AWARD NUMBER: W81XWH-18-1-0672

TITLE: Phase 1/2b Testing of the Sm-TSP-2 Schistosomiasis Vaccine in Uganda

PRINCIPAL INVESTIGATOR: David Diemert

CONTRACTING ORGANIZATION: George Washington University

REPORT DATE: Oct 2019

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Development Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
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Phase 1/2b Testing of the Sm-TSP-2 Schistosomiasis Vaccine in Uganda

The Project goal is to perform a Phase I/IIb clinical trial to evaluate the safety and immunogenicity of the Sm-TSP-2/Alhydrogel® schistosomiasis vaccine in Ugandan adults and obtain preliminary data on proof-of-efficacy. Specific Aims are to: (1) Assess the safety and immunogenicity of the Sm-TSP-2/Alhydrogel® vaccine with or without AP 10-701 (a synthetic Toll-like Receptor-4 agonist) in individuals living in areas of Uganda endemic for S. mansoni and S. haematobium; (2) Compare the incidence and intensity of reinfection with S. mansoni at 12 and 18 months following vaccination with Sm-TSP-2/Alhydrogel® vs. the licensed Hepatitis B Virus (HBV) vaccine as a comparator; (3) Assess the cellular immune response to vaccination with Sm-TSP-2/Alhydrogel®. The study will be done in two parts. Part A will be a randomized, double-blind Phase I trial in 90 healthy Ugandan adults aged 18-45 years to test 3 doses of the vaccine, with or without AP 10-701. In each dose group of 30 people, 12 will receive the Sm-TSP-2 vaccine alone, 12 will receive the Sm-TSP-2 vaccine mixed with AP 10-701, and 6 will receive the control HBV. Subjects will receive 3 intramuscular injections over 4 months and will be followed for 9 months after final injection. Part B will compare 100 people vaccinated with Sm-TSP-2 (dose/formulation determined in Part A) to 100 people vaccinated with HBV. Part B subjects will receive 3 vaccine injections administered at 2-month intervals. After final vaccination, urine and stool samples will be collected at 12 and 18 months after the 3rd injection to determine rates of new schistosome infections. The primary endpoint is to determine if vaccination prevents infection with the schistosome worm as determined by schistosome worm eggs found in feces or urine. Other outcomes include studying the antibody responses to Sm-TSP-2. This project will have a significant impact on the development of a vaccine against schistosomiasis that could protect U.S. Service members against infection by this parasite.

Progress to date in the current reporting period consists of obtaining all necessary ethical and regulatory approvals for the trial, designing the recruitment plan plus all recruitment materials, designing the study source documents including data collection forms, designing completing testing of the study Electronic Data Capture database, obtaining the import license to ship study investigational product to the study site, and training the study team in Uganda, including conducting the Site Initiation Visit. Recruitment, screening, and enrollment will be initiated immediately in Year 2 of the Project.

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Schistosomiasis; Schistosoma mansoni; Vaccine; Sm-TSP-2; Tetraspanin-2; Uganda
# TABLE OF CONTENTS

1  INTRODUCTION.......................................................................................................................... 4

2  KEYWORDS ............................................................................................................................... 4

3  ACCOMPLISHMENTS .................................................................................................................. 4

  3.1  MAJOR GOALS OF THE PROJECT............................................................................................ 4

  3.2  ACCOMPLISHMENTS UNDER THESE GOALS........................................................................ 5

  3.3  WHAT OPPORTUNITIES FOR TRAINING AND PROFESSIONAL DEVELOPMENT HAS THE PROJECT PROVIDED? ........................................................................................................... 7

  3.4  HOW WERE THE RESULTS DISSEMINATED TO COMMUNITIES OF INTEREST? ...................... 7

  3.5  WHAT DO YOU PLAN TO DO DURING THE NEXT REPORTING PERIOD TO ACCOMPLISH THE GOALS? ........................................................................................................... 7

4  IMPACT ........................................................................................................................................ 8

5  CHANGES/PROBLEMS .................................................................................................................. 8

  5.1  CHANGES IN APPROACH AND REASONS FOR CHANGE ....................................................... 8

  5.2  ACTUAL OR ANTICIPATED PROBLEMS OR DELAYS AND ACTIONS OR PLANS TO RESOLVE THEM ............................................................................................................................... 8

  5.3  CHANGES THAT HAD A SIGNIFICANT IMPACT ON EXPENDITURES ......................................... 9

  5.4  SIGNIFICANT CHANGES IN USE OR CARE OF HUMAN SUBJECTS, VERTEBRATE ANIMALS, BIOHAZARDS, AND/OR SELECT AGENTS ........................................................................... 9

6  PRODUCTS .................................................................................................................................... 10

  6.1  PUBLICATIONS, CONFERENCE PAPERS, AND PRESENTATIONS ............................................. 10

  6.2  WEBSITE(S) OR OTHER INTERNET SITE(S) ........................................................................... 10

  6.3  TECHNOLOGIES OR TECHNIQUES ......................................................................................... 10

  6.4  INVENTIONS, PATENT APPLICATIONS, AND/OR LICENSES .................................................. 10

  6.5  OTHER PRODUCTS .................................................................................................................. 10

7  PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS .................................................. 11

  7.1  INDIVIDUALS WHO WORKED ON THE PROJECT DURING THE REPORTING PERIOD .................... 11

  7.2  CHANGES IN ACTIVE OTHER SUPPORT OF THE PD/PI OR SENIOR/KEY PERSONNEL SINCE THE LAST REPORTING PERIOD ................................................................................ 12

  7.3  OTHER ORGANIZATIONS INVOLVED AS PARTNERS .................................................................. 16

8  SPECIAL REPORTING REQUIREMENTS ...................................................................................... 20

9  APPENDICES ............................................................................................................................... 21
1 INTRODUCTION

Schistosomiasis is the most important parasitic infection after malaria. Acute infection can result in significant illness and death in the form of Katayama fever, whereas chronic infection can lead to life-threatening complications such as portal hypertension (S. mansoni) or bladder obstruction, kidney failure, and bladder cancer (S. haematobium). The goal of this proposal is to perform a Phase I/IIb clinical trial to evaluate the safety and immunogenicity of the Sm-TSP-2/Alhydrogel® schistosomiasis vaccine in African adults for the first time and obtain preliminary data on proof-of-efficacy. Sm-TSP-2/Alhydrogel® has been tested in a first-in-human Phase I trial in schistosomiasis-unexposed adults in the U.S. In November 2017, a second Phase I trial was initiated in adults living in a region of Brazil where S. mansoni is endemic. The next essential step in its clinical development is to test Sm-TSP-2/Alhydrogel® in areas of Africa where both S. mansoni and S. haematobium are endemic.

