

RESEARCH EDUCATION AND CAREER DEVELOPMENT PROGRAM PLAN

A. Purpose and Objectives

Behavioral oncology seeks to contribute to cancer prevention and control by identifying and promoting behaviors that can lead to reduction in cancer risk, earlier detection of cancer, and improvements in quality of life following cancer diagnosis. In 1996, the National Cancer Institute convened a working group to assess the current status and future directions of behavioral oncology research (Lerman et al., *Prev Med* 26:S3-S9, 1997). The working group observed that behavioral research had made significant contributions to cancer prevention and control efforts, but that many opportunities and challenges remained. The working group also concluded that innovative training programs for behavioral scientists would be especially important in sustaining scientific progress in this area.

Accordingly, the purpose of this training program is to advance the field of behavioral oncology by providing promising candidates with the research training and experience needed to become productive independent scientific investigators. The specific objectives are:

To continue the development of a curriculum-dependent postdoctoral training program in behavioral oncology research using the faculty and resources of the Moffitt Cancer Center and the University of South Florida;

To recruit a diverse group of promising trainees who are committed to careers as researchers in behavioral oncology;

To provide these trainees with the knowledge and skills needed to become successful independent investigators in behavioral oncology.

The Moffitt Cancer Center and the University of South Florida are ideally suited to achieving these objectives. This proposal draws on the strengths of the Health Outcomes and Behavior Research Program at the Moffitt Cancer Center, which is comprised entirely of university faculty members. These faculty members have a history of interdisciplinary collaboration and are currently engaged in a number of funded research efforts that provide an excellent scientific environment for the proposed training program. As university faculty, these individuals also have considerable experience in teaching and mentoring behavioral scientists. Based on their scientific accomplishments and teaching expertise (described in Section C.2.) the training faculty are highly qualified to serve as mentors for individuals seeking to become independent investigators in behavioral oncology.

B. Core Requirements

Training Objectives. The core requirements that each candidate is expected to complete before meeting the program's training objectives are listed below. The ways in which the specialized curriculum and research experiences relate to these core requirements are also described below. Descriptions of the specialized curriculum and research experiences appear in subsequent sections of this document.

Acquire a Basic Understanding of the Prevention, Detection, Diagnosis, and Treatment of Cancer. This requirement can be met by a combination of the following: 1) prior experience and training; 2) attendance at the Foundations of Behavioral Oncology Course; 3) attendance at Grand Rounds in Population Science; 4) attendance at regularly scheduled meetings of interdisciplinary clinical programs at the Moffitt Cancer Center; 5) additional coursework at the University of South Florida; and 6) experience working on research directed by the Primary Mentor.

Become Familiar with the Major Studies and Findings in the Area of Behavioral Oncology. This requirement can be met by a combination of the following: 1) prior experience and training; 2) attendance at the Foundations of Behavioral Oncology Course, the Current Research in Behavioral Oncology Seminar, and the

Behavioral Oncology Journal Review Meetings; 3) regular meetings with Primary and Associate Mentors; and 4) experience working on research directed by the Primary Mentor.

Gain Expertise in Methodologies Needed to Conduct Behavioral Oncology Research. This requirement can be met by a combination of the following: 1) prior experience and training; 2) attendance at the Foundations of Behavioral Oncology Course and the Current Research in Behavioral Oncology Seminar; 3) additional coursework at the University of South Florida; 4) attendance at national training meetings/conferences; 5) regular meetings with Primary and Associate Mentors; 6) regular attendance at research group meetings; and 7) experience working on research directed by the Primary Mentor.

Be Able to Critically Review and Evaluate Research in Behavioral Oncology. This requirement can be met by a combination of the following: 1) prior experience and training; 2) attendance at the Behavioral Oncology Journal Review Meetings; 3) regular meetings with Primary and Associate Mentors; and 4) attendance and participation in the Grant Writing Seminar.

Gain an Understanding of Fundamental Issues Regarding the Ethical Conduct of Research. This requirement can be met by a combination of the following: 1) prior experience and training; 2) attendance at the Ethics in Research Course; 3) regular meetings with Primary and Associate Mentors; 4) regular attendance at research group meetings; and 5) experience working on research directed by the Primary Mentor.

Be Able to Formulate a Novel Research Question in Behavioral Oncology and Design a Methodologically Sound Study to Answer the Question. This requirement can be met by a combination of the following: 1) prior experience and training; 2) attendance at the Behavioral Oncology Seminar; 3) regular meetings with Primary and Associate Mentors; 4) and attendance and participation in the Grant Writing Seminar.

Training Committees. The formation of a training committee for each trainee is an essential element of the program. Training committees are formed based on trainee interests and faculty availability under the direction of the Advisory Committee. Each training committee meets with their trainee upon entry into the program in order to develop a plan of study. This plan takes the form of a document that describes how the trainee will meet each of the requirements listed above. Specific activities undertaken to meet training requirements are documented in the plan. Each training committee meets with their trainee every six months to evaluate progress and formulate future plans. A written summary of these meetings is prepared and distributed to the trainee, the members of the training committee, and the members of the Advisory Committee. These summaries are retained in each trainee's Progress File. With regard to the constitution of the training committee, each committee is comprised of a minimum of two mentors: one Primary Mentor and one or two Associate Mentors.

Primary Mentor. The Primary Mentor assumes primary responsibility for mentoring and providing a structured research experience for his/her assigned trainee. Qualifications for being a Primary Mentor are that the individual is a Moffitt Cancer Center member, a University of South Florida faculty member, a principal investigator of an extramurally funded research grant in behavioral oncology, and an experienced mentor of research trainees. The Primary Mentor and his/her trainee are expected to meet on a weekly basis for at least one hour for individual instruction and supervision.

Associate Mentor. The Associate Mentors are responsible for ensuring that the trainee is exposed to research methodology from multiple disciplines. Every training committee includes at least one Associate Mentor from a discipline different from that of the Primary Mentor. For example, if a Primary Mentor is trained in psychology, the Associate Mentor is from another discipline relevant to behavioral oncology (e.g., nursing, public health, family medicine, or gerontology). Efforts are made to pair Primary Mentors and Associate Mentors who have histories of research collaboration. Given the numerous interdisciplinary collaborations among the training faculty, this task is not difficult. Qualifications for being an Associate Mentor are that the individual is a Moffitt Cancer Center member, a University of South Florida faculty member, and an experienced researcher engaged in oncology-related research. All trainees have at least one Associate

Mentor. A second Associate Mentor may be appointed depending on the specific training needs of the trainee. The trainee is expected to meet with each of his/her Associate Mentors at least monthly for one hour of individual instruction and supervision.

