

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
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EPAS ID: PAT6257024

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
NATALIA TRAYANOVA	04/25/2012
HENRY R. HALPERIN	05/04/2012
HERMENEGILD AREVALO	04/25/2012
JASON CONSTANTINO	04/25/2012
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	THE JOHNS HOPKINS UNIVERSITY
<b>Street Address:</b>	3400 NORTH CHARLES STREET
<b>City:</b>	BALTIMORE
<b>State/Country:</b>	MARYLAND
<b>Postal Code:</b>	21218
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16995513
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<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>	202 344 4000
<b>Email:</b>	hjdaley@venable.com, PtoMail@Venable.com, HJDaley.Team@Venable.com
<b>Correspondent Name:</b>	THE JOHNS HOPKINS UNIVERSITY C/O VENABLE
<b>Address Line 1:</b>	P. O. BOX 34385
<b>Address Line 4:</b>	WASHINGTON, D.C. 20043-9998
<b>ATTORNEY DOCKET NUMBER:</b>	02240.527004
<b>NAME OF SUBMITTER:</b>	AZIZ H. POONAWALLA, PH.D.
<b>SIGNATURE:</b>	/AZIZ POONAWALLA/
<b>DATE SIGNED:</b>	08/19/2020
<b>Total Attachments: 4</b>	
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**WORLDWIDE ASSIGNMENT  
OF PATENT RIGHTS**

WHEREAS, Natalia TRAYANOVA, Henry R. HALPERIN, Hermenegild AREVALO, and Jason CONSTANTINO, hereinafter (collectively) referred to as the Assignor, invented a certain improvement relating to SYSTEM AND METHOD FOR PLANNING A PATIENT-SPECIFIC CARDIAC PROCEDURE for which Assignor has caused a patent application to be prepared,

☒ the application having been filed in the U.S. Patent and Trademark Office on February 11, 2011 and given application number 61/441,947;

☒ the application having been filed under the Patent Cooperation Treaty on February 10, 2012, and given application number PCT/US2012/024759, the United States of America having been designated.

☐ the inventor's declaration for the application being executed concurrently with the execution of this Assignment; the application to be filed in the U.S. Patent and Trademark Office;

WHEREAS, The Johns Hopkins University, having a principal place of business located at 3400 North Charles Street, Baltimore, Maryland 21218, hereinafter referred to as the Assignee, is desirous of acquiring the entire right, title and interest in and to the invention and the patent application;

NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other good and valuable consideration paid by Assignee to Assignor, the receipt and sufficiency of which is hereby acknowledged:

Assignor hereby assigns, sells and transfers, and has assigned, sold, and transferred to Assignee, its successors and assigns, the entire and exclusive right, title, and interest for the United States in and to the invention, the application, any application for which priority is claimed, and all applications claiming priority therefrom, including any and all divisions, continuations, in whole or in part, substitutions, renewals, reissues, reexaminations, and all patents which may be granted therefor, and extensions thereof; and Assignor authorizes and requests the Commissioner of Patents and Trademarks to issue any and all such patents, insofar as Assignor's interest is concerned, to Assignee; to have, hold, exercise, and enjoy, with all associated rights, powers, privileges, and advantages, for and during and to the end of the term or terms of such patents when granted, for the sole and exclusive use and benefit of Assignee, its successors and assigns, to the same extent as Assignor would hold and enjoy if this Assignment had not been made.

Assignor further hereby assigns, sells and transfers, and has assigned, sold, and transferred to Assignee, its successors and assigns, the entire right, title and interest in all countries of the world, in and to the invention, the application, any application for which priority is claimed, and all applications claiming priority therefrom, including all national applications, regional applications, divisions, reissues, substitutions, continuations, in whole or in part, re-examinations, and all patents which may be granted therefor, and extensions thereof, including the right to file applications and obtain patents for the invention in its own name, in all countries and including all rights of priority in all countries under the terms of any applicable international convention, insofar as Assignor's interest is concerned; and Assignor hereby authorizes and requests the applicable patent office in each country of the world to issue any and all such patents, insofar as Assignor's interest is concerned, to Assignee; to have, hold, exercise, and enjoy, with all associated rights, powers, privileges, and advantages, for and during and to the end of the term or terms of such patents when granted, for the sole and exclusive use and benefit of Assignee, its successors and assigns, to the same extent as Assignor would hold and enjoy if this Assignment had not been made.

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Assignor further acknowledge an obligation of assignment of the invention to Assignee at the time the invention was made, and represents and warrants to Assignee, its successors and assigns, that, except for any right, title, or interest that may have arisen to Assignee under law or that was already transferred to Assignee, Assignor is the sole and lawful owner of the entire right, title and interest in and to the invention and application, without encumbrance, and that Assignor has good and full right and lawful authority to assign the invention and application in the manner set forth here.

Assignor further agrees to execute any and all patent applications, assignments, affidavits, declarations, and any other papers in connection therewith necessary to perfect such patent rights, and also agrees, at the request of the Assignee, its successors, or assigns, without charge, to testify in any legal proceedings, sign all lawful papers, make all lawful oaths, and generally do everything possible to aid Assignee, its successors and assigns, to obtain, maintain, enforce, and defend patent protection for the invention.

