

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3978200

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
H. MARIE LOUGHRAN	07/10/2014
CATHERINE M. WISCOUNT	07/08/2014
NICOLAS ZORN	07/08/2014
JESSE J. MANIKOWSKI	07/09/2014
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	MERCK SHARP & DOHME CORP.
<b>Street Address:</b>	126 EAST LINCOLN AVE.
<b>Internal Address:</b>	RY86-2011A
<b>City:</b>	RAHWAY
<b>State/Country:</b>	NEW JERSEY
<b>Postal Code:</b>	07065
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	14908421
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(732)594-4720
<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>	7325943809
<b>Email:</b>	us_efs@merck.com
<b>Correspondent Name:</b>	CAROL S. QUAGLIATO
<b>Address Line 1:</b>	126 EAST LINCOLN AVE.
<b>Address Line 2:</b>	RY86-2011A
<b>Address Line 4:</b>	RAHWAY, NEW JERSEY 07065
<b>ATTORNEY DOCKET NUMBER:</b>	23536
<b>NAME OF SUBMITTER:</b>	KELLY A. PANNO
<b>SIGNATURE:</b>	/KELLY A. PANNO/
<b>DATE SIGNED:</b>	07/26/2016
<b>Total Attachments: 24</b>	

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WHEREAS, I/WE,

- (1) Peter D. WILLIAMS, located at Harleysville, Pennsylvania 19438,
- (2) John A. MCCAULEY, located at Maple Glen, Pennsylvania, 19002,
- (3) David Jonathan BENNETT, located at Winchester, Massachusetts 01890,
- (4) Christopher J. BUNGARD, located at Lansdale, Pennsylvania 19446,
- (5) Lehua CHANG, located at Ramsey, New Jersey, 07446,
- (6) Michael P. DWYER, located at Scotch Plains, New Jersey, 07076,
- (7) M. Katharine HOLLOWAY, located at Lansdale, Pennsylvania 19446,
- (8) Kartik M. KEERTIKAR, located at East Windsor, New Jersey, 08520,
- (9) H. Marie LOUGHRAN, located at Perkasio, Pennsylvania, 18944,
- (10) Jesse J. MANIKOWSKI, located at Worcester, Pennsylvania 19403,
- (11) Gregori J. MORRIELLO, located at Randolph, New Jersey 07869,
- (12) Dong-Ming SHEN, located at Edison, New Jersey 08820,
- (13) Edward C. SHERER, located at Hillsborough, New Jersey 08844,
- (14) Jurgen SCHULZ, located at Motherwell, Scotland, NL15LE,
- (15) Sherman Tim WADDELL, located at Westfield, New Jersey 07090,
- (16) Catherine M. WISCOUNT, located at Allentown, Pennsylvania 18106, and
- (17) Nicolas ZORN, located at Durmenach, France, 68480

(hereinafter ASSIGNOR(S)), together with

- (18) Xin-Jie CHU, located at Shanghai, China,
- (19) Satyanarayana, TUMMANAPALLI, located at The Galen, Singapore,
- (20) Vijayaradhi SIVALENKA, located at The Galen, Singapore,
- (21) Bin HU, located at, Shanghai, China,
- (22) Tao Ji, located at Shanghai, China, and
- (23) Bin ZHONG, located at Shanghai, China are the inventors of the invention described in an application for Patents having the Attorney Docket Number indicated above and the following Title of the Invention:

**PIPERAZINE DERIVATIVES AS HIV PROTEASE INHIBITORS**

and/or in the following application(s):

PCT International Application No. PCT/CN12013/000899 having a filing date of July 31, 2013, and  
PCT International Application No. \_\_\_\_\_ having a filing date of \_\_\_\_\_,  
US Application No. \_\_\_\_\_ having a filing date of \_\_\_\_\_.

WHEREAS I/WE covenant that the rights and property herein conveyed are free and clear of any encumbrance, and that I/we have the full right to convey the same as herein expressed.

