

AD _____

Award Number: W81XWH-11-1-0729

TITLE: Prostate Cancer Disparities in an Incarcerated Community

PRINCIPAL INVESTIGATOR: Meghan E. Borysova, Ph.D.

CONTRACTING ORGANIZATION: University of South Florida
Tampa, FL 33612-3805

REPORT DATE: September 2012

TYPE OF REPORT: Annual Summary

PREPARED FOR: U.S. Army Medical Research and Materiel 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 30 Sep 2012		2. REPORT TYPE Annual Summary		3. DATES COVERED 1 Sep 2011 - 31 Aug 2012
4. TITLE AND SUBTITLE Prostate Cancer Disparities in an Incarcerated Community			5a. CONTRACT NUMBER	
			5b. GRANT NUMBER W81XWH-11-1-0729	
			5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Meghan E. Borysova, Ph.D. E-Mail mborysov@health.usf.edu			5d. PROJECT NUMBER	
			5e. TASK NUMBER	
			5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS University of South Florida Tampa, FL 33612-3805			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY U.S. Army Medical Research and Materiel 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 This award was applied for by, and awarded to, the Principal Investigator (P.I.), Meghan E. Borysova, whose organization was Moffitt Cancer Center at the time of award notification. Dr. Borysova subsequently moved to the University of South Florida (USF) and transferred this award to USF which caused a delay in the start date. Dr. Borysova has requested a no-cost extension (NCE) dependent upon utilizing the remaining funds to cover salary of P.I. due to unforeseen circumstances involving the Florida Department of Corrections which was the community partner in this award.				
The objective of this award are to provide the principal investigator (P.I.) with a comprehensive training program that will enhance the P.I.'s skills as a prostate cancer health disparities researcher, thereby increasing the chances that the P.I. will establish her career in this field of study. The P.I. is a postdoctoral fellow whose background as a cancer biologist prepared her for a career focused on matters of Health Disparities and Health Equity. The overall goals of this P.I. and this award are to specifically focus on improving the health of underserved, minority individuals and communities; specifically <i>African Americans and the incarcerated population</i>. The training program aspects of this award include direct mentorship, attendance of seminars, meetings, lectures, presentation of data at conferences, and development of a network of health disparities professionals. The scientific goals of this study are (1) conduct a 10-year retrospective analysis of incidences and mortality of prostate cancer in the WDOC, and (2) to determine the cross-racial and ethnic prevalence of conjugal behaviors and biological markers associated with increased and decreased risks for prostate cancer within the Florida Department of Corrections. The participating organization of the Florida Department of Corrections was formally changed to the Wisconsin Department of Corrections (WDOC). This lengthy process utilized the majority of the initial year of the grant; however, the WDOC is an active and engaged community partner. The P.I. is near completion of goal 1, a 10-year retrospective analysis of mortality within the WDOC, which has revealed shocking data on disparities in the WDOC; and will use the remainder of the grant (including a no-cost-extension) to fulfill goal one and to complete goal 2.				
15. SUBJECT TERMS				
16. SECURITY CLASSIFICATION OF:		17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 14	19a. NAME OF RESPONSIBLE PERSON USAMRMC

Table of Contents

	<u>Page</u>
Introduction.....	4
Body.....	4
Training and Professional Development.....	4
Research Project.....	8
Key Research Accomplishments.....	12
Reportable Outcomes.....	12
Conclusion.....	14
References.....	14

Introduction

The Prostate Cancer Health Disparities Training Award is intended to provide early career researchers the opportunity to acquire training that will promote careers focused on improving prostate cancer outcomes, and decreasing prostate cancer disparities. Award W81XWH-11-1-0729, PC102033, focuses on providing training to Principal Investigator (PI) Meghan E. Borysova, Ph.D., through a detailed training program coupled with conducting research on prostate cancer disparities in a department of corrections. The PI is a postdoctoral fellow in the College of Public Health (COPH) at the University of South Florida in Tampa, Florida; institutions which view Health Disparities as a matter of public health concern and work tirelessly to improve health of all individuals and communities. The training component of this award includes direct mentorship, attendance at conferences, seminars, lectures, presentations of data through meetings and manuscripts, grant writing experience, professional networking and coursework. The research component of this award includes conducting a 10-year retrospective analysis of incidences and mortality of prostate cancer among incarcerated communities, and studying the cross-racial and ethnic prevalence of conjectural behaviors and biological markers associated with increased and decreased risks for prostate cancer within the incarcerated population.