Assignor hereby grants the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office, or the patent office of another nation, for recordation of this document:

Henry J. Daley / Venable LLP & The Johns Hopkins University and all practitioners at Customer Number 101887

\* \* \* \* \*

IN WITNESS WHEREOF, each individual collectively referred to as Assignor has caused this Assignment to be executed, effective as of the filing date of the earliest filed application listed above, or the date of invention, whichever came first.

EXECUTED this 25 day of April, 2012.

ASSIGNOR: Natalia TRAYANOVA

Signature: N. Trayanova

WITNESS:

Signature: Brent M. Millare

Name: Brent M. Millare

Address: 4411 Falls Bridge Dr.  
APT E, Baltimore MD, 21211

EXECUTED this 4 day of May, 2012.

ASSIGNOR: Henry R. HALPERIN

Signature: H. Halperin

WITNESS:

Signature: Melvin Mune

**WORLDWIDE ASSIGNMENT  
OF PATENT RIGHTS**

WHEREAS, Natalia TRAYANOVA, Henry R. HALPERIN, Hermenegild AREVALO, and Jason CONSTANTINO, hereinafter (collectively) referred to as the Assignor, invented a certain improvement relating to SYSTEM AND METHOD FOR PLANNING A PATIENT-SPECIFIC CARDIAC PROCEDURE for which Assignor has caused a patent application to be prepared,

- ☒ [X] the application having been filed in the U.S. Patent and Trademark Office on February 11, 2011 and given application number 61/441,947;
- ☒ [X] the application having been filed under the Patent Cooperation Treaty on February 10, 2012, and given application number PCT/US2012/024759, the United States of America having been designated.
- ☐ [ ] the inventor's declaration for the application being executed concurrently with the execution of this Assignment; the application to be filed in the U.S. Patent and Trademark Office;

WHEREAS, The Johns Hopkins University, having a principal place of business located at 3400 North Charles Street, Baltimore, Maryland 21218, hereinafter referred to as the Assignee, is desirous of acquiring the entire right, title and interest in and to the invention and the patent application;

NOW THIS WITNESSETH, that for and in consideration of One Dollar (\$1.00), and other good and valuable consideration paid by Assignee to Assignor, the receipt and sufficiency of which is hereby acknowledged:

Assignor hereby assigns, sells and transfers, and has assigned, sold, and transferred to Assignee, its successors and assigns, the entire and exclusive right, title, and interest for the United States in and to the invention, the application, any application for which priority is claimed, and all applications claiming priority therefrom, including any and all divisions, continuations, in whole or in part, substitutions, renewals, reissues, reexaminations, and all patents which may be granted therefor, and extensions thereof; and Assignor authorizes and requests the Commissioner of Patents and Trademarks to issue any and all such patents, insofar as Assignor's interest is concerned, to Assignee; to have, hold, exercise, and enjoy, with all associated rights, powers, privileges, and advantages, for and during and to the end of the term or terms of such patents when granted, for the sole and exclusive use and benefit of Assignee, its successors and assigns, to the same extent as Assignor would hold and enjoy if this Assignment had not been made.

Assignor further hereby assigns, sells and transfers, and has assigned, sold, and transferred to Assignee, its successors and assigns, the entire right, title and interest in all countries of the world, in and to the invention, the application, any application for which priority is claimed, and all applications claiming priority therefrom, including all national applications, regional applications, divisions, reissues, substitutions, continuations, in whole or in part, re-examinations, and all patents which may be granted therefor, and extensions thereof, including the right to file applications and obtain patents for the invention in its own name, in all countries and including all rights of priority in all countries under the terms of any applicable international convention, insofar as Assignor's interest is concerned; and Assignor hereby authorizes and requests the applicable patent office in each country of the world to issue any and all such patents, insofar as Assignor's interest is concerned, to Assignee; to have, hold, exercise, and enjoy, with all associated rights, powers, privileges, and advantages, for and during and to the end of the term or terms of such patents when granted, for the sole and exclusive use and benefit of Assignee, its successors and assigns, to the same extent as Assignor would hold and enjoy if this Assignment had not been made.

**WORLDWIDE ASSIGNMENT  
OF PATENT RIGHTS**

Name: Melanie Mossman  
Address: 720 Roland Ave  
Baltimore, MD 21205

EXECUTED this 25 day of APRIL, 2012.

ASSIGNOR: Hermenegildo AREVALO

Signature: [Signature]

EXECUTED this 25 day of APRIL, 2012.

WITNESS:

Signature: [Signature]  
Name: Kathleen McDowell  
Address: 1421 Battery Ave, Baltimore MD 21201

ASSIGNOR: Jason CONSTANTINO

Signature: [Signature]

WITNESS:

Signature: [Signature]  
Name: Kathleen McDowell  
Address: 1421 Battery Ave, Baltimore, MD 21201

VENABLE LLP  
Washington, D.C. 20004