**MAPMG Physician Research Scholars**

**A Program to Increase MAPMG Physician Research 2023-2025 Program Application**

**INSTRUCTIONS**

* Please complete each section thoroughly.
* If you are unsure as to how to answer a question, please type “unsure/would like input.”
* Applicants will need for their Department Chiefs to submit Department Chair Attestation via email. See Section V.B for more information.
* Detailed information about project time commitments is found in **Appendix A**. Please be sure to share this with your Department Chief.
* Physicians In Chief will be notified as to any applicants in their service areas after the submission deadline.
* Examples of past applications are provided in **Appendix B**.

Applications should be prepared in Microsoft Word using only this template. Please do not alter the template. Applications should be submitted as Microsoft Word documents**.**

**Final Applications should be emailed to the following address:** [PhysicianResearchScholars@kp.org](mailto:PhysicianResearchScholars@kp.org)

If you have questions about the program or Application, please contact the following address: [PhysicianResearchScholars@kp.org](mailto:PhysicianResearchScholars@kp.org)

**All Applications are due by Midnight, Friday, July 22, 2022**.

**I. Applicant Identifying Information**

Name:

Email Address:

Service Area:

Department:

Department Chair:

Department Chair Email Address:

**II. Applicant Interest in MAPMG Research Scholars Program. Please outline your interest in the MAPMG Research Scholars Program in 3-5 sentences**:

**III. Applicant description of previous research experience. This can include any research within academic programs or graduate programs. Please describe your experience in 3 – 5 sentences**:

**IV. Description of TWO RESEARCH PROJECTS**. Provide information for each section on each of the two research projects. See Appendix B for example. If you are unsure as to how to answer a section, please use your best judgement and include “unsure/would like input.”

**RESEARCH PROJECT #1**

**A. Introduction**. Please provide one paragraph of background information. Please include 3-5 references.

**B. What Is Known/Gap(s) in Knowledge**. Please include 3-5 references.

**C. Research Question(s)/Area of Inquiry**. Please provide a single sentence for each question, summarizing the primary objective of the project or the question(s) you want to ask.

**D. What will your project add to the field?** Please provide 1-2 sentences summarizing how the proposed project(s) add to known evidence and/or demonstrate value.

**E. Population**. Please describe the eligible population included in the research question(s) and the control population.

**F. Methods and Feasibility**. Please provide information for each of the areas below:

**i. How do you propose answering your research question(s) (retrospective data analysis, prospective study, etc.)?**

**ii. Comparison.** Please provide a description of the traditional care process against which the effectiveness of the intervention is being measured. Include less than 10 references, if needed.

**iii. Measurement of Outcomes**. Please provide a description of how the outcome will be measured, as compared with traditional care. If unsure, please identify the comparison population and write “unsure of outcome/analysis approach.”

**G. Limitations**. Please outline any limitations of your idea or approach.

**H. Collaborations**. If your research will require the collaboration of peers or other departments, an application may be stronger if preliminary conversations of conversations of support have taken place. If you have spoken with peers or relevant collaborating departments about your idea, please outline those activities.

**RESEARCH PROJECT #2**

**A. Introduction**. Please provide one paragraph of background information. Please include 3-5 references.

**B. What Is Known/Gap(s) in Knowledge**. Please include 3-5 references.

**C. Research Question(s)/Area of Inquiry**. Please provide a single sentence for each question, summarizing the primary objective of the project or the question(s) you want to ask.

**D. What will your project add to the field?** Please provide 1-2 sentences summarizing how the proposed project add to known evidence and/or demonstrate value.

**E. Population**. Please describe the eligible population included in the research question(s) and the control population.

**F. Methods and Feasibility**. Please provide information for each of the areas below:

**i. How do you propose answering your research question(s) (retrospective data**  **analysis, prospective study, etc.)?**

**ii. Comparison.** Please provide a description of the traditional care process against which the effectiveness of the intervention is being measured. Include less than 10 references, if needed.

**iii. Measurement of Outcomes**. Please provide a description of how the outcome will be measured, as compared with traditional care. If unsure, please identify the comparison population and write “unsure of outcome/analysis approach.”

**G. Limitations**. Please outline any limitations of your idea or approach.

**H. Collaborations**. If your research will require the collaboration of peers or other departments, an application may be stronger if preliminary conversations of conversations of support have taken place. If you have spoken with peers or relevant collaborating departments about your idea, please outline those activities.

**V. Attestations**. The MAPMG Physician Research Scholars Program provides dedicated time for research activities. Scholars are expected to engage with the research team and participate in program activities. It is important for both the potential Scholar and the Scholar’s Department lead to understand the time commitment and agree to the principles of the program. **Appendix A** outlines the Physician Research Scholar Program for the Department Chief to review.

