

PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

SUBMISSION TYPE:

NEW ASSIGNMENT

NATURE OF CONVEYANCE:

RELEASE BY SECURED PARTY

CONVEYING PARTY DATA

Name	Execution Date
Abiomed, Inc.	07/31/2008

RECEIVING PARTY DATA

Name:	World Heart Inc.
Street Address:	7799 Pardee Lane
City:	Oakland
State/Country:	CALIFORNIA
Postal Code:	94621

PROPERTY NUMBERS Total: 21

Property Type	Number
Patent Number:	7338521
Patent Number:	6949066
Application Number:	10186307
Application Number:	10370018
Application Number:	11138041
Application Number:	11449973
Application Number:	11450004
Patent Number:	5350413
Patent Number:	5888242
Patent Number:	5925043
Patent Number:	6015272
Patent Number:	6066086
Patent Number:	6074180
Patent Number:	6244835
Patent Number:	6270831

PATENT

500610031

REEL: 021328 FRAME: 0167

CH \$840.00 7338521

Patent Number:	6302661
Patent Number:	6394769
Patent Number:	6447265
Patent Number:	6447266
Patent Number:	6595762
Patent Number:	6879126

# **CORRESPONDENCE DATA**

Fax Number: (973)422-2963

*Correspondence will be sent via US Mail when the fax attempt is unsuccessful.*

Email: bweber@lowenstein.com

Correspondent Name: Lowenstein Sandler PC

Address Line 1: 65 Livingston Avenue

Address Line 4: Roseland, NEW JERSEY 07068

ATTORNEY DOCKET NUMBER:	21849-2
NAME OF SUBMITTER:	Brian W. Weber

# **Total Attachments: 26**

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## INTELLECTUAL PROPERTY SECURITY INTEREST RELEASE ("RELEASE")

This Release granted on this 31st day of July, 2008, by ABIOMED, INC., as lender and as investor ("**Abiomed**"), to WORLD HEART CORPORATION and WORLD HEART INC. (collectively, "**Assignor**"), provides as follows:

WHEREAS, Assignor has heretofore granted to Abiomed a security interest in (i) the Intellectual Property Collateral ("**Subsidiary Intellectual Property Collateral**"), as defined in the Intellectual Property Security Agreement, dated December 11, 2007, by and between World Heart Inc. and ABIOMED, Inc., and (ii) the Intellectual Property Collateral (the "**Parent Intellectual Property Collateral**" and, together with the Subsidiary Intellectual Property Collateral, the "**World Heart Intellectual Property**"), as defined in the Intellectual Property Security Agreement, dated December 11, 2007, by and between World Heart Corporation and ABIOMED, Inc., including, but not limited to, the properties identified in Appendix A, B, C, and D attached hereto.

WHEREAS, Abiomed wishes to release and restore all right, title and interest in and to the World Heart Intellectual Property to Assignor and further acknowledges payment in full of the loan facility extended to the Assignor against which the security interest in the World Heart Intellectual Property served as collateral.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, Abiomed hereby releases, discharges, quit claims and relinquishes unto Assignor any and all right, title and interest in and to the World Heart Intellectual Property, including but not limited to the security interests duly recorded in the United States Patent and Trademark Office on (i) December 19, 2007 at Reel 020270, Frame 0084 and at Reel 020270, Frame 0062, and (ii) on December 20, 2007 at Reel 3683 Frame 0467 and at Reel 3683, Frame 0480.

The undersigned hereby states that he/she is authorized to sign of behalf of Abiomed.

ABIOMED, INC.

