505121870 10/02/2018

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

SUBMISSION TYPE:NEW ASSIGNMENTNATURE OF CONVEYANCE:ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CHRISTOPHER JOHN TROLL	10/25/2017
MARTIN P. POWERS	10/25/2017
NICHOLAS H. PUTNAM	11/07/2017
MARCO BLANCHETTE	10/25/2017
PAUL HARTLEY	07/13/2017

RECEIVING PARTY DATA

Name:	DOVETAIL GENOMICS, LLC
Street Address:	2161 DELAWARE AVENUE
City:	SANTA CRUZ
State/Country:	CALIFORNIA
Postal Code:	95060

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	16053610

CORRESPONDENCE DATA

Fax Number: (858)350-2399

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: 8583502300

Email: asgarcia@wsgr.com, patentdocket@wsgr.com
Correspondent Name: WILSON SONSINI GOODRICH & ROSATI

Address Line 1: 650 PAGE MILL ROAD

Address Line 4: PALO ALTO, CALIFORNIA 94304

ATTORNEY DOCKET NUMBER:	45269-721.301
NAME OF SUBMITTER:	ASHLEY GARCIA
SIGNATURE:	/Ashley Garcia/
DATE SIGNED:	10/02/2018

Total Attachments: 4

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PATENT REEL: 047033 FRAME: 0105

EPAS ID: PAT5168631

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> PATENT REEL: 047033 FRAME: 0106

PATENT ASSIGNMENT	Docket Number 45269	-721.601
WHEREAS, the undersigned:		
1. Christopher John TROLL 2. Martin P. POWERS 3. Nicholas H. PUTNAN 63 Rooney Street 2654 22 rd Ave. 36 River Street, Apt. 3 Santa Cruz, California 95065 San Francisco, California 94116 (hereinafter "Inventor(s)"), have invented certain new and useful improvements in	62 707 Pe	BLANCHETTE lton Ave., Apt. 307 Cruz, California 95060
Recovering Long-Range Linkage Information from Preserve	ed Samples	
☐ for which a United States patent application is executed on even date herewith; or ☐ for which a PCT application serial number PCT/US2017/032466 was filed on May 12, 2017 in Cooperation Treaty;		_
(hereinafter, "Application(s)"). The term "Application(s)" also includes all patent applications that share or cl	aim priority to or from th	above application(s).
WHEREAS, <u>DOVETAIL GENOMICS</u> , <u>LLC</u> , a corporation of the State of <u>Delaware</u> , having a place of busing <u>95060</u> . <u>USA</u> , (hereinafter "Assignee"), is desirous of acquiring the entire right, title and interest in and to said and in and to all embodiments of the inventions, heretofore conceived, made or discovered, whether jointly or collectively referred to as "Inventions"), and in and to any and all patents, inventor's certificates and other for foreign countries, or under any international convention, agreement, protocol, or treaty, including those filed undustrial Property, The Patent Cooperation Treaty or otherwise (hereinafter "Patent(s)").	Application(s), and the in severally, by said Inventures of protection thereon	ventions disclosed therein, or(s) (hereinafter
NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Lassignee:	iventor(s) to have been re	ceived in full from said