2 KEYWORDS

Schistosomiasis; Schistosoma mansoni; Vaccine; Sm-TSP-2; Tetraspanin-2; Uganda

3 ACCOMPLISHMENTS

3.1 Major goals of the project

The Specific Aims of the project, as listed in the approved SOW for the grant, are to:

1. Assess the safety and immunogenicity of the Sm-TSP-2/Alhydrogel® vaccine with or without AP 10-701 (a synthetic Toll-like Receptor-4 agonist) in individuals living in areas of Uganda endemic for S. mansoni and S. haematobium;

2. Compare the incidence and intensity of reinfection with S. mansoni at 12 and 18 months following vaccination with Sm-TSP-2/Alhydrogel® vs. the licensed Hepatitis B Virus (HBV) vaccine as a comparator;

3. Assess the cellular immune response to vaccination with Sm-TSP-2/Alhydrogel®.

The Major Tasks and Subtasks of the project are as follows:

**Major Task 1: Obtain IRB and Regulatory Approvals for Phase I/II Clinical Trial**
Subtask 1: Prepare & Submit Clinical Protocol and Associated Documents for Ethical Committee Review
Subtask 2: Submit Clinical Protocol and Associated Documents for Regulatory Review
Subtask 3: Import Study Vaccine Supplies into Uganda from U.S.

**Major Task 2: Train MUWRP Study Staff for Clinical Trial**
Subtask 1: Coordinate with MUWRP for Training of Study Staff

**Major Task 3: Study Part A (Phase I) Participant Recruitment, Vaccination, and Follow-up**
Subtask 1: Conduct Part A of Clinical Trial
Subtask 2: Determine Sm-TSP-2/Alhydrogel dose and formulation to be tested in Phase II
Subtask 3: Complete follow-up assessments up to 9 months post-final vaccination

**Major Task 4: Study Part B (Phase II) Participant Recruitment, Vaccination, and Follow-up**
Subtask 1: Conduct Part B of Clinical Trial

**Major Task 5: Laboratory and Data Analyses (Product Stability Testing)**
Subtask 1: Conduct stability testing of Sm-TSP-2 Drug Substance & Sm-TSP-2/Alhydrogel vaccine

**Major Task 6: Laboratory and Data Analyses**
Subtask 1: Complete resolution of database queries
Subtask 2: Ship biological specimens from MUWRP to GWU for analysis
Subtask 3: Conduct immunological analyses
Subtask 4: Conduct parasitological analyses on biological specimens collected from study subjects
Subtask 5: Conduct data and statistical analyses

**Major Task 7: Report Findings**
Subtask 1: Complete Clinical Study Report
Subtask 2: Disseminate findings (abstracts, presentations, publications)

### 3.2 Accomplishments under these goals

Overall, by the end of the project Year 1 annual reporting period, Subtasks 1 and 2 of Major Task 1 had been accomplished in that full ethical and regulatory approval for the Phase I/II clinical trial of the Sm-TSP-2/Alhydrogel® vaccine had been received; approval to import the first shipment of study product into Uganda from the USA was received in September 2019 and the first shipment was planned for the beginning of October 2019. All preparations for initiating the trial were in place by the end of the reporting period, including completion of the Site Initiation Visit in July 2019. Recruitment was set to begin immediately in October 2019 (Quarter 1 of Year 2 of the project).

The following were the specific accomplishments under each task during this reporting period:

**Major Task 1:**
- Finalization of the clinical trial protocol for study TSP-18-03 (version 1.0)
- Finalization of the Informed Consent Forms for Parts A and B of study (versions 1.0)
- Finalization of the Informed Consent for Future Use of Stored Specimens and Withdrawal of Consent for Future Use forms (versions 1.0)
- Creation of recruitment materials (radio advertisements, posters, etc.) for Part A of the clinical trial
- Submission of protocol and related documents to the George Washington University (GW) IRB (Oct 2018)
- Receipt of stipulations from the GW IRB after initial review (Dec 2018) and submission of responses (Dec 2018)
- Submission of protocol and related study documents to the Makerere University School of Public Health (MUSPH) IRB (Oct 2018)
- Receipt of stipulations from the MUSPH IRB after initial review (Nov 2018) and submission of responses (Dec 2018)
- Initial approval of study (protocol version 2.0 after modifications in response to initial review stipulations) by GW IRB (Feb 2019)
- Initial approval of study (protocol version 2.0 after modifications in response to initial review stipulations) by MUSPH IRB (Feb 2019)
- Translation of all informed consent documents into Luganda (local language in Uganda)
- Creation of additional recruitment materials (briefing slides, brochures) and translation into Luganda
- Submission of translations of informed consent documents recruitment materials to the GW and MUSPH IRBs (March 2019)
- Preparation of submission package to the national Ugandan IRB (the Uganda National Council for Science and Technology – UNCST)
- Submission of the clinical protocol package to UNCST (March 2019)
- Preparation of clinical protocol package to the Ugandan National Regulatory Agency (the Uganda National Drug Authority – NDA)
- Submission of clinical protocol package and related documents to HRPO (March 2019)
- Revision of the clinical trial protocol for study TSP-18-03 (updated to version 3.0) to incorporate minor changes based on feedback from site in Uganda as well as requirements of HRPO (e.g., inclusion of specific language pertaining to the research monitor)
- Submission of version 3.0 of clinical protocol to the GW and MUSPH IRBs (June 2019)
- Submission of informed consent translations and recruitment materials to GW IRB (June 2019)
- Approval of version 3.0 of the clinical protocol, informed consent translations and recruitment materials by GW IRB (July 2019)
- Approval of version 3.0 of the clinical protocol by the MUSPH IRB (July 2019)
- Approval of the clinical protocol package by the UNCST (May 2019)
- Submission of the clinical protocol package to the Ugandan NDA (April 2019)
- Approval of the clinical protocol package by the Ugandan NDA (August 2019)
- Receipt of initial review comments on the clinical protocol package, plus stipulations, from HRPO (April 2019)
- Approval of the clinical protocol package, plus stipulations, from HRPO (September 2019)
- Registration of the clinical trial on ClinicalTrials.gov (NCT 03910972)
- Approval of the clinical protocol package by the Ugandan NDA (August 2019)

**Major Task 2:**
- Initiation of training of MWURP laboratory personnel on parasitological assays (urine and fecal microscopy for detection of *Schistosoma* infection) by GW study team as well as the Ugandan Vector Control Division of the Ministry of Health (March 2019)
- Continuation of training of MWURP laboratory personnel on parasitological assays (urine and fecal microscopy for detection of *Schistosoma* infection) by GW study team as well as the Ugandan Vector Control Division of the Ministry of Health (March – September 2019)

**Major Task 3:**
- Visit by GW clinical and laboratory project personnel (Drs. Diemert and Bethony; Ms. Tritsch) to MUWRP in Kampala, Uganda to complete pre-Study Initiation Visit training on the study protocol, study product, and laboratory assays. Logistical and operational plans to initiate the clinical trial were finalized during this visit (March 2019)
- Drafting, revision and finalization of study Part A Data Collection Forms (DCFs) in preparation for electronic database eCRF creation
- Drafting and finalization of DCF completion guidelines
- Construction and User Acceptance Testing of the electronic Data Capture (EDC) system for Part A of the study, using OpenClinica
- Training of site personnel on EDC
- Purchase of hepatitis B vaccine for Part A of study (active comparator)
- Drafting of clinical Manual of Procedures (MOP) for Part A of clinical trial
- Approval of clinical MOP version 1.0 (Sept 2019)
- Completion of clinical and pharmacy source documents for Part A of clinical trial
- Drafting of recruitment plan for Part A of clinical trial
- Completion of Site Initiation Visit (SIV) (July 2019) at MUWRP by Dr. Diemert, Mr. Kelly Thomas (GW clinical research manager) and the clinical monitor
- Finalization of study Safety Monitoring Committee (SMC) membership
- Drafting of SMC Charter
- Collection of all required study essential documents for the site and trial master files
- Purchase of all clinical and laboratory supplies required for Part A of the trial