By: Michael Minogue Date: July 31, 2008  
Name: Michael R. Minogue  
Title: CEO, President and Chairman of the Board

# APPENDIX A

PATENT NO.	TITLE	OWNERSHIP	SECURITY AGREEMENT	REEL/FRAME
7,338,521	Low Profile Inlet For An Implantable Blood Pump	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,969,345	Miniature, Pulsatile Implantable Ventricular Assist Devices And Methods Of Controlling Ventricular Assist Devices	World Heart Corporation	Assignor: World Heart Corporation Assignee: Abiomed, Inc.	020270/0062
6,949,066	Rotary Blood Pump Diagnostics And Cardiac Output Controller	World Heart Corporation	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,264,601	Implantable Ventricular Assist Device	World Heart Corporation	Assignor: World Heart Corporation Assignee: Abiomed, Inc.	020270/0062
2003/0023255 (Publication)	Cannulation Apparatus And Method	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
2003/0130668 (Publication)	Endoscopic Cannulation Apparatus And Method	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
2005/0214131 (Publication)	Methods And Systems For Determining A Viscosity Of A Fluid	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
2008/0045777 (Publication)	Electromagnetic Drive For A Ventricular Assist Device	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
2006/0287568 (Publication)	Single Sac Ventricular Assist Device	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
5,350,413	Transcutaneous Energy Transfer Device	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
5,888,242	Speed Control System For Implanted Blood Pumps	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
5,925,043	Electrosurgical Electrode With A conductive, Non-Stick Coating	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,015,272	Magnetically Suspended Miniature Fluid Pump And Method Of Designing The Same	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,066,086	Speed Control System For Implanted Blood Pumps	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,074,180	Hybrid Magnetically Suspended And Rotated Centrifugal Pumping Apparatus And Method	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,244,835	Blood Pump Having A Magnetically Suspended Rotor	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,270,831	Method And Apparatus For Providing A Conductive, Amorphous Non-Stick Coating	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,302,661	Electromagnetically Suspended And Rotated Centrifugal Pumping Apparatus And Method	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,394,769	Pump Having A Magnetically Suspended Rotor With One Active Control Axis	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,447,265	Magnetically Suspended Miniature Fluid Pump And Method Of Designing The Same	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,447,266	Blood Pump Having A Magnetically Suspended Rotor	World Heart Inc.	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,595,762	Hybrid Magnetically Suspended And Rotated Centrifugal Pumping Apparatus And Method	World Heart Corporation	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
6,879,126	Method And System For Positioning A Movable Body In A Magnetic Bearing System	World Heart Corporation	Assignor: World Heart Inc. Assignee: Abiomed, Inc.	020270/0084
5,012,176	Apparatus And Method For calorimetrically Determining	World Heart Corporation	Assignor: World Heart Corporation Assignee: Abiomed, Inc.	020270/0062

PATENT NO.	TITLE	OWNERSHIP	SECURITY AGREEMENT	REEL/FRAME
	Battery Charge State			
5,511,958	Blood Pump System	World Heart Corporation	Assignor: World Heart Corporation Assignee: Abiomed, Inc.	020270/0062
5,599,173	Blood Pump System	World Heart Corporation	Assignor: World Heart Corporation Assignee: Abiomed, Inc.	020270/0062
5,810,708	Ventricular Assist Conduit With Externally Supported Tissue Valve	World Heart Corporation	Assignor: World Heart Corporation Assignee: Abiomed, Inc.	020270/0062
6,001,056	Smooth Ventricular Assist Device Conduit	World Heart Corporation	Assignor: World Heart Corporation Assignee: Abiomed, Inc.	020270/0062
6,102,845	Ventricular Assist Device With Minimal Blood Contacting Surfaces	World Heart Corporation	Assignor: World Heart Corporation Assignee: Abiomed, Inc.	020270/0062
6,264,601	Implantable Ventricular Assist Device	World Heart Corporation	Assignor: World Heart Corporation Assignee: Abiomed, Inc.	020270/0062

# APPENDIX B

Mark:	Jurisdiction	Registration No:	Serial No. / Application No:	Registration Date (mm/dd/yyyy)
WORLD HEART (Stylized)	US	2,866,950	75/168,938	07/7/2004
QUESTCOAT	US	2,750,753	75/982,292	08/12/2003
LEVACOR	US	---	78/937,087	---
NOVACOR	US	1,424,720	73/603,099	01/13/1987
NOVACOR	US	1,415,342	73/551,266	10/12/1986
PEDIAFLOW	US	---	78/571,469	---
HEARTLINK & DESIGN	European Union (CTM)	001278654	001278654	12/14/2000
NOVACOR	Brazil	820683426	---	
WORLDHEART & DESIGN	Australia	726311	726311	01/24/1997
WORLDHEART & DESIGN	Canada	535981	0819093	10/27/2000
WORLDHEART & DESIGN	European Union (CTM)	000449751	000449751	07/09/1999

## APPENDIX C

### INTELLECTUAL PROPERTY SECURITY AGREEMENT

THIS INTELLECTUAL PROPERTY SECURITY AGREEMENT, dated as of December 11, 2007, is made by World Heart Corporation ("**Company**"), in favor of ABIOMED, Inc. (the "**Investor**").