B.1. Specialized Curriculum

A key feature of this training program is a specialized curriculum in behavioral oncology that is not otherwise available at our institution. A description of the core curriculum and elective curriculum for first-year and second-year trainees follows.

B.1.a. Core Curriculum for First-year Trainees

Foundations of Behavioral Oncology Course (8 meetings per year; 60 minutes each). These course meetings are designed to provide trainees with basic information about the prevention, early detection, and treatment of common cancers. In addition, faculty present on methodological issues common to many areas of investigation in behavioral oncology. All first-year trainees and training faculty attend these meetings. The topics covered in these meetings are as follows:

Fundamentals and Principles of Cancer Prevention – Nagi Kumar, Ph.D.

Fundamentals and Principles of Cancer Screening – Richard Roetzheim, M.D.

Fundamentals and Principles of Cancer Treatment – Susan McMillan, Ph.D.

Substance Use and Cancer – David Drobos, Ph.D.

Cultural and Literacy Issues – Cathy Meade, Ph.D.

Psychological Adaptation to Cancer – Paul Jacobsen, Ph.D.

Qualitative Research Methods – Gwendolyn Quinn, Ph.D.

Analysis of Longitudinal Data – Brent Small, Ph.D.

Methodology for Conducting Systematic Reviews and Meta-Analyses – Benjamin Djulbegovic, M.D.

Current Research in Behavioral Oncology Seminar (8 meetings per year; 30 minutes each). This seminar is designed to provide trainees with information about “research in progress” being conducted by training faculty. All first- and second-year trainees and training faculty attend these meetings.

Behavioral Oncology Journal Review Meetings (12 meetings per year; 60 minutes each). Trainees lead a critical review and discussion of recently published research in behavioral oncology on a rotating basis. All first- and second-year trainees attend these meetings. Faculty members also attend and contribute to the discussion.

Ethics in Research Course (4 meetings per year; 4.5 to 8.5 hours each) – All first-year trainees attend the Ethics in Research Course sponsored by the Department of Mental Health Law and Policy at the Florida Mental Health Institute of the University of South Florida. This course is ideally suited to the needs of our trainees since it focuses specifically on ethical issues encountered in conducting behavioral science research. It consists of a series of didactic and experiential presentations led by senior university faculty, including the Chair of the USF Behavioral Science IRB. The goals of the course are: 1) to heighten the awareness of trainees to ethical considerations relevant to the conduct of research; 2) to inform trainees of federal, state, and institutional policies, regulations, and procedures applicable to the ethical conduct of research; and 3) to provide trainees with the opportunity to discuss, in a relatively informal setting, the implications of these policies and procedures on their own behavior in a research environment. The following specific topics are covered:

Historical and cultural foundations of ethics

Institutional review board purpose and processes

Informed consent

Ethics of inclusion/exclusion criteria

Privacy, confidentiality, duties to third parties

Risk and minimization of risk to participants

Dissemination of findings

A complete listing of the course content and examples of the experiential exercises can be found at <http://www.fmhi.usf.edu/mhlp/Training/ethics/introduction.htm>

Grand Rounds in Population Science (24 meetings per year; 60 minutes each). This meeting has been in existence for several years and is attended by all faculty and trainees affiliated with the Moffitt Cancer Center Division of Population Science. The meeting features presentations on cancer prevention and control research by in-house faculty and outside speakers. Recent (2006-2008) outside speakers who focused on issues in behavioral oncology and the topics of their talks include:

Sharon Manne, Ph.D., Fox Chase Cancer Center: Promoting colorectal cancer screening to at risk family members

Marc Schwartz, Ph.D., Lombardi Cancer Center, Georgetown University: Behavioral aspects of genetic susceptibility to cancer

Robert Volk, Ph.D., Baylor College of Medicine: Informed decision-making about prostate cancer screening

Timothy Baker, Ph.D., University of Wisconsin: Nicotine withdrawal and motivation for tobacco use

Keith Singletary, Ph.D., University of Illinois: Nutritional issues in cancer prevention

Linda Jacobs, Ph.D., Abramson Cancer Center, University of Pennsylvania: Models of care for adult cancer survivors

Bradley Zebrack, Ph.D., University of Southern California: Quality of life of pediatric cancer survivors

Robert Klesges, Ph.D., St. Jude Children's Research Hospital: Cancer prevention in children and young adults

Victoria Champion, DNS, RN, FAAN, Indiana University: Promoting Mammography through DVD Intervention and Quality of Life Issues in Younger Breast Cancer Patients

Jeffrey S. Wefel, Ph.D., M.D. Anderson Cancer Center: Cancer and Cancer-Therapy Related Cognitive Dysfunction

Meeting with Primary Mentor (Approximately 50 meetings per year; 60 minutes each). Trainees meet individually with their Primary Mentor once each week. The purpose of these meetings is to supplement didactic experiences with individualized instruction and supervision in behavioral oncology research. It is expected that, during these meetings, Primary Mentors: 1) assign and discuss readings focusing on research topics of mutual interest; 2) provide individualized instruction in research methodology relevant to the conduct of behavioral oncology research; 3) discuss the current status and future directions of the Primary Mentor's program of research; and 4) work collaboratively on presentations and publications.

Meeting with Associate Mentor (Approximately 12 meetings per year; 60 minutes each). Trainees meet individually with each of their Associate Mentors once every month. The purpose of these meetings is to provide the trainees with exposure to and training in the multiple disciplines represented in behavioral oncology research. Toward this end, Associate Mentors are from disciplines other than that of the trainee's Primary Mentor. It is expected that, during these meetings, the Associate Mentors: 1) assign and discuss readings focusing on research topics of mutual interest; 2) provide individualized instruction in research methodology relevant to the conduct of behavioral oncology research; 3) discuss the current status and future directions of the Associate Mentor's program of research; and 4) work collaboratively on presentations and publications.

