PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT7254226

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
SEVEN BRIDGES GENOMICS INC.	03/30/2022

RECEIVING PARTY DATA

Name:	IMPERIAL FINANCIAL SERVICES B.V.
Street Address:	W.H. KEESOMLAAN 5
City:	AMSTELVEEN
State/Country:	NETHERLANDS
Postal Code:	1183DJ

PROPERTY NUMBERS Total: 69

Property Type	Number
Application Number:	15809229
Application Number:	14592444
Application Number:	17095206
Application Number:	15061235
Application Number:	14885192
Application Number:	15597464
Application Number:	16988236
Application Number:	15907847
Application Number:	15907835
Application Number:	15669141
Application Number:	15452963
Application Number:	14016833
Application Number:	15899713
Application Number:	14041850
Application Number:	14811057
Application Number:	15196345
Application Number:	15906404
Application Number:	16443402
Application Number:	14517419
Application Number:	17087385

Property Type	Number
Application Number:	14517513
Application Number:	17359338
Application Number:	14177958
Application Number:	16663243
Application Number:	15353105
Application Number:	16436040
Application Number:	14517406
Application Number:	16134619
Application Number:	15809153
Application Number:	17087300
Application Number:	15052354
Application Number:	15887216
Application Number:	16276070
Application Number:	14517451
Application Number:	16106996
Application Number:	14157759
Application Number:	14157979
Application Number:	14744536
Application Number:	14798686
Application Number:	15007874
Application Number:	17023289
Application Number:	15014483
Application Number:	16798759
Application Number:	15014500
Application Number:	16937827
Application Number:	14994385
Application Number:	16525822
Application Number:	15254258
Application Number:	63162400
Application Number:	14847608
Application Number:	15003374
Application Number:	15006391
Application Number:	15196085
Application Number:	16213351
Application Number:	15383102
Application Number:	16841238
Application Number:	29684521
Application Number:	15405474

Property Type	Number
Application Number:	15497524
Application Number:	17191187
Application Number:	14877378
Application Number:	15381492
Application Number:	15699305
Application Number:	16721143
Application Number:	15454811
Application Number:	16857812
Application Number:	15991157
Application Number:	16176833
Application Number:	16861569

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Email:	MBGAUTIER@MINTZ.COM
Correspondent Name:	MATTHEW GAUTIER
Address Line 1:	666 THIRD AVENUE
Address Line 2:	MINTZ LEVIN
Address Line 4:	NEW YORK, NEW YORK 10017

ATTORNEY DOCKET NUMBER:	056375-001
NAME OF SUBMITTER:	ROBERT SWEENEY
SIGNATURE:	/Robert Sweeney/
DATE SIGNED:	03/30/2022

Total Attachments: 10

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PATENT SECURITY AGREEMENT

THIS SECURITY AGREEMENT is entered into as of March 30, 2022 (this "**Agreement**"), by and between Seven Bridges Genomics Inc., a Delaware corporation (the "**Borrower**"), and Imperial Financial Services B.V., a private limited liability company organized and existing under the laws of the Netherlands ("**Lender**").

NOW THEREFORE, in consideration of the premises, Borrower hereby agrees with Lender as follows:

1.   **Grant of Security Interest.** Borrower hereby grants to Lender a first priority security interest in, and collaterally assigns, but does not transfer title to Lender, all of Borrower's right, title and interest in and to the following (collectively, the "**Collateral**") to secure payment and performance of all obligations of Borrower to Lender whether such obligations are direct or indirect, absolute or contingent, due or to become due, now existing or hereafter arising, pursuant to that certain Loan Agreement, dated March 25, 2022 between Lender and Borrower (the "**Loan Agreement**") for a loan in the size of USD $10,000,000.00 (collectively, the "**Obligations**").

