504162764 01/04/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4209441

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------|----------------|
| LUKE T. DAUM | 12/22/2016 |
| GERALD W. FISCHER | 01/04/2017 |

RECEIVING PARTY DATA

| Name: | LONGHORN VACCINES AND DIAGNOSTICS, LLC |
|-------------------|--|
| Street Address: | 2 BETHESDA METRO CENTER |
| Internal Address: | SUITE 910 |
| City: | BETHESDA |
| State/Country: | MARYLAND |
| Postal Code: | 20814 |

PROPERTY NUMBERS Total: 4

| Property Type | Number |
|---------------------|--------------|
| Application Number: | 62161527 |
| Application Number: | 62232666 |
| Application Number: | 15152871 |
| PCT Number: | US2016032033 |

CORRESPONDENCE DATA

Fax Number: (888)570-7381

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.

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Email: mail@remenicklaw.com

Correspondent Name: REMENICK PLLC

Address Line 1: 1025 THOMAS JEFFERSON STREET, NW

Address Line 2: SUITE 175

Address Line 4: WASHINGTON, D.C. 20007

| ATTORNEY DOCKET NUMBER: | 3022.034.US |
|-------------------------|------------------|
| NAME OF SUBMITTER: | JAMES REMENICK |
| SIGNATURE: | /James Remenick/ |
| DATE SIGNED: | 01/04/2017 |

PATENT 504162764 REEL: 040840 FRAME: 0357

Total Attachments: 6 source=3022_034US_ExecutedAssignment#page1.tif source=3022_034US_ExecutedAssignment#page2.tif source=3022_034US_ExecutedAssignment#page3.tif source=3022_034US_ExecutedAssignment#page4.tif source=3022_034US_ExecutedAssignment#page5.tif source=3022_034US_ExecutedAssignment#page6.tif

PATENT REEL: 040840 FRAME: 0358

ASSIGNMENT

WHEREAS, we, Gerald W. Fischer, with a residence address at 6417 Lybrook Drive, Bethesda, MD 20817, and Luke T. Daum, with a residence address at 318 Larkwood Drive, San Antonio, Texas 78209 (the "Assignors") are the inventors and owners of all right, title, and interest in and to the improvements entitled:

RAPID METHODS FOR THE IDENTIFICATION OF NUCLEIC ACIDS FROM BIOLOGICAL SAMPLES

which is disclosed and described in United States Patent Application No. 15/152,871, filed May 12, 2016, which claims priority to U.S. Provisional Application No. 62/232,666 filed September 25, 2015, and U.S. Provisional Application No. 62/161,527 filed May 14, 2015, and International Application No. PCT/US2016/32033, filed May 12, 2016, and any and all national stage applications corresponding thereto (the "Applications").

WHEREAS, Longhorn Vaccines and Diagnostics, LLC, a company having a place of business located at 2 Bethesda Metro Center, Suite 910, Bethesda, MD 20814 (the "Assignee"), is desirous of acquiring all rights to the improvements and under the application;

NOW, THEREFORE, in view of good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by Assignors, Assignors do hereby sell, assign and transfer unto said Assignee, its successors, assigns and legal representatives, Assignors' entire right, title, and interest in the above-referenced Applications, including any nonprovisional applications that claim priority thereto, all right to claim priority and all right of recovery for prior infringement, in and throughout the United States of America (including its territories and dependencies) and all countries foreign thereto in and to said improvements, said United States application, any other United States applications, including any other provisional, and any non-provisional, divisional, renewal, substitute, continuation, reexamination and reissue applications, based in whole or in part on said United States provisional application or in whole or in part on said invention, any right of priority based in whole or in part on any of the aforesaid United States provisional applications or in whole or in part on said improvements, any foreign applications, including international and regional applications, based in whole or in part on any of the aforesaid United States applications or in whole or in part on said improvements, and in and to any and all letters patent, including extensions thereof, of any country which have been or may be granted on any of the aforesaid applications or on said improvements or any parts thereof;

AND Assignee hereby authorizes and requests its agents, Remenick PLLC, whose address is 1025 Thomas Jefferson Street, N.W., Suite 175, Washington, D.C. 20007, to insert hereon any identification necessary or desirable for recordation of this document or any information necessary to correct typographical, grammatical or other errors in this document, including the filing date and application number of said application when known;

AND Assignors hereby agree for themselves and their heirs, executors, administrators, successors and assigns to execute without further consideration any further documents and instruments which may be necessary, lawful and proper in the prosecution of said above-referenced application or in the preparation or prosecution of any continuing, substitute, divisional, renewal, reexamination or reissue application or in any amendments, extensions or

PATENT REEL: 040840 FRAME: 0359 interference proceedings, or other applications for patents of any region or country, that may be necessary to secure to Assignee its interest and title in and to said improvements or any parts thereof, and in and to said several patents or any of them;

AND Assignors hereby covenant for themselves and their legal representatives, and agrees with said Assignee, its successors and assigns, that Assignors have granted no right or license to make, use, sell or offer to sell said improvements, to anyone except said Assignee, that prior to the execution of this deed, its right, title, and interest in said improvements had not been otherwise encumbered, and that Assignors have not and will not execute any instrument in conflict therewith;

AND Assignors do hereby authorize and request the United States Commissioner for Patents to issue any and all letters patent which may be granted upon said United States applications, or upon said improvements or any parts thereof when granted, to said Assignee.