#### WITNESSETH:

WHEREAS, pursuant to the Purchase Agreement, dated as of December 11, 2007 (as amended, restated, supplemented or otherwise modified from time to time, the "**Purchase Agreement**"), among the Company, WHI and the Investor, the Investor has agreed to make a loan to the Company upon the terms and subject to the conditions set forth therein;

WHEREAS, the Company has agreed, pursuant to a Security Agreement dated as of December 11, 2007 herewith in favor of the Investor (the "**Security Agreement**"), to grant a security interest in all assets to the Investor to secure payment of the Obligations of the Company;

NOW, THEREFORE, in consideration of the premises and to induce the Investor to enter into the Purchase Agreement and to make a loan to the Company thereunder, the Company hereby agrees with the Investor as follows:

1. Defined Terms. Capitalized terms used herein without definition are used as defined in the Security Agreement.

2. Grant of Security Interest in Intellectual Property Collateral. The Company, as collateral security for the prompt and complete payment and performance when due under the terms of the Note, of the Obligations, hereby mortgages, pledges and hypothecates to the Investor and grants to the Investor a Lien on and security interest in, all of its right, title and interest in, to and under the following Collateral of the Company (the "**Intellectual Property Collateral**"):

(a) Copyrights.

(i) all of its Copyrights and all IP Licenses providing for the grant by or to the Company of any right under any Copyright, including, without limitation, those referred to on Schedule 1A hereto;

(ii) all renewals, reversions and extensions of the foregoing;

(iii) all income, royalties, proceeds and liabilities at any time due or payable or asserted under and with respect to any of the foregoing, including, without limitation, all rights to sue and recover at law or in equity for any past, present and future infringement, misappropriation, dilution, violation or other impairment thereof.

(b) Patents.



(i) all of its Patents and all IP Licenses providing for the grant by or to the Company of any right under any Patent, including, without limitation, those referred to on Schedule 1B hereto;

(ii) all reissues, reexaminations, continuations, continuations-in-part, divisionals, renewals and extensions of the foregoing;

(iii) all income, royalties, proceeds and liabilities at any time due or payable or asserted under and with respect to any of the foregoing, including, without limitation, all rights to sue and recover at law or in equity for any past, present and future infringement, misappropriation, dilution, violation or other impairment thereof.

(c) Trademarks.

(i) all of its Trademarks and all IP Licenses providing for the grant by or to the Company of any right under any Trademark, including, without limitation, those referred to on Schedule 1C hereto;

(ii) all renewals and extensions of the foregoing;

(iii) all goodwill of the business connected with the use of, and symbolized by, each such Trademark; and

(iv) all income, royalties, proceeds and liabilities at any time due or payable or asserted under and with respect to any of the foregoing, including, without limitation, all rights to sue and recover at law or in equity for any past, present and future infringement, misappropriation, dilution, violation or other impairment thereof, other than, in each case, with respect to Excluded Property.

3. Security Agreement. The security interest granted pursuant to this Intellectual Property Security Agreement is granted in conjunction with the security interest granted to the Investor pursuant to the Security Agreement and the Company hereby acknowledges and agrees that the rights and remedies of the Investor with respect to the security interest in the Intellectual Property Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein.

4. Company Remains Liable. The Company hereby agrees that, anything herein to the contrary notwithstanding, the Company shall assume full and complete responsibility for the prosecution, defense, enforcement or any other reasonably necessary or desirable actions in connection with their Intellectual Property Collateral and IP Licenses subject to a security interest hereunder.

5. Counterparts. This Intellectual Property Security Agreement may be executed in any number of counterparts and by different parties in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. Signature pages may be detached from multiple separate counterparts and attached to a single counterpart.

