505105771 09/21/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5152530

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
JOHN P. WIKSWO	09/16/2014
DAVID E. CLIFFEL	09/19/2014
DMITRY A. MARKOV	09/12/2014
JOHN A. MCLEAN	09/15/2014
LISA JOY MCCAWLEY	09/19/2014
PHILLIP C. SAMSON	09/15/2014
RONALD S. REISERER	09/16/2014
FRANK EMMANUEL BLOCK	09/17/2014
JENNIFER ROBIN MCKENZIE	09/15/2014

RECEIVING PARTY DATA

Name:	VANDERBILT UNIVERSITY
Street Address:	305 KIRKLAND HALL
Internal Address:	2201 WEST END AVENUE
City:	NASHVILLE
State/Country:	TENNESSEE
Postal Code:	37240

PROPERTY NUMBERS Total: 1

Property Type	Number			
Application Number:	16049025			

CORRESPONDENCE DATA

Fax Number:

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.

Phone: 617-239-0100

Email: patent@lockelord.com
Correspondent Name: LOCKE LORD LLP
Address Line 1: P.O. BOX 55874

Address Line 4: BOSTON, MASSACHUSETTS 02205

ATTORNEY DOCKET NUMBER: 0114506.091US3

PATENT REEL: 047571 FRAME: 0208

505105771

NAME OF SUBMITTER:	TIM TINGKANG XIA		
SIGNATURE:	GNATURE: /Tim Tingkang Xia/		
DATE SIGNED:	09/21/2018		
	This document serves as an Oath/Declaration (37 CFR 1.63).		
Total Attachments: 9			
source=0114506091US3DecAssignment#page1.tif			
source=0114506091US3DecAssignment#page2.tif			
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PATENT REEL: 047571 FRAME: 0209

Attorney Docket No.: 14506-99496 VU Reference No.: YULLOCAUSI

	ASSIGNMENT STATEMENT
	LARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION CATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE
Title of Invention:	INTEGRATED ORGAN-ON-CHIP SYSTEMS AND APPLICATIONS OF THE SAME
As a below named in	ventor I heroby declare that:
□ Th ⊠ Un	tion is directed to: e attached application, or ited States application or PCT international application number <u>14/363.074</u> filed on ne 5, 2014.
	lentified application was made or authorized to be made by me. t I am the original inventor or an original joint inventor of a claimed invention in the
WHEREAS, West End Avenue, N	Vanderbilt University having an office and place of business at 305 Kirkland Hall, 2201 [ashville, Tennassee, 37240, USA, is desirous of acquiring the entire interest in the same;
Literary and Artistic time to time, the suffi agree to assign and he title and interest in an Letters Patent which application, reissue, r of priority under the I possessed by the INV for VANDERBILT I have been held by us	REFORE, for good and valuable consideration, as described in the Policy on Technology and Works, published in the 1993-1994 Vanderbilt Faculty Manual, as such policy is amended from ciency and adequacy and receipt of which are hereby acknowledged, we, the INVENTORS, preby do sell, assign and transfer unto said VANDERBILT UNIVERSITY the entire right, do to said invention and application throughout the world, including, without limitation, any may issue thereon, and any subsequent application claiming priority to the above-identified examination, divisional, continuation-in-part, extension or continuation thereof and all rights Paris Convention arising from said application, and all other rights in the INVENTION ENTORS, including the right to bring suit for damages due to past infringements; the same UNIVERSITY'S legal representatives and assigns, as fully and entirely as the same would that this assignment and sale not been made;
execute without furth- instruments which me conveyance hereby m	reby bind ourselves, our heirs, legal representatives, administrators and assigns properly to er consideration any and all applications, petitions, oaths and assignments or other papers and by be necessary in order to carry into full force and effect, the sale, assignment, transfer and ade or intended to be made and generally do everything possible to aid VANDERBILT gal representatives and assigns, to obtain and enforce proper protection for said invention in all the world;
AND, we he entered into which we	reby covenant that no assignment, sale, agreement or encumbrance has been or will be made or ould conflict with this assignment;
	nowledge that any willfull false statement made in this declaration is punishable under 18 USC somment of not more than five (5) years, or both.
LEGAL NAME OF	INVENTOR
Inventor: John P	Wiksper Date: 9/16/2019
Signature:	501/1/Lace
Witness:	1 CUS BY Date: 9-16-14

