# JOINT RESEARCH AGREEMENT

This Joint Research Agreement (the "Agreement") is entered into and effective as of 8/6/2018 (the "Effective Date") by and between:

**The UNIVERSITY OF THE PHILIPPINES, the national university of the Philippines, created through Act No. 1870, and re-organized under Republic Act No. 9500 otherwise known as the University of the Philippines Charter of 2008, through its constituent university, University of the Philippines Manila, with office address at the 8th floor, RCB Building, Philippine General Hospital, Taft Avenue, Manila, represented herein by Chancellor, Dr. Carmencita D. Padilla, representing the Philippine General Hospital, hereinafter referred to as the "INSTITUTION,"**

**and**

**TOHOKU UNIVERSITY, with office address at Graduate School of Medicine, Tohoku University, 2-1 Seiryo-machi, Aoba-ku, Sendai-shi, Miyagi, Japan, 980-8575, represented herein by Dean, Dr. Kazuhiko Igarashi, hereinafter referred to as "TU."**

**WHEREAS, TU and the INSTITUTION desire to jointly conduct a research entitled, "Acute maternal and fetal cardiovascular responses to exercise: a single blinded randomized controlled trial to improve antenatal surveillance strategies in Filipino women" for the mutual benefit of the parties,**

WHEREAS, TU and the INSTITUTION confirm that the joint research described herein will be conducted in a manner consistent with the purposes of education and research of TU and the INSTITUTION.

NOW THEREFORE, in consideration of the terms and conditions contained herein, the parties agree as follows:

**Article 1 (Definitions)**

In this Agreement, the following terms or expressions shall have the following respective meanings:

(1) "Joint Research" means research to be jointly conducted by TU and the INSTITUTION in accordance with this Agreement.

(2) "Research Result" means any technical result obtained from the performance of the Joint Research and conforms with the objective and area of the research program specified in Exhibit A which is attached to and made a part of this Agreement (hereinafter called the "Research Program").

(3) "Intellectual Property" means (i) inventions, devices, design, marks, circuit layouts and new varieties of plants (ii) patent rights, utility model rights, design rights, trademark rights, circuit layout rights, plant breeders' rights, and rights to obtain registration in any country for establishment of any patent rights, utility model rights, design rights, trademark rights and circuit layout rights, and rights to obtain plant variety registrations, and (iii) copyrights for computer programs and databases, and (iv) technical information of a proprietary nature which will be kept confidential (hereinafter called "Know-how").

(4) The term "using" used with respect to Intellectual Property means acts of producing, manufacturing under contract, using, assigning, leasing, selling, exporting, importing and any and all acts stipulated by applicable law in any country in which Intellectual Property is protected.

(5) The term "application and maintenance procedures" means any and all procedures necessary to file, prosecute, defend, establish and maintain the Intellectual Property and the term "expenses for the application and maintenance procedures" means all costs and expenses to be required for carrying out the application and maintenance procedures of the Intellectual Property (including but not limited to attorney's fees, patent attorney's fees, fees payable to the Patent Office in any country and necessary translation fees).

(6) "Designated TLO" means Tohoku Technoarch Co., Ltd. having its registered address at No. 468 Aoba, Aza, Aoba-ku, Sendai-shi, Miyagi 980-8579 Japan or any other Technology Licensing Organization to be designated by TU.

(7) The term "research materials" means any experimental materials used during the Joint Research.

**Article 2 (Implementation of Joint Research, Research Period, and Completion and Discontinuance of Joint Research)**

2.1 The parties hereto shall carry out the Joint Research in accordance with the Research Program.

2.2 The period of the Joint Research shall be the "research period" as specified in Section 4 of the Research Program.

2.3 If there arise any contingency including acts of God or any other causes beyond the reasonable control of the parties, or any delay in the Joint Research caused by unavoidable circumstances, the Joint Research may be discontinued or the research period may be extended or shortened by discussion between the parties. In such case, neither party shall be liable for any result of the discontinuation of the Joint Research or the extension or shortening of the research period.

