

**Professor OLE H PETERSEN CBE MAE ML FRS**

School of Biosciences, Cardiff University; e-mail: [PetersenOH@cardiff.ac.uk](mailto:PetersenOH@cardiff.ac.uk)

*Research Achievements*

Petersen pioneered single channel current recordings in epithelial cells, discovering hormone-evoked, messenger-mediated ion channel activation and voltage-activation of epithelial ion channels. This led to the now generally accepted concept of how ion channels control exocrine fluid secretion (Petersen & Maruyama *Nature* 1984 [ISI [WoS] Citation Classic]). He subsequently discovered sub-cellular  $\text{Ca}^{2+}$  spiking in epithelial cells (Thorn et al *Cell* 1993) and intracellular  $\text{Ca}^{2+}$  tunnels (Mogami et al *Cell* 1997). He demonstrated the crucial role of  $\text{Ca}^{2+}$  release channels and store-operated  $\text{Ca}^{2+}$  entry in Acute Pancreatitis (Raraty et al *PNAS* 2000; Gerasimenko et al *PNAS* 2009), providing proof-of-principle for  $\text{Ca}^{2+}$  release activated  $\text{Ca}^{2+}$  (CRAC) channel blockade as a treatment of severe Acute Pancreatitis (Gerasimenko et al *PNAS* 2013). He has more recently shown that boosting metabolism with galactose protects against Acute Pancreatitis (Peng et al *J Clin Invest* 2018).

*Honours and Awards*

Ole Petersen was elected Fellow of The Royal Society in 2000, Member of the German National Academy of Sciences Leopoldina in 2010 and gave the Leopoldina Lecture in 2012. He is also Member of the Royal Danish Academy of Sciences & Letters and an Honorary Member of the Hungarian Academy of Sciences. He was a Founding Member of Academia Europaea in 1988. He received the Novo Nordisk Foundation's Jacobaeus Prize (1994), the Czech Academy of Sciences' Purkyne Medal (2003) and was appointed Commander of the Order of the British Empire (CBE) for 'Services to Science' by Queen Elizabeth II in 2008. He was awarded The American Physiological Society's Horace W Davenport Distinguished Lectureship and delivered the Award Lecture at Experimental Biology (EB) in Boston, USA in 2013. In 2017, he was elected Honorary Member of the German Society for Gastroenterology, Digestive & Metabolic Diseases. He gave the American Physiological Society's Walter B Cannon Memorial Award Lecture at EB2018 in San Diego, which is the most prestigious award bestowed by the American Physiological Society. He has been awarded Academia Europaea's 2020 Gold Medal and is scheduled to deliver the Gold Medal Lecture at the Academy's 32<sup>nd</sup> Annual Conference in Barcelona on 21<sup>st</sup> October 2020.

*Principal Positions and Commissions of Trust*

Petersen succeeded the Nobel Laureate Sir Martin Evans FRS, as Director of the School of Biosciences at Cardiff University in February 2010, completing his 5-year term in 2015. He is now Professor of Physiology at Cardiff University. Before joining Cardiff University, he was George Holt Professor of Physiology at the University of Liverpool for 28 years (successor to Rod Gregory CBE FRS). Petersen is currently Alternate for the President of Academia Europaea in the European Commission's SAPEA Board (Science Advice for Policy by European Academies) (2016- ) and Vice-President of Academia Europaea (2015- ). He chaired the Biological Sciences Panel in the UK Government's 2014 Research Excellence Framework (REF2014) and has been Chair and Deputy Chair of European Research Council (ERC) Starting and Consolidator Grant Evaluation Panels for Physiology, Pathophysiology & Endocrinology (2009-2013). He was Vice-President of the Royal Society (2005-2006) and European Executive Editor of the American Physiological Society's *Physiological Reviews* (2003-2011). He has recently been appointed Editor-in-Chief of the American Physiological Society's new flagship Open Access journal *Function* to be launched in 2020.