**A. Scholar Attestation**. Applicant should read and answer the following questions.

**i. Will you commit to participate in the Foundation of Research Curriculum (2-3 days, dedicated time from clinic)?** Please answer Yes or No:

**ii. Will you commit to engaging with members of the research department to discuss and outline your research idea?** Please answer Yes or No:

**iii. Will you commit to submitting 2 peer reviewed conference abstracts and 2 peer reviewed publications in 24 months with the support of the Mid-Atlantic Permanente Research Institute (MAPRI) staff?** Please answer Yes or No:

**B. Department Chief Attestation**. Department Chief approval and attestation is required for submission. Approvals and attestations can be obtained via email and included with the Application as a screenshot or attachment.

**i. Will you commit to allowing the applicant to participate in the Physician Research Scholars Program for the entirety of the 2-years?** Please answer Yes or No:

**ii. Will you commit to allowing the applicant to participate in a 2-day training activity at the start of the program in early 2023?** Please answer Yes or No:

**iii. Will you commit to allowing the applicant one day per week during the entirety of the program dedicated to research activities outside of clinic duties?** Please answer Yes or No:

**iv. Will you agree to not schedule the applicant for on-call hours the day of and the day before their dedicated research day?** Please answer Yes or No:

**VI. Additional comments or questions.** Please use this space to provide any additional comments or questions for the review committee.

**Appendix A. Physician Research Scholars Program Outline**

**A. Start-Up Meetings**

**Month 1:**

* **Intake Meeting (1 hour)**

Scholars Program Overview and Expectations

*Attendees*: Scholar, Michael Horberg, Cabell Jonas

* **Research Scoping Meeting (2 hours)**

Discuss, scope, and refine two research ideas.

*Attendees*: Scholar, Research Scientist, Project Manager

* **Introduction to the IRB (1 hour)**

Accessing Relevant Training

*Attendees*: Scholar, LaTrina Neal

* **Introduction to the Project Manager (30 minutes)**

Discuss roles, responsibilities, budgeting/charging for Scholar, Project Manager, and Analyst work.

*Attendees*: Scholar, Project Manager, Senior Lead

* **Foundation of Research Curriculum (2-3 days in year 1)**

Overview of MAPMG/MAPRI/KPMAS resources, policies, and procedures for conducting research. Refresher seminar on basic epidemiologic and health services research methods. Research proposal basics – organization and composition of an effective proposal. IRB and Regulatory processes.

*Attendees*: Scholars, guest speakers as needed

**Month 2:**

* **Data Collection and Analysis Discussion (2 hours)**

Discuss analytics plan; prepare/submit RAPTOR.

*Attendees*: Scholar, Research Scientist, Analyst, MGOS or KPHC support (as needed)

* **Timeline and Project Plan (1 hour)**

Develop and finalize project timeline and plan based on scoped research plan.

*Attendees*: Scholar, Project Manager

* **Weekly project scoping calls to begin (30 minutes)**

Weekly project scoping calls will be used to check project progress, troubleshoot issues, review data, prepare abstracts/manuscripts, etc., and will continue throughout duration of program. When manuscript is being actively prepared, Scientific Writer will be included in meetings.

*Attendees*: Scholar, Project Manager, Analyst, Research Scientist (as needed).

**Month 12:**

* **1-year Check-in (1 hour)**

Project update, program feedback

*Attendees*: Scholar, Michael Horberg, Project Manager, Scientific Writer

**B.** **Recurrent Meetings**

**Monthly:**

* **Scholarly Peer Meeting (1 hour)**
* Networking and idea sharing between scholars.

Attendees: Scholar, Michael Horberg, guest speakers as needed

**Months 3, 6, 9, and 12:**

* **Senior Team Update Meeting (30 minutes)**

Provide project updates and program feedback to senior team members.

*Attendees*: Scholar, Michael Horberg, Project Manager, Senior Lead

**C.** **Manuscript Support Meetings**

* **Abstract/Manuscript Scoping Meeting (1 hour)**

Discuss results ready to submit. Follow-up meetings to be determined.

*Attendees*: Scholar, Michael Horberg, Project Manager, Scientific Writer

**Appendix B. Sample Applications**

**A. Example Research Project Application #1: One Research Question within a single Project Topic**

**Title**: Characteristics and Outcomes for Pregnant Patients with COVID-19

**Introduction:** The COVID-19 pandemic has created a public health emergency that is rapidly evolving and unprecedented in modern times. As of May 20, 2020, over 5 million cases were confirmed worldwide with over 300,000 total deaths.1 Pregnant women are considered high risk due to physiologic changes including immunologic, cardiopulmonary, and hematologic, and potential effects on the growing fetus. However, despite the large number of those affected, little is known about effects of the virus in pregnancy.