**Major Task 5:**
- Completion of Month 36 stability and potency testing of Sm-TSP-2 Drug Substance & Sm-TSP-2/Alhydrogel vaccine by Baylor College of Medicine (April 2019)

**Major Task 6:**
- Drafting of Laboratory Manual of Operations, version 1.0
- Drafting of laboratory Standard Operating Procedures and source documents for performance of study procedures (e.g., stool and urine microscopy for parasite ova)
Additional accomplishments:
- Bi-weekly conference calls were initiated in March 2019 between the GW and MUWRP project teams to coordinate execution of the clinical trial
- Execution of a Material Transfer Agreement (MTA) between GW and MUWRP for the shipment of biological specimens collected from study participants from Uganda to the US
- Finalization of GW service contract Request for Proposal documents for data management and clinical monitoring services for the clinical trial
- Selection of vendor for clinical monitoring services for the clinical trial and execution of service contract (Makerere University Clinical Trials Unit)
- Selection of vendor for data management services for the clinical trial and execution of service contract (Children’s National Health System)
- Execution of local clinical trials insurance policy with Ugandan insurance company, as per Uganda NDA stipulation

3.3 What opportunities for training and professional development has the project provided?
Activities related to training and professional development were conducted during this reporting period. These were completed as part of Major Task 2 (“Train MUWRP Study Staff for Clinical Trial”), and consisted principally of on-site training by GW project team members of MUWRP study personnel in Kampala, and training of MUWRP laboratory personnel in parasitological procedures by the Ugandan Vector Control Division of the Ministry of Health. Regarding the former, a pre-Study Initiation Visit was conducted in March 2019 at MUWRP by GW clinical and laboratory project personnel (Drs. Diemert and Bethony; Ms. Tritsch). During this visit, training of MUWRP study personnel was completed on the study protocol and procedures, investigational study products, and laboratory procedures and assays. Logistical and operational plans to initiate the clinical trial were finalized during this visit. In July 2019, a formal Site Initiation Visit for the trial was conducted by Dr. Diemert and Mr. Kelly Thomas (GW clinical research manager) in concert with the study clinical monitor (Ms. Miriam Galabuzi). At the SIV, the following were reviewed with the study team: study protocol; study risks and benefits; randomization and masking procedures; study products; pharmacy procedures (study product allocation, randomization, dispensing, and storage); concomitant medication recording; safety assessments; adverse event (including Serious Adverse Event) reporting; study halting rules; protocol deviations (definition and reporting requirements); study monitoring; laboratory evaluations (clinical and research); future use of stored specimens; and procedures for handling withdrawals.

In addition, throughout Year 1 of the project, training of MUWRP laboratory personnel was conducted by the Ugandan Vector Control Division (VCD) of the Ministry of Health. In particular, in-person training was completed on the procedures for performing fecal and urine microscopy for identifying helminth ova and parasites, tests that are required by the study protocol. Quality assurance assessments of the MUWRP laboratory were completed by having the VCD send known specimens to MUWRP for analysis, to verify their procedures and proficiency.

3.4 How were the results disseminated to communities of interest?
Nothing to report.

3.5 What do you plan to do during the next reporting period to accomplish the goals?
Since all ethical and regulatory approvals to initiate clinical trial activities and import study product into Uganda were obtained by the end of September 2019, recruitment and screening activities will be initiated in October 2019. The first shipment of study product (the Sm-TSP-2/Alhydrogel schistosomiasis vaccine and the AP 10-701 adjuvant) from GW in Washington, DC, to MUWRP in Kampala, Uganda, has been scheduled for the first week of October 2019.

Recruitment into Part A of the trial will first be initiated via “briefing sessions” with interested prospective adult volunteers after advertising the study in neighborhoods and communities in and
around Kampala by means of radio advertisements, posters, brochures, and word of mouth. Following these briefing sessions, adult volunteers who remain interested will be invited for individual consenting and screening appointments. A sufficient number of screened and eligible participants will be identified prior to enrolling, randomizing and vaccinating Cohort 1 in Part A of the study. Study visits and procedures will proceed as per the approved study protocol. Cohorts 2 and 3 of Part A will be enrolled if no study halting criteria (protocol Section 9.5) are met and the Safety Monitoring Committee and Research Monitor recommend continuation of dose escalation after review of interim safety data (protocol Section 9.6). It is expected that Part A of the clinical trial will be fully enrolled (n=90) in the upcoming reporting period and all vaccinations will be completed in this part of the study. Following completion of all study Day 140 visits for Part A participants, serum samples will be tested for IgG antibodies to Sm-TSP-2. A report on the interim analysis of safety and immunogenicity data through Day 140 of Part A, together with a justification for the chosen vaccine dose and formulation, will be prepared either by the end of the next reporting period or early in Year 3 of the project. This interim report will be submitted to the Safety Monitoring Committee and the Ugandan local IRB for their review prior to initiation of Part B of the study. Recruitment and enrollment of Part B of the trial will be initiated immediately thereafter.

4 IMPACT

Nothing to report to date given the early stage of this project. However, the expected short- and long-term impact of the project are as follows:

Short-term Impact. The short term impact is to provide proof-of-concept for the safety and immunogenicity of one of the first schistosomiasis vaccines tested in Africa. Specifically, the goal of this proposal is to perform a Phase I/IIb clinical trial to evaluate the safety and immunogenicity of the Sm-TSP-2/Alhydrogel schistosomiasis vaccine in African adults for the first time, and to obtain preliminary data on proof-of-efficacy. Sm-TSP-2/Alhydrogel has recently been tested in a first-in-human Phase I trial in schistosomiasis-unexposed adults in the U.S. In November 2017, a second Phase I trial was initiated in adults living in a region of Brazil where S. mansoni is endemic. The next essential step in its clinical development is to test it in areas of Africa where both S. mansoni and S. haematobium are endemic.

Long-term impact. The proposed clinical trial is critical to the development of the first successful preventative vaccine for schistosomiasis. The vaccine represents an essential technology to prevent acute schistosomiasis, a mission-abortive health threat to the US military deployed to Africa and the Middle East. The vaccine would be used alongside praziquantel in programs of “vaccine linked chemotherapy” to prevent post-treatment re-infection and chronic schistosomiasis. Achieving this goal would provide as a deliverable a key global health biotechnology that would accelerate the global elimination of schistosomiasis.