## **Curriculum Vitae: Ole H Petersen CBE FRS**

### **Nationality**

British (originally Danish, born in Copenhagen, but 'naturalized' as UK citizen in 1984)

### **Present position**

Professor at Cardiff School of Biosciences (2010 - )

Academic Director of Academia Europaea's Cardiff University Knowledge Hub (2015 - )

### **Education/Degrees**

Cand. Med. (Laudabilis) (MB ChB) University of Copenhagen, 1969

Authorized Medical Practitioner (Danish State Health Authority) 1969

Dr. med. (MD) University of Copenhagen, 1972, for thesis "Acetylcholine-induced ion transports involved in the formation of saliva"

(Thesis published as Supplement 381 in *Acta physiol scand* [now *Acta Physiologica*] 1972)

### **Posts held**

Lecturer (Assistant Professor), Institute of Medical Physiology, University of Copenhagen, 1969-73

Wellcome-Carlsberg Travelling Research Fellow, Department of Pharmacology, University of Cambridge, England, UK, 1971-72 (on leave of absence from University of Copenhagen)

Senior Lecturer (Associate Professor), Institute of Medical Physiology, University of Copenhagen, Denmark, 1973-78

Symers Professor of Physiology and Head (Chairman) of the Department of Physiology, University of Dundee, Scotland, UK, 1975-81 (on leave of absence from University of Copenhagen, 1975-78).

Head (Chairman) of the Department of Physiology, University of Liverpool, England, UK, 1981-1998

George Holt Professor of Physiology, University of Liverpool, England, UK, 1981- 2009

Director (Head) of Cardiff University's School of Biosciences, Wales, UK, 2010 - 2015

Professor at Cardiff School of Biosciences, Wales, UK, 2010 -

### **Current External Grant Support (as Principal Investigator):**

European Commission (Horizon 2020) (1<sup>st</sup> October 2016 – 31<sup>st</sup> December 2021): Euro 0.6 million.

### **Previous External Grant Support (as Principal Investigator):**

Medical Research Council Programme Grant (October 1988 – October 2017); total funding (including MRC Professorship (1998 – 2017): >£15 million

### **Invited Lectures 2020 and 2019**

Academia Europaea's 2020 Gold Medal Award Lecture to be delivered at the Academy's 32<sup>nd</sup> Annual Conference in Barcelona, 'Building Bridges III' on 21<sup>st</sup> October 2020.

The first Sir Michael Berridge Lecture at FASEB's 'Calcium and Cell Function' conference, Dublin, 5<sup>th</sup> July 2020 (conference postponed because of coronavirus crisis)

Invited Lecture at EB2020, San Diego, California, 7<sup>th</sup> April 2020 (EB2020 was cancelled because of coronavirus crisis)

Invited lecture at Conference on 'Making Sense of Science for Policy under Conditions of Complexity and Uncertainty', Royal Irish Academy, Dublin, 11<sup>th</sup> February 2020

Invited Speaker at symposium 'Bringing Great Physiology to the Forefront of Science', Duke Molecular Physiology Institute, Duke University, Durham, North Carolina, USA, 22<sup>nd</sup> January 2020

Plenary Lecture at XIV. Meeting of Nobel Laureates and Talented Student, University of Szeged, Hungary, 3<sup>rd</sup> December 2019

Invited Lecture at symposium on 'The future of research: assessing the impact of Plan S', KU Leuven, Leuven, Belgium, 6<sup>th</sup> November 2019

Invited Lecture at International Symposium on 'Lighting up cell signalling', honouring Professor Tullio Pozzan ForMemRS, University of Padua, Italy, 12<sup>th</sup> October 2019

Invited Lecture at International Workshop on 'Consensus definitions, statements and guidelines in TRANSLATIONAL MEDICINE', Hungarian Academy of Sciences, Budapest, Hungary, 23<sup>rd</sup> and 24<sup>th</sup> September 2019

Opening Plenary Lecture at 20<sup>th</sup> Congress of the Ukrainian Physiological Society, Kyiv, Ukraine, 27<sup>th</sup> May 2019 <http://aecardiffknowledgehub.wales/2019/05/31/academia-europaea-supports-physiology-congress-in-ukraine/>

Invited Lecture at UK-Qatar Health Research Forum 'Joining Forces' (UK Foreign and Commonwealth Office in co-operation with Qatar University), Doha, Qatar, 30<sup>th</sup> April 2019

Launching Academia Europaea's Tbilisi Knowledge Hub at Georgia's Ivane Javakhishvili State University; Invited Lecture at Opening Symposium, Tbilisi, Georgia, 25<sup>th</sup> April 2019

Series of 4 Invited Lectures at Jinan University, Guangzhou, China, 27-29 March 2019 (*see also next section on Honours, Awards and Plenary Keynote Lectures*)

<http://aecardiffknowledgehub.wales/2019/04/04/cardiff-hub-director-visits-china/>

Duke University, North Carolina, USA: Invited Lecture at School of Medicine, Division of Gastroenterology, 27<sup>th</sup> February 2019

Science Advice for Policy by European Academies (SAPEA): Invited Lecture at Expert Workshop on 'Making Sense of Science for Policy', Berlin, Germany, 11<sup>th</sup> February 2019

### **Honours, Awards and Major Plenary Keynote Lectures (selection):**

Academia Europaea's 2020 Gold Medal Award. Gold Medal Lecture to be delivered at the Academy's 32<sup>nd</sup> Annual Conference in Barcelona on 21<sup>st</sup> October 2020.