IN WITNESS WHEREOF, Assignors hereunto set their hand and seal.

FOR THE ASSIGNORS (THE INVENTORS):

| Name: Gerald W. Fischer | L | Date: January 4, 2017 |
|-------------------------|------------|-----------------------|
| County of Montgomery |) | |
| State of Maryland |) ss:) | |

On this 4th day of January 2017, before me a Notary Public in and for the County and State aforesaid, personally appeared Gerald W. Fischer, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and acknowledged the same to be of his free act and deed.

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Susan M. Graham, Notary Public

My Commission Expires 12/9/17

| Date: May, 2016 |
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| |
| SS: |
| before me a Notary Public in and for the County and the T. Daum, to me known and known to me to be the aled the foregoing instrument, and acknowledged the |
| Notary Public |
| My Commission Expires |
| CINES & DIAGNOSTICS, LLC |
| Date: January 4, 2017 |
| SS: |
| before me a Notary Public in and for the County and ald W. Fischer, to me known and known to me to be I sealed the foregoing instrument, and acknowledged Susan M. Graham, Notary Public My Commission Expires 12/9/17 |
| |

ASSIGNMENT

WHEREAS, we, Gerald W. Fischer, with a residence address at 6417 Lybrook Drive, Bethesda, MD 20817, and Luke T. Daum, with a residence address at 318 Larkwood Drive, San Antonio, Texas 78209 (the "Assignors") are the inventors and owners of all right, title, and interest in and to the improvements entitled:

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WHEREAS, Longhorn Vaccines and Diagnostics, LLC, a company having a place of business located at 2 Bethesda Metro Center, Suite 910, Bethesda, MD 20814 (the "Assignee"), is desirous of acquiring all rights to the improvements and under the application;

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AND Assignee hereby authorizes and requests its agents, Remenick PLLC, whose address is 1025 Thomas Jefferson Street, N.W., Suite 175, Washington, D.C. 20007, to insert hereon any identification necessary or desirable for recordation of this document or any information necessary to correct typographical, grammatical or other errors in this document, including the filing date and application number of said application when known:

AND Assignors hereby agree for themselves and their heirs, executors, administrators, successors and assigns to execute without further consideration any further documents and instruments which may be necessary, lawful and proper in the prosecution of said above-referenced application or in the preparation or prosecution of any continuing, substitute, divisional, renewal, reexamination or reissue application or in any amendments, extensions or

PATENT REEL: 040840 FRAME: 0362 interference proceedings, or other applications for patents of any region or country, that may be necessary to secure to Assignee its interest and title in and to said improvements or any parts thereof, and in and to said several patents or any of them;

AND Assignors hereby covenant for themselves and their legal representatives, and agrees with said Assignee, its successors and assigns, that Assignors have granted no right or license to make, use, sell or offer to sell said improvements, to anyone except said Assignee, that prior to the execution of this deed, its right, title, and interest in said improvements had not been otherwise encumbered, and that Assignors have not and will not execute any instrument in conflict therewith:

AND Assignors do hereby authorize and request the United States Commissioner for Patents to issue any and all letters patent which may be granted upon said United States applications, or upon said improvements or any parts thereof when granted, to said Assignee.

IN WITNESS WHEREOF, Assignors hereunto set their hand and seal.

FOR THE ASSIGNORS (THE INVENTORS):

| Name: Gerald W. Fischer | Date: May, 2016 | |
|-------------------------|---|---|
| County of |) | |
| State of |) ss:) | |
| | f May 2016, before me a Notary Public in and for the Count appeared Gerald W. Fischer, to me known and known to me ho signed and scaled the foregoing instrument, and acknowled and deed. | |
| (SEAL) | Notary Public | * |
| | My Commission Expires | |

| | Attorney Docket No. 3022.03 |
|--|--|
| Name: Luke T. Daum | De <i>lem</i> bel Date: May <u>ZZ</u> , 2016 |
| County of Scale of Texas | |
| State of Texas | |
| State aforesaid, personally appeared Luke T. Daperson of that name, who signed and sealed the same to be of his free act and deed. | foregoing instrument, and acknowledged the |
| (SEAL) ROBERTO FLORES & Notary Public, State of Texas & My Comm. Exp. 11-04-2020 & ID No. 13089/84-7 | Notary Public My Commission Expires 11-09-205 |
| WAY IN COLUMN TO THE COLUMN TH | |
| FOR ASSIGNEE: LONGHORN VACCINES By; Name: Gerald W. Fischer Title: President & CEO | |
| By; Name: Gerald W. Fischer Title: President & CEO County of | & DIAGNOSTICS, LLC |
| By; Name: Gerald W. Fischer Title: President & CEO | & DIAGNOSTICS, LLC |
| By; Name: Gerald W. Fischer Title: President & CEO County of State of State | Date: May, 2016 The a Notary Public in and for the County and |
| By: Name: Gerald W. Fischer Title: President & CEO County of State of On this day of May 2016, before make a foresaid, personally appeared Gerald W. Fithe person of that name, who signed and sealed in | Date: May, 2016 The a Notary Public in and for the County and |

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