Body

(A) Training and Professional Development

Dr. Borysova's postdoctoral training and professional development activities have focused on the disproportionate prostate cancer morbidity and mortality in minority populations, and on matters of health disparities and health equity. In keeping with the transdisciplinary nature of Dr. Borysova's research, her training and professional development have been transdisciplinary as well. Dr. Borysova has become a skilled professional with the rare capacity to conduct research on the basic science of cancer research as well as the social science elements of health disparities and cancer, while receiving training in the field of criminal justice, an essential element of her research population. To meet these goals, we have drawn upon the expertise of Dr. Arthur Williams, Ph.D., as a primary mentor, and Dr. Dawood Sultan, Ph.D., as co-mentor both of whom are faculty in the College of Public Health at the University of South Florida; Ojmarrh Mitchell, Ph.D., faculty in the Department of Criminology at the University of South Florida; and Dr. Brian Williams, faculty at the Moffitt Cancer Center.

The training and professional development plan has been facilitated and is ongoing as described below. Following is a list including a detailed description of how Dr. Borysova has followed through with the 10 original training plan components as outlined in the award application; following which is a list of 4 detailed additional career and professional development training not proposed in the award application (opportunities received due to this award); following which is a summary and a career development timeline.

1. Structured mentoring program coordinated by PI/primary mentor. Mentorship by Dr. Williams and other faculty has been provided through face-to-face meetings with Dr. Borysova including discussion of technical readings, guidance for career development, funding opportunities, research activities, collaboration on research projects, professional sponsorship for organizational involvement, resource sharing, joint peer-reviewed publications and presentations, and collaborative and independent submission of research grants. This mentorship has been particularly important for integrating the social sciences into Dr. Borysova's repertoire of scientific skill sets and thought processes.

2. Gain proficiency and a better understanding of science used to develop and implement primary prevention intervention in minority populations. Dr. Borysova has spent time focusing on community engagement, community and academic partnerships, and community based participatory research. These models have been explored through reading of primary literature, discussions with mentors and others in Dr. Borysova's professional network, and attending community partner functions. Of great significance was Dr. Borysova's experience with the Health Equity Leadership Institute (HELI) for which she was selected as a 2013 Scholar. This week-long Health Disparities Research Boot Camp at the University of Wisconsin provided detailed forums, seminars, one-on-one discussions, site visits, and honest discussions regarding the good and bad experiences that both community members and academic researchers have had as they have engaged in research interventions. While Dr. Borysova's research experience and scope of understanding of interventions prior to this award was limited to the confines of an academic setting, this award has provided her with one of the most essential skill sets – understanding how to engage research and communities together to lead to successful interventions geared toward improving health of individuals and communities. Many of these experiences has pertained directly to prostate cancer in minority communities, but much has related to addressing health disparities of many types in underserved communities, or communities of color. Great research knowledge and expertise can be harnessed into successful improvements in health for the populations we are most concerned about if and when interventions are conducted through mutually beneficial and respectful *partnerships*. This is something that can be best understood by leaving the office and going into communities. Thank you for that opportunity.

3. Gain hands-on research experience in the implementation and conduct of research studies: Dr. Borysova has worked extensively and mostly independently to forge into new research territory by studying cross racial and ethnic health of prisoners. To this end she has worked quite independently implementing and conducting research studies with departments of corrections (DOCs). This has required extensive relationship building with DOCs, acquisition of data sets, development of specific ideas revolving around accessible data, analysis of data and manuscript preparation. These experiences have been immensely formative and useful in the overall training, and the skills gained will serve Dr. Borysova through a life-time of research and intervention work.

4. Initiate and complete a research project. Dr. Borysova has conducted all major steps of her proposed research including the Institutional Review Board, start up, implementation of protocol, reporting the results, and interacting with the DOCs. The project requires completion over the next period of research.

5. Develop interventions and independent research questions based on the results from the completed research study. Based on Dr. Borysova's project data, she has begun to formulate interventions and further independent research plans. These plans and interventions have been presented informally to WDOC leadership who are eager to participate as community partners in the future.