**What is Known/Gaps in Knowledge:** Knowledge at this time is limited to case reports, case series, and systematic reviews compiling cases. For example, a recent systematic review included 54 published case series/reports to date.2 In addition, the data available is skewed towards women at time of delivery due to hospitals with universal testing on labor and delivery. Even less is known about women earlier in pregnancy and/or in the outpatient setting.

**Research Question or Area of Inquiry:** What are characteristics and clinical outcomes for pregnant women with COVID-19 and their babies in a large health care network?

**What will your question add to the field:** Our network as well as EMR allow for exploration of data for a large, diverse cohort of pregnant and postpartum women that would broaden and deepen knowledge of the effects of the virus during this important and vulnerable time.

**Population:** Women within MAPMG who were pregnant or within 6 weeks postpartum when diagnosed with COVID-19.

**Methods and Feasibility:** This would be a retrospective cohort study of COVID positive pregnant patients performed 6-12 months into the pandemic. The study would largely be descriptive and exploratory to help identify characteristics of COVID positive pregnant patients such as age, race/ethnicity, BMI, comorbidities, and gestational age at time of infection. Pregnancy outcomes and other clinical outcomes would be described as well such as miscarriage, abortion, preterm delivery, full term delivery, route of delivery, neonatal outcomes, and hospitalizations outside of for labor and delivery.

**Limitations:** Limited testing both nationally and within our network makes it impossible to identify all COVID positive patients, especially for asymptomatic cases. Those who get tested may differ clinically or demographically from those who do not, which may skew results.

**Collaborations:** None currently.

**References**:

1. COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins. Available at: <https://coronavirus.jhu.edu/map.html>. Last accessed May 21, 2020.

2. Juan J, et al. Effects of Coronavirus Disease 2019 (COVID-19) on Maternal, Perinatal

and Neonatal Outcomes: A Systematic Review. Ultrasound Obstet Gynecol. 2020 May

19. Online ahead of print.

**B. Example Research Project Application #2: Two Research Questions within a single Project Topic**

**Title:** Benign Breast Disease: Cohort identification for Breast Cancer Screening and Pathology Analysis

**Introduction:** Women with benign breast disease (BBD) are two times more likely to develop breast cancer than those without BBD. The risk varies for different types of BBD with the non-proliferative at lower risk (1.3-2), proliferative without atypia at higher risk and atypical proliferative at highest risk (2.5-4) 1, 2. The 10-year breast cancer risk of atypical hyperplasia (AH) is at least 20% 3.  Women with AH or with lobular carcinoma in situ (LCIS) are also at higher risk for both ipsilateral and contralateral breast cancer. Therefore, it is important to identify patients at higher risk of breast cancer for increased surveillance and counseling about preventive options 4. Patients with either disease should be recommended annual mammography screening, annual MRI (for >30 yrs old) and should be counseled about risk reducing hormonal therapies 5, 6. In large phase 3 randomized trials both tamoxifen, anastrozole and exemestane have been shown to reduce the incidence of breast cancer in women with AH by up to 85% 7. Uptake of these preventative measures for patients with BBD is unclear, with the possibility of both underscreening and overscreening, dependent on BBD risk.

**What is Known/Gaps in Knowledge**: There are several lifestyle, reproductive and histological factors reported to be associated with BBD and subsequent breast cancer. Reported factors associated with increased risk of subsequent breast cancer are family history of breast cancer in a first degree female relative, premenopausal status, hormone therapy (HRT) use, and longer duration of HRT use 8. Heavy smoking, obesity, early age at menarche, late age at first live birth, lower number of pregnancies, and no history of oophorectomy were not associated with increased breast cancer risk 8. However, research is still needed to understand demographic, molecular and other factors that are associated with a higher risk of breast cancer.

**Research Question(s)**:

**Question 1**. Establish a Benign Breast Disease (BBD) cohort at KPMAS, including patient characteristics and outcomes.

* Aim 1A: Identify Patient Characteristics: We would identify the number of patients with pathologically confirmed BBD, subgroups of BBD, type of biopsies (diagnostic or interval), population demographics, smoking status, weight at diagnosis, menopausal status, and HRT use
* Aim 1B: Identify subsequent breast cancer and type

**Question 2**. Evaluate the follow up management of patients with atypical hyperplasia or with lobular carcinoma in situ including number of screening tests completed after diagnosis, and uptake of preventive options including risk reducing hormonal therapy at KPMAS.

This project would focus on evaluating the management of women with BBD. We will demonstrate the value of health care services, using EMR data, to identify patients with BBD that are at higher risk for breast cancer, and evaluate their follow up care including uptake of preventive options, screening, and incidence of breast cancer.

