

PROFESSOR P.R. FLATT

BSc, PhD, DSc, CBiol, FBS, CChem, FRSC, FHEA, MRIA

Personal

Name: Peter Raymond FLATT
Nationality: British
Position: Professor of Biomedical Sciences and Director Biomedical Research
Work address: School of Biomedical Sciences, Ulster University, Coleraine, Northern Ireland, BT52 1SA, U.K. (pr.flatt@ulster.ac.uk; 028-70-124419)

Education

1971-1974 BSc Biology and Chemistry (Aston University; First Class Honours)
1974-1977 PhD (Aston University) RIA of insulin and glucagon with studies on obesity-diabetes in mice. External examiner: Professor CN Hales, FRS
2018 DSc (Ulster University) Gut hormones and peptide therapeutics for diabetes

Employment

1978-1979 Royal Society European Exchange Postdoctoral Research Fellow
Department of Medical Cell Biology, University of Uppsala, Sweden
Role Ca^{2+} in pancreatic beta cell signal transduction- Professor B Hellman
1980-1989 Lecturer/Senior Lecturer
Department of Biochemistry, University of Surrey, Guildford
1989-present Professor of Biomedical Sciences and Head of Diabetes Research Group,
School of Biomedical Sciences, Ulster University
1992-1994 Director, Biomedical Sciences Research Centre, Ulster University
1994-1997 Head of School of Biomedical Sciences, Ulster University
2012-2017 Course Director, Ulster BSc (Hons) Biomedical Science Degree Courses
2017-present Director Biomedical Sciences Research Institute, Ulster University

Professional Qualifications and Awards

1989 Elected Fellow of the Institute of Biology (FIBiol now FBS)
1989 Elected Fellow of the Royal Society of Chemistry (FRSC)
1999 Recipient of Mary Jane Kugal Award of Juvenile Diabetes Federation International
2006 Recipient of Biochemistry Medal of Irish Section of the Biochemical Society
2006 Elected Member of the Royal Irish Academy (MRIA) – Ireland's premier Learned Body for Sciences and Humanities, founded in 1785
2006 Awarded Ulster University Senior Distinguished Research Fellowship
2007 Dorothy Hodgkin Award Lecturer of Diabetes UK
2009 Niall O'Meara Lecturer of Irish Endocrine Society
2010 Ernst-Friedrich Pfeiffer Memorial Lecture, European Association for the Study of Diabetes (AIDPIT)
2016 Steno Rounds Medal, Steno Diabetes Centre, Denmark

2017
2022

Elected Fellow of Higher Education Academy (FHEA)
2nd ranking Worldwide Expert in Experimental Diabetes and 3rd in Insulin Secretion according to independent assessment by Expertscape

Research Leadership

- Since 1989 responsible for several hundred of research workers, including academic staff, postdoctoral research fellows, research assistants, postgraduate research students and technical staff.
- Lead Ulster to award grade 4 in 1992 UFC Research Assessment Exercise under Unit of Assessment 11 and highest possible rating of 5* in 1996 RAE. 5* awarded in 2001 and 2008 REF, with ranking in both 2014 and 2021 within the top 2-6 UK Universities in Biomedical Sciences.
- Founding Head Diabetes Research Group at Ulster University that currently comprises 10 academic staff, 4 postdoctoral fellows and 12 PhD students.
- 96 PhD students supervised to successful completion within 4 years of registration
- 26 Past doctoral students currently hold tenured academic positions in UK or overseas and still actively pursue diabetes research.

Research and Publications

Original and world-leading experimental diabetes research on gut hormones, peptide therapeutics, drug discovery, cell therapy, beta-cell stimulus-secretion coupling and islet cell function has substantially advanced knowledge and generated significant interest from industry, resulting in publication (with >25,369 citations (h-index 75) of the following:

- 4 Multi-author edited international research texts
- 6 Edited proceedings
- 111 Reviews and book chapters
- 571 Original peer-reviewed scientific papers
- 493 Refereed conference abstracts
- 25 Patent families and inventions

Research discoveries

These include but are not restricted to the following examples with potential translational impact.