2.4 The Joint Research shall be deemed to have been completed when the research period expires or when the parties agree that the Joint Research has been achieved.

**Article 3 (Preparation of Report)**

After the completion or discontinuance of the Joint Research, TU and the INSTITUTION shall prepare a report on the Research Result in cooperation with each other.

**Article 4 (Research Staff Members)**

4.1 Either party has appointed its employee(s) named in Section 6 of the Research Program as a research staff member who participates in the Joint Research.

4.2 Either party may, with prior written consent of the other party, appoint additional research staff members from its employees who participate in the Joint Research.

4.3 Either party shall accept any research staff member of the other party, who will be engaged in the Joint Research at their research facility, as a research associate.

**Article 5 (Research Collaborator)**

5.1 Either party may, with the prior written consent of the other party, appoint any person other than its research staff member as a research collaborator who participates in the Joint Research.

5.2 Either party shall ensure that its research collaborator who participates in the Joint Research shall comply with the terms and conditions of this Agreement.

**Article 6 (Purpose of TU; No Guarantee of the Research Result)**

The INSTITUTION acknowledges that the primary mission of TU is education and the advancement of knowledge; and, consequently, the Joint Research will be performed in a manner best suited to carry out that mission. Specifically, TU's researcher will determine the manner of performance of TU's part in the Joint Research and TU does not represent or warrant that the Joint Research will be successful in any way or that any specific results will be obtained.

**Article 7 (Similar Research)**

Nothing in this Agreement shall be construed to limit the freedom of either party or its research staff members who participate in the Joint Research under this Agreement from engaging in similar research made under other grants, contracts, or research agreements with parties.

**Article 8 (Pre-Existing Rights)**

It is acknowledged and understood by the parties hereto that any and all intellectual property rights and research materials, which are in the possession of TU and the INSTITUTION respectively prior to the conclusion of this Agreement, are independent property of the respective parties and in no way affected by this Agreement.

**Article 9 (Research Expenses)**

Each party shall pay for their own expenses for this joint research. In relation to the assumption of liabilities in case of injuries or death to study subjects or their fetuses as a direct consequence of the study, medical insurance for each patient shall be provided for as

included in the study budget.

**Article 10 (Provision of Facilities and Equipment)**

10.1 The parties hereto shall make available their own facilities and equipment respectively specified in Sections 8 and 9 of the Research Program for use in the Joint Research.

**Article 11 (Ownership of Intellectual Property)**

11.1 Either party shall promptly notify the other party if it has created any protectable Intellectual Property as the Research Result.

11.2 If any research staff member or research collaborator (hereinafter called the "Researcher") has independently created any Intellectual Property as the Research Result, the party to which such a Researcher belongs shall independently own the Intellectual Property (hereinafter called the "Independent Intellectual Property") and may independently file an application for the Intellectual Property, provided that the filing party shall first obtain a confirmation of the other party that the relevant Intellectual Property has been created independently by the Researcher belonging to the filing party.

11.3 If either party is requested by the other party to grant a royalty-bearing nonexclusive license to a third party regarding the Independent Intellectual Property set forth in Article 11.2, the requested party may grant such nonexclusive license under royalty and licensing terms determined by mutual consultations with such third party.

11.4 If the Researchers belonging respectively to TU and the INSTITUTION have jointly created any Intellectual Property as the Research Result, such Intellectual Property shall be jointly owned by TU and the INSTITUTION (hereinafter called the "Joint Intellectual Property"). If TU and the INSTITUTION wish to jointly file a patent application for such Joint Intellectual Property, TU and the INSTITUTION shall upon discussion decide a way to exploit such resulting the Joint Intellectual Property and allocation of the Application Fees and be filed in accordance with the terms and conditions set forth in Article 12.