WHEREAS, Merck Sharp & Dohme Corp., a corporation organized under the laws of the State of New Jersey, having an office at 126 East Lincoln Avenue, Rahway, New Jersey 07065, and its successors, assigns and legal representatives (hereinafter **ASSIGNEE**), is desirous of obtaining the entire right, title and interest in, to and under the invention disclosed in said application or applications;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I/we, said ASSIGNOR(S), do each hereby sell, assign and transfer or confirm the grant and assignment to said **ASSIGNEE** my/our entire right, title and interest in all countries of the world in and to my/our invention described in said application for Patents, in and to the right to file patent applications in the name of **ASSIGNEE**, its designee, or in any or all of our names, at its election, on the aforesaid invention in all countries of the world, together with all rights of priority in the aforesaid countries deriving from the above-identified application for Patents under the International Convention for the Protection of Industrial Property, under the Inter-American Convention relating to Inventions, Patents, Designs and Industrial Models and under any other international arrangement relating to patents or intellectual property, in and to any and all Letters Patent that are granted from the aforesaid application for Patents, in and to any applications claiming priority benefits to a provisional patent application or other applications filed on said invention, and in and to any continuations, divisions, reexaminations, reissues, renewals and extensions thereof of any of said Letters Patent, the same to be held and enjoyed by said **ASSIGNEE**, to the full ends of the terms for which all Letters Patent therefore may be granted, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

AND I/WE HEREBY covenant and agree that we will at any time, upon the request and at the expense of **ASSIGNEE**, without further compensation or charge to said **ASSIGNEE**, execute and deliver any and all documents that may be necessary or desirable to perfect the title to the foregoing invention, patent applications, and Letters Patent and continuations, divisions, reexaminations, reissues, renewals and extensions thereof in the name of **ASSIGNEE**,

Attorney Docket No.: 23536

including the execution and procurement of any and all further documents evidencing this assignment and sale as may be necessary or desirable for recording the same in the Patent Office of any country concerned, and will make all rightful oaths and declarations and do all lawful acts requisite for procuring the same or for aiding therein.

I/WE HEREBY authorize **ASSIGNEE** to insert in this instrument the Application Number(s) and the filing date(s) of said application for Patents when officially notified thereof.

This document may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such components shall together constitute but one and the same document.

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Peter D. WILLIAMS

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Peter D. Williams**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
John A. McCAULEY

\_\_\_\_\_  
Christopher J. BUNGARD

\_\_\_\_\_  
M. Katharine HOLLOWAY

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **John A. McCAULEY, Christopher J. BUNGARD, and M. Katharine HOLLOWAY**, to me known, and known by me to be the same person(s)

described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
NotaryPublic

Attorney Docket No.: 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
David Jonathan BENNETT

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me David Jonathan BENNETT, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
NotaryPublic

Executed this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Lehua CHANG

\_\_\_\_\_  
Michael P. DWYER

\_\_\_\_\_  
Gregori J. MORRIELLO

\_\_\_\_\_  
Dong-Ming SHEN

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me, Lehua CHANG, Michael P. DWYER, Gregori J. MORRIELLO, and Dong-Ming SHEN, to me known, and known by me to be the same person described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
NotaryPublic

Attorney Docket No. 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Edward C. SHERER

\_\_\_\_\_  
Sherman Tim WADDELL

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me Edward C. SHERER, and Sherman Tim WADDELL to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Kartik M. KEERTIKAR

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me Kartik M. KEERTIKAR, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

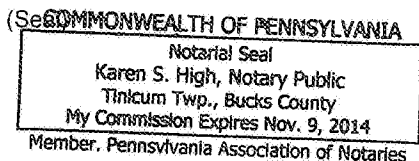
Executed this 10 day of July, 2014.

H. Marie Loughran  
H. Marie LOUGHRAN

**ACKNOWLEDGEMENT**

State of Pa )  
County of Bucks ) s.s.:  
\_\_\_\_\_ )

On this 10 day of July, 2014, personally appeared before me H. Marie LOUGHRAN, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.



Karen S. High  
Notary Public

Attorney Docket No. 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Jesse J. MANIKOWSKI

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me Jesse J. MANIKOWSKI, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Jurgen SCHULZ

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me Jurgen SCHULZ, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Catherine M. WISCOUNT

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Catherine M. WISCOUNT**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.  
(Seal)

\_\_\_\_\_  
NotaryPublic

**Attorney Docket No. 23536**

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
**Nicolas ZORN**

**WITNESSED BY**

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Nicolas ZORN**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