The Collateral shall consist of the following:

(a)   Each of the patents and patent applications which are presently owned, issued, acquired or used (whether pursuant to a license or otherwise) by Borrower, in whole or in part, and all patent rights with respect thereto throughout the world, including all proceeds thereof (including license royalties and proceeds of infringement suits), foreign filing rights and rights to extend such patents and patent rights;

(b)   All of Borrower's right, title and interest, in and to the patents and patent applications listed on Schedule A attached hereto, as the same may be updated hereafter from time to time;

(c)   All of Borrower's right, title and interest in all patentable inventions, and to file applications for patent under federal patent law or regulation of any foreign country, and to request reexamination and/or reissue of the patents, the right (without obligation) to sue or bring interference proceedings in the name of Borrower or in the name of Lender for past, present and future infringements of the patents, and all rights (but not obligations) corresponding thereto in the United States and any foreign country; and

(d)   All proceeds of any and all of the foregoing (including, without limitation, license royalties and proceeds of infringement suits) and, to the extent not otherwise included, all payments under insurance, or any indemnity, warranty or guaranty payable by reason of loss or damage to or otherwise with respect to the Collateral.

2.   **Representations and Warranties.** Borrower hereby represents and warrants to Lender the following:

(a)   A true and complete schedule setting forth all patents and patent applications owned or controlled by Borrower or licensed to Borrower, together with a summary description and information in respect of the filing or issuance thereof and expiration dates is set forth on Schedule A;

(b)   Each of the patents is valid and enforceable, and Borrower is not presently aware of any past, present or prospective claim by any third party that any of the patents are invalid or unenforceable, or that the use of any patents violates the rights of any third person, or of any basis for any such claims;

(c)   Borrower is the sole and exclusive owner of the entire and unencumbered right, title and interest in and to each of the patents and patent applications, free and clear of any liens, charges and encumbrances,

including, without limitation, pledges, assignments, licenses, shop rights and covenants by Borrower not to sue third persons;

(d)   Borrower will use commercially reasonable efforts to use proper statutory notice in connection with its use of each of the patents;

(e)   Except for the filing of financing statements with the Secretary of State of Delaware and under the Uniform Commercial Code and filings with the United States Patent and Trademark Office necessary to perfect the security interests created hereunder, no authorization, approval or other action by, and no notice to or filing with, any governmental authority or regulatory body is required either for the grant by Borrower of the security interest hereunder or for the execution, delivery or performance of this Agreement by Borrower or for the perfection of or the exercise by Lender of its rights hereunder to the Collateral in the United States.

3.   Litigation and Proceedings. Borrower shall commence and diligently prosecute in its own name, as the real party in interest, for its own benefit, and its own expense, such suits, administrative proceedings or other actions for infringement or other damages as are in its reasonable business judgment reasonably necessary to protect the Collateral. Borrower shall provide to Lender any information with respect thereto requested in writing by Lender. Lender shall provide at Borrower's expense all necessary cooperation in connection with any such suit, proceeding or action, including, without limitation, joining as a necessary party. Following Borrower's becoming aware thereof, Borrower shall notify Lender of the institution of, or any adverse determination in, any proceeding in the United States Patent and Trademark Office, or any United States, state or foreign court regarding Borrower's claim of ownership in any of its material patents, its right to apply for the same, or its right to keep and maintain such patent rights.

4.   Power of Attorney. Borrower grants Lender power of attorney, having the full authority, and in the place of Borrower and in the name of Borrower, from time to time in Lender's discretion solely during the existence of an Event of Default as defined in the Loan Agreement to take any action and to execute any instrument which Lender may deem necessary or advisable to accomplish the purposes of this Agreement, including, without limitation, as may be subject to the provisions of the Loan Agreement:

(a)   To endorse Borrower's name on all applications, documents, papers and instruments necessary for Lender to use or maintain the Collateral;

(b)   To ask, demand, collect, sue for, recover, impound, receive and give acquittance and receipts for money due or to become due under or in respect of any of the Collateral;

(c)   To file any claims or take any action or institute any proceedings that Lender may deem necessary or desirable for the collection of any of the Collateral or otherwise to enforce Lender's rights with respect to any of the Collateral and solely to the extent authorized in Section 5 below to assign, pledge, convey or otherwise transfer title in or dispose of the Collateral to any person.