8987575 v1

Attorney Docket No.: JASOS-9948
VU Reference No.: YVI-2004USI

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE
Title of Invention: INTEGRATED ORGAN-ON-CHIP SYSTEMS AND APPLICATIONS OF THE SAME
As a below named inventor I hereby declare that:
- This declaration is directed to: ☐ The attached application, or ☒ United States application or PCT international application number 14/363,074 filed on June 5, 2014.
 The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
WHEREAS, <u>Vanderbilt University</u> having an office and place of business at <u>305 Kirkland Hall, 2201</u> <u>West End Avenue, Nashville, Tennessee, 37240, USA</u> is desirous of acquiring the entire interest in the same;
NOW, THEREFORE, for good and valuable consideration, as described in the Policy on Technology and Literary and Artistic Works, published in the 1993-1994 Vanderbilt Faculty Manual, as such policy is amended from time to time, the sufficiency and adequacy and receipt of which are hereby acknowledged, we, the INVENTORS, agree to assign and hereby do sell, assign and transfer unto said VANDERBILT UNIVERSITY the entire right, title and interest in and to said invention and application throughout the world, including, without limitation, any Letters Patent which may issue thereon, and any subsequent application claiming priority to the above-identified application, reissue, reexamination, divisional, continuation-in-part, extension or continuation thereof and all rights of priority under the Paris Convention arising from said application, and all other rights in the INVENTION possessed by the INVENTORS, including the right to bring suit for damages due to past infringements; the same for VANDERBILT UNIVERSITY'S legal representatives and assigns, as fully and entirely as the same would have been held by us had this assignment and sale not been made;
AND, we hereby bind ourselves, our heirs, legal representatives, administrators and assigns properly to execute without further consideration any and all applications, petitions, oaths and assignments or other papers and instruments which may be necessary in order to carry into full force and effect, the sale, assignment, transfer and conveyance hereby made or intended to be made and generally do everything possible to aid VANDERBILT UNIVERSITY, its legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries throughout the world;
AND, we hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;
I hereby acknowledge that any willfull false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.
LEGAL NAME OF INVENTOR
Inventor: David-R. Cliffel Date: 9/19/2014
Signature: Journa & Cuffel
Witness; Clery Cosky Date: 9-19-19
Signature: Man Mun

Attorney Docket No.: 14808-99448

VU Reference No.: <u>VU12064US1</u>

	LARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION CATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE
Title of Invention:	INTEGRATED ORGAN-ON-CHIP SYSTEMS AND APPLICATIONS OF THE SAME
As a below named inv	ventor I hereby declare that:
□ The 図 Uni	tion is directed to: e attached application, or ited States application or PCT international application number 14/363,074 filed on se 5, 2014.
	lentified application was made or authorized to be made by me. I am the original inventor or an original joint inventor of a claimed invention in the
	Vanderbilt University having an office and place of business at 305 Kirkland Hall, 2201 (ashville, Tennessee, 37240, USA) is desirous of acquiring the entire interest in the same;
Literary and Artistic V time to time, the suffic agree to assign and her title and interest in and Letters Patent which n application, reissue, re of priority under the P possessed by the INVI for VANDERBILT U	REFORE, for good and valuable consideration, as described in the Policy on Technology and Works, published in the 1993-1994 Vanderbilt Faculty Manual, as such policy is amended from siency and adequacy and receipt of which are hereby acknowledged, we, the INVENTORS, reby do sell, assign and transfer unto said VANDERBILT UNIVERSITY the entire right, if to said invention and application throughout the world, including, without limitation, any may issue thereon, and any subsequent application claiming priority to the above-identified examination, divisional, continuation-in-part, extension or continuation thereof and all rights aris Convention arising from said application, and all other rights in the INVENTION ENTORS, including the right to bring suit for damages due to past infringements; the same INIVERSITY'S legal representatives and assigns, as fully and entirely as the same would that this assignment and sale not been made;
execute without furthe instruments which may conveyance hereby ma	reby bind ourselves, our heirs, legal representatives, administrators and assigns properly to er consideration any and all applications, petitions, oaths and assignments or other papers and y be necessary in order to carry into full force and effect, the sale, assignment, transfer and ade or intended to be made and generally do everything possible to aid VANDERBILT gal representatives and assigns, to obtain and enforce proper protection for said invention in all he world;
	eby covenant that no assignment, sale, agreement or encumbrance has been or will be made or uld conflict with this assignment;
	nowledge that any willfull false statement made in this declaration is punishable under 18 USC onment of not more than five (5) years, or both.
LEGAL NAME OF I	the second of th
Inventor: Dmitry	A. Markov Date: Sept 4, 2014
Signature:	
Witness:	ery Coshy Date: 9-12-14 lune Coshy