**Article 12 (Joint Intellectual Property)**

12.1 In the event TU and INSTITUTION file a patent application for the Joint Intellectual Property set forth in Article 10.3, the parties shall, upon mutual consultation,

enter into a joint application agreement which includes at least all of the following conditions:

(i) Either party may, with the prior written consent of the other party, grant an exclusive or nonexclusive license to a third party. Any and all royalties to be received from the license shall be allocated to TU and INSTITUTION in proportion to their respective shares in the Joint Intellectual Property, provided, however, that such royalties shall be allocated after deduction of any technology transfer expenses such as fees paid to Technology Licensing Organizations;

(ii) Either party may, with the prior written consent of the other party, assign its own share in the Joint Intellectual Property to a third party;

(iii) Either party may, by giving a prior written notice to the other party, abandon its own share in the Joint Intellectual Property;

(iv) In the event of granting a license, assigning the share of right, or taking other action pursuant to the foregoing paragraphs, the parties shall ensure that TU, INSTITUTION, and/or any former Researcher of either parties will be able to use the said Joint Intellectual Property for own testing, research or educational purposes even if such action has been taken; and

(v)All expenses for the application and maintenance procedures of the Joint Intellectual Property shall be borne by TU and INSTITUTION in proportion to their respective shares in the Joint Intellectual Property.

**Article 13 (Confidentiality Obligation for Know-how)**

13.1 When any Know-how to be kept confidential is acquired as the Research Result, the parties hereto shall, upon mutual consultation, identify the said Know-how in writing and specify a period of confidentiality and keep the same in confidence.

13.2 The confidentiality obligation imposed on the parties under Article 13.1 above shall continue for three (3) years from the day following the date of completion or discontinuation of the Joint Research. Provided, however, that the parties may, upon mutual consultation, extend or shorten the confidentiality period.

**Article 14 (Exchange of Information)**

14.1 Either party shall disclose or provide without charge to the other party any information, documents or Research Materials necessary to carry out the Joint Research. Provided, however, that neither party shall be obligated to disclose or provide any information, documents or research materials for which either party has a confidentiality

obligation pursuant to an agreement with any other entity, or for which either party shall have to impose on the other party a confidentiality obligation.

14.2 After the completion or discontinuance of the Joint Research, either party shall, at the request of the other party, return all documents and research materials provided by the other party.

**Article 15 (Confidential Information)**

15.1 If any technical information which is of a confidential nature and necessary to carry out the Joint Research is disclosed or provided in writing by either party to the other party, it shall be expressly indicated as confidential at the time of disclosure or provision, and, if such technical information is disclosed orally, it shall be identified as confidential at the time of disclosure and confirmed in writing within thirty (30) days from the date of the disclosure.

15.2 Neither party shall disclose, provide or leak any technical information disclosed or provided by the other party pursuant to the Article 15.1 (hereinafter called the "Confidential Information") to any third party other than its Researcher and a limited staff of officers or employees who need to know the Confidential Information (hereinafter called the "person involved in the Joint Research") in carrying out the Joint Research. Either party shall ensure that the person involved in the Joint Research shall keep the Confidential Information disclosed hereunder in confidence even after the person involved in the Joint Research has left their job at the party.

15.3 Neither party shall, without the prior written consent of the other party, use the Confidential Information for any purpose other than the Joint Research.

15.4 The obligation under Article 15.2 shall not apply to any information which falls under any of the following:

(i) information which was already in the possession of the receiving party at the time of disclosure or provision thereof;

(ii) information which was public knowledge at the time of disclosure or provision thereof;

(iii) information which became public knowledge through no fault of the receiving party after the disclosure or provision thereof;

(iv) information which was lawfully obtained by the receiving party without obligation of confidentiality from a third party who was duly authorized to

disclose said information;

(v) information which was independently developed or acquired by the receiving party without depending on the Confidential Information disclosed by the other party; or

(vi) information of which the disclosure or provision is approved in advance by the other party in writing.

15.5 The provisions set forth in Articles 15.2 and 15.3 shall not apply to the following acts:

(i) An act of either party disclosing the Confidential Information in compliance with an order of a court of competent jurisdiction or pursuant to any requirement of any governmental agency; and

(ii) An act of any Researcher utilizing any Confidential Information, which remains in the memory of the Researcher as knowledge or experience obtained during the performance of the Joint Research, for any improvement research of the Joint Research or for any other research thereof.

