Award Number:  DAMD17-00-1-0271

TITLE: Comprehensive Postdoctoral Training Program in Breast Cancer Biology

PRINCIPAL INVESTIGATOR:  Robert Dickson, Ph.D.

CONTRACTING ORGANIZATION:  Georgetown University Medical Center
                                Washington, DC  20057

REPORT DATE:  July 2002

TYPE OF REPORT:  Annual Summary

PREPARED FOR:  U.S. Army Medical Research and Materiel Command
                 Fort Detrick, Maryland  21702-5012

DISTRIBUTION STATEMENT:  Approved for Public Release;
                          Distribution Unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.
**REPORT DOCUMENTATION PAGE**

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave Blank)  
2. REPORT DATE  
   July 2002  
3. REPORT TYPE AND DATES COVERED  
   Annual Summary (1 Jul 01 - 30 Jun 02)  

4. TITLE AND SUBTITLE  
   Comprehensive Postdoctoral Training Program in Breast Cancer Biology

6. AUTHOR(S)  
   Robert Dickson, Ph.D.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  
   Georgetown University Medical Center  
   Washington, DC 20057  
   E-Mail: dicksonr@georgetown.edu

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)  
   U.S. Army Medical Research and Materiel Command  
   Fort Detrick, Maryland 21702-5012

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT  
   Approved for Public Release; Distribution Unlimited

13. Abstract (Maximum 200 Words) (abstract should contain no proprietary or confidential information)  
   The goal of this training program is to significantly extend our existing, highly successful Doctoral Training Program in Tumor Biology and several Cancer Center mechanisms that provide traditional postdoctoral training and junior faculty career development. The program integrates faculty from the Lombardi Cancer Center programs in Cancer Prevention and Control and Cancer Genetics and makes use of the existing organizational structure of the Interdisciplinary Doctoral Training Program in Tumor Biology and incorporates a multidisciplinary faculty who are devoted to research and education in breast cancer. We have one postdoctoral fellow who has successfully completed her fellowship in the program and another postdoctoral fellow who has successfully completed his first year and is now in his second year of research. We have recruited two postdoctoral fellows who have begun their first year of research in the program.

14. SUBJECT TERMS  
   breast cancer, interdisciplinary education, prevention, genetics, molecular epidemiology, translational research

15. NUMBER OF PAGES  
   6

16. PRICE CODE  
   Unlimited

17. SECURITY CLASSIFICATION OF REPORT  
   Unclassified

18. SECURITY CLASSIFICATION OF THIS PAGE  
   Unclassified

19. SECURITY CLASSIFICATION OF ABSTRACT  
   Unclassified

20. LIMITATION OF ABSTRACT

---

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. Z39-15
298-102
Table of Contents

Cover .................................................................................................................. 1
SF 298 ............................................................................................................. 2
Introduction ..................................................................................................... 4
Body ............................................................................................................... 4
Key Research Accomplishments .................................................................... 5
Reportable Outcomes ..................................................................................... 6
Conclusions .................................................................................................... 6
COMPREHENSIVE POSTDOCTORAL TRAINING PROGRAM IN BREAST CANCER BIOLOGY

INTRODUCTION

The Comprehensive Postdoctoral Training Program in Breast Cancer Biology has successfully completed its second year. The goal of the program is to significantly extend our existing, highly successful Doctoral Training Program in Tumor Biology and several Cancer Center mechanisms that provide traditional postdoctoral training and junior faculty career development. The education and training of new investigators is essential to our progress in the prevention, detection, diagnosis, and treatment of breast cancer. The Postdoctoral Training Program in Breast Cancer provides comprehensive career development and integrates interactive research in the basic biology of breast cancer, formal and informal course work in key areas, and individualized guidance in career development. The program is enriched with both new and existing courses of interest to postdoctoral fellows covering scientific writing, teaching methodologies, scientific resources and technologies for cancer research, ethics in science, career development seminar series, and provides a firm foundation in the skills needed to succeed in a career science, as well as a focused research experience in basic breast cancer biology in a strong laboratory environment. Additional programmatic activities include monthly Oncology Grand Rounds, weekly Tumor Biology Seminar Series, and weekly journal clubs. The program 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.

Postdoctoral fellows are given the opportunity to seek research and career advice from a number of senior faculty. The further development of this structured Tumor Biology Postdoctoral training program will provide excellent preparation for successful careers in cancer research.