1. Said Inventor(s) do hereby sell, assign, transfer and convey unto said Assignee the entire (b) in and to said Applications, including the right to claim priority to and from said Application(s); (c) in and substitution, continuation, or continuation-in-part of any of said Application(s); (d) in and to said Patent(s) and of the foregoing; (e) in and to each and every reissue, reexamination, renewal or extension of any kind of any and application filed outside the United States and corresponding to any of the foregoing; and (g) in and to all the Patent(s), including all rights to sue for and to receive and recover for Assignee's own use all past, present whatever nature recoverable from an infringement of the Patent(s).	to each and every applicate to each and every patent is of the foregoing; (f) in an elaims for past, present of	tion that is a divisional, suing or reissuing from any d to each and every patent
2. Said Inventor(s) hereby covenant and agree to cooperate with said Assignee to enable sai title and interest herein conveyed in the United States, foreign countries, or under any international convention by said Inventor(s) shall include prompt production of pertinent facts and documents, giving of testimony, exe or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for peherein conveyed; (b) for prosecuting any applications covering said Inventions; (c) for filing and prosecuting applications covering said Inventions and Inventions; (d) for filing and prosecuting applications for reissuance of any said Pat proceedings involving said Inventions; and (f) for legal proceedings involving said Inventions and any applicational including without limitation reissues and reexaminations, opposition proceedings, cancellation proceedings, practions and court actions; provided, however, that reasonable expenses incurred by said Inventor(s) in providing Assignee.	, agreement, protocol, or cution of petitions, oaths, erfecting in said Assignee ubstitute, divisional, conf ent(s); (e) for interference tions therefor and any Pal	treaty. Such cooperation specifications, declarations the right, title and interest inuing or additional or other priority ent(s) granted thereon,
 The terms and covenants of this assignment shall inure to the benefit of said Assignce, its and shall be binding upon said Inventor(s), their respective heirs, legal representatives and assigns. 	successors, assigns and c	ther legal representatives,
 Said Inventor(s) hereby warrant, represent and covenant that said Inventor(s) have not ent contract, or understanding in conflict herewith. 	ered and will not enter in	to any assignment,
5. Said Inventor(s) hereby request that any Patent(s) issuing in the United States, foreign con agreement, protocol, or treaty, be issued in the name of the Assignee, or its successors and assigns, for the sole representatives and assigns.	intries, or under any inter use of said Assignee, its	national convention, successors, legal
6. This instrument will be interpreted and construed in accordance with the laws of the State principles. If any provision of this instrument is found to be illegal or unenforceable, the other provisions shall extent permitted by law. This instrument may be executed in counterparts, each of which is deemed an original same agreement.	remain effective and and	hroughla to the arrestant
IN WITNESS WHEREOF, said Inventor(s) have executed and delivered this instrument to said Assi	gnee as of the dates writt	en below:
Date: 10/25/17 // Date:	Iartin P. POWERS	
Date: Date: O C Date: O Date:	Tarco BLANCHETTE	
RECEIVED AND AGREED TO BY ASSIGNEE: Dovetail Genomics, LLC		
Date: 10/25/2017 Signature: Eii.M. Livak Hale Name: Eric M. Livak Hale Title: Innovation Manager		

