

## Professor Nicholas J. Long, FRSC

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Date of Birth: 11<sup>th</sup> June 1965

### Employment

May 2011 – present	The Sir Edward Frankland BP Professor of Inorganic Chemistry, <b>Imperial College London</b>
Oct 2006 – April 2011	Professor of Applied Synthetic Chemistry, Head of Catalysis and Advanced Materials Research Section, <b>Imperial College London</b>
Oct 2002 – Sept 2006	Reader in Inorganic Chemistry, <b>Imperial College London</b>
Oct 1999 – Sept 2002	Senior Lecturer in Inorganic Chemistry, <b>Imperial College London</b>
Jan 1995 – Sept 1999	Governors' Lecturer in Inorganic Chemistry, <b>Imperial College London</b>
Oct 1993 – Dec 1994	Temporary Lecturer in Inorganic Chemistry, <b>University of Cambridge</b>
Oct 1992 – Sept 1993	The Adrian Research Fellow, <b>Darwin College, University of Cambridge</b>
Oct 1989 – Sept 1991	Demonstrator in Inorganic Chemistry, <b>University of Exeter</b>

### Education

1986 - 1990	Ph.D. in Organometallic Chemistry, <b>University of Exeter</b>
1983 – 1986	B.Sc. Honours in Chemistry (First Class), <b>University of Durham</b>

### Awards, Prizes and Measures of Esteem

- The Frank Southerden Scholarship, University of Exeter, 1986.
- The Adrian Research Fellowship, Darwin College, University of Cambridge, 1992.
- The Governors' Lectureship, Imperial College London, 1995.
- **Royal Society of Chemistry Award for Organometallic Chemistry, 2006.**
- **Leverhulme Trust Research Fellowship, 2009-10.**
- Distinguished Visiting Professor, Hong Kong Polytechnic University, 2010.
- Rector's Award for Excellence in Teaching, Imperial College London, 2010.
- Fellow, Royal Society of Chemistry (FRSC), 2011.
- Distinguished Visiting Professor, Hong Kong Baptist University, 2015.
- State Key Laboratory Senior Visiting Scholarship, Fudan University, China, 2015.
- **Royal Society Wolfson Research Merit Award, 2018-2022.**

### Research Profile

#### Research Activities

A diverse, multi-faceted research programme, focussed on synthetic inorganic and organometallic chemistry. International reputation and world-class research with applications in catalysis, electronic materials and biomedical imaging. Innovation and application: recent highlights include (i) a new family of organometallic materials: fused, cyclic metallocenes, (ii) design of diabetes sensor – detecting zinc via MRI and optical imaging signalling, (iii) pioneering micro-reactors for metal-mediated radiolabelling in PET, (iv) 'smart' self-assembling iron oxide nanoparticles for cancer imaging.

- **Published:** 187 research publications in peer-reviewed journals (*Nature Chem* = 1, *Nature Comm* = 1, *Light-Science* = 1, *Angew Chem* = 11, *JACS* = 7, *Chem Commun* = 11, *Chemistry* = 5, *Inorg Chem* = 9, *Dalton Trans* = 44, *Organometallics* = 16). Several book chapters, two textbooks i.e. (i) '*Metallocenes: An Introduction to Sandwich Compounds*', sole author, Blackwell, 1998; (ii) '*Chemistry of Molecular Imaging*', Eds. N. J. Long, W. T. Wong, Wiley, 2015.
- **H-index:** 43; 8554 citations in total; 36 papers with over 50 citations, 17 with over 100.
- **Current Research Group:** 4 PDRA, 13 PhD, 1 MRes, 2 MSci. (Current funding from EPSRC, MRC, CRUK, BHF, Leverhulme Trust).
- **Research Group History:** 14 PDRA, 42 PhD students successfully graduated. Nine former group members are now academics: (Charlotte Williams (Oxford), Graeme Stasiuk (Hull), Philip Miller (Imperial), Xiyu Li (Shandong, China), Natasha Keasberry (Brunei), Pan Jie (Wuhan, China), Nazila Kamaly (Copenhagen), Juan Gallo (Braga, Portugal), Joy Farnaby (Glasgow)).
- **External Profile:** **Plenary** (21), **Keynote** (49), **Invited** (117) lectures in career.

