3.0 Career Goals and Objectives

3a. As outlined in section 2.0, my **overarching career goal** is to identify strategies to minimize treatment-associated physical disability in older oncology patients. My unique training background and prior work put me in a novel and ideal position to champion this important research platform. I have systematically sought training, mentorship, and collaborations to support my development toward this goal. My preliminary data support both the scientific basis and feasibility of the trial proposed herein. Finally, I am establishing myself as an expert in geriatric oncology and hematologic malignancies, and am disseminating my work through the Cancer and Aging Research Group, the CALGB, and NCI. With my mentors, I have identified additional training needed to build on this foundation and achieve my career goal. The **objectives of the Career Development Plan (CDP)** are outlined below:

Objective 1: Develop expertise in the measurement of physical function in older cancer patients.
Execution of the Research Plan (Aims 2, 3) will allow me to develop this expertise by characterizing changes in physical function among older AML patients randomized to a physical activity intervention.

Objective 2: Develop expertise and experience in the design and execution of randomized physical activity interventions in older cancer patients.
Execution of the Research Plan will provide experience in the design and oversight of a targeted, tailored exercise intervention in older adults receiving chemotherapy to maximize recruitment, retention, and adherence.

Objective 3: Develop leadership and independence as a clinician researcher in geriatric oncology.
Successful execution of the RP will shape the emerging field of geriatric oncology by being among the first to a) rigorously investigate physical function as an important outcome measure, and b) integrate therapeutic physical activity interventions into the care paradigm for high-risk older adults on chemotherapy. This proposal will yield data instrumental for the development of an R01 application during the latter part of the award.

3b. Specific Career Goals

The proposed CDP is designed to enhance my research and leadership skills and gain needed experience and expertise in the following specific areas:

3b1. Develop expertise in the measurement of physical function in older cancer patients

Appropriate measurement of physical function as an outcome in cancer clinical trials for older adults requires practical and sensitive techniques. In addition, optimal design of targeted interventions to minimize treatment-related disability should include careful observations of functional decline. This CDP will build upon my prior training and rich resources at WFUSM to develop and compare methods to measure physical function in older adults treated with chemotherapy. My further training includes acquisition of knowledge and proficiency in:

- Assessment techniques to evaluate physical function
- Measurement issues related to special populations, including frail older adults and cancer patients.

3b2. Develop expertise and experience in the design and execution of randomized physical activity interventions in older cancer patients.

There is evidence that physical activity interventions can improve outcomes in older adults and cancer survivors[3-6]. Yet, few studies have focused on minimizing disability in older adults receiving chemotherapy. My pilot study of physical activity in older adults with AML showed the importance of targeting the intervention to the study population to maximize adherence, efficacy and safety. This tailoring requires understanding principles of exercise physiology. In addition, effective interventions depend on changing both physiology and behavior. An understanding of the psychology of behavioral change and methods to facilitate change are critical to achieving success. Although my M.S. provided exposure to clinical trial design, I have had no experience in design and execution of a randomized trial and no training specific to behavioral interventions. Thus, I will:

- Acquire knowledge of exercise physiology with a focus on musculoskeletal function and fitness.
- Acquire knowledge and experience in tailored exercise prescriptions with a focus on older adults.
- Gain exposure to unique aspects of protocol development, including methods used to ensure quality control when implementing an exercise intervention.
- Develop an understanding of behavior change, with emphasis on older adults and cancer patients.
- Develop expertise in principles of maximizing adherence to behavioral interventions.
- Gain exposure to blinding issues in design of behavioral interventions and methods to minimize bias.
- Learn to design an appropriate control arm and its implications on analysis and interpretation of data.

3b3. Develop leadership skills and independence as a clinician researcher in geriatric oncology
I have a developing reputation nationally as an expert in geriatric oncology. To expand on this beginning, I must continue to develop leadership skills and enhance existing abilities in writing, teaching, presentation and content. These skills and experience will assist me in my long-term goals of:

- Conducting R01 trials to prevent physical disability in older adults receiving chemotherapy.
- Integrating geriatric-specific functional outcomes into national cancer treatment trials.
- Developing national treatment protocols to compare the impact of equally effective chemotherapy treatment regimens on physical function in older adults.
- Collaborating worldwide with colleagues to develop research agendas specific to treatment and survivorship issues in older cancer patients, and disseminating information gained into clinical practice.