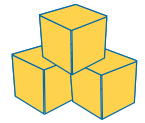


Spotlight on the Consortium Scholars



Each year, the Consortium sponsors an array of training programs for public health professionals on the island of Ireland. With funding from the HRB, the HSC R&D, and the NCI, Consortium scholar programs enable participants from a variety of disciplines the opportunity to pursue cancer prevention research, collaborate with international colleagues, and connect with mentors on the island of Ireland and the U.S. Below are short descriptions of three programs sponsored by the Consortium in 2007, followed by a sampling of brief biosketches of several 2007 scholars and their research.

NCI CANCER PREVENTION FELLOWSHIP PROGRAM

The CFPF provides postdoctoral training to individuals from a multiplicity of health science disciplines in the field of cancer prevention and control. Every year, CFPF hosts applicants from Ireland and Northern Ireland. The three-year program includes MPH training, attendance in the NCI Summer Curriculum in Cancer Prevention, and mentored research at the NCI. In 2007, six fellows participated in varying stages of the program. Dr. Lesley Anderson's work is highlighted below.



**Lesley Anderson,
PhD, MPH**

Academic Fellow
Queens University Belfast,
Belfast

Dr. Lesley Anderson obtained a PhD in cancer epidemiology from QUB in 2004. Her doctoral thesis focused on the aetiology of oesophageal adenocarcinoma in the first all-Ireland case-control study. Dr. Anderson and her colleagues discovered non-steroidal anti-inflammatory drugs and *Helicobacter pylori* infection to be associated with reduced risk of esophageal adenocarcinoma and its precursor lesions^{1,2}. In her first year in the CFPF, Dr. Anderson completed a Master's in Population Health Evidence at the University of Manchester. Her dissertation project found overall mortality rates to be higher in patients with celiac disease, as compared with the Northern Ireland population³.

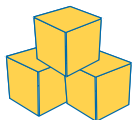
During her time at the NCI, Dr. Anderson worked to establish collaborative research projects between NCI and QUB. She also expanded her interest in immune modulation, infections, and cancer. Over the past two years, Dr. Anderson specifically examined the associations between antibiotic use⁴, hepatitis viruses⁵, autoimmune conditions, and hematopoietic malignancies. After investigating data from a multi-center case-control study, Dr. Anderson and

colleagues from the NCI Infections and Immunoepidemiology Branch found no association between overall antibiotic use and non-Hodgkin lymphoma⁴. Using the Surveillance Epidemiology and End Results-Medicare dataset of 61,464 hematopoietic malignancy patients, Dr. Anderson and colleagues discovered that the hepatitis C virus was specifically associated with an elevated risk of non-Hodgkin lymphoma and acute myeloid leukemia⁵. In addition, several autoimmune conditions, particularly those associated with systemic manifestations, were discovered to be associated with non-Hodgkin lymphoma.

Dr. Anderson is now based within the Cancer Epidemiology and Prevention Research Group, Centre for Clinical and Population Sciences, QUB, as an Academic Fellow in Cancer Prevention.

Selected Publications:

1. **Anderson LA**, Johnston BT, Watson RGP, Murphy SJ, Ferguson HR, Comber H, Reynolds JV, McGuigan J, Murray LJ. Non-steroidal anti-inflammatory drugs and the esophageal inflammation-metaplasia-adenocarcinoma sequence. *Cancer Research* 2006; 66 (9):4975-4982.
2. **Anderson LA**, Murphy SJ, Johnston BT, Watson RGP, Ferguson HR, Bamford KB, Ghazy A, McCarron P, McGuigan J, Reynolds JV, Comber H, Murray LJ. Relationship between *Helicobacter pylori* infection and gastric atrophy and the stages of the



oesophageal inflammation, metaplasia, adenocarcinoma sequence: results from the FINBAR case-control study. *GUT* 2008; 57(6):734-9.

3. **Anderson LA**, McMillan S, Watson RGP, Monaghan P, Gavin AT, Fox C, Murray LJ. Malignancy and mortality in a population-based cohort of patients with coeliac disease or 'gluten sensitivity'. *World J Gastroenterol.* 2007; 13(1):146-51.
4. **Anderson LA**, Gridley G, Engels E, Morton L, Cerhan J, Cozen W, Severson, Davis S, Hartge P & Linet M. Antibiotic use and non-Hodgkin lymphoma: a population-based study. *British Journal of Cancer* 2008; 98(1):161-4.
5. **Anderson LA**, Pfeiffer R, Warren JL, Landgren O, Gadalla S, Berndt SI, Ricker W, Parsons R, Wheeler W, Engels EA. Hematopoietic malignancies associated with viral and alcoholic hepatitis. (In revision).

NCI CLINICAL TRIALS TRAINING FOR NURSES

For the duration of the NCI Clinical Trials Training for Nurses program, oncology nurses rotate between oncology units at the NIH Clinical Center. The nurses focus on a team approach to managing clinical trials throughout training. Two nurses, Aisling Corcoran and Deirdre McDonnell, participated in the 2007 program. Deirdre McDonnell is spotlighted below.