\_\_\_\_\_  
Witness #1

\_\_\_\_\_  
Witness #2

WHEREAS, I/WE,

- (1) Peter D. WILLIAMS, located at Harleysville, Pennsylvania 19438,
- (2) John A. MCCAULEY, located at Maple Glen, Pennsylvania, 19002,
- (3) David Jonathan BENNETT, located at Winchester, Massachusetts 01890,
- (4) Christopher J. BUNGARD, located at Lansdale, Pennsylvania 19446,
- (5) Lehua CHANG, located at Ramsey, New Jersey, 07446,
- (6) Michael P. DWYER, located at Scotch Plains, New Jersey, 07076,
- (7) M. Katharine HOLLOWAY, located at Lansdale, Pennsylvania 19446,
- (8) Kartik M. KEERTIKAR, located at East Windsor, New Jersey, 08520,
- (9) H. Marie LOUGHRAN, located at Perkasio, Pennsylvania, 18944,
- (10) Jesse J. MANIKOWSKI, located at Worcester, Pennsylvania 19403,
- (11) Gregori J. MORRIELLO, located at Randolph, New Jersey 07869,
- (12) Dong-Ming SHEN, located at Edison, New Jersey 08820,
- (13) Edward C. SHERER, located at Hillsborough, New Jersey 08844,
- (14) Jurgen SCHULZ, located at Motherwell, Scotland, NL15LE,
- (15) Sherman Tim WADDELL, located at Westfield, New Jersey 07090,
- (16) Catherine M. WISCOUNT, located at Allentown, Pennsylvania 18106, and
- (17) Nicolas ZORN, located at Durmenach, France, 68480

(hereinafter ASSIGNOR(S)), together with

- (18) Xin-Jie CHU, located at Shanghai, China,
- (19) Satyanarayana, TUMMANAPALLI, located at The Galen, Singapore,
- (20) Vijayasaradhi SIVALENKA, located at The Galen, Singapore,
- (21) Bin HU, located at, Shanghai, China,
- (22) Tao Ji, located at Shanghai, China, and
- (23) Bin ZHONG, located at Shanghai, China are the inventors of the invention described in an application for Patents having the Attorney Docket Number indicated above and the following Title of the Invention:

**PIPERAZINE DERIVATIVES AS HIV PROTEASE INHIBITORS**

and/or in the following application(s):

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US Application No. \_\_\_\_\_ having a filing date of \_\_\_\_\_.

WHEREAS I/WE covenant that the rights and property herein conveyed are free and clear of any encumbrance, and that I/we have the full right to convey the same as herein expressed.

WHEREAS, Merck Sharp & Dohme Corp., a corporation organized under the laws of the State of New Jersey, having an office at 126 East Lincoln Avenue, Rahway, New Jersey 07065, and its successors, assigns and legal representatives (hereinafter ASSIGNEE), is desirous of obtaining the entire right, title and interest in, to and under the invention disclosed in said application or applications;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I/we, said ASSIGNOR(S), do each hereby sell, assign and transfer or confirm the grant and assignment to said ASSIGNEE my/our entire right, title and interest in all countries of the world in and to my/our invention described in said application for Patents, in and to the right to file patent applications in the name of ASSIGNEE, its designee, or in any or all of our names, at its election, on the aforesaid invention in all countries of the world, together with all rights of priority in the aforesaid countries deriving from the above-identified application for Patents under the International Convention for the Protection of Industrial Property, under the Inter-American Convention relating to Inventions, Patents, Designs and Industrial Models and under any other international arrangement relating to patents or intellectual property, in and to any and all Letters Patent that are granted from the aforesaid application for Patents, in and to any applications claiming priority benefits to a provisional patent application or other applications filed on said invention, and in and to any continuations, divisions, reexaminations, reissues, renewals and extensions thereof of any of said Letters Patent, the same to be held and enjoyed by said ASSIGNEE, to the full ends of the terms for which all Letters Patent therefore may be granted, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

AND I/WE HEREBY covenant and agree that we will at any time, upon the request and at the expense of ASSIGNEE, without further compensation or charge to said ASSIGNEE, execute and deliver any and all documents that may be necessary or desirable to perfect the title to the foregoing invention, patent applications, and Letters Patent and continuations, divisions, reexaminations, reissues, renewals and extensions thereof in the name of ASSIGNEE,

Attorney Docket No.: 23536

including the execution and procurement of any and all further documents evidencing this assignment and sale as may be necessary or desirable for recording the same in the Patent Office of any country concerned, and will make all rightful oaths and declarations and do all lawful acts requisite for procuring the same or for aiding therein.

I/WE HEREBY authorize **ASSIGNEE** to insert in this instrument the Application Number(s) and the filing date(s) of said application for Patents when officially notified thereof.