BODY

Training and Research Accomplishments

The accomplishments of this program include the recruitment and progress of postdoctoral fellows. In the past 10 years, over 100 postdoctoral fellows have been trained by our Tumor Biology program preceptors. These fellows have an outstanding record of research productivity and peer-reviewed publication, and over 50% of them have obtained academic faculty level positions.

In the first year of the program, two postdoctoral fellows, Fadwa Attiga, Ph.D. and Tushar Deb, Ph.D., were recruited to the program. Dr. Attiga has successfully completed her postdoctoral fellowship in Dr. Stephen Byer's lab, researching the cross
regulation between the IKK and the beta-catenin signaling pathways in breast and colon cancers. Her research topics include study of how different kinases regulate the level of oncogene beta-catenin in tumor cells and identification of the key players in the signaling cascades that alter the beta-catenin protein level and transcriptional activity in tumors. Dr. Deb, has completed his first year of research in the program in Dr. Robert Dickson’s lab. The main focus of Dr. Deb's research is to explore the EGF cell-survival signaling in transgenic MMTV-c-Myc mammary epithelial cells. Proto-oncogene c-Myc sensitizes apoptosis in absence of serum in these cells. The specific role of a calmodulin dependent kinase in this survival signaling is also being explored.

Two postdoctoral fellows, Marcia Noble, Ph.D., and Kerrie O'Brien, Ph.D., were recruited into the second year of the program. Dr. Noble began her postdoctoral fellowship in September 2001, under collaborative mentorship of Dr. Michael Johnson and Dr. Robert Dickson. Dr. Noble's research focus is on the mechanism of VEGF to promote breast cancer metastases in transgenic mouse models. Dr. O'Brien began her fellowship in March 2002 under mentorship of Dr. Robert Clarke. Dr. O'Brien's research focuses on the resistance to retinoids in breast cancer. A third postdoctoral fellow, Constanze Hample, has been recruited into the program and will begin her fellowship in September 2002 with Dr. Stephen Byers.

As noted earlier, our Postdoctoral Program incorporates elements of our existing Tumor Biology Ph.D. program, as well as new, Postdoctoral Training-specific elements as a part of a Breast Cancer Prevention Track. In addition to the existing courses offered through the Interdisciplinary Doctoral Training Program in Tumor Biology, new course components have recently been incorporated into the Breast Cancer Prevention Track. 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 in Spring 2002. These include a course in Biostatistics, Applied Biostatistics, that has been refocused on statistical design and methodology for research rather than biostatistics theory, and a Cancer Genetics course, Genetics, Health, and Society in the 21st Century, which focuses on practical and ethical questions raised by genetic information and technology. Both courses had a very successful first year and will continue to be offered. A new course in Genetics, Human and Microbial Genetics, has been developed and will be offered in the Fall.

KEY ACCOMPLISHMENTS

- Recruitment of Trainees and Progress of Trainees:
  - Two postdoctoral fellows have been recruited into class #2 of the Comprehensive Postdoctoral Training Program in Breast Cancer Biology: Marcia Noble, Ph.D., and Kerrie O'Brien, Ph.D. Dr. Noble began the program in September, 2001 in Dr. Michael Johnson's and Dr. Robert Dickson's laboratories and Dr. O'Brien began March, 2002 in Dr. Robert Clarke's laboratory.
  - Dr. Deb, from class #1, has successfully entered into his second year in the program studying breast cancer biology.
- Dr. Attiga, from class #1, completed her first year with Dr. Stephen Byers and is currently on maternity leave.

- **New Courses:**
  - A new course, *Human and Microbial Genetics*, will be offered in the fall.
  - Two courses, *Applied Biostatistics* and *Genetics, Health and Society in the 21st Century* both had a very successful first semester and will continue to be offered.

**REPORTABLE OUTCOMES**

- **Publications:**

- **Abstracts:**
  - Deb, T, and Dickson, R. Calmodulin as a positive modulator of EGF survival signaling in MMTV-C-MYC mouse mammary epithelial cells. *DOD ERA of Hope Meeting*, Orlando, FL, 2002.

**CONCLUSIONS**

The goal of the program is to significantly extend our existing, highly successful Postdoctoral Training Program in Cancer with a new specialization in Breast Cancer Biology. We have successfully completed our first year of the Comprehensive Postdoctoral Training Program in Breast Cancer Biology and have two postdoctoral fellows who are now entering their second year of research. We have recruited two new postdoctoral fellows to the program.