

BIOGRAPHICAL SKETCH

NAME Orchard, Trevor J.	POSITION TITLE Professor of Epidemiology, Medicine and Pediatrics
eRA COMMONS USER NAME trevor_orchard	

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
University College, Cardiff	("2 nd M.B.")	1971	Preclinical Studies
Welsh National School of Medicine, Cardiff	M.B.B.Ch.	1974	Medicine and Surgery
University of Nottingham, Nottingham	M.Med.Sci.	1978	Community Medicine

A. Personal Statement

Dr. Trevor Orchard is qualified to serve on the faculty for this training grant on the basis of his over 30 year experience as a practicing physician-Epidemiologist with continual NIH research funding. Importantly, Dr. Orchard has trained 23 doctoral students, 33 master's students and 7 post doctoral fellows. He has twice served as Interim Chair of the Department of Epidemiology and is a mentor on 3 other T32 grants for one of which (Cardiovascular Epidemiology Training Program) he is the Principal Investigator. Dr. Orchard teaches the Cardiovascular Epidemiology Course for the last 15 years and also instructs clinical endocrine and cardiology fellows when they rotate through his Lipid Clinic. In addition he has for 27 years been PI of the Pittsburgh Epidemiology of Diabetes Complications Study (EDC) which has been awarded MERIT status. The EDC has published over 150 papers on type 1 diabetes complications. A major focus of the EDC Study has been cardiovascular complications, including the recent demonstration of a genetic (haptoglobin) basis to much of the excess CVD and renal risk in type 1 diabetes. He also serves as the Chair of the External Scientific Evaluation Committee for the SEARCH study of diabetes in youth. Dr. Orchard has considerable experience in the epidemiology of cardiovascular disease and diabetes complications, and in mortality/morbidity classification, having also performed such activities for the Community Cardiovascular Surveillance Project, the Diabetes Control and Complications Trial, the Allegheny County IDDM registry, the Diabetes Epidemiology Research International Studies, and the Diabetes Prevention Program (DPP) and its follow up, the DPP Outcomes Study. For this multicenter study he plays a major role in the CVD area and chaired the writing group for the metabolic syndrome and CVD risk factor papers. He is thus an experienced investigator and mentor, and well qualified to serve on this Research Training in Diabetes and Endocrinology grant.

B. Positions and Honors

Positions and Employment

07/74-01/75 House Physician to Prof. R. Mahler, Univ. Hosp. of Wales
 02/75-08/75 House Surgeon to Mr. J. S. H. Wade and Mr. J. R. Salaman, Univ. Hosp. of Wales
 08/75-09/75 Locum Senior House Officer, Haematology, Freedom Field Hosp., Plymouth (full time)
 10/75-11/75 Locum General Practice, Plymouth (full time)
 11/75-10/76 Sr. House Officer to Prof. J.R.A. Mitchell & Dr. J. Hampton, Nottingham Gen. Hosp. (full time)
 11/76-09/78 Registrar in Comm. Med., Nottinghamshire Area Health Auth/Post Grad Student, Dept. of Comm. Health (full & part time Gen. Practice experience)
 10/78-10/79 British Heart Foundation, Jr. Res. Fellow, Grant #619, based in Depts. of Med. and Comm. Health, Univ. of Nottingham (full & part time Gen. Practice experience)
 10/79-12/80 Research Physician (Epid.), Dept. of Epidemiology, Grad. School of Public Health, University of Pittsburgh (full time)
 01/81-09/83 Assistant Professor, Epid., Grad. School of Public Health, Univ. of Pittsburgh
 10/83-07/92 Associate Professor, Epid., Grad. School of Public Health, Univ. of Pittsburgh (Tenured 1985)
 08/92-Present Professor of Epidemiology, Grad. School of Public Health, Univ. of Pittsburgh
 Medical Practitioner, UK, 1974 (provisional); 1975 (full); F.L.E.X., USA, 1980; PA Medical Licensure, 1981

Other Experience and Professional Memberships

- Member of the Council of Epidemiology and Prevention, Intl. Soc. & Fed. Of Cardiology
- Member of the American Diabetes Association, and its Epidemiology & Statistics Council
- Member of the American Heart Association
- Member of the Society for Epidemiology Research
- Member of the American College of Epidemiology
- Member of the American Epidemiology Society
- Adhoc NIH Site Visitor (x8), 1982-present; Adhoc NIH Study Section Reviewer (x13), 1983-present
- Member of the Institute of Medicine's Veterans Agent Orange Update II Committee, 1998
- Technical Expert Panel, NDQIA, 2002-2005
- American Diabetes Association, Grant Reviews, 1999-2002