6. Governing Law. This Intellectual Property Security Agreement and the rights and obligations of the parties hereto shall be governed by, and construed and interpreted in accordance with, the law of the State of New York.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the Company has caused this Intellectual Property Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

WORLD HEART CORPORATION

By: \_\_\_\_\_  
Name:  
Title:

ACCEPTED AND AGREED

as of the date first above written:

ABIOMED, INC.

By: \_\_\_\_\_  
Name:  
Title:

**SCHEDULE 1A  
TO  
INTELLECTUAL PROPERTY SECURITY AGREEMENT**

- A. REGISTERED COPYRIGHTS  
None
- B. COPYRIGHT APPLICATIONS  
None
- C. IP LICENSES  
None

**SCHEDULE 1B  
TO  
INTELLECTUAL PROPERTY SECURITY AGREEMENT**

**A. REGISTERED PATENTS**

<b>Current Owner/ Assignee of Record</b>	<b>Title</b>	<b>Jurisdiction</b>	<b>Patent Number</b>	<b>Issue/ Grant Date</b>	<b>Comments</b>
World Heart Corp	Apparatus and method for calorimetrically determining battery charge state	US	5,012,176	4/30/1991	
World Heart Corp	Blood pump system	US	5,511,958	4/30/1996	
World Heart Corp	Blood pump system	US	5,599,173	2/4/1997	
World Heart Corp	Ventricular assist conduit with externally supported tissue valve	US	5,810,708	9/22/1998	
World Heart Corp	Ventricular assist device with valved blood conduit and method of making	US	6,102,845	8/15/2000	
World Heart Corp	Smooth ventricular assist device conduit	US	6,001,056	12/14/1999	
World Heart Corp	Implantable ventricular assist device	US	6,264,601	7/24/2001	
World Heart Corp	Miniature, pulsatile implantable ventricular assist devices and methods of controlling ventricular assist devices	US	6,969,345	11/29/2005	
World Heart Corp/ Baxter Int'l Inc.	Blood pump system	EP	743863	9/24/2003	
World Heart Corp/ Baxter Int'l Inc.	Blood pump system	DE	69531822.5	9/24/2003	
World Heart Corp	Blood pump system	CA	2,182,665	4/15/2003	
World Heart Corp/ Baxter Int'l Inc.	Blood pump system	FR	743863	9/24/2003	
World Heart Corp/ Baxter Int'l Inc.	Blood pump system	GB	743863	9/24/2003	
World Heart Corp/ Baxter Int'l Inc.	Blood pump system	IT	743863	9/24/2003	

Current Owner/ Assignee of Record	Title	Jurisdiction	Patent Number	Issue/ Grant Date	Comments
World Heart Corp	Blood pump system	JP	3600835	10/1/2004	
World Heart Corp/ Baxter Int'l Inc.	Ventricular assist device with valved blood conduit	EP	695198	7/16/2003	
World Heart Corp/ Edwards Lifesciences Corp	Ventricular assist device with valved blood conduit and method of making	CA	2,158,547	5/4/2004	
World Heart Corp/ Baxter Int'l Inc.	Ventricular assist device with valved blood conduit	DE	69531272.3	7/16/2003	
World Heart Corp/ Baxter Int'l Inc.	Ventricular assist device with valved blood conduit	FR	695198	7/16/2003	
World Heart Corp/ Baxter Int'l Inc.	Ventricular assist device with valved blood conduit	GB	695198	7/16/2003	
World Heart Corp/ Baxter Int'l Inc.	Ventricular assist device with valved blood conduit	IT	695198	7/16/2003	
World Heart Corp	Ventricular assist device with valved blood conduit and method of making	JP	3680949	5/27/2005	
World Heart Corp	Implantable ventricular assist device	EP	1191956	9/20/2006	
World Heart Corp	Implantable ventricular assist device	DE	P69933314. 8	9/20/2006	
World Heart Corp	Implantable ventricular assist device	FR	1191956	9/20/2006	
World Heart Corp	Implantable ventricular assist device	GB	1191956	9/20/2006	
World Heart Corp	Implantable ventricular assist device	IT	1191956	9/20/2006	
World Heart Corp	Smooth ventricular assist device conduit	CA	2,391,234	1/10/2006	