Deirdre McDonnell

Clinical Trial
Coordinator/Research Nurse
St. Vincent's University
Hospital, Dublin

Ms. Deirdre McDonnell's oncology career began in 1992 at St. Vincent's Private Hospital, Dublin, where she nursed cancer patients from diagnosis through various stages of treatment and palliative care. In 1996, she obtained a Higher Diploma in Oncological Nursing from UCD. Following her tenure at UCD, she developed an interest in the development of cancer treatments and began a career in oncology research. Since 2002, she has been working as a clinical trial coordinator/research nurse in the medical oncology research department at St. Vincent's University Hospital, Dublin. Her main areas of interest include breast and bowel cancer and she has been actively involved in large international trials with collaborative groups in the U.S. In recent years, Ms. McDonnell and her colleagues reported their findings after observing sustained platelet recovery in two patients with transfusion-dependent thrombocytopenia due to marrow metastases of breast cancer using low weekly doses of the chemotherapy drug docetaxel¹.

Ms. McDonnell attended the NCI Clinical Trials Training for Nurses program in 2007. During this time, she attended a wide range of educational

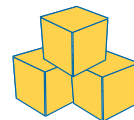
sessions, including a weekly bioethics course, Cancer Therapy Evaluation Program workshops, an Institutional Review Board meeting, and a Protocol Review and Monitoring Committee scientific meeting. Ms. McDonnell found the disease-specific patient clinics and the online intranet self-learning modules particularly relevant to her work coordinating clinical trials and conducting research.

Selected Publications:

1. Ballot J, Crown J, **McDonnell D**. Successful Treatment of Thrombocytopenia Due to Marrow Metastases of Breast Cancer with Weekly Docetaxel. *J Natl Cancer Inst.* 2003; Jun 4; 95(11):831-2.

NCI SUMMER CURRICULUM IN CANCER PREVENTION

The NCI Summer Curriculum in Cancer Prevention conducts two courses for health care professionals: a four-week course of study on Principles and Practice of Cancer Prevention and Control Course and a one-week Molecular Prevention Course, held consecutively in Bethesda. The program brings together participants from international cancer centers, universities, health departments, industry, and government. Twenty-five health and cancer care professionals from the island of Ireland, including two CPFPP scholars, participated in the two courses in 2007.



The research programs of two participants, Dr. Brendan Corkery and Dr. Estelle McLean, are summarized in this section.



Brendan Corkery, PhD

PhD student and
Research Registrar
Dublin City University,
Dublin

Dr. Brendan Corkery graduated in 2003 from the UCD School of Medicine and Medical Science. Following completion of his general professional training in medicine program, he commenced PhD studies at the National Institute for Cellular Biotechnology, Dublin City University, under the supervision of Dr. Norma O'Donovan and Professor John Crown.

In 2007, Dr. Corkery focused his research efforts on investigating targeted therapies in triple-negative breast cancer (TNBC) cells. As a part of this research, he analyzed breast cancer cell lines which were negative for estrogen receptor, progesterone receptor, and so-called triple negative human epidermal growth factor receptor². Dr. Corkery has conducted extensive research to determine whether epidermal growth factor receptor (EGFR) inhibition is an effective strategy against TNBC cells. At the 14th European Cancer Conference (ECCO), he presented pre-clinical data indicating that the drug gefitinib, which targets EGFR, significantly enhances the response of TNBC cells to chemotherapy¹. Dr. Corkery co-authored a paper on these findings entitled, "Epidermal growth

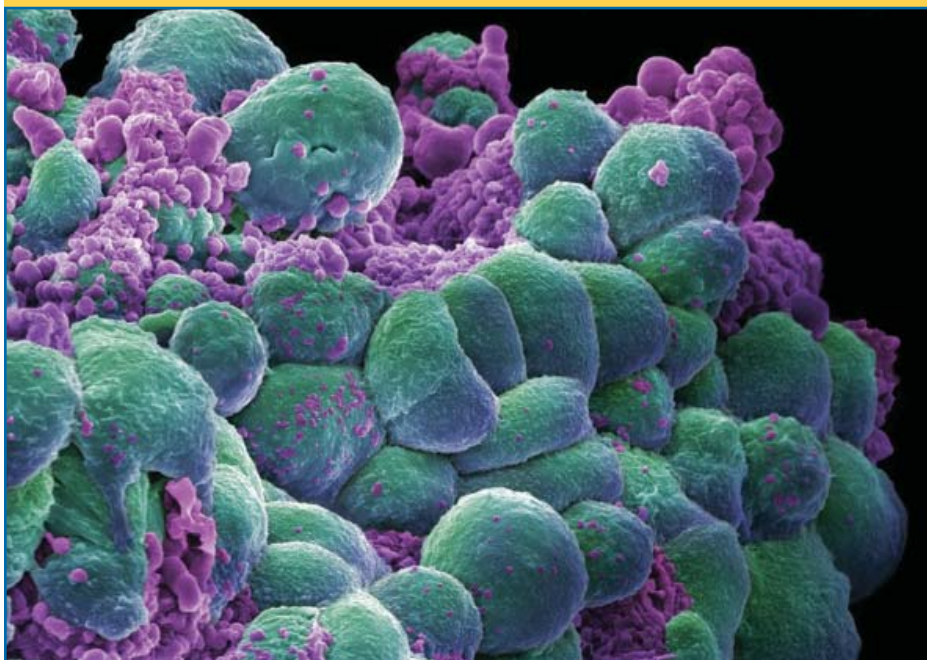
factor receptor (EGFR) inhibition in triple-negative breast cancer (BrCa),"² which appeared in the *Journal of Clinical Oncology*, 2007 American Society of Clinical Oncology (ASCO) Post-Meeting Edition.