Page 1 of 1

PATENT ASSIGNMENT	Docket Number 45269-721.6	501
WHEREAS, the undersigned:		
63 Rooney Street 2654 22 nd Avc. 36 Riv	as H. PUTNAM 4. Marco BLA er Street, Apt. 362 707 Pelton 4 im, Massachusetts 02453 Santa Cruz,	NCHETTE Ive., Apt. 307 California 95060
Recovering Long-Range Linkage Information	from Preserved Samples	
☐ for which a United States patent application is executed on even date herewith: ☐ for which a PCT application serial number PCT/US2017/032466 was filed on a Cooperation Treaty: ☐ (hereinofile "Application (AP). The application of the cooperation the property of the p	viay 12, 2017 in the United States Receiving Of	
(hereinafter, "Application(s)"). The term "Application(s)" also includes all patent applications WHEREAS, <u>DOVETAIL GENOMICS, LLC</u> , a corporation of the State of <u>Delaware</u> , having a <u>95060, USA</u> , (hereinafter "Assignee"), is desirous of acquiring the entire right, title and interest and in and to all embodiments of the inventions, heretofore conceived, made or discovered, which collectively referred to as "Inventions"), and in and to any and all patents, inventor's certificate foreign countries, or under any international convention, agreement, protocol, or treaty, included Industrial Property, The Patent Cooperation Treaty or otherwise (hereinafter "Patent(s)").	a place of business at <u>2161 Delaware Avenue.</u> st in and to said Application(s), and the inventi- hether jointly or severally, by said Inventor(s) (Santa Cruz, California ons disclosed therein, hereinafter
NOW, THEREFORE, in consideration of good and valuable consideration acknowl Assignee:	edged by said Inventor(s) to have been received	d in full from said
1. Said Inventor(s) do hereby sell, assign, transfer and convey unto said Ass (b) in and to said Applications, including the right to claim priority to and from said Application substitution, continuation, or continuation-in-part of any of said Application(s); (d) in and to so of the foregoing; (e) in and to each and every reissue, reexamination, renewal or extension of a and application filed outside the United States and corresponding to any of the foregoing; and the Patent(s), including all rights to sue for and to receive and recover for Assignee's own use whatever nature recoverable from an infringement of the Patent(s).	in(s); (c) in and to each and every application that a patent (s) and each and every patent issuing any kind of any of the foregoing; (f) in and to a compare the few of the foregoing; (f) in and to a compare the few of t	hat is a divisional, or reissuing from any ach and every patent
2. Said Inventor(s) hereby covenant and agree to cooperate with said Assign title and interest herein conveyed in the United States, foreign countries, or under any internation by said Inventor(s) shall include prompt production of pertinent facts and documents, giving of or other papers, and other assistance all to the extent deemed necessary or desirable by said Asherein conveyed; (b) for prosecuting any applications covering said Inventions; (c) for filing an applications covering said Inventions; (d) for filing and prosecuting applications for reissuance proceedings involving said Inventions; and (f) for legal proceedings involving said Inventions including without limitation reissues and reexaminations, opposition proceedings, cancellation actions and court actions; provided, however, that reasonable expenses incurred by said Inventors.	onal convention, agreement, protocol, or treaty testimony, execution of petitions, oaths, specifications of the first and for perfecting in said Assignee the rid prosecuting substitute, divisional, continuing of any said Patent(s); (e) for interferee or of and any applications therefor and any Patent(s) proceedings priority contests, public we are	Such cooperation fications, declarations ght, title and interest or additional ther priority granted thereon,
3. The terms and covenants of this assignment shall inure to the benefit of sa and shall be binding upon said Inventor(s), their respective heirs, legal representatives and assignment shall inure to the benefit of sa	id Assignce, its successors, assigns and other it gns.	egal representatives,
 Said Inventor(s) hereby warrant, represent and covenant that said Inventor contract, or understanding in conflict herewith. 	(s) have not entered and will not enter into any	assignment,
5. Said Inventor(s) hereby request that any Patent(s) issuing in the United Stragreement, protocol, or treaty, be issued in the name of the Assignee, or its successors and assignerescentatives and assigns.	ates, foreign countries, or under any internation ens, for the sole use of said Assignce, its succes	al convention, sors, legal
6. This instrument will be interpreted and construed in accordance with the laprinciples. If any provision of this instrument is found to be illegal or unenforceable, the other extent permitted by law. This instrument may be executed in counterparts, each of which is decision agreement.	provisions shall compin affective and antonna	da an alon municipal de de
IN WITNESS WHEREOF, said Inventor(s) have executed and delivered this instrum	ent to said Assignee as of the dates written bel	ow;
Date:	25-201 Marine Powers	
Date: Date: Date:	Marco BLANCHETTE	
RECEIVED AND AGREED TO BY ASSIGNEE: Dovetail Genomics, LLC		
Date: 10/30/2017 Signature: Exic M. Livak Hale Name: Eric M. Livak Hale Title: Innovation Manager		