B.1.b. Core Curriculum for Second-year Trainees

Grant Writing Seminar (Approximately 12 meetings per year; 60 minutes each). This meeting is attended by all second-year trainees and participating faculty. The focus is on developing a grant proposal that could be submitted as an NIH R03 application. The seminar outline is as follows:

Overview of preparation and review of grant proposals (2 meetings) – Faculty members discuss the critical elements of the preparation and review of a NIH grant proposal. Faculty members conducting these sessions (Paul Jacobsen, Ph.D. and Cathy Meade, Ph.D.) are NCI-funded investigators with experience serving on NIH study sections. The following topics are covered:

Elements of a NIH grant proposal
Organization and preparation of specific aims, background, and significance sections
Organization of preliminary studies
Essential elements of the methods section
Preparation of a grant budget
Roles of collaborators and consultants
General principles of grantsmanship
Working with NIH staff
NIH peer review process

Presentations by faculty of successful grant applications (2 meetings) – Faculty members distribute and discuss their recent successful grant applications. As part of this discussion, faculty will share reviewers' comments and, in the case of revised applications, describe responses to reviewers' comments. Specific examples include several successful R03 applications developed by program faculty and previous trainees.

Review of progress in writing grant applications (8 meetings plus homework assignments) – Trainees meet with Dr. Jacobsen to review their progress in writing an R03-type grant application. A timetable for the preparation of the application is distributed with expected dates for completion of specific sections. Trainees hand in sections as they are written for review and critique. Homework assignments include meeting the training committee members to develop the topic and methodology for the grant application.

Presentations based on mock grant applications (1 meeting) – Upon the completion of their grant applications, each trainee presents their proposed project to the other trainees (including the first-year trainees).

Individual meetings of trainees with review committee members (1 meeting) – Two members of the training faculty, who are not the trainee's Primary or Associate Mentors, are assigned to review each application. In addition to preparing written comments in NIH format, these two reviewers meet privately with each trainee to provide verbal feedback about the strengths and weaknesses of the application.

Behavioral Oncology Journal Review Meeting (12 meetings per year; 60 minutes each). Trainees lead a critical review and discussion of recently published research in behavioral oncology on a rotating basis. Faculty members also attend and contribute to the discussion.

Meeting with Primary Mentor (Approximately 50 meetings per year; 60 minutes each). In addition to the activities listed above that occur with first-year trainees, Primary Mentors are expected to discuss and provide guidance to second-year trainees on the preparation of their mock grant proposal.

Meeting with Associate Mentor (Approximately 12 meetings per year; 60 minutes each). In addition to the activities listed above that occur with first-year trainees, Associate Mentors are expected to discuss and provide guidance to second-year trainees on the preparation of their mock grant proposal.

B.1.c. Elective Curriculum for First- and Second-Year Trainees

Approved Coursework (Maximum of 14 meetings per year; 60-180 minutes each). Upon entry into the program and the formation of a training committee, each trainee and training committee identify up to two one-semester University of South Florida graduate courses to be taken over the period of two years in order to enhance the depth and breadth of the trainee's knowledge in fields relevant to behavioral oncology. These plans are reviewed and approved by the Advisory Committee. Possible course options selected from the current University of South Florida graduate catalog are listed below:

Seminar in Health Psychology - Psychology Dept., Arts & Sciences
Research Methods and Measurement – Psychology Dept., Arts and Sciences
Research Methods in Mass Communications - Mass Communication Dept., College of Arts

& Sciences

Topics in Medical Anthropology - Anthropology Dept., College of Arts and Sciences

Health Communication - Communication Dept., College of Arts and Sciences

Perspectives on Death and Dying – Gerontology Dept., College of Arts and Sciences

Sociology of Health and Illness – Sociology Dept., College of Arts and Sciences

Theory and Practice of Educational Evaluation – Educational Measurement Dept., College of Education

Qualitative Research - Educational Measurement Dept., College of Education

Oncology Nursing Concepts - College of Nursing

Social and Behavioral Sciences Applied to Health – College of Public Health

Introduction to Social Marketing – College of Public Health

Community Health Education – College of Public Health

Design and Analysis of Experiments for Health Researchers – College of Public Health

Survey Sampling Methods – College of Public Health

Design and Conduct of Clinical Trials – College of Public Health

Biostatistics – College of Public Health

Categorical Data Analysis – College of Public Health

Cancer Epidemiology – College of Public Health

Moffitt Community-Based Participatory Research Training Institute (CBPRTI) (9 meetings per year; 1 to 8 hours each). The CBPRTI is an outgrowth of the Tampa Bay Community Cancer Network (TBCCN), a cooperative agreement (U01) funded by National Cancer Institute. Cathy Meade, Ph.D. (a Primary Mentor) serves as Director of the TBCCN and facilitates interactions between it and this training program. The overall goal of the TBCCN is to address cancer prevention, detection and control issues that impact medically underserved, low-literacy and low-income populations in selected areas of the Tampa Bay community. To meet this goal, the network organizes and promotes cancer awareness and education activities, the use of community-based participatory research methods, and the creation of sustainable collaborations and partnerships. The CBPRTI was formed specifically in 2007 to promote the professional development of individuals interested in conducting community-based research to reduce cancer health disparities among members of underserved communities in the Tampa Bay Area. Toward this end, the Institute coordinates a number of activities including: a two-day overview of research methods in community-based participatory research, a one-day field trip to meet potential community research partners, and a bi-monthly journal club focusing on recently published articles in community-based cancer-related research. Individuals wishing to participate in the training institute are required to complete applications that are reviewed with regard to the potential of the individual to benefit from the training offered. Participation is sought from both local community members and members of the USF and Moffitt communities.

Research Meetings of the University of South Florida Center for Hospice, Palliative Care, and End-of-Life Studies (12 meetings per year; 60 minutes each). This meeting has been in existence for over five years and is attended by Moffitt and University of South Florida faculty and staff with an identified interest in end-of-life care and research. The meeting features research presentations by in-house and outside speakers. Attendance is recommended for trainees actively involved in end-of-life research. Susan McMillan, Ph.D. (a Primary Mentor) and Kristine Donovan, Ph.D. (an Associate Mentor) serve on the Executive Committee of this center and facilitate interactions between the center and this training program.

