PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	

CONVEYING PARTY DATA

Name	Execution Date
Bert Volgelstein	12/05/2012
Kenneth W. Kinzler	12/06/2012
Victor Velculescu	12/06/2012
Luis Diaz	12/06/2012
Rebecca J. Leary	12/06/2012

RECEIVING PARTY DATA

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PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	14790833	

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NAME OF SUBMITTER:	JILL A. WRIGHT	
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DATE SIGNED:	08/25/2017	
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Total Attachments: 2

PATENT REEL: 043402 FRAME: 0749 source=44807-0098002 assignment#page1.tif source=44807-0098002 assignment#page2.tif

PATENT REEL: 043402 FRAME: 0750

ASSIGNMENT

Whereas, We, Bert VOGELSTEIN, having a mailing address of 3700 Breton Way, Baltimore, MD 21208 United States of America, Kenneth W. KINZLER, having a mailing address of 616 Pointe Villas North, Baltimore, MD 21230, United States of America, Victor VELCULESCU, having a mailing address of 14064 Big Branch Drive, Dayton, MD 21036 United States of America, Luis DIAZ, having a mailing address of 5943 Meadow Rose, Ellicott City, MD 21075, United States of America, and Rebecca J. LEARY, having a mailing address of 218 N. Charles Street, Apt. 807, Baltimore, MD 21201, United States of America, hereafter also referred to as "Applicants," have invented certain new and useful improvements in an invention entitled:

PERSONALIZED TUMOR BIOMARKERS

which application is executed concurrently herewith by each respective inventor, unless the

following box is checked:

[X] was filed as PCT International Application Number <u>PCT/US2011/025152</u>, filed on February 17, 2011 and as US Application Serial Number <u>13/579,964</u>.

and WHEREAS

THE JOHNS HOPKINS UNIVERSITY

3400 North Charles Street Baltimore, MD 21218

ASSIGNEES desires to acquire the entire right, title and interest in and to the said application, inventions and improvements and any patents that may be granted on or as a result thereof in the United States of America (U.S.) and in any and all foreign countries;

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged,

We hereby assign, to the above named ASSIGNEES its successors, assigns and legal representatives (NOMINEES) the entire right, title and interest in and to said application, inventions and improvements throughout the world and to any and all patents, petty patents and utility model patents which may be granted therefor, and all continuations, continuations-in-part, divisions, reissues, extensions, renewals, and any non-provisional based on a provisional thereof (LETTERS PATENT).

And we covenant that we have full right to convey the entire interest herein assigned, and that we have not executed and will not execute any agreement or do anything in conflict herewith;

And we further covenant and agree that we will without undue delay execute without further consideration all such papers as may be necessary to perfect the title to said application, inventions and improvements, and LETTERS PATENT in the ASSIGNEES or its NOMINEES, and we agree to communicate to said ASSIGNEES or its NOMINEES all known facts respecting said application, inventions, improvements, and LETTERS PATENT, to testify in any legal proceedings, to sign all lawful papers, and generally to do all things necessary to aid ASSIGNEES or its NOMINEES to obtain and enforce for their own benefit patent protection for said application, inventions and improvements in any and all countries, all at the expense, however, of the ASSIGNEES or its NOMINEES;

And we authorize the ASSIGNEES or its NOMINEES to file in our name or their own, as appropriate, application for LETTERS PATENT in any and all countries of the world, and we authorize and request the Commissioner of Patents and Trademarks of the United States, and any proper official of any country, to issue to said ASSIGNEES or its NOMINEES any and all LETTERS PATENT for said application, inventions and improvements, for their sole use, to the full end of the term for which such LETTERS PATENT may be granted;

And we hereby grant the attorneys at the law firm of Banner & Witcoff the power to insert into this document information sufficient to identify the patent application to which this assignment pertains.

Date:	12.5.12	Inventor:	Bert VOGELSTEIN (Signature)
Date:	12/6/12	Inventor:	Kenneth W. KINZLER (Signature)
Date:	176/12	Inventor:	Victor VELCULESCU (Signature)
Date:	12/6/12	Inventor:	Luis DIAZ (Signature)
Date:	12/12/12	Inventor:	Rebecca LIFARY (Signature)

Note: No legalization or other witness required.

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