This document may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such components shall together constitute but one and the same document.

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Peter D. WILLIAMS

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Peter D. Williams**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
John A. McCAULEY

\_\_\_\_\_  
Christopher J. BUNGARD

\_\_\_\_\_  
M. Katharine HOLLOWAY

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **John A. McCAULEY, Christopher J. BUNGARD, and M. Katharine HOLLOWAY**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Attorney Docket No.: 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
David Jonathan BENNETT

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me David Jonathan BENNETT, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Lehua CHANG

\_\_\_\_\_  
Michael P. DWYER

\_\_\_\_\_  
Gregori J. MORRIELLO

\_\_\_\_\_  
Dong-Ming SHEN

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me, Lehua CHANG, Michael P. DWYER, Gregori J. MORRIELLO, and Dong-Ming SHEN, to me known, and known by me to be the same person described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Attorney Docket No. 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Edward C. SHERER

\_\_\_\_\_  
Sherman Tim WADDELL

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
) s.s.:  
County of \_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me Edward C. SHERER, and Sherman Tim WADDELL to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Kartik M. KEERTIKAR

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
) s.s.:  
County of \_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me Kartik M. KEERTIKAR, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
H. Marie LOUGHRAN

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
) s.s.:  
County of \_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me H. Marie LOUGHRAN, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Attorney Docket No. 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Jesse J. MANIKOWSKI

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Jesse J. MANIKOWSKI**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.  
(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Jurgen SCHULZ

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Jurgen SCHULZ**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.  
(Seal)

\_\_\_\_\_  
Notary Public

Executed this 8<sup>th</sup> day of July, 2014.

Catherine M. Wiscourt  
Catherine M. WISCOUNT

**ACKNOWLEDGEMENT**

State of PA)  
County of Lehigh) s.s.:  
\_\_\_\_\_)

On this 8<sup>th</sup> day of July, 2014, personally appeared before me **Catherine M. WISCOUNT**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.  
(Seal)

(Seal)

Notarial Seal  
Ronald T. Rieker, Notary Public  
Lower Macungie Twp., Lehigh County  
My Commission Expires March 12, 2017

Ronald T. Rieker

Notary Public

Attorney Docket No. 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Nicolas ZORN

**WITNESSED BY**

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Nicolas ZORN**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

\_\_\_\_\_  
Witness #1

\_\_\_\_\_  
Witness #2

Attorney Docket No.: 23536  
**WORLDWIDE ASSIGNMENT**

WHEREAS, I/WE,

- (1) Peter D. WILLIAMS, located at Harleysville, Pennsylvania 19438,
- (2) John A. MCCAULEY, located at Maple Glen, Pennsylvania, 19002,
- (3) David Jonathan BENNETT, located at Winchester, Massachusetts 01890,
- (4) Christopher J. BUNGARD, located at Lansdale, Pennsylvania 19446,
- (5) Lehua CHANG, located at Ramsey, New Jersey, 07446,
- (6) Michael P. DWYER, located at Scotch Plains, New Jersey, 07076,
- (7) M. Katharine HOLLOWAY, located at Lansdale, Pennsylvania 19446,
- (8) Kartik M. KEERTIKAR, located at East Windsor, New Jersey, 08520,
- (9) H. Marie LOUGHRAN, located at Perkasi, Pennsylvania, 18944,
- (10) Jesse J. MANIKOWSKI, located at Worcester, Pennsylvania 19403,
- (11) Gregori J. MORRIELLO, located at Randolph, New Jersey 07869,
- (12) Dong-Ming SHEN, located at Edison, New Jersey 08820,
- (13) Edward C. SHERER, located at Hillsborough, New Jersey 08844,
- (14) Jurgen SCHULZ, located at Motherwell, Scotland, NL15LE,
- (15) Sherman Tim WADDELL, located at Westfield, New Jersey 07090,
- (16) Catherine M. WISCOUNT, located at Allentown, Pennsylvania 18106, and
- (17) Nicolas ZORN, located at Durmenach, France, 68480

(hereinafter ASSIGNOR(S)), together with

- (18) Xin-Jie CHU, located at Shanghai, China,
- (19) Satyanarayana, TUMMANAPALLI, located at The Galen, Singapore,
- (20) Vijayasaradhi SIVALENKA, located at The Galen, Singapore,
- (21) Bin HU, located at, Shanghai, China,
- (22) Tao Ji, located at Shanghai, China, and
- (23) Bin ZHONG, located at Shanghai, China are the inventors of the invention described in an application for Patents having the Attorney Docket Number indicated above and the following Title of the Invention:

**PIPERAZINE DERIVATIVES AS HIV PROTEASE INHIBITORS**

and/or in the following application(s):

PCT International Application No. PCT/CN12013/000899 having a filing date of July 31, 2013, and  
PCT International Application No. \_\_\_\_\_ having a filing date of \_\_\_\_\_.  
US Application No. \_\_\_\_\_ having a filing date of \_\_\_\_\_.