B. PATENT APPLICATIONS

Current Owner/ Applicant of Record	Title	Jurisdiction	Application Number	Filing Date	Comments
World Heart Corp	Miniature, pulsatile implantable ventricular assist devices and methods of controlling ventricular assist devices	EP	03790319.2	12/5/2003	
World Heart Corp	Miniature, pulsatile implantable ventricular assist devices and methods of controlling ventricular assist devices	CA	2,506,758	12/5/2003	
World Heart Corp	Miniature, pulsatile implantable ventricular assist devices and methods of controlling ventricular assist devices	JP	2004-559269	12/5/2003	
World Heart Corp	Implantable ventricular assist device	CA	2,368,200	12/15/1999	
World Heart Corp/ Edwards Lifesciences Corp	Implantable ventricular assist device	JP	2000-609121	12/15/1999	
World Heart Corp	Smooth ventricular assist device conduit	EP	99968849.2	11/9/1999	

C. IP LICENSES

Name of Agreement	Parties	Date	Patents
License Agreement	University of Utah Research Foundation and MedQuest Products, Inc	3/1/99	6,074,180 6,302,661 6,394,769 6,595,762
Assignment, Assumption and Amendment Agreement	University of Utah Research Foundation, MedQuest Products, Inc and World Heart Corp	6/8/05	
License Agreement	Virginia Patent Foundation and MedQuest Products, Inc	3/31/99	6,074,180 6,302,661 6,394,769 6,595,762
Consent to Assign and License Agreement	Virginia Patent Foundation, MedQuest Products, Inc and World Heart Corp	7/18/05	
License Agreement	University of Pittsburgh and MedQuest Products, Inc	2/13/02	6,015,272 6,244,835* 6,447,265 6,447,266* 5,888,242 6,066,086*
Assignment, Assumption and Amendment Agreement	University of Pittsburgh and MedQuest Products, Inc and World Heart Corp	7 /11/05	* Some question exists re. U of Pitt's rights to these patents
Amended & Restated TET License Agreement	Ottawa Heart Institute Research Corporation and World Heart Corp.	9/28/07	5,350,413

**SCHEDULE 1C  
TO  
INTELLECTUAL PROPERTY SECURITY AGREEMENT**

**A. REGISTERED TRADEMARKS**

<b>Current Owner/ Applicant of Record</b>	<b>Mark</b>	<b>Jurisdiction</b>	<b>Registration Number</b>	<b>Issue/ Grant Date</b>	<b>Comments</b>
World Heart Corp	NOVACOR	US	1,415,342	10/28/1986	Service Mark
World Heart Corp	NOVACOR	US	1,424,720	1/13/1987	Trademark
World Heart Corp	NOVACOR	BR	820683426		
World Heart Corp	WORLDHEART	US	2,866,950	7/27/2004	
World Heart Corp	MEDQUEST	US	2,480,212	8/21/2001	No Material value; to be abandoned
World Heart Corp	QUESTCOAT	US	2,750,753	8/12/2003	No Material value; to be abandoned

**B. TRADEMARK APPLICATIONS**

None

**C. IP LICENSES**

None



## APPENDIX D

### INTELLECTUAL PROPERTY SECURITY AGREEMENT

THIS INTELLECTUAL PROPERTY SECURITY AGREEMENT, dated as of December 11, 2007, is made by World Heart Inc. ("Borrower"), in favor of ABIOMED, Inc. (the "Lender").