5 CHANGES/PROBLEMS

5.1 Changes in approach and reasons for change

No changes in approach, design or objectives were made during the reporting period.

5.2 Actual or anticipated problems or delays and actions or plans to resolve them

1. Although the proposed start date listed on the grant application for this project was Nov. 1, 2018, the grant was unexpectedly awarded with a start date of Sept. 30, 2018, earlier than anticipated. Therefore, finalization of the study protocol, informed consent form and related clinical trial documents, and initial submission of the clinical trial protocol to the local Ugandan IRB and the George Washington University IRB, did not occur until October 2018. The Statement of Work for this grant had indicated that submission of the protocol to the Ugandan IRB would occur prior to
initiation of the grant; however, given the earlier than expected grant start date, this was not possible. Furthermore, the Ugandan local IRB (Makerere University School of Public Health IRB) would not review the protocol until the notice of grant award had been received. Therefore, initial submission of the study to the local Ugandan and US ethical review bodies did not occur as early in the project period as originally anticipated. However, both submissions did occur in Month 1 of the project (October 2018), stipulations were received from both IRBs, and responses to the stipulations were submitted in December 2018. Therefore, the delay in receiving initial IRB approval was only a few months.

2. When the grant was originally proposed, the Ugandan collaborators on this project at the Makerere University Walter Reed Project indicated that submission to the national Ugandan IRB (UNCST) could occur in parallel to the local IRB submission. However, at the time of the grant initiation, the project team was informed that the current UNCST regulations required approval by the local Ugandan IRB first, before submission could be made to the national IRB. Therefore, submission to UNCST could not occur in Month 1 of Year 1 of the project as originally intended, and had to wait until final approval by the Makerere University School of Public Health IRB, which was received in January 2019. Submission to UNCST occurred immediately upon receipt of local IRB approval and full approval for the trial was received in May 2019, Month 8 of Year 1 of the project).

5.3 Changes that had a significant impact on expenditures

Given the delays in obtaining all required ethical and regulatory approvals for the clinical trial, expenses related to initiation of the clinical trial (e.g., recruitment and advertising expenses, participant compensation, clinical and laboratory personnel salary expenses, clinical supplies, etc.) have been delayed. Therefore, the total expenditures in Year 1 of the project are significantly less than originally planned but have simply been shifted forward. Expenditures will pick up significantly in Year 2 of the project as recruitment, enrollment, vaccinations and study visits are initiated.

5.4 Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

After initial submission of protocol version 1.0 to the local Ugandan (Makerere University School of Public Health [MUSPH]) and GW IRBs, protocol version 2.0 was approved by both after minor revisions were made to meet their stipulations. These revisions to the protocol included:

- Section 2.3: added additional (new since initial version of the protocol) results from the Phase 1 trials of Sm-TSP-2/Alhydrogel conducted in Houston, TX, and in Brazil.
- Section 4.1: the minimum prevalence of S. mansoni infection that will be targeted for inclusion of communities in Part B of the trial has been revised to 25% from 30% based on local recent prevalence data.
- Section 9.3.4: added follow-up of babies born to female participants if they become pregnant during study follow-up.
- Section 9.6.2: added Safety Monitoring Committee (SMC) teleconference meeting to be conducted to review the interim analysis of safety and immunogenicity data through Day 126 of Part A, to obtain approval for initiating vaccinations in Part B of the trial.
- Section 11.6.2: added that a report on the interim analysis of safety and immunogenicity data through Day 126 of Part A, together with a justification for the chosen vaccine dose and formulation, will be submitted to the SMC and Ugandan local IRB for their review prior to initiation of Part B of the study.

In addition, protocol version 3.0 was submitted to the GW and MUSPH IRBs in June 2019; approval by both IRBs was received in July 2019. The changes from version 2.0 to 3.0 consisted primarily of the following:

- Minor editorial clarifications to study procedures and visits.
- Update of reporting requirements to IRBs and other regulatory bodies overseeing study conduct, based on feedback from Ugandan team and US HRPO.
- Minor grammatical and editorial corrections.
6 PRODUCTS

6.1 *Publications, conference papers, and presentations*

Nothing to report.

6.2 *Website(s) or other Internet site(s)*

The clinical trial was registered on the Clinicaltrials.gov website during this reporting period ([https://clinicaltrials.gov/ct2/show/NCT03910972?term=TSP-2&draw=2&rank=1](https://clinicaltrials.gov/ct2/show/NCT03910972?term=TSP-2&draw=2&rank=1)). The progress of the trial will be updated periodically on this website, at a minimum every six months. Results will also be posted to this site when they become available.

6.3 *Technologies or techniques*

Nothing to report.

6.4 *Inventions, patent applications, and/or licenses*

Nothing to report.

6.5 *Other Products*

Nothing to report.
7 PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

7.1 Individuals who worked on the project during the reporting period

<table>
<thead>
<tr>
<th>Name:</th>
<th>David Diemert, MD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Role:</td>
<td>Grant PI; Protocol Chair</td>
</tr>
<tr>
<td>Researcher Identifier:</td>
<td>0000-0002-2789-0512 (Orcid ID)</td>
</tr>
<tr>
<td>Nearest person month worked:</td>
<td>1 person month per year</td>
</tr>
<tr>
<td>Contribution to Project:</td>
<td>Dr. Diemert has performed work in leading the project as the grant PI and protocol chair: managing study design and developing the clinical protocol and related study documents; overseeing ethical and regulatory submissions in the US (at GW and HRPO); developing plans for clinical monitoring and data management; developing procedures for safety monitoring oversight.</td>
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<thead>
<tr>
<th>Name:</th>
<th>Jeffrey Bethony, PhD</th>
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<tbody>
<tr>
<td>Project Role:</td>
<td>GW Clinical Immunology Laboratory (CIL) Director</td>
</tr>
<tr>
<td>Researcher Identifier:</td>
<td>0000-0002-7901-2113 (Orcid ID)</td>
</tr>
<tr>
<td>Nearest person month worked:</td>
<td>1 person month per year</td>
</tr>
<tr>
<td>Contribution to Project:</td>
<td>Dr. Bethony has performed work in leading the overall oversight of the immunological assays conducted at GW. He is involved in designing, analyzing and interpreting the immunologic and parasitologic data that will be generated as part of this Project.</td>
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<thead>
<tr>
<th>Name:</th>
<th>Doreen Campbell, MSc</th>
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<tbody>
<tr>
<td>Project Role:</td>
<td>Clinical Research Manager</td>
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<tr>
<td>Researcher Identifier:</td>
<td>n/a</td>
</tr>
<tr>
<td>Nearest person month worked:</td>
<td>2 person months per year</td>
</tr>
<tr>
<td>Contribution to Project:</td>
<td>Ms. Campbell has performed work in coordinating and managing all activities related to conducting the clinical trial, particularly the data management and clinical monitoring for the study; she also periodically conducted internal quality assurance monitoring of the study.</td>
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<tr>
<th>Name:</th>
<th>Kelly Thomas, MBA</th>
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<td>Project Role:</td>
<td>Clinical Research Manager</td>
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<td>Researcher Identifier:</td>
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<tr>
<td>Nearest person month worked:</td>
<td>1 person month per year</td>
</tr>
<tr>
<td>Contribution to Project:</td>
<td>Mr. Kelly replaced Ms. Campbell on this project in July 2019. He has performed work in coordinating and managing all activities related to conducting the clinical trial, particularly the data management and clinical monitoring for the study; he also periodically conducts internal quality assurance monitoring of the study, requiring travel to the clinical trial site in Uganda.</td>
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<tr>
<th>Name:</th>
<th>Samantha Daaka, MPH</th>
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<tbody>
<tr>
<td>Project Role:</td>
<td>Clinical Research Coordinator</td>
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<tr>
<td>Researcher Identifier:</td>
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<tr>
<td>Nearest person month worked:</td>
<td>3 person months per year</td>
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<tr>
<td>Contribution to Project:</td>
<td>Ms. Daaka has performed work in coordinating submissions to the IRBs, coordinating communications with the trial site, coordinating maintenance of GCP essential documents related to the trial, and assisting in the preparation of clinical trial work plans, activity charts and correspondence.</td>
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</table>
7.2 Changes in active other support of the PD/PI or senior/key personnel since the last reporting period