WHEREAS I/WE covenant that the rights and property herein conveyed are free and clear of any encumbrance, and that I/we have the full right to convey the same as herein expressed.

WHEREAS, Merck Sharp & Dohme Corp., a corporation organized under the laws of the State of New Jersey, having an office at 126 East Lincoln Avenue, Rahway, New Jersey 07065, and its successors, assigns and legal representatives (hereinafter **ASSIGNEE**), is desirous of obtaining the entire right, title and interest in, to and under the invention disclosed in said application or applications;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I/we, said ASSIGNOR(S), do each hereby sell, assign and transfer or confirm the grant and assignment to said **ASSIGNEE** my/our entire right, title and interest in all countries of the world in and to my/our invention described in said application for Patents, in and to the right to file patent applications in the name of **ASSIGNEE**, its designee, or in any or all of our names, at its election, on the aforesaid invention in all countries of the world, together with all rights of priority in the aforesaid countries deriving from the above-identified application for Patents under the International Convention for the Protection of Industrial Property, under the Inter-American Convention relating to Inventions, Patents, Designs and Industrial Models and under any other international arrangement relating to patents or intellectual property, in and to any and all Letters Patent that are granted from the aforesaid application for Patents, in and to any applications claiming priority benefits to a provisional patent application or other applications filed on said invention, and in and to any continuations, divisions, reexaminations, reissues, renewals and extensions thereof of any of said Letters Patent, the same to be held and enjoyed by said **ASSIGNEE**, to the full ends of the terms for which all Letters Patent therefore may be granted, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

AND I/WE HEREBY covenant and agree that we will at any time, upon the request and at the expense of **ASSIGNEE**, without further compensation or charge to said **ASSIGNEE**, execute and deliver any and all documents that may be necessary or desirable to perfect the title to the foregoing invention, patent applications, and Letters Patent and continuations, divisions, reexaminations, reissues, renewals and extensions thereof in the name of **ASSIGNEE**,

Attorney Docket No.: 23536

including the execution and procurement of any and all further documents evidencing this assignment and sale as may be necessary or desirable for recording the same in the Patent Office of any country concerned, and will make all rightful oaths and declarations and do all lawful acts requisite for procuring the same or for aiding therein.

I/WE HEREBY authorize **ASSIGNEE** to insert in this instrument the Application Number(s) and the filing date(s) of said application for Patents when officially notified thereof.

This document may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such components shall together constitute but one and the same document.

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Peter D. WILLIAMS

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Peter D. Williams**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
John A. McCAULEY

\_\_\_\_\_  
Christopher J. BUNGARD

\_\_\_\_\_  
M. Katharine HOLLOWAY

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **John A. McCAULEY, Christopher J. BUNGARD, and M. Katharine HOLLOWAY**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Attorney Docket No.: 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
David Jonathan BENNETT

**ACKNOWLEDGEMENT**

\_\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **David Jonathan BENNETT**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Lehua CHANG

\_\_\_\_\_  
Michael P. DWYER

\_\_\_\_\_  
Gregori J. MORRIELLO

\_\_\_\_\_  
Dong-Ming SHEN

**ACKNOWLEDGEMENT**

\_\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me, **Lehua CHANG, Michael P. DWYER, Gregori J. MORRIELLO, and Dong-Ming SHEN**, to me known, and known by me to be the same person described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Attorney Docket No. 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Edward C. SHERER

\_\_\_\_\_  
Sherman Tim WADDELL

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Edward C. SHERER, and Sherman Tim WADDELL** to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Kartik M. KEERTIKAR

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Kartik M. KEERTIKAR**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
H. Marie LOUGHRAN

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **H. Marie LOUGHRAN**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Attorney Docket No. 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Jesse J. MANIKOWSKI

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Jesse J. MANIKOWSKI**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.  
(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Jurgen SCHULZ

**Witnessed by:**

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Jurgen SCHULZ**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

\_\_\_\_\_  
Witness #1

\_\_\_\_\_  
Witness #2

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Catherine M. WISCOUNT

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Catherine M. WISCOUNT**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.  
(Seal)

\_\_\_\_\_  
Notary Public

Notary Public

Attorney Docket No. 23536

Executed this 08 day of July, 2014.