- Stable analogues of apelin, xenin, PYY, oxytocin, AVP, and esculentin-Cha for obesity-diabetes therapy
- Multiple acting peptide agonists for treatment of obesity-diabetes
- Incretin peptides for prevention of bone fractures and treatment of bone fragility
- Peptide analogues of GIP for treatment of obesity, insulin resistance and diabetes
- Gut peptide mimetics for treatment of disorders with dysfunctional synaptic transmission
- Novel GIP antagonist peptides for treatment of metabolic disease
- Glycated insulin as biomarker for prediabetes
- Electrofusion derived pancreatic beta cells for drug discovery and cellular screening - distributed worldwide by ECACC to >100 research laboratories and licenced following evaluation by 5 multi-national pharmaceutical companies
- Two related Impact Case Studies included in 2014 Ulster REF submission, rated 4*

Research Funding and Commercial Exploitation

- Research funding of over £25M from industry and a variety of other sources including Diabetes UK, The Wellcome Trust, European Fund for Study of Diabetes (EFSD), European Commission, Invest Northern Ireland, SAAD Trading Company, NI Department of Health & Social Services, SPUR, DENI, DEL and Ulster University.
- Academic Founder, Director and CSO of Diabetica Ltd, a company registered in Northern Ireland under number NI 33135.
- Winners of the prestigious 2008 inaugural Academic Enterprise Awards (ACES) Europe for Life Sciences for development of new approaches to diabetes therapy.
- Inventor on patents licensed through Innovation Ulster promising staged payments worth up to \$40M.

Research Presentations

- Approximately 600 research papers presented at national/international conferences organised by learned societies in more than 20 countries in Europe, North America, Middle East, Asia and Japan.
- Approximately 100 invited lectures delivered, including many to industry since 1982

Membership of Professional Associations

- Diabetes UK, European Association for the Study of Diabetes (EASD), Irish Endocrine Society, America Diabetes Association (ADA), Royal Irish Academy (RIA)

Other Indicators of Esteem and Work Promoting Science

- Member, Royal Irish Academy Advisory Committee for Assessment New Candidates
- Scientific Secretary, Committee of Medical and Scientific Section of British Diabetic Association
- Associate Editor, Frontiers of Endocrinology (Gut Endocrinology Section)
- Member of Diabetes UK Advisory and Professional Councils, and Diabetes UK Research Advisory Group
- Member Council EASD and EASD Langerhans Fellowship Committee
- Founding Chairman of EASD Islet Study Group
- UK Coordinator of EU funded Islet Research European Network (IREN) an Executive Committee of EU funded Islet Research European-Latin American Network (IRELAN)
- Member of Steering Committee of EASD Incretin Study Group
- Committee member Biochemical Society, Nutrition Society and Liaison Committees of British Endocrine Societies
- Member of Executive Committee and Honorary Treasurer Northern Ireland HPSS RRG in Endocrinology & Diabetes
- Member (or Chairman) Programme and Abstract Review Committees of Diabetes UK, EASD, Biochemical Society, Nutrition Society and ADA
- Member of Grants Review Committee of Diabetes UK and the RD Lawrence Fellowship and PhD studentship award committees.
- Chairperson of EFSD (Metabolic Toxicity) Grants Awards Committee and member of Grants Committee for Juvenile Diabetes Research Foundation (JDRF).

- Member MRC Expert Review Panel on UK Nutrition Research Partnership for Health and Disease
- Referee/advisor for grants submitted to The Wellcome Trust, MRC, Diabetes UK, EFSD, JDRF, Diabetes Research & Wellness Foundation (DRWF) plus many others.
- Member of Editorial Boards: Frontiers in Endocrinology (Associate Editor), Biochemical Journal, Journal of Endocrinology, International Journal of Peptides, World Journal of Diabetes
- Regular referee for Diabetes, Diabetologia, Diabetes Obesity Metabolism, Science, Nature, Molecular Cellular Endocrinology amongst others
- External examiner for the Medical Sciences Course (MSC) at the Faculty of Medicine and Health Sciences at United Arab Emirates (UAE) University, Al Ain. UAE.