Attorney Docket No.: 14575-99446 VU Reference No.: YVIV064USI

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE
Title of Invention: INTEGRATED ORGAN-ON-CHIP SYSTEMS AND APPLICATIONS OF THE SAME
As a below named inventor I hereby declare that:
- This declaration is directed to: ☐ The attached application, or ☑ United States application or PCT international application number 14/363.974 filed on June 5, 2014.
 The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.
WHEREAS, Vanderbilt University having an office and place of business at 305 Kirkland Hall, 2201 West End Avenue, Nashville, Tennessee, 37240, USA, is desirous of acquiring the entire interest in the same;
NOW, THEREFORE, for good and valuable consideration, as described in the Policy on Technology and Literary and Artistic Works, published in the 1993-1994 Vanderbilt Faculty Manual, as such policy is amended from time to time, the sufficiency and adequacy and receipt of which are hereby acknowledged, we, the INVENTORS, agree to assign and hereby do sell, assign and transfer unto said VANDERBILT UNIVERSITY the entire right, title and interest in and to said invention and application throughout the world, including, without limitation, any Letters Patent which may issue thereon, and any subsequent application claiming priority to the above-identified application, reissue, reexamination, divisional, continuation-in-part, extension or continuation thereof and all rights of priority under the Paris Convention arising from said application, and all other rights in the INVENTION possessed by the INVENTORS, including the right to bring suit for damages due to past infringements; the same for VANDERBILT UNIVERSITY'S legal representatives and assigns, as fully and entirely as the same would have been held by us had this assignment and sale not been made;
AND, we hereby bind ourselves, our heirs, legal representatives, administrators and assigns properly to execute without further consideration any and all applications, petitions, oaths and assignments or other papers and instruments which may be necessary in order to carry into full force and effect, the sale, assignment, transfer and conveyance hereby made or intended to be made and generally do everything possible to aid VANDERBILT UNIVERSITY, its legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries throughout the world;
AND, we hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;
I hereby acknowledge that any willfull false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.
LEGAL NAME OF INVENTOR
Inventor: John A. McLesse Date: 9.15.14
Signature: W. William
Witness: Carry Cushy Date: 9/15/14
Signature: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

Attorney Docket No.: 14506-99446 VU Reference No.: YU12064US1

ASSIGNMENT STATEMENT

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE INTEGRATED ORGAN-ON-CHIP SYSTEMS AND APPLICATIONS OF THE SAME Title of Invention: As a below named inventor I hereby declare that: This declaration is directed to: ☐ The attached application, or ☑ United States application or PCT international application number 14/363,074 filed on June 5, 2014. The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. WHEREAS, Vanderbift University having an office and place of business at 305 Kirkland Hall, 2201 West End Avenue, Nashville, Tennessee, 37248, USA, is desirous of acquiring the entire interest in the same; NOW, THEREFORE, for good and valuable consideration, as described in the Policy on Technology and Literary and Artistic Works, published in the 1993-1994 Vanderbilt Faculty Manual, as such policy is amended from time to time, the sufficiency and adequacy and receipt of which are hereby acknowledged, we, the INVENTORS, agree to assign and hereby do sell, assign and transfer unto said VANDERBILT UNIVERSITY the entire right, title and interest in and to said invention and application throughout the world, including, without limitation, any Letters Patent which may issue thereon, and any subsequent application claiming priority to the above-identified application, reissue, reexamination, divisional, continuation-in-part, extension or continuation thereof and all rights of priority under the Paris Convention arising from said application, and all other rights in the INVENTION possessed by the INVENTORS, including the right to bring suit for damages due to past infringements; the same for VANDERBILT UNIVERSITY'S legal representatives and assigns, as fully and entirely as the same would have been held by us had this assignment and sale not been made; AND, we hereby bind ourselves, our heirs, legal representatives, administrators and assigns properly to execute without further consideration any and all applications, petitions, oaths and assignments or other papers and instruments which may be necessary in order to carry into full force and effect, the sale, assignment, transfer and conveyance hereby made or intended to be made and generally do everything possible to aid VANDERBILT UNIVERSITY, its legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries throughout the world; AND, we hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment; I hereby acknowledge that any willfull false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both. LEGAL NAME OF INVENTOR Inventor: Lisa Joy McCawley Signature: Witness:

Altorney Decket No.: 14506-93466
VU Reference No.: YU12094181

USING AN		CLARATION (37 CFR 1.63) FO CATION DATA SHEET (37 C				SIGNEE
Title of Invent	ention: INTEGRATED ORGAN-ON-CHIP SYSTEMS AND APPLICATIONS OF THE SAME					AME
As a below named inventor I hereby declare that:						
	□ Th ⊠ Un	ation is directed to: se attached application, or nited States application or PCT in me 5, 2014.	ternational applic	stion number]	4/363,074 filed on	
- I beli	 The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. 				:	
		, <u>Vanderbilt University</u> having : Nashville, Tennessee, 37240, US				
Literary and A time to time, the agree to assign title and interest. Letters Patent application, rei of priority und possessed by the for VANDER!	rtistic ' te suffi and he st in an which i issue, r er the I ne INV BILT I	EREFORE, for good and valuable Works, published in the 1993-199 iciency and adequacy and receipt ereby do sell, assign and transfer and to said invention and application may issue thereon, and any subsercexamination, divisional, continueraries Convention arising from said ENTORS, including the right to UNIVERSITY'S legal represents had this assignment and sale not	94 Vanderbilt Factor which are here unto said VAND on throughout the quent application arion-in-part, extor application, and bring suit for datastices and assigners.	ulty Manual, as by acknowledge ERBHAT UNIN world, includin claiming priori ension or contil I all other rights mages due to pa	s such policy is ameged, we, the INVEN VERSITY the enting, without limitation the above-ide mustion thereof and in the INVENTIC set infringements; the such particular infringements; the INVENTIC set infringements in the INVENTIC set i	nded from TORS, right, right, n, any ntified all rights IN
execute withou instruments whe conveyance he	nt furth nich ma roby m ', its le	ereby bind ourselves, our heirs, te her consideration any and all appli- ay be necessary in order to carry hade or intended to be made and g egal representatives and assigns, to the world;	ications, petitions into full force and generally do every	, oaths and assi effect, the sale thing possible	gnments or other pa s, assignment, transi to aid VANDERBI	pers and er and LT
AND, entered into wi	, we he nich wo	reby covenant that no assignmen ould conflict with this assignmen	t, sale, agreement t;	or encumbrance	e has been or will b	e made or
		nowledge that any willfull false s sonment of not more than five (5		this declaration	n is punishable und	er 18 USC
LEGAL NAM	Œ OF	INVENTOR			80	· ·
Inventor:	Phillip	C. Samson	***************************************	Date: Sap	T 15 201	<u>.</u>
Signature:	<i>~</i> /~	yoc- Suga				
Witness: (2	very Cosby		Date: Q_	15-14	

Attorney Docket Mo.: 14506-99446 VU Reference No.: VU12064US1

ASSIGNMENT STATEMENT

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE INTEGRATED ORGAN-ON-CHIP SYSTEMS AND APPLICATIONS OF THE SAME Title of Invention: As a below named inventor I hereby declare that: This declaration is directed to: ☐ The attached application, or ☑ United States application or PCT international application number 14/363,074 filed on June 5, 2014. The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. WHEREAS, Vanderbilt University having an office and place of business at 305 Kirkland Hall, 2201 West End Avenue, Nashville, Tennessee, 37240, USA, is desirous of acquiring the entire interest in the same; NOW, THEREFORE, for good and valuable consideration, as described in the Policy on Technology and Literary and Artistic Works, published in the 1993-1994 Vanderbilt Faculty Manual, as such policy is amended from time to time, the sufficiency and adequacy and receipt of which are hereby acknowledged, we, the INVENTORS, agree to assign and hereby do sell, assign and transfer unto said VANDERBILT UNIVERSITY the entire right, title and interest in and to said invention and application throughout the world, including, without limitation, any Letters Patent which may issue thereon, and any subsequent application claiming priority to the above-identified application, reissue, reexamination, divisional, continuation-in-part, extension or continuation thereof and all rights of priority under the Paris Convention arising from said application, and all other rights in the INVENTION possessed by the INVENTORS, including the right to bring suit for damages due to past infringements; the same for VANDERBILT UNIVERSITY'S legal representatives and assigns, as fully and entirely as the same would have been held by us had this assignment and sale not been made; AND, we hereby bind ourselves, our heirs, legal representatives, administrators and assigns properly to execute without further consideration any and all applications, petitions, oaths and assignments or other papers and instruments which may be necessary in order to carry into full force and effect, the sale, assignment, transfer and conveyance hereby made or intended to be made and generally do everything possible to aid VANDERBILT UNIVERSITY, its legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries throughout the world; AND, we hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment; I hereby acknowledge that any willfull false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both. LEGAL NAME OF INVENTOR Inventor: Ronald S Witness:

Attorney Docket No.: 14506-99146

VU Reference No.: VIII 2064US1

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE			
Title of Invention: INTEGRATED ORGAN-ON-CHIP SYSTEMS AND APPLICATIONS OF THE SAME			
As a below named inventor I hereby declare that:			
- This declaration is directed to: ☐ The attached application, or ☑ United States application or PCT international application number 14/363,074 filed on June 5, 2014.			
 The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. 			
WHEREAS, <u>Vanderbilt University</u> having an office and place of business at <u>305 Kirkland Hall, 2201</u> <u>West End Avenue, Nashville, Tennessee, 37246, USA</u> , is desirous of acquiring the entire interest in the same;			
NOW, THEREFORE, for good and valuable consideration, as described in the Policy on Technology and Literary and Artistic Works, published in the 1993-1994 Vanderbilt Faculty Manual, as such policy is amended from time to time, the sufficiency and adequacy and receipt of which are hereby acknowledged, we, the INVENTORS, agree to assign and hereby do sell, assign and transfer unto said VANDERBILT UNIVERSITY the entire right, title and interest in and to said invention and application throughout the world, including, without limitation, any Letters Patent which may issue thereon, and any subsequent application claiming priority to the above-identified application, reissue, reexamination, divisional, continuation-in-part, extension or continuation thereof and all rights of priority under the Paris Convention arising from said application, and all other rights in the INVENTION possessed by the INVENTORS, including the right to bring suit for damages due to past infringements; the same for VANDERBILT UNIVERSITY'S legal representatives and assigns, as fully and entirely as the same would have been held by us had this assignment and sale not been made; AND, we hereby bind ourselves, our heirs, legal representatives, administrators and assigns properly to execute without further consideration any and all applications, petitions, oaths and assignments or other papers and instruments which may be necessary in order to carry into full force and effect, the sale, assignment, transfer and conveyance hereby made or intended to be made and generally do everything possible to aid VANDERBILT UNIVERSITY, its legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries throughout the world;			
AND, we hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;			
I hereby acknowledge that any willfull false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both.			
LEGAL NAME OF INVENTOR			
Inventor: Frank Emmanuel Block Date: 17 50/ 2014 Signature: Frank Emmanuel Block Date: 17 50/ 2014			
Witness: Chery Cushy Date: 9-17-14 Signature: Chery Cusho			
The state of the s			

Attorney Docket No.: 14506-99466 VU Reference No.: VU12664U81

ASSIGNMENT STATEMENT

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76) AND ASSIGNMENT FOR SINGLE ASSIGNEE INTEGRATED ORGAN-ON-CHIP SYSTEMS AND APPLICATIONS OF THE SAME Title of Invention: As a below named inventor I hereby declare that: This declaration is directed to: ☐ The attached application, or ☑ United States application or PCT international application number 14/363.074 filed on June 5, 2014. The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. WHEREAS, Vanderbill University having an office and place of business at 305 Kirkland Hall, 2201 West End Avenue, Nashville, Tennessee, 37240, USA, is desirous of acquiring the entire interest in the same; NOW, THEREFORE, for good and valuable consideration, as described in the Policy on Technology and Literary and Artistic Works, published in the 1993-1994 Vanderbilt Faculty Manual, as such policy is amended from time to time, the sufficiency and adequacy and receipt of which are hereby acknowledged, we, the INVENTORS, agree to assign and hereby do sell, assign and transfer unto said VANDERBILT UNIVERSITY the entire right, title and interest in and to said invention and application throughout the world, including, without limitation, any Letters Patent which may issue thereon, and any subsequent application claiming priority to the above-identified application, reissue, reexamination, divisional, continuation-in-part, extension or continuation thereof and all rights of priority under the Paris Convention arising from said application, and all other rights in the INVENTION possessed by the INVENTORS, including the right to bring suit for damages due to past infringements; the same for VANDERBILT UNIVERSITY'S legal representatives and assigns, as fully and entirely as the same would have been held by us had this assignment and sale not been made; AND, we hereby bind ourselves, our heirs, legal representatives, administrators and assigns properly to execute without further consideration any and all applications, petitions, oaths and assignments or other papers and instruments which may be necessary in order to carry into full force and effect, the sale, assignment, transfer and conveyance hereby made or intended to be made and generally do everything possible to aid VANDERBILT UNIVERSITY, its legal representatives and assigns, to obtain and enforce proper protection for said invention in all countries throughout the world; AND, we hereby covenant that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment; I hereby acknowledge that any willfull false statement made in this declaration is punishable under 18 USC 1001 by fine or imprisonment of not more than five (5) years, or both. LEGAL NAME OF INVENTOR Inventor: Jennifer Robin McKenzie Signature: Witness:

> PATENT **REEL: 047571 FRAME: 0218**

RECORDED: 09/21/2018