5.   Specific Remedies. Upon the occurrence of any Event of Default (as defined in the Loan Agreement):

(a)   Lender may notify licensees to make royalty payments on license agreements directly to Lender;

(b)   Lender may sell or assign the Collateral at public or private sale for such amounts, and at such time or times as Lender deems advisable. Any requirement of reasonable notice of any disposition of the Collateral shall be satisfied if such notice is sent to Borrower ten (10) days prior to such disposition. Borrower shall be credited with the net proceeds of such sale only when they are actually received by Lender, and Borrower shall continue to be liable for any deficiency remaining after the Collateral is sold or collected;

(c)   If the sale is to be a public sale, Lender shall also give notice of the time and place by publishing a notice one time at least ten (10) calendar days before the date of the sale in a newspaper of general circulation in the county in which the sale is to be held; and

(d)   To the maximum extent permitted by applicable law, Lender may be the purchaser of any or all of the Collateral at any public sale and shall be entitled, for the purpose of bidding and making settlement or payment of the purchase price for all or any portion of the Collateral sold at any public sale, to use and apply all or any part of the Obligations as a credit on account of the purchase price of any Collateral payable by Lender at such sale.

6.   **Release.**   At such time as the Obligations shall have been paid in full (other than contingent indemnification obligations in which no claim has been made or is reasonably foreseeable) the Collateral shall be released from the security interests created hereby, and this Agreement and all obligations (other than those expressly stated to survive such termination) of the Lender and the Borrower hereunder shall terminate, all without delivery of any instrument or any further action by any party, and all rights to the Collateral shall revert to the Borrower. Upon any such termination, the Lender (at the Borrower's request and sole cost) will promptly execute and deliver to the Borrower (with such customary representations and warranties from a secured lender releasing its lien as the Borrower may reasonably request) such documents as the Borrower may reasonably request and as are provided to the Lender to evidence such termination.

7.   **Governing Law.**   All acts and transactions hereunder and the rights and obligations of the parties hereto shall be governed, construed and interpreted in accordance with the laws of the State of Delaware.

[Signature Page to Follow]

IN WITNESS WHEREOF, the Borrower and Lender have caused this Agreement to be executed by their duly authorized officers as of the date first above written.

Seven Bridges Genomics Inc.

By:_____
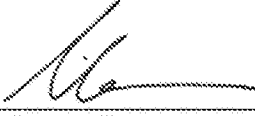Name: Tarık Buğra Yıldırım
Title: Executive Chairman

Imperial Financial Services B.V.

By:_____
Name: Evren Öztürk
Title: Managing Director A

By:_____
Name: Nihan Pınar
Title: Managing Director B

[Signature Page to Patent Security Agreement]