Honors

- Fellow of the 10th International Teaching Seminar on Cardiovascular Epidemiology and Prevention, International Society of Cardiology, Ghana, 1977
- British Heart Foundation Junior Research Fellowship, 1978/79
- Special Emphasis Research Career Award – Cardiovascular, Metabolism & Endocrine Aspects of Diabetes Mellitus, NIH, Sept., 1980 (5 years)
- Fellow of the Epidemiology Council – American Heart Association
- Member of American Epidemiological Society
- Chairman, ADA Epidemiology & Statistics Council 1989/1991
- Kelly West Award (1993), Charles Best Medal (1994) and George Lukin's Award (PA Affiliate 1996), ADA
- Kelly West Lecture 2008, University of Oklahoma

C. Selected Peer-reviewed Publications (from over 310 publications, 430 abstracts, 90 reviews/ chapters/ letter/editorials)

Most relevant to the current application

1. Orchard TJ. Epidemiology in the 80's - need for a change? *Lancet* 1980; (2): 845-846.
 2. Orchard TJ, Donahue RP, Kuller LH, Drash AL. Cholesterol screening in childhood: does it predict adult hypercholesterolaemia? *J Pediatr* 1983; 103(5):687-691.
 3. Orchard TJ, Dorman JS, Maser RE, Becker DJ, Drash AL, Ellis D, LaPorte RE, Kuller LH. The Prevalence of Complications in Insulin Dependent Diabetes Mellitus by Sex and Duration: Pittsburgh Epidemiology of Diabetes Complications Study-II. *Diabetes* 1990; 39(9): 1116-1124.
 4. Orchard TJ, Strandness DE. Assessment of PVD in Diabetes: Report and Recommendations of an International Workshop Sponsored by the AHA and the ADA. *Diabetes Care*, 1993; 16(8): 1199-1209.
 5. Orchard TJ. From Diagnosis and Classification to Complication and Therapy: DCCT Part II? The 1993 Kelly West Lecture. *Diabetes Care* 1994; 17(4): 326-338.
 6. Orchard TJ, Forrest K., Ellis D, Becker DJ. Cumulative Glycemic Exposure and Microvascular Complications in IDDM: The Glycemic Threshold Revisited. *Arch Intern Med* 1997; 157: 1851-1856.
 7. Orchard TJ, Olson JC, Williams K, Forrest KYZ, Kinder LS, Ellis D, Becker DJ. Insulin Resistance-Related Factors, but not Glycemia, Predict Coronary Artery Disease in Type 1 Diabetes: Ten Year Follow-up Data from the Pittsburgh EDC Study. *Diabetes Care* 2003; 26(5): 1374-79.
 8. Orchard TJ, Temprosa M, Goldberg R, Haffner S, Ratner R, Marcovina S, Fowler S, for the Diabetes Prevention Program Research Group. The effect of metformin and intensive lifestyle intervention on the metabolic syndrome: The DPP Randomized Trial. *Ann Intern Med* 2005; 142(8): 611-619.
 9. Nathan DM, Cleary PA, Jye-Yu C, Backlund MS, Genuth SM, Lachin JM, Orchard TJ, Raskin P, Zinman B on behalf of the Writing group of the DCCT/EDIC Research Group. Intensive diabetes treatment and cardiovascular disease in patients with type 1 diabetes. *N Engl J Med* 2005; 353(25): 2643-2653.
 10. Orchard TJ, Costacou T, Kretowski A, Nesto RW. Type 1 Diabetes and Coronary Artery Disease. *Diabetes Care* 2006; 29(11): 2528-2538.
-

11. Prince CT, Becker D, Costacou T, Miller R, Orchard TJ. Changes in glycaemic control and risk of coronary artery disease in T1DM: findings from the Pittsburgh EDC Study. *Diabetologia* 2007; 50: 2280-2288.
12. Costacou T, Ferrell R, Orchard TJ. Haptoglobin genotype: a determinant of cardiovascular complication risk in type 1 diabetes. *Diabetes* 2008; 57: 1702-1706.
13. Costacou T, Ferrell RE, Ellis D, Orchard TJ. Haptoglobin genotype and renal function decline in type 1 diabetes. *Diabetes* 2009; 58(12): 2904-2909. PMID: PMC2780877.
14. Orchard TJ, Secrest AM, Miller RG, Costacou T. In the absence of renal disease, 20-year mortality risk in type 1 diabetes is comparable to that of the general population: a report from the Pittsburgh Epidemiology of Diabetes Complications Study. *Diabetologia* 2010; 53(11): 2312-2319. PMID: PMC3057031.
15. Secrest AM, Becker DJ, Kelsey SF, LaPorte RE, Orchard TJ. Cause-specific mortality trends in a large population-based cohort with long-standing childhood-onset type 1 diabetes. *Diabetes* 2010; 59: 3216-3222. PMID: PMC2992785.
16. Miller R, Secrest A, Sharma R, Songer T, Orchard T. Improvements in the life expectancy of type 1 diabetes: the Pittsburgh Epidemiology of Diabetes Complications study cohort. *Diabetes* 2012; 61(11): 2987-2992. PMID: PMC3478551.
17. Orchard TJ, Sun W, Cleary PA, Genuth SM, Lachin JM, McGee P, Paterson AD, Raskin P, Anbinder Y, Levy AP; DCCT/EDIC Research Group. Haptoglobin genotype and the rate of renal function decline in the diabetes control and complications trial/epidemiology of diabetes interventions and complications study. *Diabetes* 2013; 62(9): 3218-3223. PMID: PMC3749329.
18. Miller RG, Secrest AM, Ellis D, Becker DJ, Orchard TJ. Changing impact of modifiable risk factors on the incidence of major outcomes of type 1 diabetes: The Pittsburgh Epidemiology of Diabetes Complications Study. *Diabetes Care* 2013 Dec; 36(12): 3999-4006. PMID: PMC3836155.