6. Gain extensive grant writing experience. Dr. Borysova has developed her grant writing skills by attending local grant writing workshops, and by attending mock grant reviews conducting through the Health Equity Leadership Institute (HELI) in Madison, Wisconsin for which Dr. Borysova was a 2013 Scholar. As well, she has independently writing and submitting an extramural grant based on the current research project, and by collaborating on a letter-of-

intent for a large multi PI grant. As well, she has written an extensive award application which is formatted as a grant for the NIH Loan Repayment Program. The independent grant was not funded, the multi PI letter of intent is under consideration, and the NIH Loan Repayment Award was received. These experiences have been effective and extremely important.

7. Responsible conduct of human research in vulnerable communities. Dr. Borysova has successfully completed the Foundations in Human Research Protections through USF as well as formal courses in Ethics and Clinical Trials; both of which focused on human research, and she has become recertified to conduct human subjects' research by taking and passing the IRB's required follow-up course. Additionally, and importantly, Dr. Borysova has read extensively on researcher and the history of conducting research within vulnerable communities, through the Health and Human Services website, by reading biographies on the topic, and other literature that is imperative to the foundations of the field of ethical conduct in research. Dr. Borysova has met with and discussed research in vulnerable populations with one of the authors of the report to the United States government on conducting research in vulnerable populations. In addition, Dr. Borysova has read extensively the primary literature conducting research within vulnerable populations. Finally, and importantly, Dr. Borysova published a manuscript suggesting that research in prison settings on health disparities be conducted, proposing in the manuscript reasons and circumstances that would make this acceptable and beneficial. Every month this peer-reviewed article has been one of the most frequently downloaded manuscripts within the broad publishing infrastructure that includes her article and others from many journals.

8. Attend research and educational meetings. Dr. Borysova has attended education sessions and presented her work at internal, local, and national meetings. She has participated in grand rounds, seminars, journal clubs, working groups, and research interest groups at and outside of Moffitt Cancer center and the University of South Florida.

9. Scientific writing and research dissemination. Dr. Borysova has written and published a peer reviewed manuscript reflecting the topic she works on, and has submitted a second manuscript that is under consideration. As well, she has co-authored a third manuscript with Dr. Sultan (a co-mentor on this award) to write an additional manuscript focused on access to healthy foods in African American neighborhoods within Tampa Bay. Dr. Borysova is in the process of writing manuscripts on her data which is a collaborative effort as the Wisconsin Department of Corrections will partner in this process. As well Dr. Borysova has presented her research at scientific meetings, conferences, and the Health Equity Leadership Institute.

10. Interactions with established scientists, networking, and peer linkages. Dr. Borysova has seized the opportunity to network and collaborate with other scientists. She has been surrounded by social scientists in particular since this is the aspect of her training that had not yet been developed prior to this award. Specifically, she has forged local and close relationships and linkages with faculty from departments and fields of criminology, psychology, public health, epidemiology, health disparities, and mental health. Beyond these local relationships, Dr. Borysova has networked with scientists who work in departments of corrections, in the Bureau of Justice Statistics, and other academic institutions throughout the United States. After 1 year of working on this award the relevance and research utility of these relationships has become clear and Dr. Borysova will harness those interactions to facilitate her research and publications during the next period of this award. This element of training has been of particular importance.

Additional career and professional development training not proposed in the award application.

This award has been essential for providing Dr. Borysova with numerous additional experiences that have been amazing for her career growth and development. While some of these are reflected in experiences such as impactful conversations and exposures, others are tangible and noteworthy and listed below.

(1) Dr. Borysova accepted an invitation to **review graduate student research applications for the national Paul Ambrose Scholar Program** which self-defines as a program which “exposes health professions students to influential public health professionals and prepares them to be leaders in addressing population health challenges at the national and community level.” Scholarships were awarded to students to attend a four-day symposium in Washington, DC and conduct a community-based health education project at their institution.

(2) Dr. Borysova accepted several invitations to function as a **Reviewer of manuscripts** submitted to the following journals relevant to her field of study: **Journal of Health Care for the Poor and Underserved (JHCPU)** which is a peer-reviewed journal focusing on contemporary health care issues of medically underserved communities. JHCPU is the official journal of the Association of Clinicians for the Underserved; and **Health Promotion Practice (HPP)** which is a peer-reviewed bi-monthly journal devoted to the practical application of health promotion and education. HPP focuses on critical and strategic information for professionals engaged in the practice of developing, implementing, and evaluating health promotion and disease prevention programs. This journal is a member of the Committee on Publication Ethics.

