

## PATENT ASSIGNMENT COVER SHEET

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<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT	
<b>CONVEYING PARTY DATA</b>		
	<b>Name</b>	<b>Execution Date</b>
	FEI RAN	05/26/2016
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<b>PROPERTY NUMBERS Total: 1</b>		
	<b>Property Type</b>	<b>Number</b>
	Application Number:	15838720
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<b>NAME OF SUBMITTER:</b>	NEIL H. BENOWITZ	
<b>SIGNATURE:</b>	/Neil H. Benowitz/	
<b>DATE SIGNED:</b>	06/10/2022	
<b>Total Attachments: 3</b>		
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ASSIGNMENT

I, Fei Ran, residing at: 30 Clarendon Street, Boston, MA 02116, USA, being the inventor(s) of certain improvements in the international application entitled: **ENGINEERING AND OPTIMIZATION OF SYSTEMS, METHODS, ENZYME AND GUIDE SCAFFOLDS OF CAS9 ORTHOLOGS AND VARIANTS FOR SEQUENCE MANIPULATION** for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, hereby assign unto **PRESIDENT AND FELLOWS OF HARVARD COLLEGE** having a place of business at 17 Quincy Street, Cambridge, MA 02138 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. 62/181,659 filed June 18, 2015 and 62/207,318 filed August 19, 2015 and a PCT International Application filed under the Patent Cooperation Treaty in the PCT United States Receiving Office (RO/US) on \_\_\_\_\_ identified as International Application No. \_\_\_\_\_, 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 **PRESIDENT AND FELLOWS OF HARVARD COLLEGE**, 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. 62/181,659 filed June 18, 2015; and

United States Provisional Application No. 62/207,318 filed August 19, 2015, 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 **PRESIDENT AND FELLOWS OF HARVARD COLLEGE** 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.

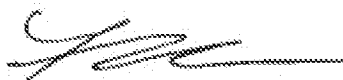
I agree, at any time, upon the request of **PRESIDENT AND FELLOWS OF HARVARD COLLEGE** to execute and to deliver to **PRESIDENT AND FELLOWS OF HARVARD COLLEGE** any additional applications for patents for said inventions and discoveries, or any part or parts thereof, and any applications for patents 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 **PRESIDENT AND FELLOWS OF HARVARD COLLEGE**, to execute and to deliver to **PRESIDENT AND FELLOWS OF HARVARD COLLEGE**, 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 **PRESIDENT AND FELLOWS OF HARVARD COLLEGE**, 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 **PRESIDENT AND FELLOWS OF HARVARD COLLEGE** as from the June 18, 2015 filing date of the first filed United States Provisional Application No. 62/181,659 from which priority is hereby claimed.

I, Fei Ran, hereby authorize the attorneys of record, Vedder Price P.C., to insert the PCT Application Serial No. for the instant application entitle **ENGINEERING AND OPTIMIZATION OF SYSTEMS, METHODS, ENZYME AND GUIDE SCAFFOLDS OF CAS9 ORTHOLOGS AND VARIANTS FOR SEQUENCE MANIPULATION**, even if the PCT Application Serial No. and filing date are after the execution date of this document as this document is to be effective as to such a PCT Application.

5-26-16  
Date

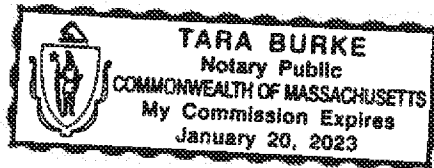
  
\_\_\_\_\_  
Fei Ran

Commonwealth of Massachusetts )

COUNTY OF Middlesex SS

I, Tara Burke, a Notary Public in and for the county and Commonwealth aforesaid, do hereby certify that Fei Ran, personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that she signed and delivered the said instrument as her free and voluntary act for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and Notarial Seal, this 26 day of May, 2016.



A handwritten signature in dark ink, appearing to read 'Tara Burke', written over a horizontal line.

Notary Public  
My Commission Expires:

1/20/23

SEAL