15.6 The obligations imposed on the parties hereto under Articles 15.2 and 15.3 shall continue for three (3) years from the day following the date of completion or discontinuation of the Joint Research. Provided, however, that the parties may, upon mutual consultation, extend or shorten such a period.

**Article 16 (Publication of Research Result)**

16.1 In light of the social mission of universities, TU, the INSTITUTION and any former Researcher of either TU or the INSTITUTION may, in accordance with the provisions of this Article, disclose, announce or publish the Research Result of the Joint Research (the "Publication of Research Result").

16.2 Either party which desires the Publication of Research Result (the "publishing party") shall notify the other party in writing of the contents of such publication no later than thirty (30) days prior to the scheduled day of the Publication of Research Result.

16.3 The other party shall evaluate the contents of the publication in order to determine if it contains any Confidential Information and/or Know-how to be kept confidential pursuant to Articles 13 and 15, or any protectable intellectual property subject matter. Within fifteen (15) days after receiving the notice, the receiving party shall inform the publishing party in writing of the result of such evaluation and may request that such

modifications as deemed necessary be made.

16.4 The obligations imposed on the parties hereto under Article 16.2 shall continue for one (1) year from the day following the date of completion or discontinuation of the Joint Research. Provided, however, that the parties may, upon mutual consultation, extend or shorten such a period.

16.5 The ownership of any research materials acquired as a result of the Joint Research and methods to manage and dispose of the research materials shall be determined by discussion between TU and the INSTITUTION. Provided, however, that TU shall at least reserve a right to use and allocate the research materials for non-commercial purposes.

**Article 17 (Utilization of Designated TLO)**

17.1 TU may, at any time and without consent of the INSTITUTION, request the Designated TLO to perform for TU any and all necessary official procedures concerning the application and maintenance procedures of any Intellectual Property set forth in Article 11.2 or Article 11.3 and Article 12.

17.2 TU may, at any time and by giving a prior written notice to the INSTITUTION, assign to the Designated TLO the Independent Intellectual Property of TU or its own share in the Joint Intellectual Property, or grant to the Designated TLO a license for the Independent Intellectual Property of TU or based on its own share in the Joint Intellectual Property.

17.3 In the case of Article 17.2 above, TU shall take necessary measures to ensure that the Designated TLO performs the confidentiality obligation or any other obligation set forth in this Agreement.

**Article 18 (Cancellation of Agreement)**

Either party may terminate this Agreement by giving a written notice to the other party, if

(i) the other party has committed any improper or unjust act in connection with the performance of this Agreement, or

(ii) the other party has breached any provision of this Agreement,

unless such improper or unjust act or breach has been remedied within a reasonable period set in the written notice.

**Article 19 (Damages)**

Either party may make a claim for damages against the other party, if it incurs a loss or damage due to any act mentioned in Article 18 or due to any intentional act or gross negligence of the other party.

**Article 20 (Term of Agreement)**

20.1 The term of this Agreement shall be the period of the Joint Research as set forth in Article 2.2 hereof.

20.2 The provisions of Article 3, Articles 6 through 17, and Articles 19 through 23 shall survive the termination or expiration of this Agreement for the period as set forth in each of these provisions or until all the respective subject matters therein cease to exist.

**Article 21 (Non-use of Name)**

Except as otherwise required by law, neither party shall, without the prior written consent of the other party, use the name of the other party or of any employee thereof, trademarks or logo of the other party in any advertising, press release or other form of publicity in connection with this Agreement.

**Article 22 (Export Controls/Economic Sanctions)**

22.1 Either party agrees to comply with applicable export controls and economic sanctions laws and regulations. Further, each party remains solely responsible for complying with such laws and regulations in all instances, including obtaining all necessary export authorizations and licenses.

**Article 23 (Dispute and Jurisdiction)**

23.1 All disputes, including controversies and differences, which may arise between the Parties, out of or in relation to or in connection with this Agreement or for the breach thereof, shall, if possible, be settled through consultation or negotiation.