Nicolas ZORN

WITNESSED BY

On this 08 day of July, 2014, personally appeared before me Nicolas ZORN, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

Debra J. Lee  
Witness #1

[Signature]  
Witness #2

Attorney Docket No.: 23536  
WORLDWIDE ASSIGNMENT

WHEREAS, I/WE,

- (1) Peter D. WILLIAMS, located at Harleysville, Pennsylvania 19438,
- (2) John A. MCCAULEY, located at Maple Glen, Pennsylvania, 19002,
- (3) David Jonathan BENNETT, located at Winchester, Massachusetts 01890,
- (4) Christopher J. BUNGARD, located at Lansdale, Pennsylvania 19446,
- (5) Lehua CHANG, located at Ramsey, New Jersey, 07446,
- (6) Michael P. DWYER, located at Scotch Plains, New Jersey, 07076,
- (7) M. Katharine HOLLOWAY, located at Lansdale, Pennsylvania 19446,
- (8) Kartik M. KEERTIKAR, located at East Windsor, New Jersey, 08520,
- (9) H. Marie LOUGHRAN, located at Perkasi, Pennsylvania, 18944,
- (10) Jesse J. MANIKOWSKI, located at Worcester, Pennsylvania 19403,
- (11) Gregori J. MORRIELLO, located at Randolph, New Jersey 07869,
- (12) Dong-Ming SHEN, located at Edison, New Jersey 08820,
- (13) Edward C. SHERER, located at Hillsborough, New Jersey 08844,
- (14) Jurgen SCHULZ, located at Motherwell, Scotland, NL15LE,
- (15) Sherman Tim WADDELL, located at Westfield, New Jersey 07090,
- (16) Catherine M. WISCOUNT, located at Allentown, Pennsylvania 18106, and
- (17) Nicolas ZORN, located at Durmenach, France, 68480

(hereinafter ASSIGNOR(S)), together with

- (18) Xin-Jie CHU, located at Shanghai, China,
- (19) Satyanarayana, TUMMANAPALLI, located at The Galen, Singapore,
- (20) Vijayasaradhi SIVALENKA, located at The Galen, Singapore,
- (21) Bin HU, located at, Shanghai, China,
- (22) Tao JI, located at Shanghai, China, and
- (23) Bin ZHONG, located at Shanghai, China are the inventors of the invention described in an application for Patents having the Attorney Docket Number indicated above and the following Title of the Invention:

**PIPERAZINE DERIVATIVES AS HIV PROTEASE INHIBITORS**

and/or in the following application(s):

PCT International Application No. PCT/CN12013/000899 having a filing date of July 31, 2013, and  
PCT International Application No. \_\_\_\_\_ having a filing date of \_\_\_\_\_,  
US Application No. \_\_\_\_\_ having a filing date of \_\_\_\_\_.

WHEREAS I/WE covenant that the rights and property herein conveyed are free and clear of any encumbrance, and that I/we have the full right to convey the same as herein expressed.

WHEREAS, Merck Sharp & Dohme Corp., a corporation organized under the laws of the State of New Jersey, having an office at 126 East Lincoln Avenue, Rahway, New Jersey 07065, and its successors, assigns and legal representatives (hereinafter **ASSIGNEE**), is desirous of obtaining the entire right, title and interest in, to and under the invention disclosed in said application or applications;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I/we, said ASSIGNOR(S), do each hereby sell, assign and transfer or confirm the grant and assignment to said **ASSIGNEE** my/our entire right, title and interest in all countries of the world in and to my/our invention described in said application for Patents, in and to the right to file patent applications in the name of **ASSIGNEE**, its designee, or in any or all of our names, at its election, on the aforesaid invention in all countries of the world, together with all rights of priority in the aforesaid countries deriving from the above-identified application for Patents under the International Convention for the Protection of Industrial Property, under the Inter-American Convention relating to Inventions, Patents, Designs and Industrial Models and under any other international arrangement relating to patents or intellectual property, in and to any and all Letters Patent that are granted from the aforesaid application for Patents, in and to any applications claiming priority benefits to a provisional patent application or other applications filed on said invention, and in and to any continuations, divisions, reexaminations, reissues, renewals and extensions thereof of any of said Letters Patent, the same to be held and enjoyed by said **ASSIGNEE**, to the full ends of the terms for which all Letters Patent therefore may be granted, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