Page 1 of 4

PATENT ASSIGNMENT	Docket Number 45269-721.601	
WHEREAS, the undersigned:		
1. Christopher John TROLL 2. Martin P. POWERS 3. Nicholas H. PUTNAM 63 Rooniey Street 2654 22nd Ave. 36 River Street, Apt. 3 Santa Cruz, California 95065 San Francisco, California 94116 (hereinafter "Inventor(s)"), have invented certain new and useful improvements in	62 707 Pelton Ave., Apt. 307	
Recovering Long-Range Linkage Information from Preserve	ed Samples	
for which a United States patent application is executed on even date herewith; or for which a PCT application serial number PCT/US2017/032466 was filed on May 12, 2017 in Cooperation Treaty; (hereinafter, "Application(s)"). The term "Application(s)" also includes all patent applications that share or cl		
WHEREAS, <u>DOVETAIL GENOMICS</u> , <u>LLC</u> , a corporation of the State of <u>Delaware</u> , having a place of business at <u>2161 Delaware Avenue</u> , <u>Santa Cruz</u> , <u>California 95060</u> , <u>USA</u> , (hereinafter "Assignee"), is desirous of acquiring the entire right, title and interest in and to said Application(s), and the inventions disclosed therein, and in and to all embodiments of the inventions, heretofore conceived, made or discovered, whether jointly or severally, by said Inventor(s) (hereinafter collectively referred to as "Inventions"), and in and to any and all patents, inventor's certificates and other forms of protection thereon granted in the United States, foreign countries, or under any international convention, agreement, protocol, or treaty, including those filed under the Paris Convention for the Protection of Industrial Property, The Patent Cooperation Treaty or otherwise (hereinafter "Patent(s)").		
NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said I Assignee:	nventor(s) to have been received in full from said	
1. Said Inventor(s) do hereby sell, assign, transfer and convey unto said Assignee the entire (b) in and to said Applications, including the right to claim priority to and from said Application(s); (c) in and substitution, continuation, or continuation-in-part of any of said Application(s); (d) in and to said Patent(s) and of the foregoing; (e) in and to each and every reissue, reexamination, renewal or extension of any kind of any and application filed outside the United States and corresponding to any of the foregoing; and (g) in and to all the Patent(s), including all rights to sue for and to receive and recover for Assignee's own use all past, present whatever nature recoverable from an infringement of the Patent(s).	to each and every application that is a divisional, d each and every patent issuing or reissuing from any of the foregoing; (f) in and to each and every patent claims for past, present and future infringement of	
2. Said Inventor(s) hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest herein conveyed in the United States, foreign countries, or under any international convention, agreement, protocol, or treaty. Such cooperation by said Inventor(s) shall include prompt production of pertinent facts and documents, giving of testimony, execution of petitions, oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any applications covering said Inventions; (c) for filing and prosecuting substitute, divisional, continuing or additional applications covering said Inventions; (d) for filing and prosecuting applications for reissuance of any said Patent(s); (e) for interference or other priority proceedings involving said Inventions; and (f) for legal proceedings involving said Inventions and any applications therefor and any Patent(s) granted thereon, including without limitation reissues and reexaminations, opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that reasonable expenses incurred by said Inventor(s) in providing such cooperation shall be paid for by said Assignee.		
3. The terms and covenants of this assignment shall inure to the benefit of said Assignee, it and shall be binding upon said Inventor(s), their respective heirs, legal representatives and assigns.	s successors, assigns and other legal representatives,	
4. Said Inventor(s) hereby warrant, represent and covenant that said Inventor(s) have not encontract, or understanding in conflict herewith.	stered and will not enter into any assignment,	
5. Said Inventor(s) hereby request that any Patent(s) issuing in the United States, foreign countries, or under any international convention, agreement, protocol, or treaty, be issued in the name of the Assignee, or its successors and assigns, for the sole use of said Assignee, its successors, legal representatives and assigns.		
6. This instrument will be interpreted and construed in accordance with the laws of the State of California, without regard to conflict of law principles. If any provision of this instrument is found to be illegal or unenforceable, the other provisions shall remain effective and enforceable to the greatest extent permitted by law. This instrument may be executed in counterparts, each of which is deemed an original, but all of which together constitute one and the same agreement.		
IN WITNESS WHEREOF, said Inventor(s) have executed and delivered this instrument to said Ass	signee as of the dates written below:	
Date: Date: Date:	Martin P. POWERS	
1/1 1/1		
Date: U/7/17 Nicholas H. PUTNAM Date:	Marco BLANCHETTE	
RECEIVED AND AGREED TO BY ASSIGNEE: Dovetail Genomics, LLC		
Date: 11/4/2017 Signature: Eric M. Livak Hale	_	

Page 1 of 1

Innovation Manager

Title:

PATENT ASSIGNMENT	Docket Number 45269-721.601
WHEREAS, the undersigned:	
1. Paul HARTLEY 4265 Mountcastle Way San Jose, California 95136 (hereinafter "Inventor(s)"), have invented certain new and useful improvements in	
Recovering Long-Range Linkage Information from Preserv	ved Samples
for which a United States patent application is executed on even date herewith; or	
☐ for which a PCT application serial number <u>PCT/US2017/032466</u> was filed on <u>May 12, 2017</u> is Cooperation Treaty;	-
(hereinafter, "Application(s)"). The term "Application(s)" also includes all patent applications that share or c	•• • •
WHEREAS, <u>DOVETAIL GENOMICS</u> , <u>LLC</u> , a corporation of the State of <u>Delaware</u> , having a place of business at <u>2161 Delaware Avenue</u> , <u>Santa Cruz</u> . <u>California 95060</u> , <u>USA</u> , (hereinafter "Assignee"), is desirous of acquiring the entire right, title and interest in and to said Application(s), and the inventions disclosed therein, and in and to all embodiments of the inventions, heretofore conceived, made or discovered, whether jointly or severally, by said Inventor(s) (hereinafter collectively referred to as "Inventions"), and in and to any and all patents, inventor's certificates and other forms of protection thereon granted in the United States, foreign countries, or under any international convention, agreement, protocol, or treaty, including those filed under the Paris Convention for the Protection of Industrial Property, The Patent Cooperation Treaty or otherwise (hereinafter "Patent(s)").	
NOW, THEREFORE, in consideration of good and valuable consideration acknowledged by said Assignee:	Inventor(s) to have been received in full from said
1. Said Inventor(s) do hereby sell, assign, transfer and convey unto said Assignee the entire right, title and interest (a) in and to said Inventions; (b) in and to said Applications, including the right to claim priority to and from said Application(s); (c) in and to each and every application that is a divisional, substitution, continuation, or continuation-in-part of any of said Application(s); (d) in and to said Patent(s) and each and every patent issuing or reissuing from any of the foregoing; (e) in and to each and every reissue, reexamination, renewal or extension of any kind of any of the foregoing; (f) in and to each and every patent and application filed outside the United States and corresponding to any of the foregoing; and (g) in and to all claims for past, present and future infringement of the Patent(s), including all rights to sue for and to receive and recover for Assignee's own use all past, present, and future lost profits, royalties, and damages of whatever nature recoverable from an infringement of the Patent(s).	
2. Said Inventor(s) hereby covenant and agree to cooperate with said Assignee to enable said Assignee to enjoy to the fullest extent the right, title and interest herein conveyed in the United States, foreign countries, or under any international convention, agreement, protocol, or treaty. Such cooperation by said Inventor(s) shall include prompt production of pertinent facts and documents, giving of testimony, execution of petitions, oaths, specifications, declarations or other papers, and other assistance all to the extent deemed necessary or desirable by said Assignee (a) for perfecting in said Assignee the right, title and interest herein conveyed; (b) for prosecuting any applications covering said Inventions; (c) for filing and prosecuting aubstitute, divisional, continuing or additional applications covering said Inventions; (d) for filing and prosecuting applications for reissuance of any said Patent(s); (e) for interference or other priority proceedings involving said Inventions; and (f) for legal proceedings involving said Inventions and any applications therefor and any Patent(s) granted thereon, including without limitation reissues and reexaminations, opposition proceedings, cancellation proceedings, priority contests, public use proceedings, infringement actions and court actions; provided, however, that reasonable expenses incurred by said Inventor(s) in providing such cooperation shall be paid for by said Assignce.	
3. The terms and covenants of this assignment shall inure to the benefit of said Assignee, i and shall be binding upon said Inventor(s), their respective heirs, legal representatives and assigns.	its successors, assigns and other legal representatives,
4. Said Inventor(s) hereby warrant, represent and covenant that said Inventor(s) have not econtract, or understanding in conflict herewith.	entered and will not enter into any assignment,
 Said Inventor(s) hereby request that any Patent(s) issuing in the United States, foreign c agreement, protocol, or treaty, be issued in the name of the Assignee, or its successors and assigns, for the so representatives and assigns. 	
6. This instrument will be interpreted and construed in accordance with the laws of the State of California, without regard to conflict of law principles. If any provision of this instrument is found to be illegal or unenforceable, the other provisions shall remain effective and enforceable to the greatest extent permitted by law. This instrument may be executed in counterparts, each of which is deemed an original, but all of which together constitute one and the same agreement.	
Date: Paul VIARTLEY IN WITNESS WHEREOF, said Inventorys) have executed and delivered this instrument to said Assignce as of the dates written below:	
RECEIVED AND AGREED TO BY ASSIGNEE: Dovctail Genomics, LLC	·
Date: Signature: Name: Eric M. Livak Hale	
Title: Innovation Manager	

Page I of I