23.2 Any claims, disputes or controversy between the parties arising out of or in relation to this Agreement or the breach thereof, which cannot be satisfactory settled by the parties, shall be finally settled by arbitration upon the written

request of either party, in accordance with the rules of Conciliation and Arbitration of the International Chamber of Commerce. The place of arbitration shall be Tokyo, Japan, in case TU is the respondent, and Manila, the Philippines in case the INSTITUTION is the respondent. The arbitration proceedings shall be conducted in English. The award shall be final and binding upon both parties. Judgment upon the award may be entered in any court having jurisdiction thereof.

**Article 24 (No waiver)**

No failure or delay of either party to require the performance by the other party of any provision of this Agreement shall in any way adversely affect such provision after that. No waiver by either party of a breach of any provision of this Agreement shall be taken to be a waiver by such party of any succeeding breach of such provision.

**Article 25 (Severability)**

Should any provision of this Agreement be held by a court of competent jurisdiction to be invalid, illegal or unenforceable, the validity of the remaining provisions shall not be affected unless the relative balance of the relative benefit from the agreement enjoyed by the parties is materially changed.

**Article 26 (Notice)**

All notices and other communications hereunder shall be in writing and effective upon receipt if sent by registered or certified mail, return receipt requested, postage prepaid, or by an internationally recognized courier service which provides proof of delivery or receipt, such as DHL and Federal Express, to the following addresses of the parties:

If to TU: Professor Yoshitaka Kimura MD, PhD
Advanced Interdisciplinary Biomedical Engineering
Graduate School of Medicine, Tohoku University
9th floor, Building #5, 2-1 Seiryo-machi, Aoba-ku,
Sendai-shi, Miyagi, Japan, 980-8575

If to the INSTITUTION:

Clarissa L. Velayo, MD, PhD
PRINCIPAL INVESTIGATOR
Office Address:
Department of Physiology
2nd Floor, Salcedo Hall
College of Medicine, University of the Philippines – Manila
547 Pedro Gil Street corner A. Mabini,
Ermita, Manila, Philippines 1000
Residential Address:
Unit 1 Ecology Village, Sabio Street
Barangay Bangkal, Makati City, Philippines 1233

If any notice or communication is sent by facsimile transmission, such a notice or communication shall be followed by a confirmation copy by mail as specified above, and effective upon transmission only if receipt of the transmission by the recipient can be confirmed.

**Article 27 (Entire Agreement)**

This Agreement constitutes the entire agreement between the parties pertaining to the subject matter contained in it and incorporates all of the research program provisions (Exhibit A) and the research protocol (Exhibit B) which supersedes all prior and contemporaneous agreements, representations and understandings of the parties.

No supplement, modification or amendment of this Agreement shall be binding unless executed in writing by both parties.

IN WITNESS of this Agreement, the parties have executed this Agreement as of the day and year first above written.

Signed for and on behalf of

TU: Tohoku University

Signature: Kazuhiko Igarashi

Name: Professor Kazuhiko Igarashi, MD, PhD

Title: Dean, Tohoku University Graduate School of Medicine

Signed for and on behalf of

the INSTITUTION: University of the Philippines – Manila

Signature:

Name: Professor Carmencita D. Padilla, MD, MAHPS

Title: Chancellor University of the Philippines - Manila

20 APR 2018

(Exhibit A: Research Program)