The changes below are those from the Other Support that was listed for Drs. Diemert and Bethony submitted to U.S. Army Medical Research and Development Command in April 2018 as part of a Just in Time request.

7.2.1 David Diemert (Grant PI)

Other Support that started in reporting period:

a) **Title of the project**: A Phase 1, randomized, double-blind, placebo-controlled dosage escalation trial to evaluate the safety and immunogenicity of eOD-GT8 60mer Vaccine, Adjuvanted in HIV-uninfected, healthy adult volunteers.
   
   1. Funding Agency: International AIDS Vaccine Initiative (IAVI)
   2. Goal: The goal of this project is to conduct a Phase 1 clinical trial to test the safety and immunogenicity of the eOD-GT8 60mer Vaccine, Adjuvanted that is being developed to protect against infection with HIV.
   3. Specific Aims
      i. Specific Aim 1: To evaluate the safety and tolerability of the study regimens
      ii. Specific Aim 2: To assess the frequency of VRC01-class memory B cells
      iii. Specific Aim 3: To assess the frequency and magnitude of binding antibody responses to eODGT8 60mer and eOD-GT8 monomer
      iv. Specific Aim 4: To assess the proportion of volunteers with epitope-specific antibody responses against eOD-GT8
   4. Start and end date (month/day/year – month/day/year): 05/01/2018 – 04/30/2020
   5. Level of Funding: $477,257
   6. Level (%) of effort in the project: 19%

| Name: | Sarah Tritsch, BS |
| Project Role: | Senior Research Associate, GW CIL |
| Researcher Identifier: | n/a |
| Nearest person month worked: | 1 person month per year |
| Contribution to Project: | Ms. Tritsch performed work in planning for the receiving and processing of blood samples collected from study subjects in Uganda that will be shipped to GW, and for conducting immunological assays on these samples. She also conducted training on laboratory procedures during the pre-study initiation visit to MUWRP by GW study personnel in March 2019. |

| Name: | Guangzhao Li, MS |
| Project Role: | Biostatistician II, GW CIL |
| Researcher Identifier: | n/a |
| Nearest person month worked: | 2 person month per year |
| Contribution to Project: | Ms. Li has performed work in planning for the analysis of immunological assays and completion of reports and publications that will be conducted as part of this project. |

| Name: | Carissa Stoudt |
| Project Role: | Laboratory Aide, GW CIL |
| Researcher Identifier: | n/a |
| Nearest person month worked: | 1 person month per year |
| Contribution to Project: | Ms. Stoudt has performed work in planning for the receipt, processing and storage of biological specimens that will be received at GW CIL as part of this project. |
Other Support that ended in reporting period:

a) **Title of the project**: Phase 1 Trial of Na-APR-1 and Na-GST-1 Hookworm Vaccines in Brazilian Adults
   1. Funding Agency: NIH
   2. Goal: The goal of the overall study is to identify the optimal vaccination regimen for inducing the highest protective antibody level as reflected by the highest concentration, quality (IgG subclass), specificity and affinity of antibody and the most prolonged antibody response as determined by the induction of memory B-cells.
   3. Specific Aims:
      i. Specific Aim 1: Conduct a double blind, dose-escalation Phase 1 trial in Brazilian adults to assess the safety and immunogenicity of Na-GST-1/Alhydrogel co-administered with Na-APR-1/Alhydrogel with and without GLA.
      ii. Specific Aim 2: Measure the quantity and quality of the Ab response to each antigen by the novel application of two well established antibody-profiling techniques.
      iii. Specific Aim 3: Measure the functional capacity of neutralizing antibodies to each antigen administered alone or together, with and without co-administration of GLA.
      iv. Specific Aim 4: Assess the induction of memory B cells (MBC) during immunization to each antigen and their association with Ab responses as determine in Aim 3.
   4. Start and end date (month/day/year – month/day/year): 07/08/2015 – 06/30/2019
   5. Level of Funding: $2,113,720
   6. Level (%) of effort in the project: 10%

b) **Title of the project**: Developing and Testing a novel, low-cost, effective HOOKworm VACcine to Control Human Hookworm Infection in endemic countries
   1. Funding Agency: European Commission via subaward from the Amsterdam Institute of Global Health and Development (AIGHD) (FP7 award)
   2. Goal: The goal of this project is to conduct the immunology in pre-clinical and clinical immunology in support of the testing, and clinical evaluation of Na-GST-1 and Na-APR-1 in Gabon, Africa, to develop a bivalent human hookworm vaccine.
   3. Specific Aims:
      i. Specific Aim 1: Establish safety and immunogenicity of the vaccine candidates when coadministered in an endemic African population.
      ii. Specific Aim 2: Improve the manufacturing process and formulation of the vaccine candidates.
      iii. Specific Aim 3: Provide clinical proof of concept.
      iv. Specific Aim 4: Improve accessibility of the vaccine in endemic areas.
   4. Start and end date (month/day/year – month/day/year): 10/01/2013 – 03/31/2019
   5. Level of Funding $384,361
   6. Level (%) of effort in the project: 10%

c) **Title of the project**: Feasibility Study of Leukapheresis to Obtain Low-Frequency Lymphocyte Sub-Populations in Healthy Adults.
   1. Funding Agency: International AIDS Vaccine Initiative (IAVI)
   2. Goal: The goal of this project is to test the feasibility of performing the leukapheresis procedure to obtain sufficient quantities of lymphocytes so that low-frequency subpopulations can be adequately detected and enumerated. The eventual goal will be to use leukapheresis during the upcoming Phase 1 trial of the eOD-GT8 60mer Vaccine, Adjuvanted. 
   3. Specific Aims:
i. Specific Aim 1: To assess the safety and feasibility of conducting leukapheresis to isolate and enumerate lymphocyte subpopulations.

ii. Specific Aim 2: To characterize the cellular composition of peripheral blood mononuclear cell (PBMC) samples obtained by leukapheresis using flow cytometry.

iii. Specific Aim 3: To quantify lymphocyte subpopulations in samples obtained by leukapheresis.

