medical Center.

3. I am Board Certified in Clinical Genetics, Pediatrics, Clinical Cytogenetics and Clinical Molecular Genetics. I am a member of the plaintiff American College of Medical Genetics. I have lectured and published widely on the subject of genetics. Articles I have authored or co-authored have appeared in *Nature*, *New England Journal of Medicine, American Journal of Human Genetics, American Journal of Medical Genetics*, and *Genomics*, and I have served on the Editorial Board of *Clinical Genetics*. I have also received many research grants to do

research in the area of genetics. A copy of my curriculum vitae is attached hereto as Exhibit 1.

4. Through the Human Genetics Program and Molecular Genetics Laboratory at the NYU Langone Medical Center that I direct, my staff and I engage in both research and clinical practice relating to genetic related susceptibility to disease. Comprehensive information about the work we perform through the lab is available from our website at http://pediatrics.med.nyu.edu/genetics. While I have the capability and desire to do so, I cannot provide patients with the results of BRCA1/2 related genetic screening for their susceptibility to breast cancer because I am forbidden to do so as a result of Myriad's assertion of its patents. The details of that assertion by Myriad are as follows.

5. In the late 1990's, my lab was sending patient samples to Dr. Haig Kazazian at the University of Pennsylvania for BRCA related genetic screening. Then, in or around 1998 or 1999, I was informed that Dr. Kazazian would no longer accept samples and provide such service to me or anyone else because his lab was ceasing all such operations as a result of patent infringement assertions made against them by Myriad. As a result, since Myriad became and still is the only other provider of BRCA1/2-related genetic screening services, my program began sending all patient samples to them for analysis. Currently, we send Myriad approximately 500-800 patient samples for BRCA related genetic screening every year, the vast majority of which are from patients living in New York.

6. I am also aware that Myriad has vigorously defended its patent rights related to the BRCA1/2 genes in Europe and this aggressive patent behavior has contributed to the chilling effect Myriad's patent assertion has had on other labs considering offering BRCA1/2 related genetic testing services. In my opinion, Myriad's assertion of its patents has frightened off others from even applying for the required CLIA approval necessary to offer BRCA1/2 related genetic testing in the United States. I know that, personally, as a result of what Myriad did to Dr. Kazazian's lab, I have never even tried to apply for such approval for my lab, because I am certain that Myriad would make the same patent infringement allegations against me if I did so.

7. Supporting my belief on this subject is the fact that Myriad, in May of 1998, demanded I enter into a license agreement if I wanted to offer even a very limited amount of BRCA1/2-related genetic testing. On May 21, 1998, I received a letter from Mr. William A. Hockett, Director of Corporate Communications for Myriad, that stated, "I understand that you are either currently providing diagnostic testing services for BRCA1 or are interested in initiating such a service," before notifying me that, "Myriad Genetics has been awarded four US patents covering BRCA1." A copy of the letter is attached hereto as Exhibit 2. The patents referenced in the letter were listed in an attached proposed license agreement (there were actually five, not four, patents specifically identified in the license agreement) and they are the exact same patents that are involved in this case relating to BRCA1. Mr. Hockett's letter indicated that Myriad was offering me a very limited license only to do single mutation tests and multiple mutation panels (up to four mutations) for

patients of Ashkenazi Jewish descent. The narrow license Myriad offered to me would not allow my lab to do full BRCA1/2-related genetic testing and, so, I did not enter into one with them. Whereas it is true that some years have passed since that letter, I have no reason to believe that Myriad's position that my offering such testing would violate their patents has changed, as I understand the cited patents are still in effect.

8. If the patents were invalidated, I would immediately take steps to begin clinical sequencing of the BRCA1 and BRCA2 genes. I would receive samples not only from patients at NYU's hospitals but from other hospitals and referring physicians around the country. I would also specifically do sequencing for the named plaintiff women in this case and I would offer such testing on a sliding cost scale based upon the patient's income and wealth and that would include zero cost for patients who cannot afford to pay for the test and who do not have insurance to cover the test. Approximately 10% of the genetic testing we currently perform for patients is provided to them by us for free and I expect the same to be true of our BRCA1/2-related testing if we are enabled to begin offering it.