#### WITNESSETH:

WHEREAS, pursuant to the Purchase Agreement, dated as of December 11, 2007 (as amended, restated, supplemented or otherwise modified from time to time, the "Purchase Agreement"), among the Borrower, the Parent and the Lender, the Lender has agreed to make a loan to the Borrower upon the terms and subject to the conditions set forth therein;

WHEREAS, the Borrower has agreed, pursuant to a Security Agreement dated as of December 11, 2007 herewith in favor of the Lender (the "Security Agreement"), to grant a security interest in all assets to the Lender to secure payment of the Obligations of the Borrower;

NOW, THEREFORE, in consideration of the premises and to induce the Lender to enter into the Purchase Agreement and to make a loan to the Borrower thereunder, the Borrower hereby agrees with the Lender as follows:

1. Defined Terms. Capitalized terms used herein without definition are used as defined in the Security Agreement.

2. Grant of Security Interest in Intellectual Property Collateral. The Borrower, as collateral security for the prompt and complete payment and performance when due under the terms of the Note, of the Secured Obligations, hereby mortgages, pledges and hypothecates to the Lender and grants to the Lender a Lien on and security interest in, all of its right, title and interest in, to and under the following Collateral of the Borrower (the "Intellectual Property Collateral");

(a) Copyrights.

(i) all of its Copyrights and all IP Licenses providing for the grant by or to the Borrower of any right under any Copyright, including, without limitation, those referred to on Schedule 1A hereto;

(ii) all renewals, reversions and extensions of the foregoing;

(iii) all income, royalties, proceeds and liabilities at any time due or payable or asserted under and with respect to any of the foregoing, including, without limitation, all rights to sue and recover at law or in equity for any past, present and future infringement, misappropriation, dilution, violation or other impairment thereof, other than, in each case, with respect to Excluded Property.

(b) Patents.

(i) all of its Patents and all IP Licenses providing for the grant by or to the Borrower of any right under any Patent, including, without limitation, those referred to on Schedule 1B hereto;

(ii) all reissues, reexaminations, continuations, continuations-in-part, divisionals, renewals and extensions of the foregoing;

(iii) all income, royalties, proceeds and liabilities at any time due or payable or asserted under and with respect to any of the foregoing, including, without limitation, all rights to sue and recover at law or in equity for any past, present and future infringement, misappropriation, dilution, violation or other impairment thereof, other than, in each case, with respect to Excluded Property.

(c) Trademarks.

(i) all of its Trademarks and all IP Licenses providing for the grant by or to the Borrower of any right under any Trademark, including, without limitation, those referred to on Schedule 1C hereto;

(ii) all renewals and extensions of the foregoing;

(iii) all goodwill of the business connected with the use of, and symbolized by, each such Trademark; and

(iv) all income, royalties, proceeds and liabilities at any time due or payable or asserted under and with respect to any of the foregoing, including, without limitation, all rights to sue and recover at law or in equity for any past, present and future infringement, misappropriation, dilution, violation or other impairment thereof, other than, in each case, with respect to Excluded Property.

3. Security Agreement. The security interest granted pursuant to this Intellectual Property Security Agreement is granted in conjunction with the security interest granted to the Lender pursuant to the Security Agreement and the Borrower hereby acknowledges and agrees that the rights and remedies of the Lender with respect to the security interest in the Intellectual Property Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein.

4. Borrower Remains Liable. The Borrower hereby agrees that, anything herein to the contrary notwithstanding, the Borrower shall assume full and complete responsibility for the prosecution, defense, enforcement or any other reasonably necessary or desirable actions in connection with their Intellectual Property Collateral and IP Licenses subject to a security interest hereunder.

5. Counterparts. This Intellectual Property Security Agreement may be executed in any number of counterparts and by different parties in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. Signature pages may be detached from multiple separate counterparts and attached to a single counterpart.

6. Governing Law. This Intellectual Property Security Agreement and the rights and obligations of the parties hereto shall be governed by, and construed and interpreted in accordance with, the law of the State of New York.

IN WITNESS WHEREOF, the Borrower has caused this Intellectual Property Security Agreement to be executed and delivered by its duly authorized officer as of the date first set forth above.

WORLD HEART INC.

By: \_\_\_\_\_  
Name:  
Title:

ACCEPTED AND AGREED

as of the date first above written:

ABIOMED, INC.

