

PATENT ASSIGNMENT

Electronic Version v1.1
 Stylesheet Version v1.1

| SUBMISSION TYPE: | NEW ASSIGNMENT | | | | | | | | | | | | |
|--|---|---------------|---|---------------------|----------------|--------------------|-----------------|-----------------|-------------|----------------|----------------|--------------|------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT | | | | | | | | | | | | |
| CONVEYING PARTY DATA | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Robert E. Johnston</td> <td>11/19/2012</td> </tr> <tr> <td>Christy K. Jurgens</td> <td>11/09/2012</td> </tr> <tr> <td>Kelly Young Poe</td> <td>01/19/2013</td> </tr> </tbody> </table> | | Name | Execution Date | Robert E. Johnston | 11/19/2012 | Christy K. Jurgens | 11/09/2012 | Kelly Young Poe | 01/19/2013 | | | | |
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| RECEIVING PARTY DATA | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Name:</td> <td>The University of North Carolina at Chapel Hill</td> </tr> <tr> <td>Street Address:</td> <td>308 Bynum Hall</td> </tr> <tr> <td>Internal Address:</td> <td>Campus Box 4105</td> </tr> <tr> <td>City:</td> <td>Chapel Hill</td> </tr> <tr> <td>State/Country:</td> <td>NORTH CAROLINA</td> </tr> <tr> <td>Postal Code:</td> <td>27599-4105</td> </tr> </table> | | Name: | The University of North Carolina at Chapel Hill | Street Address: | 308 Bynum Hall | Internal Address: | Campus Box 4105 | City: | Chapel Hill | State/Country: | NORTH CAROLINA | Postal Code: | 27599-4105 |
| Name: | The University of North Carolina at Chapel Hill | | | | | | | | | | | | |
| Street Address: | 308 Bynum Hall | | | | | | | | | | | | |
| Internal Address: | Campus Box 4105 | | | | | | | | | | | | |
| City: | Chapel Hill | | | | | | | | | | | | |
| State/Country: | NORTH CAROLINA | | | | | | | | | | | | |
| Postal Code: | 27599-4105 | | | | | | | | | | | | |
| PROPERTY NUMBERS Total: 1 | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>11816360</td> </tr> </tbody> </table> | | Property Type | Number | Application Number: | 11816360 | | | | | | | | |
| Property Type | Number | | | | | | | | | | | | |
| Application Number: | 11816360 | | | | | | | | | | | | |
| CORRESPONDENCE DATA | | | | | | | | | | | | | |
| <p>Fax Number: 9198541401 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i></p> <p>Phone: 919-854-1400 Email: msalazar@myersbigel.com Correspondent Name: MBSS / Marthenn Salazar Address Line 1: 4140 Parklake Ave Address Line 2: Suite 600 Address Line 4: Raleigh, NORTH CAROLINA 27612</p> | | | | | | | | | | | | | |
| ATTORNEY DOCKET NUMBER: | 5470-419 | | | | | | | | | | | | |
| NAME OF SUBMITTER: | Marthenn Salazar | | | | | | | | | | | | |
| Total Attachments: 5 | | | | | | | | | | | | | |

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ASSIGNMENT

THIS ASSIGNMENT, made by us, **Robert E. Johnston**, a citizen of the United States of America, residing at ~~534 Copperline Drive~~ ^{408 Drexel Fl. Trm.}, Chapel Hill, NC 27516; **Christy K. Jurgens**, a citizen of the United States of America, residing at 6 Kingsberry Drive, Somerset, NJ 08873; and **Kelly Young Poe**, a citizen of the United States of America, residing at 13107 Millhaven Place, Apt A, Germantown, MD 20874;

WITNESSETH: That,

WHEREAS, we are joint inventors of certain new and useful improvements in NEW LIVE VIRUS VACCINES for which International Application No. PCT/US2006/005338 was filed on February 15, 2006, and U.S. Application No. 11/816,360 was filed on August 15, 2007 in the United States Patent and Trademark Office; and

WHEREAS, **The University of North Carolina at Chapel Hill**, a constituent institution of The University of North Carolina and an educational institution chartered under the laws of the State of North Carolina having a principal place of business at 308 Bynum Hall, Campus Box 4105, Chapel Hill, North Carolina, hereinafter referred to as assignee, is desirous of acquiring my entire right, title and interest in and to said invention as described in said application(s), and in and to any and all Letters Patent which shall be granted therefor in the United States of America and all foreign countries;