**What will your project add to the field**: This study could help define and validate a registry of patients with benign breast disease and identify those at higher risk for breast cancer for further screening and preventative therapies. It will benefit the learning heath systems by defining a population for more personalized screening alerts and be a resource for identification of prognostic molecular markers.

**Population:** Dr. Visvanathan at Johns Hopkins has an established Breast and Ovarian Surveillance Service (BOSS) cohort of patients that have a family history of breast cancer. The Breast and Ovarian Surveillance Service (BOSS) Cohort Study is an ongoing prospective study consisting of women (N = 1,431) and men (N =23), 18 years or older with a familial risk for breast and/or ovarian cancer, recruited in 2005-2013 primarily from the cancer genetics clinic at the Johns Hopkins Sidney Kimmel Comprehensive Cancer Center. Our cohort participants have had 719 breast cancers, 131 second cancers including breast cancer, 76 distant breast recurrences and 1,095 benign breast procedures, excluding mastectomies. This cohort has prospectively followed patients for over 10 years with surveys and pathological report and specimen collection for all breast and gynecologic procedures. It has also linked screening data from Johns Hopkins and is hoping to link data from American Radiology. At KPMAS, an exploratory preparation to research was done two years ago to identify patients at KPMAS with BBD and subsequent breast cancer and with pathological specimens. With ICD and CPT coding were able to identify 5,485 patients with BBD, 2,616 with a biopsy (but biopsy linkage to BBD is not verified), and 1,097 with a breast malignancy. However more work is needed for an in-depth analysis to identify timing, pathological verification, and linkage to specimens.

**Methods and Feasibility:**

Data Extraction and Analysis:

For Project 1,our algorithm to find patients at KPMAS with BBD includes ICD-9 and 10 diagnosis codes for non-proliferative, proliferative without atypia and atypical proliferative disease including atypical ductal hyperplasia (ADH), squamous and apocrine metaplasia, mild hyperplasia, lobular carcinoma in situ (LCIS), and benign neoplasms. Our algorithm will exclude codes for breast conditions not associated with increased risk of cancer including cysts, diffuse cystic mastopathy, fibroadenosis and fibrosclerosis of the breast and mammary duct ectasia. We will use the Research Data Warehouse and Clarity to identify breast cancer occurrences and coded risk factors specified in the Aims. Validation with a 10% chart review of those factors will be performed.

For Project 2, At KPMAS, we will also identify mammograms and MRIs with procedure codes, excluding patients with double mastectomy. We will explore the feasibility of validating self-report versus EMR data from EPIC regarding follow up care from gynecology and primary care providers.

**Limitations:** none noted

**Collaborators**: [Name] is a medical oncologist and cancer epidemiologist. Her research is focused on breast and ovarian cancer prevention. The team will also collaborate with the KPMAS tumor registry team.

**References**

[1] Jorgensen TJ, Helzlsouer KJ, Clipp SC, Bolton JH, Crum RM and Visvanathan K. DNA repair gene variants associated with benign breast disease in high cancer risk women. *Cancer Epidemiol Biomarkers Prev*. 2009; 18: 346-50.

[2] Marchant DJ. Benign breast disease. *Obstet Gynecol Clin North Am*. 2002; 29: 1-20.

[3] Hartmann LC, Degnim AC, Santen RJ, Dupont WD and Ghosh K. Atypical hyperplasia of the breast--risk assessment and management options. *N Engl J Med*. 2015; 372: 78-89.

[4] American College of O and Gynecologists' Committee on Practice B-G. Practice Bulletin No. 164: Diagnosis and Management of Benign Breast Disorders. *Obstet Gynecol*. 2016; 127: e141-56.

[5] Bevers TB, Helvie M, Bonaccio E, et al. Breast Cancer Screening and Diagnosis, Version 3.2018, NCCN Clinical Practice Guidelines in Oncology. *J Natl Compr Canc Netw*. 2018; 16: 1362-89.

[6] Fabian CJ, Visvanathan K and Somerfield MR. Use of Endocrine Therapy for Breast Cancer Risk Reduction: ASCO Clinical Practice Guideline Update Summary. *J Oncol Pract*. 2019: JOP1900379.

[7] Nelson HD, Fu R, Zakher B, McDonagh M, Pappas M and Stillman L. *Medication Use for the Risk Reduction of Primary Breast Cancer in Women: A Systematic Review for the US Preventive Services Task Force*. Rockville (MD)2019.

[8] Arthur R, Wang Y, Ye K, et al. Association between lifestyle, menstrual/reproductive history, and histological factors and risk of breast cancer in women biopsied for benign breast disease. *Breast Cancer Res Treat*. 2017; 165: 623-31.