| | | |
|---|---|---|
| 1 | Research Title | **Acute maternal and fetal cardiovascular responses to exercise: a single blinded randomized controlled trial to improve antenatal surveillance strategies in Filipino women** |
| 2 | Research Purpose and Description | **TECHNICAL SYNOPSIS**<br>a. Objectives/Expected output<br>The general objective of this research is to evaluate acute maternal and fetal responses to exercise using multi-modal antenatal surveillance techniques which include 2D-ultrasonography, Color Doppler studies, cardiotocography and non-invasive abdominal maternal and fetal electrocardiography. The following are specific objectives: (1) To evaluate the acute maternal cardiovascular responses to exercise in low risk pregnancy patients after a single bout of exercise (Sheng Zhen Gong) using a combined assessment which includes the patient's clinical profile, antenatal surveillance test findings, electrocardiography; (2) To evaluate the acute fetal cardiovascular responses to exercise in low risk pregnancy patients after a single bout of exercise (Sheng Zhen Gong) using a combined assessment which includes antenatal surveillance test findings and electrocardiography.<br>For expected outcomes, the project will provide the following information based on a Filipino population:<br>1. The profile of a sample population of low risk pregnancies seen at a tertiary center.<br>2. A multi-modal analysis of acute maternal and fetal cardiovascular response to a single bout of exercise in a Filipino low risk pregnancy population.<br>3. The construction of recommendations for the formulation of local practice guidelines concerning exercise in pregnancy.<br>4. Continuous collaborative output with Tohoku University Graduate School of Medicine using the first non-invasive abdominal fetal electrocardiographic machine to be made available locally. |

## RESEARCH DESIGN

This is a single-blinded randomized controlled trial among low risk pregnant Filipino women undergoing a single bout of exercise (Sheng Zhen Gong). One hundred sixty eight (168) women seen at the University of the Philippines, Philippine General Hospital, Obstetrics and Gynecology Out-patient Department for prenatal consultation, who meet the inclusion criteria, and who do not have any of the exclusion criteria will be invited to participate in the study. Informed consent will be obtained. Each patient will undergo a physical examination, questionnaire completion and interview prior to test scheduling. They will be instructed not to eat or drink anything starting 1 hour prior to testing. During the scheduled test, pre-exercise assessment will involve maternal capillary blood glucose (CBG), maternal blood pressure, maternal oxygen saturation, ultrasonographic, Doppler and maternal and fetal electrocardiographic (ECG) evaluation. This will be followed by a single 20-minute session of Sheng Zhen Gong exercises (movement and meditation) or a 20-minute session of sitting down (Control group), and finally post-exercise assessment involving maternal capillary blood glucose (CBG), maternal blood pressure, maternal oxygen saturation, ultrasonographic, Doppler and maternal and fetal ECG evaluation again. All testing, data encoding, processing and analysis shall be done at the Department of Physiology, College of Medicine, University of the Philippines, Manila which is the official headquarters of the study.

## SAMPLING DESIGN

Based on the article in 2003 by Chan, using proportion outcomes and our primary outcome of interest being dichotomous (where 30% [$\pi^1$] of control group individuals may show changes, the exercise may be deemed beneficial if positive changes or absolute improvement are noted in at least 60% [$\pi^2$] of the exercise population) with clinical relevance achieved at 30% effect size; for a two-sided test with alpha, 0.05 and power, 96%:

### Two Proportions Power Analysis

| Power | N1 | N2 | Allocation Ratio | P1 | P2 | Odds Ratio | Alpha | Beta |
|---|---|---|---|---|---|---|---|---|
| 0.96339 | 80 | 80 | 1.000 | 0.3 | 0.6 | 3.500 | 0.05 | 0.03661 |

## INCLUSION CRITERIA

singleton pregnancies from 28 to 33 weeks and 6 days of gestation

no maternal co-morbidities

no fetal congenital anomalies

at least 18 years of age on day of testing

## EXCLUSION CRITERIA

Patients with mental disabilities

Patients unable to give written or verbal consent

Patients who have previously practiced Sheng Zhen Gong

**WITHDRAWAL CRITERIA**

The patients may choose to withdraw from the study anytime. A patient may be withdrawn from the study by the investigators due to safety and logistical concerns (eg. residence outside of Metro Manila, non-ambulatory state of patients or difficulty to return for follow-up) or in the event of any deviation from the study protocol (eg. insufficient antenatal surveillance testing).