4. Start and end date (month/day/year – month/day/year): 04/01/2018 – 08/31/2018

5. Level of Funding: $19,577

6. Level (%) of effort in the project: 0%

7.2.2 Jeffrey Bethony (GW Clinical Immunology Laboratory Director)

Other Support that started in reporting period:

a) Title of the project: Laboratory support for, “A Phase 1, randomized, double-blind, placebo-controlled dosage escalation trial to evaluate the safety and immunogenicity of eOD-GT8 60mer Vaccine, Adjuvanted in HIV-uninfected, healthy adult volunteers.”

1. Funding Agency: International AIDS Vaccine Initiative (IAVI)

2. Goal: The goal of this project is to conduct a Phase 1 clinical trial to test the safety and immunogenicity of the eOD-GT8 60mer Vaccine, Adjuvanted that is being developed to protect against infection with HIV.

3. Specific Aims

i. Specific Aim 1: To evaluate the safety and tolerability of the study regimens

ii. Specific Aim 2: To assess the frequency of VRC01-class memory B cells

iii. Specific Aim 3: To assess the frequency and magnitude of binding antibody responses to eODGT8 60mer and eOD-GT8 monomer

iv. Specific Aim 4: To assess the proportion of volunteers with epitope-specific antibody responses against eOD-GT8

4. Start and end date (month/day/year – month/day/year): 05/01/2018 – 04/30/2020

5. Level of Funding: $101,261

6. Level (%) of effort in the project: 4%

Other Support that ended in reporting period:

a) Title of the project: Phase 1 Trial of Na-APR-1 and Na-GST-1 Hookworm Vaccines in Brazilian Adults

1. Funding Agency: NIH

2. Goal: The goal of the overall study is to identify the optimal vaccination regimen for inducing the highest protective antibody level as reflected by the highest concentration, quality (IgG subclass), specificity and affinity of antibody and the most prolonged antibody response as determined by the induction of memory B-cells.

3. Specific Aims:

i. Specific Aim 1: Conduct a double blind, dose-escalation Phase 1 trial in Brazilian adults to assess the safety and immunogenicity of Na -GST-1/Alhydrogel co-administered with Na-APR-1/Alhydrogel with and without GLA

ii. Specific Aim 2: Measure the quantity and quality of the Ab response to each antigen by the novel application of two well established antibody-profiling techniques

iii. Specific Aim 3: Measure the functional capacity of neutralizing antibodies to each antigen administered alone or together, with and without co-administration of GLA.
iv. Specific Aim 4: Assess the induction of memory B cells (MBC) during immunization to each antigen and their association with Ab responses as determined in Aim 3.

4. Start and end date (month/day/year – month/day/year): 07/08/2015- 06/30/2019

5. Level of Funding: $2,113,720

6. Level (%) of effort in the project: 5.32%

b) **Title of the project:** Developing and Testing a novel, low-cost, effective HOOKworm VACCine to Control Human Hookworm Infection in endemic countries

1. Funding Agency: European Commission via subaward from the Amsterdam Institute of Global Health and Development (AIGHD) (FP7 award)

2. Goal: The goal of this project is to conduct the immunology in pre-clinical and clinical immunology in support of the testing, and clinical evaluation of Na-GST-1 and Na-APR-1 in Gabon, Africa, to develop a bivalent human hookworm vaccine.

3. Specific Aims
   i. Specific Aim 1: Establish safety and immunogenicity of the vaccine candidates when coadministered in an endemic African population.
   ii. Specific Aim 2: Improve the manufacturing process and formulation of the vaccine candidates.
   iii. Specific Aim 3: Provide clinical proof of concept.
   iv. Specific Aim 4: Improve accessibility of the vaccine in endemic areas.

4. Start and end date (month/day/year – month/day/year): 10/01/2013 – 03/31/2019

5. Level of Funding $384,361

6. Level (%) of effort in the project: 2%

c) **Title of the project:** Feasibility Study of Leukapheresis to Obtain Low-Frequency Lymphocyte Sub-Populations in Healthy Adults.

1. Funding Agency: International AIDS Vaccine Initiative (IAVI)

2. Goal: The goal of this project is to test the feasibility of performing the leukapheresis procedure to obtain sufficient quantities of lymphocytes so that low-frequency subpopulations can be adequately detected and enumerated. The eventual goal will be to use leukapheresis during the upcoming Phase 1 trial of the eOD-GT8 60mer Vaccine, Adjuvanted.

3. Specific Aims:
   i. Specific Aim 1: To assess the safety and feasibility of conducting leukapheresis to isolate and enumerate lymphocyte subpopulations.
   ii. Specific Aim 2: To characterize the cellular composition of peripheral blood mononuclear cell (PBMC) samples obtained by leukapheresis using flow cytometry.
   iii. Specific Aim 3: To quantify lymphocyte subpopulations in samples obtained by leukapheresis.

4. Start and end date (month/day/year – month/day/year): 04/01/2018 – 08/31/2018

5. Level of Funding: $19,577

6. Level (%) of effort in the project: 0%

d) **Title of the project:** Burkitt Lymphoma (BL) Genome Sequencing Project (BLGSP)

1. Funding Agency: Leidos Biomedical Research, Inc (for the National Cancer Institute, National Institutes of Health)

2. Goal: To support the hypothesis above by accrual of high quality, clinically annotated tissue from patients with Burkitt Lymphoma (BL). This material will be used to study clinical, genetic, and immunologic parameters that might have prognostic significance and/or are involved in the initiation and progression of Burkitt Lymphoma in the context of the BLGSP initiative.
3. Specific Aims:
   i. Specific Aim: A prospective tissue accrual study using incident cases of confirmed BL as determined by clinical and laboratory tests described herein with a 12 and 24 month follow up
4. Start and end date: 09/23/2013 - 06/23/2018
5. Level of Funding: $188,000
6. Level (%) of effort in the project: 2.97%
e) Title of the project: AIDS Malignancy Consortium
1. Funding Agency: NIH/NCI (prime: UCLA)
2. Goal: support innovative clinical trials for HIV/AIDS associated malignancies. As chair of the Laboratory Resource Committee Chair, Dr. Bethony coordinates the research laboratory studies on these trials.
3. Specific Aims:
   i. To investigate new treatment and prevention interventions for malignancies in people living with HIV
   ii. To study the pathobiology of these tumors in the context of clinical trials.
4. Start and estimated end date: 09/01/2018 – 08/31/2020
5. Level of Funding: $24,697 (sub to GW)
6. Level (%) of effort in the project: 5%

7.3 Other organizations involved as partners
7.3.1 Organization Name: Makerere University Walter Reed Project (MUWRP)

Location of Organization: Kampala, Uganda

Partner’s contribution to the project:
- Facilities (clinical trial site)
- Collaboration

