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The goal of this training program is to dramatically extend our existing, highly successful Interdisciplinary Doctoral Training Program in Tumor Biology with a new track which integrates genetics, molecular epidemiology, and prevention of breast cancer. This new track offers both MD/PhD and PhD training opportunities, and integrates new faculty from the Lombardi Cancer Center Programs in Cancer Prevention and Control, and Cancer Genetics. The program is enriched by new courses, as well as practical research experience. This new programmatic initiative makes use of the existing organizational structure of the Interdisciplinary Doctoral Training Program in Tumor Biology and incorporates a multi-disciplinary faculty who are devoted to research and education in breast cancer. We have enrolled our first incoming class of two PhD students and have recruited a second year incoming class of one MD/PhD student and two PhD students. Additionally, new course components have been incorporated into the Breast Cancer Prevention track that focus on cancer genetics, cancer prevention, and epidemiology and cancer risk.

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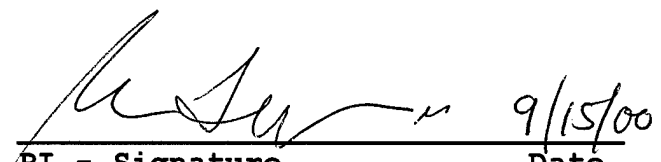

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COMBINED MD/PHD AND PHD TRAINING PROGRAM IN BREAST CANCER PREVENTION

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COMBINED MD/PHD AND PHD TRAINING PROGRAM IN BREAST CANCER PREVENTION

INTRODUCTION

The goal of this training program is to dramatically extend our existing, highly successful Interdisciplinary Doctoral Training Program in Tumor Biology with a new track which integrates genetics, molecular epidemiology, and prevention of breast cancer. This new track offers both MD/PhD and PhD training opportunities, and integrates new faculty from the Lombardi Cancer Center Programs in Cancer Prevention and Control, and Cancer Genetics. The program is enriched by new courses covering cancer genetics, molecular epidemiology, and cancer prevention, as well as practical research experience. This new programmatic initiative makes use of the existing organizational structure of the Interdisciplinary Doctoral Training Program in Tumor Biology and incorporates a multi-disciplinary faculty who are devoted to research and education in breast cancer.

BODY

Training and Research Accomplishments

The accomplishments of this new program in its first year fall into two categories: the recruitment of new trainees, and the development of courses for the program. The first incoming class of this new track in the Interdisciplinary Doctoral Training Program in Tumor Biology consists of two PhD candidates, Ms. Christine Coticchia and Ms. Stacey Kessler, who were selected based on their outstanding qualifications and the compatibility of their interests with the goals of this program. Ms. Kessler's application statement expressed an interest in both breast cancer and cancer prevention, while Ms. Coticchia indicated that she wishes to build on her breast cancer research experience obtained while completing a master's degree. Both trainees are currently performing laboratory rotations in order to select a thesis research laboratory, and are completing course requirements.

The lack of MD/PhD trainees in this first class reflects the fact that these students complete two years of preclinical medical school course work before beginning their PhD training; thus the MD/PhD students eligible to participate in the first year of the new Breast Cancer Prevention Track of the Interdisciplinary Doctoral Training Program in Tumor Biology were admitted into the MD/PhD program three years prior, and do not necessarily have interests compatible with the goals of this training program. However, since this new program has been added to our training web site, a number of MD/PhD candidates have specifically stated an interest in the program for their PhD training.

Three trainees have been recruited for the second incoming class of the Breast Cancer Prevention Track of the Interdisciplinary Doctoral Training Program in Tumor Biology: one MD/PhD candidate, Ms. Carolyn Lee, and two PhD candidates, Ms. Sonia DeAssis and Mr. Elijah

Hebert. Ms. DeAssis has a master's degree and research experience in the field of breast cancer, and is interested in breast cancer prevention as related to diet and environment. Ms. Lee and Mr. Hebert are both interested in cancer genetics and breast cancer.

In addition to the existing core course work of the Interdisciplinary Doctoral Training Program in Tumor Biology, new course components have been incorporated into the Breast Cancer Prevention track. These include a course in *Biostatistics and Experimental Design* that has been refocused on statistical design and methodology for research rather than biostatistics theory, a *Cancer Genetics* course, *Topics in Molecular Epidemiology of Cancer Risk*, and *Principles of Cancer Prevention.*

Cancer Genetics introduces the fundamentals of the molecular genetics and molecular cytogenetics of cancer. In addition, it covers diagnostic, clinical, and population-based aspects of this rapidly advancing field. This course is offered is the Fall semester.

Topics in Molecular Epidemiology of Cancer Risk was introduced this year, and is offered in both the Fall and Spring semesters. This course focuses on the latest developments in the field of cancer risk assessment and explores how interindividual variation contributes to cancer risk. Topics ranging from epidemiology to cancer genetics for carcinogen metabolism, DNA repair, signal transduction and cell cycle control, as well as methods for developing new biomarkers and quality control are covered.

Our newest course, *Principles of Cancer Prevention*, will be offered this spring. It will cover the general principles of cancer prevention by life-style modifications from the basic science, clinical, and epidemiologic perspectives, with special emphasis on nutrition, environment and specific behaviors.

All of these courses emphasize breast cancer, as most of the teaching faculty are extensively involved in breast cancer research. Interest in these courses has not been limited to students in the new Breast Cancer Prevention track; a number of additional students in the Interdisciplinary Doctoral Training Program in Tumor Biology and other biomedical graduate programs at Georgetown University have enrolled as well.

KEY ACCOMPLISHMENTS

- *Recruitment of New Trainees:* Two PhD candidates, Ms. Christine Coticchia and Ms. Stacey Kessler, completed their first year of training in the Breast Cancer Prevention track of the Interdisciplinary Doctoral Training Program in Tumor Biology, and three new trainees were recruited for the second incoming class - one MD/PhD candidate, Ms. Carolyn Lee, and two PhD candidates, Ms. Sonia DeAssis and Mr. Elijah Hebert.

- *Development of Courses:* The following course were revised or developed for the Breast

Cancer Prevention track of the Interdisciplinary Doctoral Training Program in Tumor Biology - *Biostatistics and Experimental Design*, *Cancer Genetics*, *Topics in Molecular Epidemiology of Cancer Risk*, and *Principles of Cancer Prevention.*

CONCLUSIONS

The goal of this training program is to dramatically extend our existing, highly successful Interdisciplinary Doctoral Training Program in Tumor Biology with a new track which integrates genetics, molecular epidemiology, and prevention of breast cancer. We have enrolled our first incoming class of two PhD students and have recruited a second year incoming class of one MD/PhD student and two PhD students. Additionally, new course components have been incorporated into the Breast Cancer Prevention track that focus on cancer genetics, cancer prevention, and epidemiology and cancer risk.