Research Team Meetings (50 meetings per year; 60-120 minutes each). Each principal investigator serving as a Primary Mentor is expected to meet with his/her trainees, research staff and collaborating investigators on a weekly basis. The general purpose of these meetings is to: 1) review and discuss the implementation of studies about to begin accrual; 2) review and discuss the status of accruing studies; 3) identify and discuss future studies; and 4) review and discuss study findings preliminary to submission of results for presentation or publication. These meetings provide an important opportunity for trainees to learn about the organization and functioning of a collaborative interdisciplinary research team. These meetings also provide opportunities for direct experience and supervision in many activities related to the day-to-day conduct of research (e.g., data collection, management, and analysis).

Meetings of Moffitt Interdisciplinary Clinical Programs (50 meetings per year; 60 minutes each). Clinical care at Moffitt Cancer Center is provided by members of disease-based interdisciplinary programs. Most clinical programs hold weekly meetings where clinical and research issues are discussed. Trainees involved in disease-based clinical research are encouraged to attend the weekly meetings of the interdisciplinary clinical programs with which they are collaborating. These meetings provide an excellent opportunity for trainees to gain knowledge about the diagnosis and treatment of specific cancers. Attendance is recommended only for the clinical program with which the trainee is actively engaged in collaborative research.

B.2. Research Experience

Experience in all facets of behavioral oncology research is a key element of training. Toward this end, each trainee has the opportunity to become involved in his or her Primary Mentor's ongoing funded research in order to be prepared for careers as independent scientists. As described above, all Primary Mentors are principal investigators of extramurally funded research grants in behavioral oncology and experienced in mentoring postdoctoral trainees.

It is expected that each Primary Mentor arranges for his/her trainee to observe and participate in the following research experiences during the two-year period of postdoctoral training:

- Design and implementation of methodology for data collection
- Development of procedures for insuring the integrity of the study design and the quality of the data collected
- Designation of responsibilities for study personnel and management of study personnel
- Design and implementation of methodology for delivery of study interventions (applies only to intervention studies)
- Design and implementation of methodology for insuring the fidelity of intervention delivery (applies only to intervention studies)
- Design and implementation of procedures for data management and tracking of participants
- Preliminary and final analyses of study data
- Preparation of results for presentation and publication

In addition to these experiences with ongoing research, it is expected that each Primary Mentor will arrange for his/her trainee to observe and participate in activities related to research grant preparation. Some of these activities occur in conjunction with the Grant Writing Seminar that all second-year trainees participate in. Additional activities occur as the Primary and Associate Mentors prepare new grant applications. Since the Primary Mentors are all extramurally funded principal investigators, there is a high likelihood that they will be engaged in grant writing during the two-year period that each trainee is working with them.

C. RESEARCH BASE, MENTORS, AND FACILITIES/RESOURCES

C.1. Research Base

The primary research base for this training program consists of extramurally funded projects in behavioral oncology directed by the Primary Mentors. At present, the primary research base consists of 20 individual projects that generate over \$6.9 million in annual direct funding. All trainees are assigned a Primary Mentor and obtain research experience through direct involvement in the funded research activities of the Primary Mentors. The secondary research base is comprised of other funded projects in cancer prevention, detection and control that have relevance to behavioral oncology and are directed by the Associate Mentors. At present, the secondary research base consists of 12 projects that generate more than \$4.3 million in annual direct funding. Trainees are not directly involved in the funded research activities of their secondary mentors. However, through contacts with their Associate Mentors, trainees become familiar with the aims and methods of these studies. This experience provides trainees with exposure to a range of methodologies in cancer

prevention and control research that can inform their understanding and ability to carry out studies in behavioral oncology.

C.2. Mentors

All Primary and Associate Mentors participating in this training program are members of the University of South Florida (USF) faculty and the Moffitt Cancer Center (MCC) Division of Population Science. This division is comprised of two scientific programs funded by the MCC Cancer Center Support Grant (CCSG; P20): the Health Outcomes and Behavior Program and the Risk Assessment Detection and Intervention Program. Brief biographies of the Primary and Associate Mentors follow.

C.2.a. Primary Mentors

Lodovico Balducci, M.D., Professor, USF Department of Oncologic Sciences and Member, MCC Health Outcomes and Behavior Program. Dr. Balducci is an internationally recognized expert in geriatric oncology and Program Leader of the Senior Adult Oncology Clinical Program at MCC. Since joining the USF faculty in 1991, Dr. Balducci has been involved in research training at the graduate and post-graduate levels. He has served on the dissertation committees of several Ph.D. candidates in Aging Studies at USF. These dissertations have focused on the delivery of care to elderly cancer patients and age-related differences in treatment decision-making. In addition, Dr. Balducci has provided research supervision to seven graduate students and two postdoctoral fellows who have collaborated with him on geriatric oncology research. One of his former postdoctoral fellows (funded by this training grant) recently joined the faculty of the University of Georgia. Dr. Balducci is currently the principal investigator of an NCI-funded study of a psychoeducational intervention delivered to family caregivers of older cancer patients receiving chemotherapy that is designed to improve the management of the patient's symptoms and the quality of life of the caregiver. His research collaborators include the following members of the training faculty: Martine Extermann, M.D., Ph.D., Paul Jacobsen, Ph.D., and Brent Small, Ph.D.

Thomas Brandon, Ph.D., Professor, USF Departments of Psychology and Oncologic Sciences; and Staff Investigator, MCC Health Outcomes and Behavior Program. Dr. Brandon is an internationally recognized expert in behavioral aspects of tobacco control. While serving on the faculty at the State University of New York at Binghamton (1990-1997) and USF (since 1997), Dr. Brandon has trained numerous undergraduates, graduate students, and postdoctoral fellows in cancer-related research—specifically, research on tobacco use and cessation. He has chaired four undergraduate honors theses, 10 master's theses, and 11 doctoral dissertations, and mentored four postdoctoral fellows. He has also supervised the research of over 100 undergraduate research assistants, many of whom have since entered graduate or medical school. His former doctoral students include current assistant or associate professors at Louisiana State University, American University, Temple University, Syracuse University, the University of Texas M.D. Anderson Cancer Center, and the Robert Wood Johnson Medical School. Of his former postdoctoral fellows, one now holds an intramural research position at the American Cancer Society, another has recently been promoted to an assistant professor position at USF, and a third is an assistant professor at the University of West Virginia. Dr. Brandon is currently the principal investigator of an NCI-funded study of cost-effective methods of preventing relapse and promoting continued abstinence among pregnant and postpartum smokers. He is also the principal investigator of an ACS-funded study that is testing the translation of basic animal research on Pavlovian extinction into a cue-exposure treatment for nicotine dependence. His research collaborators include the following members of the training faculty: David Drobos, Ph.D., Ji-Hyun Lee, Dr.P.H., Cathy Meade, Ph.D., and Gwendolyn Quinn, Ph.D.

