

AWARD NUMBER: W81XWH-18-2-0017

TITLE: Prostate Cancer Biorepository Network

PRINCIPAL INVESTIGATOR: Colm Morrissey

CONTRACTING ORGANIZATION: University of Washington

REPORT DATE: Oct 2020

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;
Distribution Unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE Oct 2020		2. REPORT TYPE Annual		3. DATES COVERED 09/30/2019 -09/29/2020	
4. TITLE AND SUBTITLE Prostate Cancer Biorepository Network				5a. CONTRACT NUMBER W81XWH-18-2-0017	
				5b. GRANT NUMBER PC171113P3	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Colm Morrissey E-Mail:cmorriss@uw.edu				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) University of Washington 4333 Brooklyn Ave Seattle WA 98195-0001				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Development Command Fort Detrick, Maryland 21702-5012				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release; Distribution Unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT The purpose of the Prostate Cancer biorepository is to collect and distribute relevant biological specimens to prostate cancer investigators.					
15. SUBJECT TERMS Prostate Cancer Biospecimens					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Unclassified	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON USAMRMC
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER (include area code)

TABLE OF CONTENTS

	<u>Page</u>
1. Accomplishments	4
2. Products	7
3. Participants & Other Collaborating Organizations	8
4. Changes Problems	10
5. Special Reporting Requirements	10

Annual Technical Progress Report

Award Number:	W81XWH-18-2-0017
Log Number:	PC171113P3
Project Title:	Prostate Cancer Biorepository Network
Principal Investigator Name:	Colm Morrissey
Principal Investigator Organization and Address:	UNIVERSITY OF WASHINGTON GRANT & CONTRACTS DIVISION 4333 BROOKLYN AVE NE SEATTLE WA 98195-0001
Principal Investigator Phone and Email:	206-543-1461 cmorriss@uw.edu
Report Date:	09.30.20
Report Period:	10.01.19 through 09.30.20

Keywords: Biorepository, Prostate cancer

1. Accomplishments:

What were the major goals of the project?

Specific Aim 1: Collect, process, and store biospecimens annotated with clinical and pathology data from well-characterized populations of patients.

Specific Aim 2: Maintain an informatics infrastructure for secure data storage and transfer, and a web-accessible portal for users to learn about and access specimens from the PCBN.

Specific Aim 3: Continue to develop harmonized SOPs for biospecimen acquisition, processing, storage and quality control to increase the fidelity of biospecimens provided to investigators.

Specific Aim 4: Distribute biospecimens according to a prioritization plan to ensure maximal use by the prostate cancer community.

What was accomplished under these goals?

Database Management

Data abstraction and record updates were the focus of our group during the first few months of COVID19 while sample collection was on hold, and continued at a regular pace once collections started again.

Prostatectomy Tissue Acquisition

During this year, we prepared frozen OCT embedded tissues from 43 prostatectomies. Ten were from high risk patients (Gleason 8 and above), 30 were from medium risk (Gleason 7) and 3 were low risk (Gleason 6).

Tissue Acquisition Necropsies (TAN)

We performed four prostate cancer TANs in the past year. The specimens are processed and are being read by a pathologist and the results entered into our database.

Tissue Microarrays (TMAs)

We are currently constructing a new xenograft tissue microarray (TMA) as we are coming close to the end of the current TMA that we had constructed in duplicate last year containing 40 patient derived xenograft lines. Our castration-resistant prostate cancer metastasis TMA is still in use, but we have started identifying histologically new more recent castration-resistant tissues to construct a new TMA, the construction has not taken place, but will occur in the next few months.

Longitudinal Sampling

Serum and Plasma Isolation

Sera were obtained from 43 prostatectomy patients and 52 metastatic patients. Plasma and buffy coats were obtained from 43 prostatectomy patients and 51 metastatic patients.

Patient Derived Xenografts (PDX)

We have attempted to grow five different PDX implants from patients. We have successfully transplanted one of these tumors (LuCaP 243). In addition, we are currently developing four castrate-resistant lines from androgen sensitive lines.

Specimens Provided

This year we have provided to different groups:

1. A metastasis TMA
2. Frozen tissue from sixteen PDX lines
3. A PDX TMA
4. Two PDX TMAs and a metastasis TMA
5. Two PDX TMAs
6. Three cuts of twenty bone metastases
7. Two metastasis TMAs
8. A metastasis TMA
9. Twenty-eight serum samples from CRPC patients
10. One hundred sera from prostate cancer patients
11. One metastasis TMA
12. Two PDX TMAs
13. Three metastasis TMAs
14. A PDX and a metastasis TMA
15. A metastasis TMA

Describe the Regulatory Protocol and Activity Status (if applicable).