(3) Dr. Borysova applied for and was awarded a 2-year **NIH Loan Repayment Program award** through the National Institute on Minority Health and Health Disparities for her work supported by this award.

(4) Dr. Borysova was selected as a **2013 Health Equity Leadership Institute Scholar**. This opportunity cannot be underestimated. This one week long boot camp for Health Equity researchers provided immense training and broad experiences in the context of an honest, open environment in which other researchers could provide a true description of their career ups and downs including experiences with research, grant writing, manuscript preparation, job acquisition; as well as professional development, mentorship, training and work-life balance. Additionally this opportunity provided Dr. Borysova and the other selected scholars with direct community engagement with academic community partners who shared their positive and negative experiences in order to prepare Scholars for community intervention research. This experience was provided by the University of Wisconsin and the University of Maryland with lead health disparities researchers as the leaders of this forum; leading to networking with a multitude of scholars from various health disparities backgrounds and a host of health equity researchers who are leaders in their fields.

Summary of Training and Professional Development

This award has been integral in providing Dr. Borysova with skills, thought processes, and an overall framework for conducting research in vulnerable populations and for engaging with the community who is the focus of our work. This award has allowed Dr. Borysova to effectively build essential professional networks and individual relationships that are critical to transdisciplinary research and underlie effective research efforts. As well, this award has allowed Dr. Borysova to develop tangible skill sets that are formative in professional development including manuscript preparation, grant writing, dissemination of research, addressing concerns of community partners, and evaluating the research of others through journal clubs, acting as a reviewer for relevant peer-reviewed journals and reviewing research applications of scholars for an award. The first year of this award has been enormously successful for Dr. Borysova in terms of training and professional development.

Table 1: Career Development Experiences and Timeline (blue indicates accomplished, checkmark indicates continuation of training plan; additional experiences not outlined in award application are not integrated into this timeline):

Career Development Experiences / Timeline in Months	1-4	5-8	9-12	13-16	17-20	21-24
Structured mentoring program by PI/mentor	√	√	√	√	√	√
Gain proficiency and a better understanding of science used to develop and implement primary prevention intervention in minority populations.	√	√				
Research experience in implementation and conduct of research studies	√	√	√	√	√	√
Initiate and complete the research project.	√	√	√	√	√	√
Develop interventions and independent research questions based on the results from the completed research study.						√
Gain hands-on grant writing experiences.	√	√	√	√	√	√
Responsible conduct of human research.	√	√	√	√		
Attend Research and Educational Meetings (1 per week)	√	√	√	√	√	√
Scientific writing and research dissemination.	√	√	√	√	√	√
Interactions with established scientists, networking, and peer linkages.	√	√	√	√	√	√

(B) Research Project

Scientific growth and progress are an integral part of this training award. As such, this award has allowed Dr. Borysova a tremendous amount of scientific progress (detailed below). This progress has been shaped around the original aims described in the application. Dr. Borysova has adapted to unforeseen circumstances of the community partnership by forging additional partnerships and addressing the aims within that context. These changes ultimately are advantageous and have been excellent for training a skilled researcher, and have resulted in the need for additional time to complete the aims; therefore, a no-cost extension has been requested. As the research progresses into the next phase, a statement of work may require amending in order to reflect limitations in datasets and population sizes.

The overall goal of this award is to conduct a study establishing correctional facilities as an environment in which etiologies of prostate cancer disparities can be teased out in a manner that is ultimately beneficial to the incarcerated population as well as the non-incarcerated population.

Note: Dr. Borysova's project is transdisciplinary involving prostate cancer, health disparities and incarcerations. Health of the incarcerated community – a vast and large community that is largely populated by African American men from low socioeconomic backgrounds – is of utmost concern. This outgrowth of this transdisciplinary research topic will allow Dr. Borysova to continue to pursue questions not only pertaining to prostate cancer disparities, but to the broader fields of health disparities and over representation of black men in prisons.