David Drobos, Ph.D., Associate Professor, USF Department of Oncologic Sciences and Member, MCC Health Outcomes and Behavior Program. Dr. Drobos is a highly successful behavioral investigator in the areas of substance abuse, tobacco control, and psychophysiology. His current research focuses on the role of attentional, affective, and genetic factors in smoking risk, cue reactivity in alcohol and nicotine addiction, and the development of smoking cessation treatments. While serving on the faculty of the Medical University of South Carolina (1998-2002) and USF (since 2002) he has been involved in training activities at the

undergraduate, graduate, and postgraduate levels. Specifically, he has chaired seven honor's theses and two master's theses; he currently supervises three doctoral students and one postdoctoral fellow. He has served as research preceptor to four pre-doctoral psychology interns, who have gone on to faculty positions at Duke University, University of Pittsburgh, Georgia State University, and the University of South Florida. He has also supervised the research of approximately 25 undergraduate research assistants, many of whom have since entered graduate or medical school. Dr. Drobles is currently the principal investigator of an NIAAA-funded study of drug/cue interactions and their contributions to co-morbidity for alcohol and nicotine dependence. His research collaborators include the following members of the training faculty: Thomas Brandon, Ph.D. and Ji-Hyun Lee, Dr.P.H.

Anna Giuliano, Ph.D., Professor, USF Department of Oncologic Sciences and Program Leader, MCC Risk Assessment Detection and Intervention Program. Dr. Giuliano is an internationally recognized expert on cancer epidemiology, with particular expertise in the areas of nutritional epidemiology and infection and cancer. While serving on the faculty at the University of Arizona (1993-2004) and USF (since 2004), Dr. Giuliano has trained numerous undergraduates, graduate students, and postdoctoral fellows in cancer-related research. Much of this experience has involved teaching graduate courses in cancer epidemiology and prevention, and nutritional epidemiology, and directing a postgraduate seminar in cancer prevention. Her experience also includes chairing eight dissertation committees and mentoring six postdoctoral fellows. Her former advisees have gone on to faculty positions at the University of Arizona, the University of Colorado, Virginia Commonwealth University, and the University of South Florida. Dr. Giuliano is currently the principal investigator of an NCI-funded study of the natural history of human papilloma virus (HPV) in men, an NCI-funded study of biomarkers of HPV progression, and an ACS-funded study designed to understand and improve breast cancer survivorship in Latinas. Her research collaborators include the following members of the training faculty: Ellen Daley, Ph.D., Paul Jacobsen, Ph.D., and Susan Vadaparampil, Ph.D.

Paul Jacobsen, Ph.D., Professor, USF Departments of Psychology and Oncologic Sciences and Program Leader, MCC Health Outcomes and Behavior Program. Dr. Jacobsen is an internationally recognized expert on behavioral aspects of cancer prevention and control. Since joining the USF faculty in 1994, Dr. Jacobsen has been involved in cancer-related research training at the undergraduate, graduate, and postgraduate levels. Specifically, he has chaired four undergraduate honors theses, nine master's theses, and eight doctoral dissertations in the area of behavioral oncology. He has also trained five postdoctoral fellows in behavioral oncology research. Two of these fellows subsequently accepted positions with the American Cancer Society's Behavioral Research Center and one recently joined the USF faculty as an assistant professor. Between 1984 and 1994, Dr. Jacobsen was involved in postgraduate training in behavioral oncology research at Memorial Sloan-Kettering Cancer Center (MSKCC). During this period he served as Director of Research Training for the MSKCC Psychiatry Service, coordinated two NIH-funded T32 training grants, and trained numerous postdoctoral fellows who are now engaged in behavioral oncology research at other major cancer centers. Dr. Jacobsen is currently principal investigator of an NCI-funded study of the prevalence, predictors, and course of fatigue in women with early stage breast cancer and an ACS-funded study of stress management and exercise training for cancer chemotherapy patients. His research collaborators include the following members of the training faculty: Lodovico Balducci, M.D., Kristine Donovan, Ph.D., Martine Extermann, M.D., Ph.D., Anna Giuliano, Ph.D., Ji-Hyun Lee, Dr.P.H., Cathy Meade, Ph.D., Richard Roetzheim, M.D., Brent Small, Ph.D., and Susan Vadaparampil, Ph.D.

Susan McMillan, Ph.D., Professor, USF College of Nursing and Member, MCC Health Outcomes and Behavior Program. Dr. McMillan is an internationally recognized expert in palliative care and end-of-life care. She is also Director of Oncology Nursing in the USF College of Nursing Graduate Program where she teaches classes at the master's and doctoral levels, and supervises theses and dissertations in her areas of expertise. During the past 10 years, she served as committee member on seven dissertations (two as co-chair) and chaired 75 master's thesis committees. Dr. McMillan has also mentored a postdoctoral trainee in behavioral oncology. Since 1996, Dr. McMillan has been a leader in the interdisciplinary Center for Hospice, Palliative Care and End of Life Studies on campus (which she founded) that includes both faculty and students. Dr. McMillan is currently principal investigator of two NINR-funded studies focusing on symptom management in persons with cancer. She actively collaborates with the following members of the training

faculty: Kristine Donovan, Ph.D., Martine Extermann, M.D., Ph.D., Cathy Meade, Ph.D., and Brent Small, Ph.D.