Title	Docket No.	Application Num	Publication Num	Patent Num	Filing Date	Issue Date
SYSTEMS AND METHODS FOR ALIGNING SEQUENCES TO PERSONALIZED REFERENCES	S1961.70001US01	15/809,229	US-2018-0157792-A1		11/10/2017	
SYSTEMS AND METHODS FOR USE OF KNOWN ALLELES IN READ MAPPING	SBG-010/01US 31079/34	14/592,444	20150199475		1/8/2015	12/15/2020
SYSTEMS AND METHODS FOR USE OF KNOWN ALLELES IN READ MAPPING		17/095,206			11/20/2020	
SYSTEMS AND METHODS FOR GENOMIC PATTERN ANALYSIS	SBG-015/01US 31079/81	15/061,235	20160259880	10192026	3/4/2016	1/29/2019
BIOLOGICAL GRAPH OR SEQUENCE SERIALIZATION	SBG-021/00US 31079/45	14/885,192	US-2017-0109383-A1		10/16/2015	
SYSTEMS AND METHODS FOR SEQUENCE ENCODING, STORAGE, AND COMPRESSION	SBG-027.23-ORG	15/597,464	US-2018-0089369-A1	10790044	5/17/2017	09/29/2020
SYSTEMS AND METHODS FOR SEQUENCE ENCODING, STORAGE, AND COMPRESSION		16/988,236			8/20/2020	
DATA SECURITY IN BIOINFORMATIC SEQUENCE ANALYSIS	SBG-061	15/907,847	US-2018-0253553-A1		2/28/2018	
WATERMARKING FOR DATA SECURITY IN BIOINFORMATIC SEQUENCE ANALYSIS	SBG-067	15/907,835	US-2018-0253536-A1	10726110	2/28/2018	07/28/2020
COMPUTER METHOD AND SYSTEM OF IDENTIFYING GENOMIC MUTATIONS USING GRAPH-BASED LOCAL ASSEMBLY	5326.1000-001	15/669,141	US-2018-0039730-A1		8/4/2017	
SYSTEMS AND METHODS FOR ALIGNING SEQUENCES TO GRAPH REFERENCE CONSTRUCTS	S1961.70002US00	15/452,963	US-2018-0260520-A1		3/8/2017	
METHODS AND SYSTEMS FOR ALIGNING SEQUENCES	SBG-001/01US 31079/3	14/016,833	20150057946	9898575	9/3/2013	2/20/2018
METHODS AND SYSTEMS FOR ALIGNING SEQUENCES	SBG-001/02US	15/899,713	US-2018-0357367-A1		2/20/2018	
METHODS AND SYSTEMS FOR DETECTING SEQUENCE VARIANTS	SBG-002/01US (31079/7)	14/041,850	20150056613	9116866	9/30/2013	8/25/2015
METHODS AND SYSTEMS FOR DETECTING SEQUENCE VARIANTS	SBG-002/02US 31079/44	14/811,057	2015347678	9390226	7/28/2015	7/12/2016

Title	Docket No.	Application No.	Publication No.	Patent No.	Date	Date
METHODS AND SYSTEMS FOR DETECTING SEQUENCE VARIANTS	SBG-002/03US 31079/111	15/196,345	20160306921	9904763	6/29/2016	2/27/2018
METHODS AND SYSTEMS FOR DETECTING SEQUENCE VARIANTS	SBG-002/04US	15/906,404	US-2018-0336314-A1	10325675	2/27/2018	6/18/2019
METHODS AND SYSTEMS FOR DETECTING SEQUENCE VARIANTS	S1961.70006US05	16/443,402			6/17/2019	
METHODS AND SYSTEMS FOR QUANTIFYING SEQUENCE ALIGNMENT	SBG-006/01US	14/517,419	20150199473	10,832,797	10/17/2014	11/10/2020
METHODS AND SYSTEMS FOR QUANTIFYING SEQUENCE ALIGNMENT		17/087,385			11/2/2020	
METHODS AND SYSTEMS FOR ALIGNING SEQUENCES IN THE PRESENCE OF REPEATING ELEMENTS	SBG-007/01US	14/517,513	20150199474	11,049,587	10/17/2014	6/25/2021
METHODS AND SYSTEMS FOR ALIGNING SEQUENCES IN THE PRESENCE OF REPEATING ELEMENTS		17/359,338			6/25/2021	
SYSTEMS AND METHODS FOR ANALYZING SEQUENCE DATA	SBG-014/00US 31079/19	14/177,958	20150227685	9817944	2/11/2014	11/14/2017
SYSTEMS AND METHODS FOR ADAPTIVE LOCAL ALIGNMENT FOR GRAPH GENOMES	S1961.70024US01	16/663,243				
Systems and Methods for Aligning Sequences to Graph References	SBG-058/00US	15/353,105	US-2018-0137387-A1	10319455	11/16/2016	6/11/2019
Systems and Methods for Aligning Sequences to Graph References	S1961.70027US01	16/436,640		11,062,793	6/10/2019	
METHODS AND SYSTEMS FOR GENOTYPING GENETIC SAMPLES	SBG-005/01US	14/517,406	20150199472	10078724	10/17/2014	9/18/2018
METHODS AND SYSTEMS FOR GENOTYPING GENETIC SAMPLES	SBG-005/02US	16/134,619			9/18/2018	
SYSTEMS AND METHODS FOR ANALYZING SEQUENCE DATA	SBG-014/01US	15/809,153	US-2018-0232483-A1		11/10/2017	12/29/2020
SYSTEMS AND METHODS FOR ANALYZING SEQUENCE DATA	SBG-014/01US	17/087,300			11/2/2020	
SYSTEMS AND METHODS FOR GENOTYPING WITH GRAPH REFERENCE	SBG-026/00US 31079/54	15/052,354	US-2017-0242958-A1	10262102	2/24/2016	4/16/2019