By: \_\_\_\_\_  
Name:  
Title:

**SCHEDULE 1A  
TO  
INTELLECTUAL PROPERTY SECURITY AGREEMENT**

- A. REGISTERED COPYRIGHTS  
None
- B. COPYRIGHT APPLICATIONS  
None
- C. IP LICENSES  
None

**SCHEDULE 1B  
TO  
INTELLECTUAL PROPERTY SECURITY AGREEMENT**

**A. REGISTERED PATENTS**

<b>Current Owner/ Assignee of Record</b>	<b>Title</b>	<b>Jurisdiction</b>	<b>Patent Number</b>	<b>Issue/ Grant Date</b>	<b>Comments</b>
World Heart Inc/ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	US	6,074,180	6/13/00	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA)
World Heart Inc/ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Electromagnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	US	6,302,661	10/16/01	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA)
World Heart Inc/ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Pump having a magnetically suspended rotor with one axis of control	US	6,394,769	5/28/02	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA)
World Heart Inc/ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pump Apparatus and Method	US	6,595,762	Issued: 7/22/03	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA)
World Heart Inc/ World Heart Corp	Method and System for Positioning a Movable Body in a Magnetic Bearing System	US	6,879,126	Issued 4/12/05	
World Heart Inc/ World Heart Corp	Rotary blood pump diagnostics and cardiac output controller	US	6,949,066	Issued 9/27/05	
World Heart Inc/ World Heart Corp	Electrosurgical electrode with a conductive, non- stick coating	US	5,925,043	7/20/99	No material value
World Heart Inc/ World Heart Corp	Method and apparatus for providing a conductive, amorphous non-stick coating	US	6,270,831	8/7/01	No material value

Current Owner/ Assignee of Record	Title	Jurisdiction	Patent Number	Issue/ Grant Date	Comments
World Heart Inc./ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	Canada	2253435	4/11/06	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner
World Heart Inc./ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	Australia	766439	1/29/04	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner
World Heart Inc./ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	France	0897476	10/15/03	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner
World Heart Inc./ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	Germany	DE 697 25 565.4	10/15/03	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner
World Heart Inc./ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	Ireland	0897476	10/15/03	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner
World Heart Inc./ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	Netherlands	0897476	10/15/03	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner
World Heart Inc./ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	United Kingdom	0897476	10/15/03	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner

Current Owner/ Assignee of Record	Title	Jurisdiction	Patent Number	Issue/ Grant Date	Comments
World Heart Inc/ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	Austria	0897476	10/15/03	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner
World Heart Inc/ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Hybrid Magnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	Australia	735578	10/25/01	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner
World Heart Inc Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Implantable Centrifugal Blood Pump with Hybrid Magnetic Bearings	Canada	2,330,048	4/20/04	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Reassignment application erroneously listed only Univ. of VA Patent Foundation
World Heart Inc Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Implantable Centrifugal Blood Pump with Hybrid Magnetic Bearings	Australia	741418	3/14/02	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Reassignment application erroneously listed only Univ. of VA Patent Foundation

## B. PATENT APPLICATIONS

Current Owner/ Applicant of Record	Title	Jurisdiction	Application Number	Filing Date	Comments
World Heart Inc	Single sac ventricular assist device	US	11/450,004	6/9/2006	
World Heart Inc	Electromagnetic drive for a ventricular assist device	US	11/449,973	6/8/2006	
World Heart Inc	Single sac ventricular assist device	EP	06784737.6	6/9/2006	
World Heart Inc	Single sac ventricular assist device	PCT	PCT/US06/2264 4	6/9/2006	
World Heart Inc	Electromagnetic drive for a ventricular assist device	EP	06772785.9	6/9/2006	
World Heart Inc.	Electromagnetic drive for a ventricular assist device	PCT	PCT/US06/2260 7	6/9/2006	
World Heart Inc Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Implantable blood pump with hybrid magnetic bearings	US	09/673,922 CON of 6,074,180	4/22/99 New Filing Date: 8/24/01	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Reassignment application erroneously listed only Univ. of VA Patent Foundation
World Heart Inc/ World Heart Corp	Remote cannulation apparatus and method	US	10/186,307	6/28/02 Provisional Filed 6/29/01	
World Heart Inc/ World Heart Corp	Low profile inlet for an implantable blood pump	US	10/171,458	Filed 6/13/02	
World Heart Inc/ World Heart Corp	Endoscopic cannulation apparatus and method	US	10/370,018 CIP on 10/186,307 PRV 60/301,795	Filed 2/20/03	
World Heart Inc/ World Heart Corp	Methods and system for determining a viscosity of a fluid	US	11/138,041 CIP on 6,949,066	Filed 5/26/05	
World Heart Inc.	Wearable VAD controller reserve battery	US	60/933,607	Provisional filed 6/6/07	Assignment not filed as of 12/7/07
World Heart Inc.	Implantable VAD with replaceable percutaneous cable	US	60/933,606	Provisional filed 6/6/07	Assignment not filed as of 12/7/07