NOW, THEREFORE, To Whom It May Concern, be it known that for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, we have sold and by these presents do hereby sell, assign, transfer and convey unto said assignee, its successors and assigns, the entire right, title, and interest in and to the said invention and application(s), and in and to any and all continuations, continuations-in-part, or divisions thereof, and in and to any and all Letters Patent of the United States of America and all foreign countries or reissues or other forms of protection thereof which may be granted therefor or thereon, for the full end of the term for which said Letters Patent may be granted along with any term extensions thereon or therefor, together with the right to claim the priority of said application in all foreign countries in accordance with the International Convention, the same to be held and enjoyed by said assignee, its successors and assigns, as fully and entirely as the same would have been held and enjoyed by us if this assignment and sale had not been made.

We hereby request that said Letters Patent be issued in accordance with this assignment.

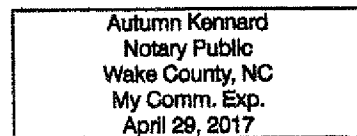
We further covenant and agree that, at the time of the execution and delivery of these presents, we possess full title to the invention and applications above-mentioned, and that we have the unencumbered right and authority to make this assignment.

We further covenant and agree to promptly communicate to said assignee or its representatives any facts known to us relating to said invention, to testify in any interference or legal proceedings involving said invention, to execute any additional papers which may be requested to confirm the right of the assignee, its representatives, successors, or assigns to secure patent or similar protection for the said invention in all countries and to vest in the assignee complete title to the said invention and Letters Patent, without further compensation, but at the expense of said assignee, its successors, assigns, and other legal representatives; and we hereby instruct, and further covenant and agree to bind our heirs, legal representatives, and assigns, to do same, without further compensation, but at the expense of said assignee or its representatives.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on this 19th day of November, 2012.

Robert E. Johnston (SEAL)
Robert E. Johnston

STATE OF NC)
COUNTY OF Wake)



Before me personally appeared the person described in and who executed the foregoing instrument, and he acknowledged to me that he executed the same for the purposes therein stated, this 19 day of November, 2012.

Autumn Kennard
Notary Public

SEAL

My Commission Expires: 4/29/17

IN WITNESS WHEREOF, I have hereunto set my hand and seal on this 9 day
of Nov, 2012.

Christy K. Jurgens (SEAL)
Christy K. Jurgens

STATE OF New Jersey
COUNTY OF Somerset

Before me personally appeared the person described in and who executed the
foregoing instrument, and she acknowledged to me that she executed the same for the
purposes therein stated, this 9th day of November, 2012.

[Signature]
Notary Public

SEAL

My Commission Expires:

JOAO A ROCHA
Notary Public - New Jersey
Essex County
My Commission Expires December 3, 2012

IN WITNESS WHEREOF, I have hereunto set my hand and seal on this 19TH day
of JANUARY, 2013

Kelly Young Poe (SEAL)
Kelly Young Poe

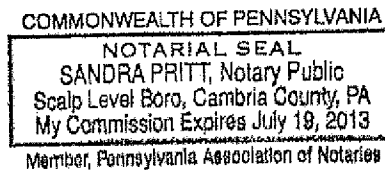
STATE OF PENNSYLVANIA
COUNTY OF Cambria

Before me personally appeared the person described in and who executed the
foregoing instrument, and she acknowledged to me that she executed the same for the
purposes therein stated, this 19 day of JANUARY, 2013.

Sandra Pritt
Notary Public

SEAL

My Commission Expires: July 19, 2013



WHEREBY The University of North Carolina at Chapel Hill acknowledges and
accepts the assignment;

IN WITNESS WHEREOF, I have hereunto set my hand and seal on this 29th day of
January, 201~~2~~³. The undersigned warrants and represents that he/she has the
authority to sign this Assignment on behalf of the Assignee, **The University of North
Carolina at Chapel Hill.**

By: Jacqueline Duay (SEAL)

Title: Interim Director

STATE OF North Carolina)

COUNTY OF ORANGE)

Before me personally appeared the person described in and who executed the
foregoing instrument, and he/she acknowledged to me that he/she executed the same for the
purposes therein stated, this 29th day of January, 201~~2~~³.

Doris Bonita Perry
Notary Public



My Commission Expires: June 28, 2015