

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
ALEXANDRO TREVINO	06/02/2016
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	THE BROAD INSTITUTE INC.
<b>Street Address:</b>	415 MAIN STREET
<b>City:</b>	CAMBRIDGE
<b>State/Country:</b>	MASSACHUSETTS
<b>Postal Code:</b>	02142
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15179912
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<b>ATTORNEY DOCKET NUMBER:</b>	47627.04.2069
<b>NAME OF SUBMITTER:</b>	SARAH MARCANO
<b>SIGNATURE:</b>	/sarah marcano/
<b>DATE SIGNED:</b>	08/23/2016
<b>Total Attachments: 2</b>	
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ASSIGNMENT

I, Alexandro Trevino, residing at: 126 Blackwelder Court, #914A, Standford, CA 94305, being the inventor(s) of certain improvements in the international application entitled: **SYSTEMS, METHODS AND COMPOSITIONS FOR SEQUENCE MANIPULATION WITH OPTIMIZED FUNCTIONAL CRISPR-CAS SYSTEMS** for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, hereby assign unto **THE BROAD INSTITUTE INC.**, having a place of business at 415 Main Street, Cambridge, MA 02142, USA, its successors and assigns (1) the entire right, title and interest in all countries throughout the world in and to any and all of my inventions and discoveries in my United States Provisional Application Nos. 61/980,012 filed April 15, 2014 and 62/087,537 filed December 4, 2014, and a PCT International Application filed under the Patent Cooperation Treaty in the PCT United States Receiving Office (ROIUS) on December 12, 2014, identified as International Application No. PCT/US2014/070175, and designating all PCT member countries/states, as well as in any renewals, revivals, reissues, reexaminations, extensions, continuations and divisions thereof, and any substitute applications therefore; (2) the full and complete right to file patent applications in the name of **THE BROAD INSTITUTE INC.** or their designee's election, on the aforesaid inventions, discoveries and applications in all countries of the world; (3) the entire right title and interest in and to any Letters Patent which may issue on the aforesaid inventions, discoveries and applications in any country of the world and any renewals, revivals, reissues, reexaminations and extensions thereof, and any patents of confirmation, registration and importation of the same; and (4) the entire right, title and interest in and to all Convention and Treaty Rights of all kinds thereon, including without limitation all rights of priority in any country of the world, in and to the following application(s):

United States Provisional Application No. 61/980,012 filed April 15, 2014;

United States Provisional Application No. 62/087,537 filed December 4, 2014, and all rights of priority in any country of the world deriving from the above-identified International Application.

I hereby authorize and request the competent authorities to grant and to issue any and all such Letters Patent in any country throughout the world to **THE BROAD INSTITUTE INC.** as the assignee of the entire right, title and interest therein, as fully and entirely as the same would have been held and enjoyed by me had this assignment, sale and transfer not been made.

NEWYORK#421235.1

I agree, at any time, upon the request of THE BROAD INSTITUTE INC. to execute and to deliver to THE BROAD INSTITUTE INC. any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents of confirmation, registration and importation based on any Letters Patent issuing on said inventions, discoveries or applications, and divisions, continuations, renewals, revivals, reissues, reexaminations and extensions thereof.

I further agree, at any time, upon request of THE BROAD INSTITUTE INC. to execute and to deliver to THE BROAD INSTITUTE INC. such additional documents, if any, as are necessary or desirable to secure patent protection on said inventions, discoveries and applications throughout all countries of the world, and otherwise to do what is necessary to give full effect to and to perfect any and all rights of THE BROAD INSTITUTE INC. under this Assignment, including the execution, delivery and procurement of any and all further documents evidencing this assignment, transfer and sale as may be necessary or desirable.

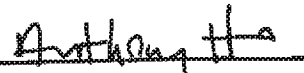
In testimony of which I have hereupon affixed my signature it is my intention that this Assignment instrument be effective, and all rights transferred herein shall be considered to have vested in THE BROAD INSTITUTE INC. as from the April 15, 2014, the filing date of the first filed United States Provisional Application No. 61/980,012, from which priority is hereby claimed.

2016-6-2  
Date

  
Alexandro Trevino

Witness 1

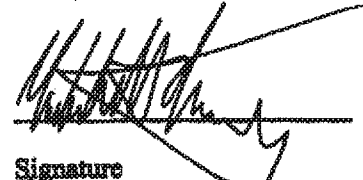
June 2, 2016  
Date

  
Signature

Anthony Ho  
Print Name

Witness 2

June 2, 2016  
Date

  
Signature

Lisa Shuck-Anderson  
Print Name

NEWYORK#431233.1