D. Research Support

Ongoing Research Support

- | | |
|---|------------------|
| <p>DK094157 Orchard (PI)
Case Western
Epidemiology of Diabetes Interventions and Complications
This is the second renewal of the long-term follow-up study of the original DCCT intervention trial population. Follow-up testing and evaluation of this diabetic population is conducted in the Diabetes and Lipid Research Building.
Role: PI</p> | <p>2006-2016</p> |
| <p>U01 DK048412-20 Orchard (PI)
NIH/NIDDK
Diabetes Prevention Program Phase 2
This project continues patient follow-up of the long-term effects of the Diabetes Prevention Program interventions on further diabetes development, microvascular outcomes, and cardiovascular disease and risk factors. The extension also includes epidemiologic analysis of impaired glucose tolerance and new-onset type 2 diabetes and determination of the economic impact of diabetes prevention/delay.
Role: PI</p> | <p>2009-2014</p> |
| <p>R37 DK034818-28 Orchard (PI)
NIH/NIDDK
Epidemiology of Diabetes Complications (EDC) Phase II: Renewal
This renewal will extend the follow-up of diabetes complications to 25 years and will document morbidity risk and estimate life expectancy as well as focus on the roles of glycemic, oxidative and inflammatory stress along with women's health issues.
Role: PI</p> | <p>2009-2014</p> |
| <p>R18 DK081323-03 Kriska (PI)
NIDDK</p> | <p>2010-2014</p> |
-

Diabetes Prevention Translation Project: the Healthy LIFESTYLE

This purpose of this project is to test a framework for the translation of the Diabetes Prevention Program that includes a training model for community health care professionals, and evaluation and cost-effectiveness analyses of the intervention program in each of three community settings including a health care practice, a worksite, and local community centers.

Role: Co-Investigator

R01 DK089028-03 Rosano (PI) 2010-2014
NIDDK

Imaging Biomarkers of Accelerated Brain Aging in Type 1 Diabetes

This research will quantify the nature, severity and risk factors of brain abnormalities in the ongoing longitudinal Epidemiology of Diabetes Complications (EDC) cohort study as adults with Type 1 Diabetes (T1D) are increasingly more likely to develop brain abnormalities in addition to multiple micro- and macro-vascular complications.

Role: Co-Investigator

R01 DK060586-11 Becker (PI) 2012-2017
Carnegie

From Adolescence to Adulthood: Persons With and Without Diabetes

The Diabetes and Lipid Research Center participates in this subcontract designed to help identify those who are at risk for mental or physical health difficulties and provide the foundation for interventions and public health programs aimed at adolescents with and without diabetes.

Completed Research Support

RC4 DK090809-02 Orchard (PI) 2010-2013
NIDDK

Evaluation of Differing type 1 Diabetes Regimens in Youth in the Developing World

This project capitalizes on an ongoing collaboration between the University of Pittsburgh, the Life for a Child program of the International Diabetes Federation, the Association Rwandaise des Diabetiques and the National University of Rwanda. It will evaluate, by a randomized clinical trial, two models of care for type 1 diabetes (youth onset) in the developing world (Rwanda), including their comparative costs and compare this current management regimen with a much simplified diabetes management regimen based on a single daily injection of a basal insulin that does not have any peaks.

Role: PI

Korytkowski (PI) 2011-2013
Sanofi Aventis

Pharmacologic Progression Strategies in Type 1 Diabetes

The specific objective of this research is to compare measures of type 2 diabetes according to assigned treatment with insulin, an injectable GLP1 analog or an additional oral diabetes medication to monitor efficacy of different pharmacologic progression strategies.

R03DK094518-01 Orchard (PI) 2011-2012
NIDDK

Health System Based Clinical Trial Recruitment

The aim of this project is to develop a registry of individuals with diabetes treated within one of the largest U.S. health care systems, the University of Pittsburgh Medical Center (UPMC), and thus assess the feasibility of recruiting for such a clinical trial in the type 1 diabetes population.

Role: PI