**DATA COLLECTION PLAN**

One hundred sixty eight (168) Filipino women above 18 years of age who consult at the University of the Philippines, Philippine General Hospital, Obstetrics and Gynecology Out-patient Department, who meet the inclusion criteria, and who do not have any of the exclusion criteria will be included in the study (Appendix A). Informed consent will be obtained (Appendix B). Each patient will undergo a physical examination and interview prior to test scheduling. On the day of testing, they will be instructed not to eat or drink anything starting 1 hour prior to testing. During the scheduled test, pre-exercise assessment will involve maternal capillary blood glucose (CBG), maternal blood pressure, maternal oxygen saturation, ultrasonographic, Doppler and ECG evaluation. This will be followed by a single 15-minute session of Sheng Zhen Gong exercises (standing and sitting forms) or a 15-minute session of sitting down (Control group), and finally a post-exercise assessment involving maternal capillary blood glucose (CBG), maternal blood pressure, maternal oxygen saturation, ultrasonographic, Doppler and ECG evaluation again (Appendices C & D). All testing, data encoding, processing and analysis shall be done at the Department of Physiology, College of Medicine, University of the Philippines, Manila which is the official headquarters of the study. Maternal and fetal ECG recordings will be anonymized and sent to the Tohoku University Graduate School of Medicine, Department of Obstetrics and Gynecology for extraction and analysis of electrocardiographic parameters.

**DATA ANALYSIS PLAN**

Categorical profiles will be expressed in frequency and percentages while continuous variables will be described in mean and standard deviation. In testing associations between antenatal surveillance methods, Chi square test with 2x2 Fisher Exact test adjustment will be done. Also, stratification of multi-modal method findings will be initially evaluated using a univariate test then followed by multivariate logistic regression to identify associations between parameters. Furthermore, any associated p-values lesser than 0.05 alpha will be considered significant. NCSSSPASS 2000 and Systat software will be used in the processing of data.

| | | | | |
|---|---|---|---|---|
| 3 | Research Period | | January 2018 to October 2019 | |
| 4 | Research Staff Member | | Name, Division and Title | Role in the Joint Research |
| | | THE INSTITUTION | Clarissa L. Velayo, MD, PhD<br>Principal Investigator | • develop the research protocol<br>• oversee the whole project<br>• monitor the progress of the research in accordance with the pre-set schedule<br>• meet with the principal investigator, consultant co-investigator and statistician to discuss and plan on data management<br>• Perform the physical examination, ultrasound scans and electrocardiographic studies<br>• prepare the progress reports<br>• write the final report |
| | | THE INSTITUTION | Sherri Ann L. Suplido, MD<br>Co-Investigator | • develop the research protocol<br>• give advice on the conduct of the research<br>• Assist in performing the physical examination, ultrasound scans<br>• monitor the progress of the research<br>• assist in editing the final research paper |
| | | TU | Kiyoe Funamoto, PhD<br>Co-Investigator | • develop the research protocol<br>• give advice on the conduct of the research<br>• monitor the progress of the research<br>• assist in editing the final research paper |
| | | TU | Professor Yoshitaka Kimura, MD, PhD<br>Co-Investigator | • develop the research protocol<br>• give advice on the conduct of the research<br>• monitor the progress of the research<br>• oversee data analysis in Japan<br>• assist in editing the final research paper |
| 7 | Research Expenses to be paid by THE INSTITUTION to TU | | (i) Direct Costs | Japanese Yen |

| | | | |
|---|---|---|---|
| | (consumption tax included) | (ii) Indirect Costs (Note 1) | Japanese Yen |
| | | (iii) Research Fee (Note 2) | Japanese Yen (¥_____ x _____[Number of People]) |
| | | Total | 0 Japanese Yen |
| 8 | TU's Facilities and Equipment which are made available for the Joint Research | Abdominal Fetal Electrocardiography Machine (International patent application Number: PCT/JP2006/316386) | |
| | | (Equipment provided by TU to THE INSTITUTION free of charge, if any) | |
| 9 | THE INSTITUTION's Facilities and Equipment which are made available for the Joint Research | Ultrasound Machine | |
| | | (Equipment provided by THE INSTITUTION to TU free of charge, if any) | |

(Exhibit B: Attached Research Protocol)