Hypothesis or Objective

This study was designed to determine the cross-racial and ethnic prevalence of conjectural behaviors and biological markers associated with increased and decreased risks for prostate cancer; and characterize the incidences and mortality of prostate cancer, thereby establishing the Florida Department of Corrections (FDOC) as a model for elucidating the genetic, epigenetic, and socio-environmental etiologies of prostate cancer.

Approval for this research was awarded by the Florida Department of Corrections (FDOC) prior to the submission of the award application, unforeseen circumstances created challenges in obtaining data sets from the FDOC and the partnership was not fruitful. After several months of effort, Dr. Borysova developed and established a relationship with the Wisconsin Department of Corrections (WDOC), submitted a formal application to conduct research with the WDOC and following approval of such, expanded her award with permission/approval of the award agency to substitute the WDOC for the FDOC. The advantages of this change include access to a mortality dataset kept by the WDOC that the FDOC did not keep, an ongoing fruitful partnership with a DOC that regularly engages in academic partnerships, and the capacities of the WDOC to produce prostate cancer incidence data electronically with superior informational technology relative to that in the FDOC. The limitations of the WDOC partnership include proximity - site-visits are more limited due to expense, population size – the prisoner population is 20% the size of the FDOC, and health care structure – the WDOC does not provide routine annual physicals including blood draws whereas the FDOC does provide such services. These changes may ultimately affect the statement of work (SOW) in which case Dr. Borysova will submit for approval of such through the award agency. Prior to this annual report the original SOW has been retained.

Specific Aims

Specific Aim 1: Compare the lifestyle factors thought to be associated with prostate cancer including: smoking habits, dietary intake, physical activity levels, anthropometrics, sun exposure, frequency of general health care utilization and prostate cancer screening and follow-up between incarcerated African American, Hispanic, and Caucasian American men.

Specific Aim 2: Describe and compare the biological factors and biochemical markers implicated in prostate cancer risk including family history of prostate cancer, serum PSA, free and total testosterone, IGF-1 and IGFBP3, and 25-hydroxyvitamin D.

*Aims 1 and 2 underlie the first of two research questions described in this award; “determine the cross-racial and ethnic prevalence of conjectural behaviors and biological markers associated with increased and decreased risks for prostate cancer”. These aims and this research question will be addressed during the remaining period of research.

Specific Aim 3: Determine the number of instances of prostate cancer incidence and mortality among incarcerated African American, Hispanic, and Caucasian American men in the FDOC.

*Aim 3 underlies the second of two research questions described in this award; “characterize the incidences and mortality of prostate cancer”. This aim has two components- analyzing prostate cancer incidence by race, and analyzing mortality from prostate cancer by race.

1. **Prostate Cancer Incidence:** Analysis of incidence is ongoing. The WDOC’s data for prostate cancer incidence dates from 2005-2009 reflective of the most recent dates used in national databases on prostate cancer incidence rates in the United States, and as well they have data for 2010 and 2011, however, these dates do not correspond with standard dates reflected in national data for the overall United States population. The data continues to be analyzed for several factors. First, the data below is in the process of being age adjusted as well as generating age-specific data. National data on prostate cancer incidence by race/ethnicity are age adjusted or age-specific in order to reflect variances in the age distribution of different populations. Age adjustment of the WDOC data will provide for direct comparisons to national data in order to account for differential age distributions of different populations. Age specific data analysis of WDOC data will allow for direct comparisons between black and white men’s age of prostate cancer incidence reflective of the SEER

national data on prostate cancer. In the August of 2013, Dr. Borysova will be flying to Madison, Wisconsin to conduct these analyses in collaboration with the data and statistics staff of the WDOC. The raw non-age adjusted data is below as well as the age adjusted US population data for 2005-2009.

US population 2005-2009 AGE ADJUSTED

All Race 154.8/100,000
Caucasian 146.9/100,000
Black 236.0/100,000

WDOC 2005-2009 NOT AGE ADJUSTED

57 All Race Pca/23802 men = 239.5/100,000
34 Caucasian Pca/13453 men = 252.7/100,000
20 Black Pca/9231 men = 216.7/100,000

WDOC 2005-2011 NOT AGE ADJUSTED

75 All Race Pca/37425 men = 200.4/100,000
42 Caucasian Pca/21044 men = 199.6/100,000
31 Black Pca/14636 men = 205.0/100,000

In addition to age-adjustment of the data, Dr. Borysova and colleagues are also analyzing the data to reflect several pieces of demographic data including education level, crime committed and security level of incarceration, length of time incarcerated prior to prostate cancer detection, and zip code prior to incarceration. These factors will allow for the data to be more extensively contextualized.