SYSTEMS AND METHODS FOR PROVIDING ASSISTED LOCAL ALIGNMENT	SBG-032/01US	15/887,216	US-2018-0247016-A1		2/2/2018	
SYSTEM AND METHOD FOR SEQUENCE IDENTIFICATION IN REASSEMBLY VARIANT CALLING	SBG-083/01US	16/276,070			2/14/2019	
METHODS AND SYSTEMS FOR IDENTIFYING DISEASE-INDUCED MUTATIONS	SBG-008/01US	14/517,451	20150197815	10053736	10/17/2014	8/21/2018
METHODS AND SYSTEMS FOR DETECTING SEQUENCE VARIANTS	SBG-008/02US	16/106,996			8/21/2018	
SYSTEMS AND METHODS FOR TRANSCRIPTOME ANALYSIS	SBG-009/01US-1 31079/13	14/157,759	20150112658	9063914	1/17/2014	6/23/2015
SYSTEMS AND METHODS FOR TRANSCRIPTOME ANALYSIS	SBG-009/02US-1 31079/14	14/157,979	20150112602	9092402	1/17/2014	7/28/2015
SYSTEMS AND METHODS FOR USING PAIRED-END DATA IN DIRECTED ACYCLIC STRUCTURE	SBG-009/02US-2 31079/43	14/798,686	20150310167	10055539	7/14/2015	8/21/2018
SYSTEMS AND METHODS FOR USING PAIRED-END DATA IN DIRECTED ACYCLIC STRUCTURE		14/744,536	20150302145	10204207	6/19/2015	2/12/2019
SYSTEMS AND METHODS FOR EPIGENETIC ANALYSIS	SBG-018/01US 31079/59	15/007,874	20170058320	10,793,895	1/27/2016	10/6/2020
SYSTEMS AND METHODS FOR EPIGENETIC ANALYSIS		17/023,289			9/16/2020	
SYSTEMS AND METHODS FOR MITOCHONDRIAL ANALYSIS	SBG-019/01US 31079/69	15/014,483	20170058341	10584380	2/3/2016	3/10/2020
SYSTEMS AND METHODS FOR MITOCHONDRIAL ANALYSIS		15/798,759			2/24/2020	
SYSTEMS AND METHODS FOR ANALYZING VIRAL NUCLEIC ACIDS	SBG-020/01US 31079/70	15/014,500	20170058365	10724110	2/3/2016	7/28/2020
SYSTEMS AND METHODS FOR ANALYZING VIRAL NUCLEIC ACIDS	S1961.70022US02	16/937,827			7/24/2020	
SYSTEMS AND METHODS FOR ANALYZING CIRCULATING TUMOR DNA	SBG-022/00US 31079/48	14/994,385	US-2017-0198351-A1	10364468	1/13/2016	7/30/2019
SYSTEMS AND METHODS FOR ANALYZING CIRCULATING TUMOR DNA	S1961.70023US01	16/525,822			7/30/2019	
SYSTEMS AND METHODS FOR DETECTING RECOMBINATION	SBG-029/00US 31079/110	15/254,258	US-2018-0060480-A1		9/1/2016	
Systems and Methods for Generating Graph References		63/162,400			3/17/2021	