9. My laboratory has all of the personnel, expertise, and facilities necessary to do various types of sequencing of the BRCA1 and BRCA2 genes and I have the strong desire for my lab to provide such sequencing services. We could, and would, as necessary, do full sequencing, search for deletions and rearrangements, and search for large rearrangements. This would include sequencing that Myriad does not do as part of its standard BRCA1 and BRCA2 sequencing.

10. Further, if the patents were invalidated, I would begin to tell patients involved in my current research program regarding susceptibility to breast cancer the results of their BRCA1/2-related genetic screening. As of now, I understand Myriad would consider such action on my part to be infringement of their patents. However, it is important, for research purposes, to study the way patients respond after being told their genetic testing results, as this can lead to valuable insights regarding their behavior. I do not provide the results of BRCA 1/2-related genetic screening to the patients in my research today because I assume that such disclosure is not allowed as a result of Myriad's other patent assertion activities. Such research would also be beneficial for prospective analysis and could aid medical science in improving patient care.

11. Because of their patent assertion, Myriad is the only lab in the nation from which my patients can get BRCA1/2-related genetic screening. I think it is important for there to be more than one lab that offers a particular genetic test, because the methodology or results provided by one lab may not correspond with that of another. This doesn't mean one lab is necessarily wrong or bad, but just that reasonable minds can disagree about the best way to perform such tests and analyze such results. Thus, it is important that patients have access to more than one lab for performing BRCA1/2-related genetic tests. Women who are told they are positive for a mutation of the BRCA1 or BRCA2 genes that correlates with an increased risk of breast and/or ovarian cancer have enormously important decisions to make. Likewise, women who are told from Myriad's test that they are negative for a mutation of the BRCA1 and BRCA2 genes may still harbor a

mutation that places them at significant risk. It is important that they make those decisions based on accurate information. Tests from different labs can ensure that the information they are using to make those decisions is accurate with regard to test performance and interpretation. This is one reason why, if the patents are invalidated, my lab will immediately begin to offer such testing.

12. Another harm caused by having only a single lab performing genetic testing, such as with Myriad and the BRCA genes, is that research into variants of unknown significance cannot be performed. Many of my patients who send samples to Myriad get results that indicate they have an alteration, but that it has unknown significance. This means Myriad doesn't know whether the alteration is a mutation relating to an increased susceptibility to breast and ovarian cancer, or is instead an insignificant alteration of no consequence. By not being able to do independent BRCA1/2 genetic testing and analysis, the ability to determine the meaning of these unknown variants is stymied and at the whim of Myriad's corporate interests. It may very well not be in the financial interests of Myriad to do further research on variants of unknown significance from smaller or underrepresented population groups, like racial minorities, and thus such research would not happen at all unless another lab – and in particular an academic lab like mine – has the opportunity to do so. This is yet another reason why my lab would immediately begin to perform BRCA1/2-related genetic testing upon invalidation of the Myriad patents, to aid BRCA1/2-related research on many fronts, including into the meaning of what are currently variants of "unknown significance."

13. I am aware of the BIC database, which I understand is discussed in detail in Dr. Swisher's declaration. I agree with her that the sharing of data on mutations in BRCA1 and BRCA2 genes is essential for the advancement of knowledge about the nature of those genes and the clinical significance of the mutations or alterations found. Currently, we must sometimes report that we have found an alteration but don't know whether it increases the risk of breast or ovarian cancer or not. These are often referred to as variants of unknown significance. If the patents were invalidated and my lab was permitted to do sequencing, we would share all of the results of our work with the BIC database. Such actions would quickly increase knowledge about the alterations in the gene and would result in fewer and fewer alterations whose significance is unknown.

14. Genes are products of nature and not inventions of man. They are so basic to science that any restriction that prevents scientists from looking at the genes themselves or examining the effects of the genes is fundamentally inconsistent with the advancement of human knowledge.

I declare, pursuant to 28 U.S.C. §1746, under penalty of perjury under the laws of the United States, that the foregoing is true and correct to the best of my knowledge and belief.

Harry Ostrer, M.D.

Executed on August 11, 2009