<table>
<thead>
<tr>
<th>Makerere University Walter Reed Project (MUWRP) Participants:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong> Hannah Kibuuka, MD</td>
</tr>
<tr>
<td><strong>Project Role:</strong> Trial PI; Subaward PI</td>
</tr>
<tr>
<td><strong>Researcher Identifier:</strong> 0000-0002-2293-1944 (Orcid ID)</td>
</tr>
<tr>
<td><strong>Nearest person month worked:</strong> 1 person month per year</td>
</tr>
<tr>
<td><strong>Contribution to Project:</strong> Dr. Kibuuka has performed work in leading the project as the clinical trial PI on site in Uganda. She has been involved in managing study design and developing the clinical protocol and related study documents; overseeing ethical and regulatory submissions in Uganda (at Makerere University and the national Ugandan ethics committee and regulatory agency); developing logistical and operational plans for conducting the clinical trial at MUWRP.</td>
</tr>
</tbody>
</table>
### Makerere University Walter Reed Project (MUWRP) Participants:

<table>
<thead>
<tr>
<th>Name</th>
<th>Project Role</th>
<th>Researcher Identifier</th>
<th>Nearest person month worked</th>
<th>Contribution to Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proscovia Naluyima, PhD</strong></td>
<td><strong>MUWRP Laboratory Director</strong></td>
<td>n/a</td>
<td>2 person months per year</td>
<td>Dr. Naluyima has performed work in leading the overall oversight of the laboratory procedures and assays that will be performed at MUWRP in Uganda for the trial. She is involved in designing, analyzing and interpreting the immunologic and parasitologic data that will be generated as part of this Project.</td>
</tr>
<tr>
<td><strong>Francis Kiweewa, MBChB, MMed, MPH</strong></td>
<td><strong>Head of Research and Scientific Affairs at MUWRP</strong></td>
<td>0000-0003-4938-9558 (Orcid ID)</td>
<td>1 person month per year</td>
<td>Dr. Kiweewa has performed work in contributing to the scientific design of the project, participating in the actual implementation of the study, and helping the trial PI in supervising the clinical trials staff.</td>
</tr>
<tr>
<td><strong>Monica Millard, BSN, MPH</strong></td>
<td><strong>MHRP Country Director in Uganda</strong></td>
<td>n/a</td>
<td>2 person months per year</td>
<td>Ms. Millard has performed work in developing the study design and protocol; supporting the QA/QC and regulatory functions at the MUWRP site in Uganda; and in overseeing the budgeting and operational logistics at the site.</td>
</tr>
<tr>
<td><strong>Nicholas Tamale MD</strong></td>
<td><strong>Medical Officer and Study Coordinator at MUWRP</strong></td>
<td>n/a</td>
<td>6 person months per year</td>
<td>Dr. Tamale has performed work in leading the coordination of the actual implementation of the study at the MUWRP site in Uganda, and helping the trial PI in supervising the clinical trials staff.</td>
</tr>
<tr>
<td><strong>Douglas Makumbi MD</strong></td>
<td><strong>Medical Officer and Study Coordinator at MUWRP</strong></td>
<td>n/a</td>
<td>2 person months per year</td>
<td>Dr. Makumbi replaced Dr. Tamale on this project in August 2019. He has performed work in leading the coordination of the actual implementation of the study at the MUWRP site in Uganda, and helping the trial PI in supervising the clinical trials staff. Upon initiation of recruitment and screening, Dr. Mwesigwa will implement the day to day clinical trials activities including eligibility checks, enrollment of the participants, collection of clinical data, specimens and follow-up of all participants enrolled.</td>
</tr>
<tr>
<td><strong>Allan Tindikahwa, PharmD</strong></td>
<td><strong>Head, Quality Improvement &amp; Compliance at MUWRP</strong></td>
<td>n/a</td>
<td>3 person months per year</td>
<td>Dr. Tindikahwa has performed work in preparing and coordinating the ethical and regulatory submissions to the Ugandan local and national IRBs as well as the Uganda National Drug Authority (the national regulatory agency); design and implementation of the clinical quality management plan for the trial; and, design of the data collection forms that will be used to collect data on study participants at the MUWRP site in Uganda.</td>
</tr>
<tr>
<td>Name:</td>
<td>Betty Mwesigwa, MD</td>
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<tr>
<td>Project Role:</td>
<td>Medical Officer at MUWRP</td>
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<tr>
<td>Researcher Identifier:</td>
<td>n/a</td>
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<tr>
<td>Nearest person month worked:</td>
<td>1 person month per year</td>
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<tr>
<td>Contribution to Project:</td>
<td>Dr. Mwesigwa has performed work in the implementation of the clinical trial; design of the data collection forms that will be used to collect data on study participants; design of recruitment plan and recruitment materials; and, creation of the study Manual of Procedures. Upon initiation of recruitment and screening, Dr. Mwesigwa will implement the day to day clinical trials activities including eligibility checks, enrollment of the participants, collection of clinical data, specimens and follow-up of all participants enrolled.</td>
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<table>
<thead>
<tr>
<th>Name:</th>
<th>Amir Wamala, PharmD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Role:</td>
<td>Investigational Pharmacist at MUWRP</td>
</tr>
<tr>
<td>Researcher Identifier:</td>
<td>n/a</td>
</tr>
<tr>
<td>Nearest person month worked:</td>
<td>1 person month per year</td>
</tr>
<tr>
<td>Contribution to Project:</td>
<td>Mr. Wamala has performed work in preparing the pharmacy at MUWRP for initiation of the clinical trial; design of the investigational pharmacy forms that will be used to perform accountability, dispensing and storage or study vaccines at MUWRP; coordination of the application to the Uganda NDA to import study product to the study site; and, creation of the study Manual of Procedures.</td>
</tr>
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<thead>
<tr>
<th>Name:</th>
<th>Immaculate Nakabuye</th>
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</thead>
<tbody>
<tr>
<td>Project Role:</td>
<td>Research Nurse at MUWRP</td>
</tr>
<tr>
<td>Researcher Identifier:</td>
<td>n/a</td>
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<tr>
<td>Nearest person month worked:</td>
<td>1 person month per year</td>
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<tr>
<td>Contribution to Project:</td>
<td>Ms. Nakabuye has performed work in preparing the clinic at MUWRP for initiation of the clinical trial. Upon initiation of the trial, she will perform study-related procedures including consenting, performing participant assessments and vital signs.</td>
</tr>
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<thead>
<tr>
<th>Name:</th>
<th>Mukyala Maureen Gabula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Role:</td>
<td>Research Nurse at MUWRP</td>
</tr>
<tr>
<td>Researcher Identifier:</td>
<td>n/a</td>
</tr>
<tr>
<td>Nearest person month worked:</td>
<td>1 person month per year</td>
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<tr>
<td>Contribution to Project:</td>
<td>Ms. Gabula has performed work in preparing the clinic at MUWRP for initiation of the clinical trial. Upon initiation of recruitment and screening, she will perform study-related procedures including consenting, performing participant assessments and vital signs.</td>
</tr>
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<thead>
<tr>
<th>Name:</th>
<th>Namagabo Jacqueline Sarah</th>
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</thead>
<tbody>
<tr>
<td>Project Role:</td>
<td>Quality Control/Quality Assurance Coordinator at MUWRP</td>
</tr>
<tr>
<td>Researcher Identifier:</td>
<td>n/a</td>
</tr>
<tr>
<td>Nearest person month worked:</td>
<td>1 person month per year</td>
</tr>
<tr>
<td>Contribution to Project:</td>
<td>Ms. Sarah has performed work in preparing the clinical quality management plan for the clinical trial. She will coordinate all QC/QA activities for the clinical aspects of the trial and will perform episodic audits of study documentation, including completed DCFs.</td>
</tr>
<tr>
<td>Name</td>
<td>Project Role</td>
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</tr>
<tr>
<td>Joseph Wandege</td>
<td>Laboratory Manager at MUWRP</td>
</tr>
<tr>
<td>Christine Nanteza</td>
<td>Laboratory QA/QC Coordinator at MUWRP</td>
</tr>
<tr>
<td>Ezra Musingye</td>
<td>Data Manager at MUWRP</td>
</tr>
<tr>
<td>Jauhara Nanyondo</td>
<td>Community Outreach Coordinator at MUWRP</td>
</tr>
<tr>
<td>Hilda Mutebe</td>
<td>Regulatory Officer at MUWRP</td>
</tr>
</tbody>
</table>
7.3.2 **Organization Name:** Baylor College of Medicine (BCM)