2. Prostate Cancer Mortality: The WDOC has submitted to Dr. Borysova 10 years of data that comprehensively reflects all deaths from 2002-2011. During this time frame 409 inmates died in the care of the WDOC (this contrasts with the much larger FDOC which would have approximately 2,000 deaths during the same time frame). Prostate Cancer Mortality Data analyzed through this award has shown the following: The WDOC's dataset indicates that cancer is the leading cause of death in the WDOC, responsible for 30% of all WDOC deaths, contrary to the United States as a whole in which cancer is the second leading cause of death, accounting for just over 23% of all deaths. As reported by the American Cancer Society, prostate cancer deaths are responsible for approximately 10-11% of all male cancer deaths in the United States as a whole. Four (4) cases of cancer deaths were due to prostate cancer in the WDOC during the 10 year period of analysis, which equates to 3.3% of WDOC male cancer deaths. Of the 4 prostate cancer deaths, 2 were white men, 1 was a black man, and 1 was a Hispanic/Latino man. The number of deaths is too few to analyze for racial and ethnic disparities; however, we analyzed the data for available demographic information. Descriptive results follow.
One white man had completed 10th grade, was 78 years old at time of death, had been incarcerated for 28 years prior to death, was incarcerated in a maximum security level facility for first degree murder, and was treated within a medical infirmary within his facility, and was diagnosed during incarceration. The other white man had obtained his High School Equivalent Degree (GED), was 65 years old at time of death, had been incarcerated for 2 1/2 years prior to death was incarcerated in the same maximum security level facility for drug related charges, and was treated within a medical infirmary

within his facility, and was diagnosed during incarceration. The Hispanic/Latino man had completed 8th grade, was 69 years old at time of death, had been incarcerated for 12 months prior to death, was incarcerated in a maximum security level facility for driving while intoxicated, and was treated within a medical infirmary within his facility, and was diagnosed during incarceration. The black man had completed 8th grade, was 65 years old at time of death, had been incarcerated for 6 years and 9 months prior to death, was incarcerated in the same maximum security level facility for first degree murder, and was treated within a medical infirmary within his facility, and was diagnosed prior to incarceration. All four men were housed and treated in the same facility, only the black man was diagnosed prior to incarceration.

The population size of the WDOC is one-fifth the size of the FDOC and therefore has a lower mortality count and presumably lower numbers of deaths from prostate cancer. Due to the small numbers of prostate cancer deaths, Dr. Borysova analyzed the cross-racial and ethnic mortality from all types of cancer and non-cancer deaths. While this was not part of the original research plan, it is very useful in understanding whether the WDOC has racial and ethnic disparities in mortality. If the DOD is interested in this data, we are happy to make it available. Data on prostate cancer incidence and mortality in the WDOC will be published in upcoming manuscripts that are in preparation.

Summary of Research Project

This award has been integral in providing Dr. Borysova with opportunities to conduct research on prostate cancer health disparities. Dr. Borysova has developed research analysis skills including analysis of datasets and statistical analyses. She has contextualized descriptive data of cross-racial and ethnic incidence and mortality from prostate cancer (as well as other cancers) within the Wisconsin Department of Corrections (WDOC) and the relationship of that data to the general United States population and Wisconsin's population. Dr. Borysova has analyzed and will continue to analyze demographic data of inmates with prostate cancer. Dr. Borysova has developing tangible research skill sets that are formative for any health disparities and prostate cancer researcher, thus providing her with research skills that allow her to bridge the basic science/social science gap in health disparities and cancer research. Along with the development of such skill sets, Dr. Borysova is fulfilling the goals of defining prison populations as a disparate population whose health is of concern and whose data may impact our understanding of the etiologies of racial and ethnic prostate cancer disparities both within prison as well as the non-incarcerated community. Data from the first year of this award is currently being prepared as manuscripts for dissemination. Additionally, Dr. Borysova has published a first author review manuscript on the topic of studying disparities within the incarcerated populations. (**See Reportable Outcomes** section below for detailed list of manuscripts resulting from this award.) The first year of this award has been successful for research and will continue during the next period of the award.