National and International Profile

External examiner for 56 PhD theses in the field of islet and gut hormone research for 28 different Universities in UK, Europe, North America and Asia.

Established contacts with more than 350 scientists from 21 countries worldwide maintained through established networks, including EASD Islet Study Group, IREN and IRELAN. Joint research and publications with following:

- Institute of Clinical Biochemistry, Hannover Medical School, Germany (Prof S Lenzen).
- Department of Endocrinology, Karolinska Institute, Stockholm (Prof P-O Berggren).
- Oxford Centre for Diabetes Endocrinology & Metabolism, University of Oxford, UK (Prof P Rorsman)
- Bone Research Group, University of Angers, France (Dr G Mabileau)
- Research Division, Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders, Dhaka (Prof AK Azad Kahn & Prof L Ali).
- Metabolic Unit, Royal Victoria Hospital, Belfast (Professor PM Bell).
- Department of Medicine, University of Barcelona, Spain (Prof R Gomis).
- Laboratory of Experimental Medicine, Brussels Free University, Belgium (Prof WJ Malaisse).
- School of Biomedical and Life Sciences, University of Lancaster (Prof C Holscher).
- Department of Biomedical Sciences, Curtin University, Perth, Australia (Prof P Newsholme).

Learning and Teaching

Considerable effort has been devoted to educating the next generation of scientists. Many of these have been inspired to become PhD students and gone on to develop successful careers in academia or industry. Teaching and related administrative responsibilities include:

- Teaching to University BSc (Hons) students studying Biomedical Sciences, Nutrition, Optometry, Pharmacy, Biological Sciences; MSc Biomed Sciences and Human Nutrition.
- Course Director, full-time and part-time BSc (Hons) courses in Biomedical Sciences (Ulster, 2011- 2017).
- Course Director, full-time and part-time MSc courses related to Biomedical Sciences (Ulster, 1989-1992).

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EDITED BOOKS

1. Bailey, C.J. and Flatt, P.R. (Eds)
New Antidiabetic Drugs.
(49 contributors from 12 countries worldwide)
Smith Gordon & Co Ltd, London, p 320, 1990.
2. Flatt, P.R. (Ed)
Nutrient Regulation of Insulin Secretion.
(46 contributors from 8 countries worldwide)
Portland Press, London, p 415, 1992.
3. Flatt, P.R. and Lenzen, S. (Eds)
Frontiers of Insulin Secretion and Pancreatic B-Cell Research.
(240 contributors from 12 countries worldwide)
Smith-Gordon & Co Ltd, London, p. 630, 1994.
4. Ioannides, C. and Flatt, P.R. (Eds)
Drugs, Diet and Disease, Vol. 2, Mechanistic Approaches to Diabetes.
(33 contributors from 7 countries worldwide)
Ellis Horwood Ltd, Chichester, p. 380, 1999

EDITED PROCEEDINGS AND COLLECTIONS

1. Flatt, P.R. (Ed)
Nutrient Regulation of Insulin Secretion.
Special Colloquium of Biochemical Society, Guildford.
Biochem. Soc. Trans. 18: 101-127, 1990.
2. Flatt, P.R. (Ed)
Molecular mechanisms of insulin secretion and pancreatic B-cell dysfunction.
Special Colloquium of Biochemical Society, Belfast.
Biochem. Soc. Trans. 22: 1-41, 1994.
3. Flatt, P.R. (Ed)
Hypothalamic and metabolic effects of regulatory peptides.
Special Colloquium of Biochemical Society, Aberdeen.
Biochem. Soc. Trans. 24: 559-598, 1996.
4. Flatt PR and Conlon JM (Eds)
Newer peptide-based agents for treatment of patients with type 2 diabetes
Peptides 100: 1-281; 2018.
5. Flatt PR and Conlon JM (Eds)
Glucose-dependent insulinotropic polypeptide (GIP)
Peptides 125; 2020.
6. Flatt PR, Knopp FK, Tarasov AI (Eds)
Proglucagon-derived peptides
Front Endocrinol (Lausanne). 2021, e-book, Nov 11;12:776871. doi:
10.3389/fendo.2021.776871. PMID: 34858346; PMCID: PMC8631785.

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