Describe the Protocol and Activity Status for sections a-c, as applicable, using the format described for each section. If there is nothing significant to report during this reporting period, state "Nothing to Report."

TOTAL PROTOCOLS: 1

PROTOCOL (1 of 1 total):

Protocol [HRPO Assigned Number]: HRPO Log Number E00074.1a

Title: The Prostate Cancer Biorepository Network (PCBN)

Target required for clinical significance: NA

Target approved for clinical significance: NA

SUBMITTED TO AND APPROVED BY:

University of Washington IRB #2341

HRPO #_E00074.1a

STATUS:

- (i) Number of subjects recruited/original planned target: 102/150
Number of subjects screened/original planned target: 102/150
Number of patients enrolled/original planned target: 102/150
Number of patients completed/original planned target: 102/150

- (ii) Report amendments submitted to the IRB and USAMRMC HRPO for review: NA

- (iii) Adverse event/unanticipated problems involving risks to subjects or others and actions or plans for mitigation: NA

**(b) Use of Human Cadavers for Research Development Test & Evaluation (RDT&E),
Education or Training**

TOTAL ACTIVITIES: 4

ACTIVITES: *Prostate Cancer Rapid autopsy program*

- *The purpose of this activity is to collect metastatic and control tissue from patients within hours of death.*
- *The lead PI is Dr. Colm Morrissey, the lead Pathologist Dr. Lawrence True.*
- *The tissue was processed and frozen for molecular biology, embedded in paraffin for histology and fresh tissue used to implant into immune compromised animals to establish patient derived xenografts.*
- *No problems encountered in the procurement, inventory, use, storage, transfer, transportation and disposition of cadavers used for RDT&E.*

(c) Animal Use Regulatory Protocols

TOTAL PROTOCOL(S): 1

PROTOCOL (1 of 1 total):

Protocol [ACURO Assigned Number]: ACURO Log Number PC171113P3.e001

Title: *Title:* Prostate Cancer Biorepository Network (PCBN) - University of Washington Site

Target required for statistical significance: NA

Target approved for statistical significance: NA

SUBMITTED TO AND APPROVED BY:

University of Washington IACUC # 3202-01

ACURO # PC171113P3.e001

STATUS:

ONGOING

What do you plan to do during the next reporting period to accomplish the goals and objectives?

We will continue to consent patients, collect and process biospecimens and add them to the Prostate Cancer Biorepository at the University of Washington.

2. Products: List any products resulting from the project during the reporting period. If there are no products to report for the current quarter, state "Nothing to report."

The products during the reporting period as described above were:

Prostatectomy Tissue Acquisition
 During the year, we prepared frozen OCT embedded tissues from 43 prostatectomies. Ten were from high risk patients (Gleason 8 and above), 30 were from medium risk (Gleason 7) and 3 were low risk (Gleason 6).

Tissue Acquisition Necropsies (TAN)
 We performed four TANs in the past year. Specimens are processed and are being read by a pathologist and the results entered into our database.

Tissue Microarrays (TMAs)
 We are currently constructing a new xenograft tissue TMA, which should be completed and ready for distribution shortly.

Longitudinal Sampling
Serum and Plasma Isolation
 Sera were obtained from 43 prostatectomy patients and 52 metastatic patients. Plasma and buffy coats were obtained from 43 prostatectomy patients and 51 metastatic patients.

Patient Derived Xenografts (PDX)
 We have successfully transplanted a new PDX line (LuCaP 243).

All specimens described have been entered into our Biorepository database. A summary of the specimens procured during the year are shown in the table (Inset).

Biospecimen Acquisition October 1 2019 – September 31 2020	Total Specimens Collected
Serum	
Pre-RRP	43
Metastatic	52
Total	95
Tissue	
Prostatectomy	43
Metastatic Sites Sampled	31
Normal Sites Sampled	26
Total	100

3. Participants & Other Collaborating Organizations

What individuals have worked on the project?

Provide the following information for: (1) Project Directors (PDs)/ PIs; and (2) each person who has worked at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort).