Key Research Accomplishments

- Identify and develop academic-community partnership with alternative DOC as research partner (WDOC headquartered in Madison, Wisconsin).
- Submit and receive approval for research with WDOC.
- In partnership with WDOC, develop dataset reflecting prostate cancer incidence.
- Request and receive dataset reflecting mortality within the WDOC.
- Analyze prostate cancer incidence in the WDOC by race. Ongoing analyses for age-adjustment, comparisons to United States overall populations, and demographic factors.
- Analyze WDOC cancer mortality, and compare to United States overall populations. Sub-analysis of prostate cancer mortality relative to demographic factors and time of exposure to WDOC environment and sub-environment, as well as determination of prostate cancer as a condition diagnosed prior to or during incarceration.

Reportable Outcomes (A-I)

A. Grants and Research Proposals:

- Proposal to conduct research with Wisconsin Department of Corrections. **Approved.**
- NIH Loan Repayment Program Award 2012-2014 through the National Institutes of Health Institute on Minority Health and Health Disparities. **Funded.**
- Submitted application for 2013 Association for the Advancement of Cancer Research AACR-Millennium Prostate Cancer Research Fellowship award. **Not funded.**
- Submitted Letter-of-Intent as co-PI for 2013 Pfizer Independent Grant for Learning & Change Award focused on adult vaccinations in minority communities **Under Review**

B. Peer Reviewed Manuscripts (in Peer Reviewed Scientific Journals)

Published

- **Borysova, Meghan E.**; Mitchell, Ojmarrh; Sultan, Dawood H.; and Williams, Arthur R. (2012) "Racial and Ethnic Health Disparities in Incarcerated Populations," Journal of Health Disparities Research and Practice: Vol. 5: Iss. 2, Article 8.
- Ganna Chornokur, Kyle J. Dalton, **Meghan E. Borysova**, Naji B. Kumar. Disparities at Presentation, Diagnosis, Treatment and Survival in African American men Affected by Prostate Cancer. Prostate, Jun 15;71(9):985-97 2011

Accepted Upon Revisions

- **Meghan E. Borysova**, Dawood Sultan, Adewale Troutman, Ganna Chornokur, Kyle Dalton (2013) "Prostate Cancer Disparities throughout the Cancer Control Continuum"

In Preparation

- **Meghan E. Borysova**, Ojmarrh Mitchel, Dawood H. Sultan. Prostate Cancer Incidence and Mortality in WDOC.
- **Meghan E. Borysova**, Arthur Williams. Suicide in WDOC.
- **Meghan E. Borysova**. Mortality by Race and Ethnicity in WDOC.
- Dawood Sultan, **Meghan E. Borysova**. Access to Healthy Foods in Hillsborough County.
- Meg Comins, **Meghan E. Borysova**, Dawood H. Sultan. Health Information Technology and Disparities in Prostate Cancer Care: Improving the Quality of Collected Data.

C. Recognition and Awards:

2013 Health Equity Leadership Institute Scholar (competitive selection); University of Wisconsin and University of Maryland; funded through a p60 National Institute on

Minority Health and Health Disparities Center for Excellence Award

D. Poster Presentations

- “Ten year retrospective cross racial and ethnic prostate cancer incidence and mortality in the Florida Department of Corrections” **Meghan E. Borysova, Ph.D.**, David Ensley, Nagi B. Kumar, Ph.D., R.D.; Association for the Advancement of Cancer Research (AACR) Health Disparities Conference; Miami, FL 2010
- “Ten year retrospective cross racial and ethnic prostate cancer incidence and mortality in the Florida Department of Corrections” **Meghan E. Borysova, Ph.D.**, David Ensley, Nagi B. Kumar, Ph.D., R.D.; H. Lee Moffitt Cancer Center Symposium; Tampa, FL 2011
- “Racial and Ethnic Health Disparities in an Incarcerated Community” **Meghan E. Borysova, Ph.D.**, Ojmarrh Mitchell, Ph.D., James Greer, Arthur R. Williams, Ph.D., Summit on the Science of Eliminating Health Disparities; Washington DC 2012