Title	Ref No / App No	Pub No	Patent No	Date	Date
VARIANT-CALLING ON DATA FROM AMPLICON-BASED SEQUENCING METHODS	SBG-013/01US 31079/46 14/847,608	2016070856		9/8/2015	
SYSTEMS AND METHODS FOR HAPLOTYPING	SBG-016/01US 31079/57 15/003,374	2016034273Z	10275567	1/21/2016	4/30/2019
SYSTEMS AND METHODS FOR ENCODING GENETIC VARIATION FOR A POPULATION	SBG-028/00US 31079/72 15/006,391	US-2017-0211205-A1	10460829	1/26/2016	10/29/2019
METHOD AND APPARATUS FOR IDENTIFYING TANDEM REPEATS IN A NUCLEOTIDE SEQUENCE	SBG-043/00US 15/196,085	US-2018-0004891-A1		6/29/2016	6/19/2019
DETECTION OF INSUFFICIENT HOMOLOGY REGIONS IN A REFERENCE SEQUENCE	SBG-060/01US 16/213,351			12/7/2018	
GENERATION AND USE OF SIMULATED GENOMIC DATA	SBG-063 15/383,102	US-2018-0173848-A1	10629292	12/19/2016	4/21/2020
GENERATION AND USE OF SIMULATED GENOMIC DATA	SBG-063/C1 16/841,238	US-2018-0004891-A1		12/19/2019	
GRAPHICAL USER INTERFACE WITH PILL SHAPE FOR A DISPLAY SCREEN	5326.1001-001 29/684,521	D925,574		3/21/2019	
METHODS AND SYSTEMS FOR GENERATING, BY A VISUAL QUERY BUILDER, A QUERY OF A GENOMIC DATA STORE	SBG-1030US 15/405,474		10545955	1/13/2017	1/28/2020
METHODS AND SYSTEMS FOR STREAM-PROCESSING OF BIOMEDICAL DATA	SBG-1031US 15/497,524		10,972,574	4/26/2017	
METHODS AND SYSTEMS FOR STREAM-PROCESSING OF BIOMEDICAL DATA	SBG-1031USC1 17/191,187			3/3/2021	
SYSTEMS AND METHODS FOR SMART TOOLS IN SEQUENCE PIPELINES	SBG-012/01US 31079/49 14/877,378	2016103659	9558321	10/7/2015	1/31/2017
SYSTEMS AND METHODS FOR SMART TOOLS IN SEQUENCE PIPELINES	SBG-012/02US 31079/125 15/381,492	US-2017-0199764-A1	10083064	12/16/2016	9/25/2018
HASHING DATA-PROCESSING STEPS IN WORKFLOW ENVIRONMENTS	SBG-044 15/699,305	US-2018-0081717-A1		9/8/2017	
HASHING DATA-PROCESSING STEPS IN WORKFLOW ENVIRONMENTS	SBG-044C1/116567-5002 16/721,143			12/19/2019	
SYSTEMS AND METHODS FOR PROCESSING COMPUTATIONAL WORKFLOWS	SBG-056/01US 15/454,811	US-2018-0053328-A1	10672156	3/9/2017	6/2/2020

Title	Docket No.	Application No.	Publication/Patent No.		Date	Date
SYSTEMS AND METHODS FOR PROCESSING COMPUTATIONAL WORKFLOWS		16/857,812			4/24/2020	
SYSTEMS AND METHODS FOR SCHEDULING JOBS FROM COMPUTATIONAL WORKFLOWS	SBG-075/01US/116567-5008	15/991,157	US-2018-0349183-A1		5/29/2018	
SYSTEM AND METHOD FOR DYNAMIC CONTROL OF WORKFLOW EXECUTION	SBG-084/01US	16/175,833	US 2019-0129769 A1	10,678,613	10/31/2018	6/9/2020
SYSTEM AND METHOD FOR DYNAMIC CONTROL OF WORKFLOW EXECUTION	SBG-084C1/116567-5015	16/861,569			4/29/2020	