AND I/WE HEREBY covenant and agree that we will at any time, upon the request and at the expense of **ASSIGNEE**, without further compensation or charge to said **ASSIGNEE**, execute and deliver any and all documents that may be necessary or desirable to perfect the title to the foregoing invention, patent applications, and Letters Patent and continuations, divisions, reexaminations, reissues, renewals and extensions thereof in the name of **ASSIGNEE**,

Attorney Docket No.: 23536

including the execution and procurement of any and all further documents evidencing this assignment and sale as may be necessary or desirable for recording the same in the Patent Office of any country concerned, and will make all rightful oaths and declarations and do all lawful acts requisite for procuring the same or for aiding therein.

I/WE HEREBY authorize **ASSIGNEE** to insert in this instrument the Application Number(s) and the filing date(s) of said application for Patents when officially notified thereof.

This document may be executed in any number of counterparts, each of which so executed shall be deemed to be an original, but all such components shall together constitute but one and the same document.

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Peter D. WILLIAMS

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Peter D. Williams**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
John A. McCAULEY

\_\_\_\_\_  
Christopher J. BUNGARD

\_\_\_\_\_  
M. Katharine HOLLOWAY

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **John A. McCAULEY**, **Christopher J. BUNGARD**, and **M. Katharine HOLLOWAY**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Attorney Docket No.: 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
David Jonathan BENNETT

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **David Jonathan BENNETT**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Lehua CHANG

\_\_\_\_\_  
Michael P. DWYER

\_\_\_\_\_  
Gregori J. MORRIELLO

\_\_\_\_\_  
Dong-Ming SHEN

**ACKNOWLEDGEMENT**

\_\_\_\_\_) of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
\_\_\_\_\_)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me, **Lehua CHANG, Michael P. DWYER, Gregori J. MORRIELLO, and Dong-Ming SHEN**, to me known, and known by me to be the same person described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Attorney Docket No. 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Edward C. SHERER

\_\_\_\_\_  
Sherman Tim WADDELL

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Edward C. SHERER, and Sherman Tim WADDELL** to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Kartik M. KEERTIKAR

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Kartik M. KEERTIKAR**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
H. Marie LOUGHRAN

**ACKNOWLEDGEMENT**

\_\_\_\_ of \_\_\_\_\_ )  
County of \_\_\_\_\_ ) s.s.:  
\_\_\_\_\_ )

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **H. Marie LOUGHRAN**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

(Seal)

\_\_\_\_\_  
Notary Public

Attorney Docket No. 23536

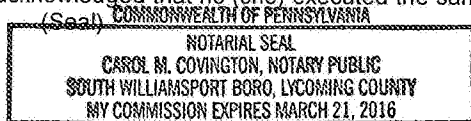
Executed this 9<sup>th</sup> day of July, 2014.

Jesse J. Manikowski  
Jesse J. MANIKOWSKI

ACKNOWLEDGEMENT

Commonwealth of Pennsylvania)  
County of Lycoming) s.s.:  
)

On this 9<sup>th</sup> day of July, 2014, personally appeared before me Jesse J. MANIKOWSKI, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.



Carol M. Covington  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Jurgen SCHULZ

ACKNOWLEDGEMENT

\_\_\_\_\_ of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me Jurgen SCHULZ, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.  
(Seal)

\_\_\_\_\_  
Notary Public

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Catherine M. WISCOUNT

ACKNOWLEDGEMENT

\_\_\_\_\_ of \_\_\_\_\_)  
County of \_\_\_\_\_) s.s.:  
)

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me Catherine M. WISCOUNT, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.  
(Seal)

Notary Public

Attorney Docket No. 23536

Executed this \_\_\_\_ day of \_\_\_\_\_, 2014.

\_\_\_\_\_  
Nicolas ZORN

**WITNESSED BY**

On this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, personally appeared before me **Nicolas ZORN**, to me known, and known by me to be the same person(s) described in and who executed the foregoing instrument, and acknowledged that he (she) executed the same, of his (her) own free will for the purpose set forth.

\_\_\_\_\_  
Witness #1

\_\_\_\_\_  
Witness #2