Honorary Professor at Jinan University, Guangzhou, China. A series of 4 lectures delivered at Jinan University's School of Medicine as well as at the University's new South Campus on 27<sup>th</sup>, 28<sup>th</sup> and 29<sup>th</sup> March 2019. <http://aecardiffknowledgehub.wales/2019/04/04/cardiff-hub-director-visits-china/>

The American Physiological Society's Walter B Cannon Memorial Award Lecturer 2018. The Plenary Award Lecture delivered at Experimental Biology (EB) at the San Diego Convention Center, California, USA on 22<sup>nd</sup> April 2018.

Elected Honorary Member of the German Society for Gastroenterology, Digestive and Metabolic Diseases, 2017. Award Lecture at the 72<sup>nd</sup> Annual Meeting of the Society ('Viszeralmedizin 2017'), Dresden, Germany, 14<sup>th</sup> September 2017

Jubilee Lecture, celebrating the 25<sup>th</sup> Anniversary of the Federation of European Physiological Societies (FEPS), at the 2016 FEPS Congress in Paris, France, 30<sup>th</sup> June 2016

'World Leader Award' "for his studies on cellular Ca<sup>2+</sup> signalling processes" at International Symposium on 'Latest Advances in Biomedicine & Interdisciplinary Sciences', Instituto de Investigaciones Cientificas (Indicasat AIP), Panama City, Republic of Panama, 22<sup>nd</sup> February 2016

Elected Honorary Member of The Physiological Society (2015)

Opening Plenary Lecture at the 2013 Annual Congress of the Brazilian Society of Physiology (Sociedade Brasileira de Fisiologia), Ribeirao Preto, Sao Paulo, Brazil, 7<sup>th</sup> September 2013

Keynote Lecture at the 37<sup>th</sup> International Congress of Physiological Sciences (IUPS), Birmingham, UK, 23<sup>rd</sup> July 2013 <http://www.voicesfromoxford.org/video/the-role-of-calcium-in-pancreatic-disease/397>

Honorary President of the 37<sup>th</sup> International Congress of Physiological Sciences (IUPS), Birmingham, UK, 2013

The American Physiological Society's Horace W Davenport Distinguished Lecture, Experimental Biology (EB) 2013, Boston, Massachusetts, USA, 23<sup>rd</sup> April 2013

The Leopoldina Lecture at the German National Academy of Sciences Leopoldina, Halle, Germany, 23<sup>rd</sup> May 2012 (on the eve of the festivities in connection with the formal opening of the Academy's new building).

Elected Member of the German National Academy of Sciences Leopoldina (ML) (2010)

Lifetime Achievement Award from the European Pancreatic Club. Keynote Award Lecture at the European Pancreatic Club's Annual Meeting, Stockholm, Sweden, 17<sup>th</sup> June 2010

Plenary Keynote Lecture at Annual Meeting of Korean Physiological Society, Gagneung, South Korea, 30<sup>th</sup> October 2009

AGA (American Gastroenterological Association) State-of-the-Art Lecture, DDW (Digestive Diseases Week), Chicago, USA, 31<sup>st</sup> May 2009  
(Interview with Ole Petersen published in the DDW (June 2009) issue of **Pancreatology**: Fernandez-Zapico ME (2009) **Pancreatology** 9, 323-326.

Speaker at Opening Ceremony of Beijing Joint Conference of Physiological Sciences 2008 and Invited Lecture in Symposium 1 on Calcium Signaling, Beijing, China, 20<sup>th</sup> October 2008

Keynote Lecture at 4<sup>th</sup> Covian Symposium, University of Sao Paulo, Brazil, 25<sup>th</sup> May 2008  
(Published in **Brazilian Journal of Medical and Biological Research** 42, 9-16, 2009).