Current Owner/ Applicant of Record	Title	Jurisdiction	Application Number	Filing Date	Comments
World Heart Inc Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Implantable centrifugal blood pump with hybrid magnetic bearings	US	11/925,294 CIP on 09/673,922	10/26/07	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Assignment not filed as of 12/7/07
World Heart Inc/ World Heart Corp Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Electromagnetically Suspended and Rotated Centrifugal Pumping Apparatus and Method	Japan	2001-543912, PCT/US00/3341 5	12/8/00	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Foreign office may still reflect MedQuest as owner
World Heart Inc Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Implantable Centrifugal Blood Pump with Hybrid Magnetic Bearings	Europe	9921446.3	4/22/99	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Reassignment application erroneously listed only Univ. of VA Patent Foundation
World Heart Inc Univ. of Utah Research Foundation Univ. of VA Patent Foundation	Implantable Centrifugal Blood Pump with Hybrid Magnetic Bearings	Japan	PCT/US99?0887 0	4/22/99	Exclusive licenses from co-inventors (Univ of Utah, Univ of VA) Reassignment application erroneously listed only Univ. of VA Patent Foundation
World Heart Inc/ World Heart Corp	Medquest Low Profile Inlet for an Implantable Blood Pump	Europe	03731429.1	5/29/03	Foreign office may still reflect MedQuest as owner
World Heart Inc/ World Heart Corp	Medquest Rotary Blood Pump Diagnostics and Cardiac Output Controller	Canada	2,506,698	8/21/03	Foreign office may still reflect MedQuest as owner

Current Owner/ Applicant of Record	Title	Jurisdiction	Application Number	Filing Date	Comments
World Heart Inc/ World Heart Corp	Medquest Rotary Blood Pump Diagnostics and Cardiac Output Controller	Europe	03755746.9	8/21/03	Foreign office may still reflect MedQuest as owner

C. IP LICENSES

Name of Agreement	Parties	Date	Patents
License Agreement	University of Utah Research Foundation and MedQuest Products, Inc	3/1/99	6,074,180 6,302,661 6,394,769 6,595,762
Assignment, Assumption and Amendment Agreement	University of Utah Research Foundation, MedQuest Products, Inc and World Heart Corp	6/8/05	
License Agreement	Virginia Patent Foundation and MedQuest Products, Inc	3/31/99	6,074,180 6,302,661 6,394,769 6,595,762
Consent to Assign and License Agreement	Virginia Patent Foundation, MedQuest Products, Inc and World Heart Corp	7/18/05	
License Agreement	University of Pittsburgh and MedQuest Products, Inc	2/13/02	6,015,272 6,244,835* 6,447,265 6,447,266* 5,888,242 6,066,086*
Assignment, Assumption and Amendment Agreement	University of Pittsburgh and MedQuest Products, Inc and World Heart Corp	7 /11/05	* Some question exists re. U of Pitt's rights to these patents
Amended & Restated TET License Agreement	Ottawa Heart Institute Research Corporation and World Heart Corp.	9/28/07	5,350,413

**SCHEDULE 1C  
TO  
INTELLECTUAL PROPERTY SECURITY AGREEMENT**

A. REGISTERED TRADEMARKS

None

B. TRADEMARK APPLICATIONS

Current Owner/ Applicant of Record	Mark	Jurisdiction	Application Number	Filing Date	Comments
World Heart Inc/ MedQuest Products, Inc.	PEDIAFLOW	US	78/571,469	2/21/2005	
World Heart Inc.	LEVACOR	US	78/937,087	7/25/2006	

C. IP LICENSES

None