

## PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT2985600

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
DAVID R. LIU	08/12/2014
VIKRAM PATTANAYAK	08/18/2014
HOWARD HUGHES MEDICAL INSTITUTE	08/12/2014
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	President and Fellows of Harvard College
<b>Street Address:</b>	17 Quincy Street
<b>City:</b>	Cambridge
<b>State/Country:</b>	MASSACHUSETTS
<b>Postal Code:</b>	02138
<b>PROPERTY NUMBERS Total: 2</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	14320370
<b>Application Number:</b>	14320413
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(617)495-9568
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	(617) 495-3058
<b>Email:</b>	denlyn_atherton@harvard.edu
<b>Correspondent Name:</b>	ANNE CRAIG
<b>Address Line 1:</b>	1350 MASSACHUSETTS AVE
<b>Address Line 2:</b>	HARVARD UNIVERSITY, OFFICE OF TECH. DEV.
<b>Address Line 4:</b>	CAMBRIDGE, MASSACHUSETTS 02138
<b>ATTORNEY DOCKET NUMBER:</b>	5024 US 1&2 HU
<b>NAME OF SUBMITTER:</b>	ANNE I. CRAIG
<b>SIGNATURE:</b>	/aic/
<b>DATE SIGNED:</b>	08/18/2014
<b>Total Attachments: 6</b>	
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source=5024 14 \_320,413 Assignment and NOR#page4.tif

ASSIGNMENT

Assignor:  
HOWARD HUGHES MEDICAL INSTITUTE  
4000 Jones Bridge Road  
Chevy Chase, MD 20815

Assignee:  
PRESIDENT AND FELLOWS OF HARVARD COLLEGE  
17 Quincy Street  
Cambridge, MA 02138

WHEREAS, I, **David R. Liu**, of Lexington, Massachusetts, as a duly appointed agent of Howard Hughes Medical Institute (HHMI), have developed certain inventions described in U.S. Patent Application Serial No. **14/320,413** filed **06/30/2014**, entitled "METHODS FOR IDENTIFYING A TARGET SITE OF A CAS9 NUCLEASE" and in U.S. Patent Application Serial No. **14/320,370** filed **06/30/2014**, entitled: "METHODS FOR IDENTIFYING A TARGET SITE OF A CAS9 NUCLEASE", both which claim priority to Provisional Patent Application Serial No 61/864,289 filed 8/09/2013, entitled: "Nuclease Profiling System", having full right to convey HHMI's entire right, title, and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

WHEREAS, PRESIDENT AND FELLOWS OF HARVARD COLLEGE ("Assignee"), a non-profit corporation of the state of Massachusetts, having its principal place of business at 17 Quincy Street, Cambridge, Massachusetts 02138, is desirous of acquiring the entire right, title, and interest in and to said invention or inventions and any and all patents to be obtained therefore;

NOW, THEREFORE, in consideration of good and valuable consideration, the receipt and sufficiency of which are hereby acknowledge by the undersigned does hereby sell, assign, transfer, and set over unto said Assignee, its successors and assigns, HHMI's entire right, title, and interest throughout the world in and to said invention or inventions, as described in the aforesaid application, in any form or embodiment thereof, and in and to the aforesaid application; and in and to any application filed in any foreign country based thereon, including the right to file said foreign applications and claim priority under the provisions of any international convention or treaty; also the entire right, title, and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon said invention

or inventions and any divisional, continuation, or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and the undersigned hereby authorizes and requests the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

For purposes of complying with foreign requirements, the above paragraph is intended to expressly grant all the recited rights and grants in China, Korea, and Japan.

The undersigned further agrees, without any further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence of interference purposes or for other legal proceedings whenever requested; testify in any interference or other legal proceedings, whenever requested; executed and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its successors or assigns and nominees to secure, obtain and enforce proper patent protection for said invention or inventions in this or any foreign country.

Assignor authorizes Assignee or Assignee's representative to supply and/or to correct any errors in the patent/application information provided above including but not limited to said application serial number(s) and filing date(s), prior to or after recordation.

IN TESTIMONY WHEREOF, the undersigned had hereunto set his/her hand and seal on the date after his/her signature.

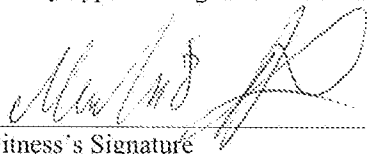


David R. Liu,

As duly appointed agent of the Howard Hughes Medical Institute

8-12-14

(Date)



Witness's Signature

8/12/14

(Date)

ALEKS MARKOVIC

Witness's Printed Name

## ASSIGNMENT

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, I, the undersigned:

**Vikram Pattanayak**

(each hereafter "Assignor") hereby assign, sell, and transfer to:

**President and Fellows of Harvard College  
17 Quincy Street, Cambridge, Massachusetts 02138**

(hereafter "Assignee") its successors and assigns, Assignor's entire right, title and interest throughout the world in and to any and all inventions for:

### **METHODS FOR IDENTIFYING A TARGET SITE OF A CAS9 NUCLEASE**

described in U.S. Patent Application No. **14/320,370** filed **06/30/2014**, which claims priority to Provisional Patent Application No. 61/864,289 filed 08/09/2013, and in and to the aforesaid application(s), in any form or embodiment thereof, and in and to any application on any of the inventions filed in this and any foreign country, based thereon, including the right to file said applications, apply for patent rights, and claim priority under the provisions of any international convention or treaty; also the entire right, title and interest throughout the world in and to any and all patents or reissues or extensions thereof to be obtained in this or any foreign country upon any of the inventions and any divisional, continuation, or substitute applications which may be filed upon said invention or inventions in this or any foreign country; and the right to sue in its own name and recover damages for past infringement of any United States Letters Patent and foreign patent; and authorize and request the issuing authority to issue any and all patents on said application or applications to said Assignee or its successors and assigns.

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Assignor hereby warrants that he/she has full right to convey his/her entire right, title and interest, both legal and equitable, in and to said inventions, free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

Assignor further agrees, without further payment or compensation by said Assignee or its successors and assigns, to communicate to said Assignee, its representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings, whenever requested; testify in any interference or other legal proceedings whenever

Patent Assignment  
HU Case 5024  
Appl. No(s): 14/320,370

requested; execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and generally do everything possible to aid said Assignee, its representatives or agents, or its successors or assigns to secure, obtain and enforce proper patent protection for said invention or inventions in this and any foreign country.

Assignor authorizes Assignee or Assignee's representative to supply and/or to correct any errors or omissions in the patent/application information provided above including but not limited to said application serial number(s) and filing date(s), prior to or after recordation.

Assignor appoints Assignee, through its designee, as its attorney-in-fact to execute, in Assignor's name and on Assignor's behalf, any and all documents required to effectuate this Assignment, specifically including, but not limited to, those documents specified above and any necessary corrective assignments.

8/18/14  
Date

8-18-14  
Date

  
Vikram Pattanayak

  
Witness

JOSEPH RUDOLF  
Witness's Printed Name

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8/18/14

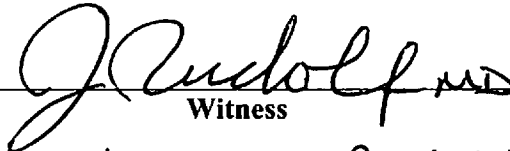
Date



Vikram Pattanayak

8-18-14

Date



Witness

JOSEPH H RUDOLF

Witness's Printed Name