Queen Elizabeth II's New Year Honours List 2008: Appointed Commander of the Order of the British Empire (CBE) for 'Services to Science'. Award received personally from Queen Elizabeth II, at Buckingham Palace, on 7<sup>th</sup> May 2008

Opening Plenary Lecture at Joint Meeting of FEPS, The Physiological Society (UK) and the Slovak Physiological Society, Bratislava, Slovakia, September 2007

Plenary Keynote Lecture at XXXIV Congress of the Spanish Society of Physiological Sciences, Valladolid, Spain, July 2007

The Plenary Keynote Lecture, 82<sup>nd</sup> Annual Meeting of the Physiological Society of Japan, Sendai, May 2005  
(Published in **Cell Calcium** 38, 171-200, 2005)

The First John Young Memorial Lecture (The Keynote Lecture) at Gordon Research Conference on Salivary Glands and Exocrine Secretion, Ventura, California, USA, February 2005

Elected Honorary Member of The Hungarian Academy of Sciences (2004)

Awarded J.E. Purkyně Honorary Medal for 'Merit in the Biological Sciences' from The Academy of Sciences of the Czech Republic (2003)

The Keynote Lecture, Gordon Research Conference on Calcium Signaling, South Hadley, Massachusetts, USA, July 2003

Elected Honorary Member of The Hungarian Physiological Society (2002)

Elected Fellow of The Royal College of Physicians (FRCP) (London) (2001)

Elected Fellow of The Royal Society of London (FRS) (2000)

Visiting Professor, University of Stellenbosch, South Africa (2000)

Elected Fellow of the Academy of Medical Sciences (UK) (FMedSci) (Founding Fellow - 1998)

Dame Honor B. Fell Memorial Lecture (13<sup>th</sup> March 1996, University of Wales School of Medicine, Cardiff)

Awarded Novo Nordisk Foundation's H.C. Jacobaeus Prize & Lecture (1994, Royal Danish Academy of Sciences & Letters, Copenhagen)

Elected Honorary Member of The Polish Physiological Society and awarded the Society's Czubalsky Medal (1993)

The Physiological Society's 1991 Annual Review Prize Lecture (delivered on 18<sup>th</sup> July 1991 at the University of Cambridge at the Joint Meeting of the Physiological Society of Japan, the Korean Physiological Society and The Physiological Society (UK))  
(Published in *Journal of Physiology* 448, 1-51, 1992)

Elected Foreign Member of the Royal Danish Academy of Sciences & Letters (1988)

Elected Member of Academia Europaea (Foundation Member) (1988)

The 13<sup>th</sup> Halliburton Lecture, 17<sup>th</sup> February 1987, King's College, University of London

Morton I. Grossman Memorial Lecture (18<sup>th</sup> October 1985, Center for Ulcer Research & Education (CURE), University of California, Los Angeles, USA)  
(Published in *American Journal of Physiology* 251, G1-G13, 1986)

Awarded Brinch's Prize for 'Important and Original Research on Secretory Processes in Exocrine Glands' (1975, Danish Technical University)

### **ISI (now Web of Science [WoS]) Citation Classic**

Petersen, O.H. Commentary on Petersen and Maruyama, Calcium-activated potassium channels and their role in secretion. *Nature* 307, 693-696, 1984. ISI *Current Contents, Life Sciences* vol. 36, no. 48, p.9, 1993

### **Citation Metrics (March, 2020)**

**Google Scholar:** *h*-index: **96**; total citations: 28210

**Scopus:** *h*-index: 80; citations (self-citations excluded): 16425

## **Member (Fellow) of Academies (Societies) of Science and Medicine**

Fellow of The Royal Society (FRS) (elected 2000)

Member of the German National Academy of Sciences Leopoldina (ML) (elected 2010)

Honorary Member of the Hungarian Academy of Sciences (elected 2004)

Foreign Member of the Royal Danish Academy of Sciences and Letters (elected 1988)

Member of Academia Europaea (MAE) (elected 1988)

Fellow of the Academy of Medical Sciences (FMedSci) (elected 1998)

Fellow of the Royal College of Physicians (FRCP) (elected 2001)

Honorary Member of the German Society for Gastroenterology, Digestive and Metabolic Diseases (elected 2017)

Honorary Member of The Physiological Society (elected 2015)

Honorary Member of the Hungarian Physiological Society (elected 2002)

Honorary Member of the Polish Physiological Society (elected 1993)

## **Current Editorial Work (selection)**

Editor-in-Chief, **Function** (American Physiological Society), 2020 -

## **Past Editorial Work (selection)**

Senior Reviews (Executive) Editor, **Journal of Physiology** [2016 -2019]; Consulting Editor [2013 – 2016]