Cathy Meade, Ph.D., Professor, USF Department of Oncologic Sciences and Staff Investigator, MCC Health Outcomes and Behavior Program. Dr. Meade is an internationally recognized expert in healthy literacy and cultural aspects of cancer. She has been involved in cancer-related research training at the undergraduate, graduate, and postgraduate levels. Between 1987 and 1994, Dr. Meade chaired and/or served as a member of numerous master's theses and doctoral committees at the University of Milwaukee School of Nursing. Since joining Moffitt in 1994, she has continued to serve as a member of master's theses and doctoral committees in the fields of nursing and anthropology. She has also developed a number of innovative cancer training, mentoring and education programs. Since 1998, Dr. Meade has been Project Director for the NCI-funded Project LINK: Leaders In New Knowledge, a program that provides cancer research experiences to promising high school and undergraduate students from underrepresented minority groups. Other training efforts include the nationally recognized biennial conferences on *Cancer, Culture and Literacy* which draw over 270 participants. From 2001 to 2006, Dr. Meade also led the NCI-funded Cancer, Culture and Literacy Institute, which provided education, training and mentoring activities designed to increase understanding of the intersection of culture and literacy in cancer control and population science. A total of 86 doctorally prepared researchers from a wide array of disciplines, (medicine, nursing, psychology, adult education, nutrition, social work, physical therapy, and epidemiology) were trained in this program. Dr. Meade currently leads the Tampa Bay Community Cancer Network (TBCCN), a cooperative agreement project funded by NCI's Center for Reducing Cancer Health Disparities, which is designed to reduce cancer-related health disparities in the Tampa Bay Community. As part of TBCCN's training activities, her team recently developed the Community-Based Participatory Research Training Institute, a 3.5-day educational forum for junior investigators focusing on the convergence of culture and literacy as they relate to community-based participatory research. Other current research projects include an NCI-funded study which aims to develop a Spanish language questionnaire for assessing cancer information needs among underserved Puerto Ricans residing in Hillsborough County, Florida and San Juan, Puerto Rico. Dr. Meade's research collaborators include the following members of the training faculty: Thomas Brandon, Ph.D., Paul Jacobsen, Ph.D., Susan McMillan, Ph.D., Richard Roetzheim, M.D., and Susan Vadaparampil, Ph.D.

Richard Roetzheim, M.D., M.P.H., Professor, USF Department of Family Medicine and Member, MCC Health Outcomes and Behavior Program. Dr. Roetzheim is an internationally recognized expert on primary care and cancer. Since joining the University of South Florida faculty in 1988, he has served as a mentor for eight medical students, two public health students, and two post-doctoral fellows conducting community based research in behavioral oncology. He has served on doctoral dissertation committees for five Ph.D. candidates. He is currently the principal investigator of an NCI-funded study of a school based program designed to promote sun-protective behaviors in fourth graders. He is also the principal investigator of an NCI-funded study designed to evaluate the effectiveness of patient navigators in reducing cancer-related health disparities. Dr. Roetzheim's research collaborators include the following members of the training faculty: B. Lee Green, Ph.D., Paul Jacobsen, Ph.D., Ji-Hyun Lee, Dr.P.H., Cathy Meade, Ph.D., and Susan Vadaparampil, Ph.D.

C.2.b. Associate Mentors

Ellen Daley, Ph.D., Assistant Professor, USF Department of Community and Family Health and Member, MCC Health Outcomes and Behavior Program. Dr. Daley is an expert on the behavioral impact of HPV infection. Her research training activities include teaching graduate courses in public health and providing research mentoring to graduate students from the USF Colleges of Public Health, Medicine, Nursing, and Arts and Sciences. She is currently the principal investigator of an NCI-funded study of men's cognitive and emotional responses to notification of HPV infection. Her research collaborators include the following members of the training faculty: Anna Giuliano, Ph.D., Gwendolyn Quinn, Ph.D., and Susan Vadaparampil, Ph.D.

Benjamin Djulbegovic, M.D., Ph.D., Professor, USF Departments of Medicine and Oncology and Member, MCC Health Outcomes and Behavior Program. Dr. Djulbegovic's research interests are evidence-based medicine, decision-analysis, and the impact of randomized trials. In addition to publishing and lecturing on these topics, he has instructed graduate and post-graduate students in the methods used to conduct systematic reviews and meta-analyses. Dr. Djulbegovic is currently the principal investigator of an NIH-funded study evaluating the quality of randomized clinical trials conducted by the NCI-funded cooperative groups. He actively collaborates on research with Lodovico Balducci, M.D., another member of the training faculty.

Kristine Donovan, Ph.D., Assistant Professor, USF Department of Oncologic Sciences and Member, MCC Health Outcomes and Behavior Program. Since joining the USF faculty in 2003, Dr. Donovan's research has focused on the quality of life of women with cancer. To date, she has mentored four undergraduate students and seven graduate students by providing them with supervised research experience in behavioral oncology research. Dr. Donovan is also the course instructor for Counseling the Terminally Ill, a graduate course offered by the USF College of Nursing and School of Aging Studies. Dr. Donovan is currently the principal investigator of an ACS-funded study examining the sexual health of women with gynecologic cancers. Her research collaborators include the following members of the training faculty: Paul Jacobsen, Ph.D., Susan McMillan, Ph.D., and Brent Small, Ph.D.

Martine Extermann, M.D., Ph.D., Associate Professor, USF Department of Oncologic Sciences and Member, MCC Health Outcomes and Behavior Program. Dr. Extermann is an international leader in geriatric oncology research. Since joining the USF faculty in 1997, her key research interests have been the integration of a geriatric assessment in the management of older cancer patients, as well as the impact of comorbidity on the prognosis, cancer behavior, and treatment of older cancer patients. She served on two dissertation committees and mentored one post-doctorate student. In addition, she mentors an average of two international fellows per year from Europe and other worldwide locations in geriatric oncology research. Dr. Extermann is presently the principal investigator of an ACS-funded study to design a tool to predict tolerance to chemotherapy among older adults. Her research collaborators include the following members of the training faculty: Paul Jacobsen, Ph.D., Susan McMillan, Ph.D., and Brent Small, Ph.D.

B. Lee Green, Ph.D., Professor, USF Department of Oncologic Sciences, and Member, MCC Health Outcomes and Behavior Program. Dr. Green is recognized for his work in the area of cancer health disparities with a particular interest in education, knowledge and awareness among minority populations. His interests also include community based participatory research as well as minority participation in clinical trials and research studies. Dr. Green has held faculty positions at the University of Alabama (1994-1998), the University of Alabama at Birmingham (1998-2002), Texas A&M University (2002-2006), and Moffitt Cancer Center (2006 – current). During his tenure at these institutions Dr. Green has mentored many undergraduate and graduate students. Specifically, he has chaired 12 doctoral dissertations and supervised the research work of over 40 undergraduate students. His former students are currently on the faculty of the University of Alabama at Birmingham, University of Michigan, University of Georgia, Mississippi State University, Texas A&M University, University of South Florida, and Arizona State University. Since joining Moffitt in 2006, Dr. Green has initiated research collaborations with the following members of the training faculty: Paul Jacobsen, Ph.D., Cathy Meade, Ph.D., Richard Roetzheim, M.D., and Susan Vadaparampil, Ph.D.