Name: Colm Morrissey

Project Role: PI

Researcher Identifier (e.g. ORCID ID):

Nearest person month worked: 2

Contribution to Project: He supervised all biospecimen acquisition, processing, characterization, maintenance of the clinical database, interaction with the other sites when necessary, and the distribution of specimens.

Name: Lawrence True

Project Role: Co-director

Researcher Identifier (e.g. ORCID ID):

Nearest person month worked: 1

Contribution to Project: As a surgical pathologist with expertise in GU cancers his input and participation has been in tissue acquisition and rapid autopsies.

Name: Eva Corey

Project Role: Co-director

Researcher Identifier (e.g. ORCID ID):

Nearest person month worked: 1

Contribution to Project: Her primary responsibilities were to focus on the maintenance, development and processing of the LuCaP prostate cancer xenograft lines.

Name: Lori Kollath

Project Role: Biorepository Manager

Researcher Identifier (e.g. ORCID ID):

Nearest person month worked: 4

Contribution to Project: Her primary responsibilities were to obtain human subjects approvals oversight of all biospecimen collections, processing, clinical chart abstractions, database entries and biospecimen distributions. She supervises Ms. Nghiem and Ms. Essien.

Name: Halima Essien
Project Role: Research Scientist
Researcher Identifier (e.g. ORCID ID):

Nearest person month worked: 1

Contribution to Project: Ms. Essien is one of two tissue acquisition technicians. She works very closely with Dr. True in obtaining radical prostatectomy and control specimens immediately after surgical removal. She processes these specimens initially in the frozen section suite of surgical pathology and then follows-up with processing in the research laboratory, she also aids in the processing of blood specimens. She reports to Ms. Kollath and helps maintain the repository specimen database. She is also a member of the rapid autopsy team.

Name: Jennifer Conner
Project Role: Research Scientist
Researcher Identifier (e.g. ORCID ID):

Nearest person month worked: 1

Contribution to Project: Ms. Conner reports directly to Ms. Nguyen. She assists Ms. Nguyen in all administrative tasks associated with the animal facility and fully participates in the daily maintenance and care of the animals bearing our 42 serially passaged patient-derived xenograft models. In addition, she assists in the establishment of new xenograft lines from tissue acquisition. Ms. Conner is a member of the rapid autopsy team.

Name: Belinda Nghiem
Project Role: Research Scientist
Researcher Identifier (e.g. ORCID ID):

Nearest person month worked: 1

Contribution to Project: Ms. Nghiem is our research study coordinator and phlebotomist. She spends 100% of her time in the Urology Oncology clinic helping to identify and consent patients for biospecimen donations. She draws blood on hundreds of patients per year and serves as the primary link between the research laboratory and clinic. She is also a member of the rapid autopsy team.

- 4. Changes/Problems:** The PD/PI is reminded that the recipient organization is required to obtain prior written approval from the awarding agency Grants Officer whenever there are significant changes in the project or its direction. If not previously reported in writing, provide the following additional information or state, "Nothing to Report," if applicable:

a. Actual Problems or delays and actions to resolve them

For the first weeks of the COVID-19 outbreak in late March and early April, we halted collection of tissues and devised a rotating schedule for personnel to reduce contact between members of the tissue acquisition group, during this period we focused on data abstraction. Once a COVID-19 work plan was devised, we started limited collections and maintained social distancing structures in the group. We have been working with that plan in place since then. Further, the rapid autopsy was suspended until approvals were obtained from the University to move forward with a new plan of action. We have met all of these approvals except one. Personnel are currently receiving training in the use of fitted masks required by our EH&S office.

b. Anticipated Problems/Issues

Provide a description of anticipated problems or issues that have a potential to impede performance or progress. Also provide course of actions planned to mitigate problems or to take should the problem materialize.

All activities are moving forward, with the exception of performing any new rapid autopsies until appropriate PPE is available. We managed to acquire a small number of masks for fitting with EH&S, however, our challenge currently is that we have limited access to the required fitted masks. We have ordered them through multiple sources, but they are not available at this time, EH&S do not have access to the masks to provide to us, nor does the autopsy service who received masks as an emergency allocation. We have reached out to other groups within the medical school and expect that the shortage of appropriate PPE will be resolved shortly.

5. Special Reporting Requirements:

Quad Charts: If applicable, the Quad Chart (available on <https://www.usamraa.army.mil>) should be updated and submitted with attachments.