**Location of Organization:** Houston, Texas

**Partner's contribution to the project:**
- Regulatory support (US FDA IND holder of the Sm-TSP-2/Alhydrogel schistosomiasis vaccine)
- Collaboration

### Baylor College of Medicine (BCM) Participants:

<table>
<thead>
<tr>
<th>Name</th>
<th>Project Role</th>
<th>Researcher Identifier</th>
<th>Nearest person month worked</th>
<th>Contribution to Project</th>
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</thead>
<tbody>
<tr>
<td>Peter Hotez, MD, PhD</td>
<td>Director, Texas Children’s Hospital Center for Vaccine Development at Baylor College of Medicine; Subaward PI</td>
<td>0000-0001-8770-1042 (Orcid ID)</td>
<td>0 person months per year</td>
<td>Dr. Hotez has performed work in directing the project team at BCM and guiding the experimental design and data analysis. He coordinates the collaboration with the GW and MUWRP.</td>
</tr>
<tr>
<td>Maria Elena Bottazzi, PhD</td>
<td>Co-Director, Texas Children’s Hospital Center for Vaccine Development at Baylor College of Medicine (TCH-CVD at BCM)</td>
<td>0000-0002-8429-0476 (Orcid ID)</td>
<td>0 person months per year</td>
<td>Dr. Bottazzi has performed work in supervising the quality control and regulatory units at the BCM vaccine center. She reviews all technical reports for assessment of ongoing potency and stability of the Sm-TSP-2/Alhydrogel vaccine and is responsible for submissions to the US FDA for this product on behalf of BCM, the Sponsor.</td>
</tr>
<tr>
<td>Hilda Guerrero, BS</td>
<td>Director of Quality Assurance and Regulatory Affairs, TCH-CVD at BCM</td>
<td>n/a</td>
<td>0 person months per year</td>
<td>Ms. Guerrero has performed work in overseeing quality assurance services during the performance of the quality control activities including quality management support for the ongoing stability testing of the Sm-TSP-2/Alhydrogel vaccine. She also supervises preparation of all regulatory documentation in support of this project, in particular for the investigational product and regulatory submissions for this clinical trial to the US FDA.</td>
</tr>
<tr>
<td>Wen-Hsiang Chen, PhD</td>
<td>Director of Quality Control, TCH-CVD at BCM</td>
<td>n/a</td>
<td>0 person months per year</td>
<td>Dr. Chen has performed work in supervising all Quality Control measures during the production of the Sm-TSP-2/Alhydrogel vaccine and for the stability testing of the TSP-2 protein.</td>
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</tbody>
</table>

8 **SPECIAL REPORTING REQUIREMENTS**

- QuadChart for Year 1 of the project (see Appendix A)
Appendix A: QuadChart for Year 1 of the project.
Phase 1/2b Testing of the Sm-TSP-2 Schistosomiasis Vaccine in Uganda

Proposal #: PR172460
Award #: W81XWH1810672
PI: David Diemert
Org: George Washington University
Award Amount: $4,758,022

Study Aims
• Assess the safety and immunogenicity of the Sm-TSP-2/Alhydrogel® vaccine with or without AP 10-701 (a synthetic Toll-like Receptor-4 agonist) in individuals living in areas of Uganda endemic for S. mansoni and S. haematobium
• Compare the incidence and intensity of reinfection with S. mansoni at 12 and 18 months following vaccination with Sm-TSP-2/Alhydrogel® vs. the licensed Hepatitis B Virus (HBV) vaccine as a comparator
• Assess the cellular immune response to vaccination with Sm-TSP-2/Alhydrogel

Approach
Conduct a Phase 1/2 proof-of-concept trial of the Sm-TSP-2/Alhydrogel schistosomiasis vaccine in healthy, schistosomiasis-exposed adults living in endemic areas of Uganda. Objectives are to tests the safety, immunogenicity and efficacy of the vaccine in this population.

Timeline and Cost

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<th>Activities</th>
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<td>Obtain IRB and Regulatory Approvals for</td>
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<tr>
<td>Train MUWRP Study Staff for Clinical Trial</td>
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<tr>
<td>Study Part A (Phase I) Participant Recruitment</td>
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<td>Vaccination, and Follow-up</td>
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<tr>
<td>Study Part B (Phase II) Participant Recruitment</td>
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<td>Product Stability Testing</td>
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<tr>
<td>Estimated Budget ($K)</td>
<td></td>
<td>$291</td>
<td>$1,218</td>
<td>$1,373</td>
<td>$1,234</td>
<td>$642</td>
</tr>
</tbody>
</table>

Goals/Milestones
CY18 Goal – Ethical & Regulatory Submissions
☐ Submission to GW and MUWRP IRBs
CY19 Goals – Ethical & Regulatory Approvals
☐ Approval by all Ugandan and US IRBs and regulators
☐ Initiation of recruitment and vaccinations in Part A of study
CY20 Goal – Completion of Study Part A & Initiation of Part B
☐ Complete study visits in Part A
☐ Initiation of recruitment and vaccinations in Part A of study
CY21 Goal – Completion of Vaccinations in Study Part B
☐ Completion of vaccinations in Study Part B
CY22 Goal – Research laboratory analyses & reporting results
☐ Completion of research laboratory analyses
☐ Completion of Clinical Study Report

Comments/Challenges/Issues/Concerns
• Full IRB approval took longer than anticipated due to new requirement for local MUWRP IRB approval prior to national Ugandan IRB review. Budget expenditures have been delayed accordingly.

Budget Expenditure to Date
Projected Expenditure: $1,165,072
Actual Expenditure: $273,410

Updated: 31OCT2019