Nagi Kumar, Ph.D. Associate Professor, USF Department of Oncologic Sciences and Member, MCC Health Outcomes and Behavior Program. Dr. Kumar is an expert on nutrition and cancer. Since joining USF in 1992, Dr. Kumar has been involved in teaching and training undergraduate and graduate students in research methods pertaining to nutrients, body composition and lifestyle factors in cancer control. Dr. Kumar has a secondary appointment in the USF College of Nursing where she provides lectures for the courses in Nutritional Approaches in Cancer Treatment and Diet, Physical Activity and Cancer. Dr. Kumar has served on three thesis committees for graduate students in public health and nutritional anthropology and has mentored several summer interns, including minority interns. Dr. Kumar has been the co-director of two training grants: the DOD-funded Florida A&M University (FAMU) Center for Minority Prostate Cancer Training and Research, a collaborative program between FAMU and the Moffitt Cancer Center; and the DOD-funded Historically Black

Colleges and Universities Summer Internship Program in Prostate Cancer (Project INSPIRE). These activities have led to the development of specialized training programs for FAMU graduate students and faculty and a public education module on prostate cancer for African Americans. Dr. Kumar is currently the principal investigator of an NCI-funded Phase II study evaluating the role of Polyphenol E as a chemopreventive agent for prostate cancer. Her research collaborators include the following members of the training faculty: Cathy Meade, Ph.D., and Cynthia Myers, Ph.D.

Ji-Hyun Lee, Dr.P.H., Assistant Professor, USF Department of Oncologic Sciences and Member, MCC Biostatistics Core. Dr. Lee's primary research interest is in developing methods for repeated measurement data. Specifically, she focuses on goodness-of-fit tests for correlated binary data and change-point models using a generalized estimating equations (GEE) method. Dr. Lee spends a significant amount of her time working in collaboration with oncologists, epidemiologists, and behavioral scientists at MCC. As a biostatistician at Moffitt Cancer Center (MCC), her goals in teaching are to support excellence in biostatistical practice and promote sound application of these statistical methods. Toward this end, she is actively involved in mentoring graduate students and post-doctoral fellows to nurture their development as biostatisticians and scientists. She also provides statistical seminars on a regular basis to cancer researchers and graduate students and teaches graduate courses in biostatistics in the USF Colleges of Public Health and Medicine. Dr. Lee actively collaborates on research with the following members of the training faculty: Thomas Brandon, Ph.D., David Drobos, Ph.D., Anna Giuliano, Ph.D., Paul Jacobsen, Ph.D., and Richard Roetzheim, M.D.

Cecile A. Lengacher R.N., Ph.D., Professor, USF College of Nursing and Member, MCC Health Outcomes and Behavior Program. Dr. Lengacher is an expert on psychoneuroimmunology and cancer. Since joining the USF faculty in 1988, Dr. Lengacher has been involved in research training at the undergraduate and graduate levels. At the graduate level, she has chaired 12 master's theses and 2 doctoral dissertations, with 3 other dissertations in progress. Dr. Lengacher is currently the principal investigator of an NCI-funded study on the effects of a mindfulness based stress reduction intervention on physical and psychological outcomes in breast cancer survivors. She actively collaborates with the following members of the training faculty, Paul Jacobsen Ph.D., and Cynthia Myers, Ph.D.

Gwendolyn Quinn, Ph.D., Associate Professor, USF Department of Oncologic Sciences and Member, MCC Health Outcomes and Behavior Program. Since joining the USF faculty in 1997, Dr. Quinn's primary research focus has been patient-physician communication and the use of social marketing techniques to promote health behavior change. She has trained over one hundred students in applying the principles of social marketing to health-related issues, particularly the prevention of breast and cervical cancer and the promotion of oncology clinical trials. She has also supervised numerous graduate students in the collection of qualitative data through focus groups and individual interviews in anthropology, nursing, and public health-related research projects. Dr. Quinn has served on six doctoral committees in public health, anthropology and nursing. She regularly teaches social marketing in the College of Public Health and Clinical Problem Solving in the College of Medicine. She is currently the principal investigator of an ACS funded study examining oncologists' attitudes and practices regarding fertility preservation for newly diagnosed cancer patients. Her research collaborators include the following members of the training faculty: Thomas Brandon, Ph.D., Cynthia Myers, Ph.D., Vani Simmons, Ph.D., and Susan Vadaparampil, Ph.D.

Michael Schell, Ph.D., Professor, USF Department of Oncologic Sciences and Scientific Director, MCC Biostatistics Core. Over his 23-year professional career, Dr. Schell has worked at four NCI-designated cancer centers, including three as Biostatistics Core Director (University of California at Irvine, University of North Carolina, and University of South Florida). Dr. Schell has authored over 100 articles, and collaborated on over 20 grants. He is the lead author of the "reduced monotonic regression method", a modern technique which generally provides stronger fits to data than yielded by linear regression, since it relaxes the linearity requirement while retaining monotonicity. Dr. Schell has directed 8 master's theses and has served on 13 doctoral committees. He is a staunch advocate of improving the practice of statistics in applied research, and has given numerous talks and provided one-on-one mentorship to non-statistical scientists. His research

collaborators include the following members of the training faculty: Anna Giuliano, Ph.D., Ji-Hyun Lee, Dr.P.H., and Nagi Kumar, Ph.D.