Chair of the European Editorial Committee (Executive Editor, Europe) of the American Physiological Society's **Physiological Reviews** [2003 – 2011] (Member of the European Editorial Committee from 1999)

Member of Editorial Board, **Current Biology** [2002-2017]

Member of Editorial Board, **Physiology** [2010 – 2017]

## **Membership of International and National (UK) Committees (selection)**

### ***Academia Europaea (The European Academy)***

*Currently:* Academic Director of Academia Europaea's Cardiff University Knowledge Hub [2015- ]; Vice President [2015 - ] and Chair of Search Committee for next President [2019-2020]. *Previously:* Chair of Nominations Committee [2004- 2014]; Chair of Physiology & Medicine Section [1995 – 2006]

### ***SAPEA (Science Advice for Policy by European Academies)***

Member of the SAPEA Board (Deputy for the President of Academia Europaea) [2016- ]. Member of the Co-ordination groups established by the Group of Chief Scientific Advisors to the European Commission for the projects on 'Food from the Oceans' [2016-2017], 'Making Sense of Science for Policy' [2018 – 2019], 'Sustainable Food Systems' [2019 – 2020] and 'Biodegradability of plastics' [2020 - ]

### ***American Physiological Society***

Editor-in-Chief of the new APS flagship journal **Function** to be launched in 2020

## **Past memberships of major international and national committees (selection)**

### ***The Royal Society (The UK's National Academy of Science)***

Member of Sectional Committee 8 (Anatomy, Physiology & Neurosciences) [2016-2019] and [2011-2013], Member of Wolfson Research Merit Awards Committee [2008-2012], Vice-President [2005-2006], Member of Council [2004 - 2006] and Chair of Sectional Committee 8 [2002 - 2004]

### ***The European Research Council (ERC)***

Deputy Chair of ERC Consolidator Grant Panel for Physiology, Pathophysiology & Endocrinology [2013 funding round]. Chair of ERC Starting Grant Panel for Physiology, Pathophysiology & Endocrinology [funding rounds 2009, 2010 and 2011].

### ***The UK Government's Higher Education Funding Council for England (HEFCE): 2014 Research Excellence Framework (REF2014)***

Chair of Sub-Panel 5 (Biological Sciences) and Member of Main Panel A (Biomedical and Life Sciences) [2010 – 2015]; Member of Sub-panel 15 (Biomedical Sciences) in RAE2008

### ***The Physiological Society (UK)***

Senior Reviews (Executive) Editor of **J Physiol** [2016-2019]; Consulting Editor of **J Physiol** [2013-2016]; Honorary President of the 37<sup>th</sup> International Congress of Physiological Sciences (IUPS 2013), Birmingham, UK, 2013; President and Chair of Council [2006-2008]; Foreign (International) Secretary [1992-1998]



### ***Learned Society of Wales***

Vice-President (Science, Technology & Medicine) [2014 –2018]; Member of Council [2012 -2018].

### ***Welsh Government***

Member of Science Advisory Council for Wales [2010 - 2018]

### ***Academy of Medical Sciences (UK)***

Springboard Champion for Cardiff University [2015 – ]; Member of Sectional Committee 3 (Anatomy, neurobiology, physiology, and pharmacological sciences) [2012-2014]

### ***International Union of Physiological Sciences (IUPS)***

Honorary President of the 37<sup>th</sup> International Congress of Physiological Sciences, Birmingham, UK, July 2013. Member of IUPS Nominations Committee [2012]. IUPS Secretary General and Ex Officio Member of the Executive Committee and Council [2002 –2010]; Vice Chair of the International Scientific Program Committee (ISPC) for the 35<sup>th</sup> International Congress of Physiological Sciences, San Diego, California, March/April 2005 and Co-Chair of the ISPC for the 36<sup>th</sup> International Congress of Physiological Sciences, Kyoto, Japan, July/August 2009.

### ***Max Planck Society***

Member of Scientific Advisory Board ('Beirat') at Max Planck Institute for Molecular Physiology, Dortmund, Germany [1995-2007]; Member of 'Kuratorium' and Scientific Advisory Board at Max Planck Institute for Biophysics, Frankfurt am Main [1980-1995]

### ***Federation of European Physiological Societies (FEPS)***

President [2001 – 2003]

### ***Post-REF (Research Excellence Framework) Adviser to UK Universities (Life Sciences)***

University of Glasgow, June 2015; April 2018  
University of Leeds, October 2015; December 2017  
University of Oxford, October/November 2016; May 2018

### ***REF Adviser (International)***

University of Hong Kong, April 2015; March 2018