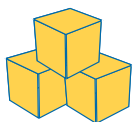
Dr. Corkery attended both the four-week Principles and Practice of Cancer Prevention and Control Course and the one-week Molecular Prevention Course at the NCI in 2007. The curriculum's emphasis on cancer biology and the molecular mechanisms of prevention will be of great benefit to his work in medical oncology. The courses also provided Dr. Corkery with a global perspective on the unique cultural and economic challenges associated with cancer research, treatment, and prevention all over the world.

Selected Publications:

1. **Corkery B**, O'Donovan N, Clynes M, Crown J. Epidermal growth factor receptor (EGFR) inhibition in triple-negative breast cancer (BrCa). *Journal of Clinical Oncology*, 2007 ASCO Annual Meeting Proceedings Part I. Vol 25, No. 18S (June 20 Supplement), 2007: 14071.
2. **Corkery B**, O'Donovan N, Clynes M, Crown J. Gefitinib enhances response to chemotherapy in triple-negative breast cancer (BrCa). *Eur J Cancer* 2007; 5/4 (Suppl): 185. Abstract 2003.

Breast Cancer Cells





Estelle McLean, PhD

Postdoctoral Research
Fellow
Queen's University Belfast,
Belfast

Dr. Estelle McLean graduated from QUB in 2006 with a PhD in molecular oncology. Throughout her academic career, Dr. McLean has pursued a research program in the field of drug-resistance, with a specific focus on the novel use of DNA microarray technology to identify predictive markers of response to chemotherapy in colorectal cancer. Dr. McLean and her colleagues used DNA microarray analysis to examine the transcriptional profile of human colon cancer HCT116 cells that were treated with 5-fluorouracil (5-FU) or oxaliplatin and then selected for resistance to these chemotherapy drugs. After conducting extensive bioinformatic analyses, Dr. McLean was able to identify constitutively dysregulated sets of genes in drug-resistant cells and ultimately concluded that these genes may represent molecular signatures of sensitivity to 5-FU and oxaliplatin¹. Dr. McLean has been recently involved in studying polyamines, a group of cell components that play an important role in the regulation of cell proliferation and cell differentiation and in the growth and survival of several solid tumors, including colorectal cancer. Together with several colleagues, Dr. McLean used DNA microarray

technology to identify the polyamine catabolic enzyme *spermidine/spermine N(1)-acetyltransferase* (SSAT) as one of the most inducible genes in response to 5-FU or oxaliplatin in parental and drug-resistant HCT116 cell lines². The results of Dr. McLean's work in this area suggest that SSAT may be an important target for therapeutic intervention in colorectal cancer.

research efforts on evaluating cancer risks associated with biomarker expression, defining an optimal strategy for biomarker evaluation, and comparing these potential biomarkers against clinical cancer risk indicators in colitis. Dr. McLean's work in this regard may provide the future scientific basis for more accurate cancer risk assessment and effective cancer prevention in colitis patients.



DNA Strings

In August 2007, Dr. McLean attended the NCI Molecular Prevention Course, where she studied how various molecular techniques are applied to molecular epidemiology, biomarkers, and translational research. When she returns to her postdoctoral position at the CCRCB at QUB in 2008, Dr. McLean will incorporate the knowledge acquired at the Molecular Prevention Course in her work investigating predictive risk markers for colitis-associated colorectal cancer. She will be specifically focusing her future

Selected Publications:

1. Boyer J, Allen WL, **McLean EG**, et al. Pharmacogenomic identification of novel determinants of response to chemotherapy in colon cancer. *Cancer Res* 2006; 66(5): 2765-77.
2. Allen W L, **McLean EG**, Boyer J, et al. The role of spermidine/spermine N1-acetyltransferase in determining response to chemotherapeutic agents in colorectal cancer cells. *Mol. Cancer Ther* 2007; 6(1), 128-137.