E. Scientific Talks Given

- 2010 Research In Progress; Center for Equal Health, Tampa, FL
- 2013 Health Equity Leadership Institute; University of Wisconsin, Madison, WI

F. Invited Speaker (*Topics include: Molecular Mechanisms of Carcinogenesis, Health Disparities, Cancer Disparities, Etiologies of Cancer and Cardiovascular Disease, Targeted Cancer Therapies*)

- 2011 University of Tampa; Invited Guest Lecturer
- 2012 University of Tampa; Invited Guest Lecturer
- 2012 University of South Florida; Invited Guest Lecturer
- 2013 University of South Florida; Invited Guest Lecturer

G. Invited Reviewer for Peer Reviewed Journals

- **Journal of Health Care for the Poor and Underserved (JHCPU)** A peer-reviewed journal focusing on contemporary health care issues of medically underserved communities. JHCPU is the official journal of the Association of Clinicians for the Underserved.
- **Health Promotion Practice (HPP)** A peer-reviewed bi-monthly journal devoted to the practical application of health promotion and education. HPP focuses on critical and strategic information for professionals engaged in the practice of developing, implementing, and evaluating health promotion and disease prevention programs. This journal is a member of the Committee on Publication Ethics.

H. Invited Reviewer for Research Fellow Applications

Paul Ambrose Scholar Program “a program which “exposes health professions students to influential public health professionals and prepares them to be leaders in addressing population health challenges at the national and community level.”

I. Classes courses training

- Health Equity Leadership Institute Weeklong Health Disparities Research Boot Camp University of Wisconsin, Madison, WI
- Epidemiology for Non-Epidemiologists Course American Public Health Association Learning Institute, Denver, CO
- Cancer Epidemiology Graduate Course PHC 6007

- University of South Florida, Tampa, FL
- Foundations of Medical Anthropology Graduate Course ANG 6469
University of South Florida, Tampa, FL
- Bioethics for Researchers Course
Moffitt Cancer Center and Research Institute, Tampa, FL
- Clinical Trials Workshop Course
Moffitt Cancer Center and Research Institute, Tampa, FL
- University of South Florida Scholarly Event
University of South Florida, Tampa, FL
- Foundations in Human Research Protections on-line Tutorial
University of South Florida, Tampa, FL

Conclusions

This training grant has provided a tremendous scientific and career building opportunity to Dr. Meghan Borysova, PI of this award. She has utilized the initial period of the award to maximize her training through professional development and research. Dr. Borysova has taken advantage of the opportunities available at her institution and beyond, to attend courses that augment her doctoral and postdoctoral training, she has attended meetings and workshops, trainings and scholarly events. Dr. Borysova has been recognized as a 2013 Health Equity Leadership Scholar, has been invited as a reviewer for reputable peer-reviewed journals and a research scholar program. Dr. Borysova has delivered scientific talks to audiences in the scientific community as well as multiple invited talks to undergraduate and graduate students at two local universities as well as to the Health Equity Leadership Institute. Dr. Borysova has disseminated her research through poster presentations and peer reviewed manuscripts. Scientifically, Dr. Borysova has become versed and competent in building challenging community-academic relationships in order to conduct her research. She has submitted and awarded numerous research applications as PI of which the prestigious NIH Loan Repayment Program Award and an application to conduct specific research with the Wisconsin Department of Corrections (WDOC) were approved, and a letter-of-intent is currently under review. Dr. Borysova's research has identified and characterized the cross-racial and ethnic prostate cancer incidence rates in the WDOC, as well as mortality from all causes including all cancers, including prostate, across races relative to the overall U.S. population. Dr. Borysova has developed the skills necessary to manage her research effectively on a contentious topic within the confines of dataset availability and community partnership efforts. Importantly, Dr. Borysova has effectively communicated the significance of her research findings to the WDOC in order to secure a verbal agreement to conduct near-future health interventions within the WDOC which are expected to have positive impacts on the health of inmates, reduction of racial disparities in health, and improved prostate cancer outcomes. The next stage of this award is expected to be focus heavily on research and data-based manuscript publication while maintaining professional development. Dr. Borysova extends great appreciation to the DOD for having provided these opportunities to conduct research that will improve health of this important community while providing her with a wealth of professional training and development.

References

N/A