Thomas Sellers, Ph.D., M.P.H., Professor, USF Department of Oncologic Sciences and Associate Center Director, MCC Division of Population Science. Dr. Sellers is an internationally recognized expert in the molecular and genetic epidemiology of common cancers. He has extensive experience with teaching and mentoring, and has served as co-principal investigator of a NIH-funded T32 training grant while at the University of Minnesota and principal investigator of a NCI-funded R25T training grant while at the Mayo Clinic. Over the course of his career, Dr. Sellers has trained numerous undergraduates, graduate students, and postdoctoral fellows in the areas of epidemiology, genetics, health informatics, biostatistics and environmental health. He is currently the principal investigator of an NCI-funded study that is screening the genome to identify loci associated with risk for ovarian cancer. His research collaborators include the following members of the training faculty: Paul Jacobsen, Ph.D., Anna Giuliano, Ph.D., Nagi Kumar, Ph.D., Cynthia Myers, Ph.D., and Brent Small, Ph.D.

Brent Small, Ph.D., Associate Professor, USF School of Aging Studies; Member, MCC Health Outcomes and Behavior Program; and Member, MCC Biostatistics Shared Resource. Dr. Small is an expert on aging and cancer. He has considerable experience with graduate level instruction in gerontology and statistics, with special emphasis on modern approaches to longitudinal data analysis. In addition, he has experience with supervising graduate students in the statistical analysis of health outcomes data. Dr. Small has received a number of teaching awards at USF, and has served on 26 dissertation committees, 5 as major professor. Dr. Small is currently the principal investigator of an NCI-funded study investigating the moderating influence of genetic risk factors on cancer treatment-related changes in cognitive functioning. His research collaborators include the following members of the training faculty: Kristine Donovan, Ph.D., Paul Jacobsen, Ph.D., Susan McMillan, Ph.D., Cynthia Myers, Ph.D., and Thomas Sellers, Ph.D.

Susan T. Vadaparampil, Ph.D., Assistant Professor, USF Departments of Oncologic Sciences and Community and Family Health and Member, MCC Health Outcomes and Behavior Program. Dr. Vadaparampil conducts research on psychosocial issues related to genetic counseling and testing for inherited cancer susceptibility syndromes. She has been recognized as a national expert in this area and serves as an adjunct scientist in the Clinical Genetics Branch of the National Cancer Institute. Dr. Vadaparampil has been involved in several training efforts focused on mentoring junior faculty for careers in cancer prevention and control research. From 2003-2006 she served as mentor on the DOD-funded Florida A&M University (FAMU) Center for Minority Prostate Cancer Training and Research, a collaborative program between FAMU and the Moffitt Cancer Center. She also serves as the education and training coordinator for the "Tampa Bay Community Cancer Network (TB-CCN): A Model for Reducing Health Disparities", an NCI-funded U01 grant. Dr. Vadaparampil is the principal investigator of an ACS-funded grant that explores the impact of genetic counseling on the care and psychological status of recently diagnosed breast cancer patients. She is also the principal investigator of a study funded by the National Human Genome Research Institute that examines knowledge, attitudes, and behaviors related to cancer genetics among Mexican, Puerto Rican, and Cuban women at increased risk for hereditary breast and ovarian cancer. Dr. Vadaparampil's research collaborators include the following members of the training faculty: Anna Giuliano, Ph.D., Paul Jacobsen, Ph.D., Cathy Meade, Ph.D., and Gwendolyn Quinn, Ph.D.

C.3. Resources and Facilities

The University of South Florida (USF) is among the largest universities in the United States, with a student population of more than 44,000. In 2006, the university granted 2,095 master's degrees, 230 Ph.D. degrees, and 116 M.D. degrees. USF has a wide range of research programs and is currently ranked as a Carnegie I institution. All members of the training faculty hold academic appointments at USF. These faculty members belong to four different colleges within the university (Arts and Sciences, Nursing, Medicine, and Public Health), reflecting the multidisciplinary nature of our training program.

The Moffitt Cancer Center (MCC) is a private, not-for-profit institution whose mission is focused entirely on cancer care, research, education, and prevention. Since its founding in 1986, MCC has been the focal point for cancer-related interests and activities at USF. More than 1,500 employees, 300 physicians and scientists, and 200 volunteers work at MCC. It is the only NCI-designated cancer center in the state of Florida. The Center first received a P30 Cancer Center Support Grant (CCSG) Award and NCI designation in 1997. This grant was most recently renewed in 2006. The Center includes a 162-bed hospital that admitted over 6000 patients in 2006, an Ambulatory Services Center that recorded over 195,000 outpatient visits, a 24-bed bone marrow transplant program, a variety of research programs, a comprehensive cancer screening program, an active community education division, and affiliations with several national cooperative groups (SWOG, RTOG, GOG, NSABP, and POG) and other Florida hospitals. In 2006, Moffitt researchers obtained over \$38 million in external peer-reviewed funding from a variety of sources including the National Institutes of Health, the American Cancer Society and the Department of Defense and an additional \$14 million from industry and private foundations.

With regard to its scientific activities as funded by the P30 CCSG, MCC is organized into five main research programs: Molecular Oncology, Immunology, Experimental Therapeutics, Risk Assessment Detection and Intervention, and Health Outcomes and Behavior. The Behavioral Oncology Post-Doctoral Training Program draws primarily on the resources and faculty of the Department of Health Outcomes and Behavior. This program is led by Paul Jacobsen, Ph.D., who is also Program Director of the Behavioral Oncology Post-Doctoral Training Program. Staff investigators for the Health Outcomes and Behavior funded by the P30 CCSG include Thomas Brandon, Ph.D. and Cathy Meade, Ph.D., who are also Primary Mentors for the Behavioral Oncology Post-Doctoral Training Program. The scientific goals of the Department of Health Outcomes and Behavior are to: 1) understand the determinants of behaviors that lead to prevention and early detection of cancer and develop effective methods of promoting those behaviors; 2) understand and improve patients' quality of life throughout the disease course; 3) identify clinical practices and health outcomes that can inform efforts to improve the quality of cancer care; and 4) understand and address the determinants of cancer-related health disparities. The program is comprised of 23 members from four colleges and seven departments at USF representing a wide variety of disciplines. Numerous members of the program serve as Primary and Associate Mentors in the training program. The Department of Health Outcomes and Behavior was rated as Outstanding during the most recent Cancer Center Support Grant Review.

Members of the Department of Health Outcomes and Behavior are able to draw on the resources provided by 13 shared resources (scientific cores) at the Moffitt Cancer. Program members are particularly frequent users of the Biostatistics Core, which provides consultation and assistance with statistical aspects of research design and analysis, and the Survey Methods Core, which provides consultation and assistance with the design of survey tools and the collection and analysis of survey data.