#### Funding

- Over £3.5 million raised in the last five years, including securing £680k (EPSRC & Industrial) for the Masters in Research in Bioimaging Science, £1.9M from Research Councils and Charities, £850k from Industry.
- £8.7 million for the '*Comprehensive Cancer Imaging Centre*' (**CRUK/EPSRC/MRC/DoH**) (12/2008 – 11/2013) Co-I (Deputy Director and Chemistry lead investigator).

- £5.6 million for the '**EPSRC Centre for Doctoral Training in Medical Imaging**' – King's College/Imperial College. Awarded November 2013, first cohort started October 2014 (Deputy Director, Imperial Lead PI).
- *3D ultrafast ultrasound with microbubble contrast agents for simultaneous imaging of molecular targets and perfusion in cancer*, **Cancer Research UK**, C53470/A22353, 2016-2020, £758k (Tang, Aboagye, Long).
- *Quantum-Interference-Enhanced Thermoelectricity (QUIET)*, **EPSRC**, EP/N032977/1, 2016-2019, £558k (Lambert, Albrecht, Cohen, Long).
- *Ringtronics: Single-molecule circuitry for electronics and spintronics*, **Leverhulme Trust**, RPG-2012-754, 2013-2018, £508k (Albrecht, Long).
- *Development of a fluorescent reporter probe for enzyme-activity of Heme Oxygenase 1 (HO-1)*, **British Heart Foundation**, PG/17/71/33242, 2017-2019, £213k (Boyle, Long, Mason).
- *Metalloocene Ringtronics: New Magnetic and Electronic Materials*, **Royal Society**, Royal Society Wolfson Research Merit Award, 2018-2022, £75k (Long).

## **Teaching**

### **UG Teaching**

- Head of Inorganic Teaching (2004-2006).
- Core UG lecturing, examining (written, oral), tutorials, demonstrating. Lectures: Atomic Structure (Yr 1), (2005-2015); Organometallic Chemistry (Yr 2), (2016 - ); Molecular Imaging (Yr 4), (2011 - ); Lanthanide and Actinides (Yr 3), (2006-2012); Chemistry of Macrocycles (Yr 3), (2002-2006); Coordination Chemistry (Yr 1), (1998-2003).
- External Examiner – UG Chemistry degree programmes at Hong Kong University (2016-2019).
- External Examiner – UG Chemistry degree programmes at Lancaster University (2015-2019).
- External Examiner – UG Chemistry degree programmes at University of Cardiff (2010-2013).
- External Examiner – UG Chemistry degree programmes at Queens University Belfast (2009-2012).
- External Examiner – UG Chemistry degree programmes at University College, Cork (2008-2010).

### **PG Teaching**

- Founder and Director of MRes course in Bioimaging Sciences (2005-2013).
- Co-Founder and Deputy Director of King's/Imperial CDT in Medical Imaging (2014-current).
- External Examiner – PG degree programme at Queen Mary College, London (2010-2012).
- External Examiner – PhD (over 60 since 2010, in UK, Europe and Asia).

## **Management and Administration**

### **Panels and Committees (External)**

- Singapore Science Funding Scheme, Panel Member (Jan 2015, March 2016, Feb 2018).
- Ireland Science Programme Grants, Panel Chair (June 2013, June 2017, Sept 2018).
- Finland Science and Engineering Funding Council, Panel Member/Chair (Jan 2017, Jan 2018).
- Hong Kong Research Grants Council, Physical Sciences Panel Member (2018-2020).
- External Advisor, Hong Kong Polytechnic University (2015-2021).
- REF 2021 panel member for sub-panel 8 (Chemistry).
- UK Dementia Network Committee (2014 - ).
- EPSRC EPR National Facility steering board member (2012 - ).
- BiomagingUK Steering Group (2012 - ).
- RSC Travel Grants Committee (2011-2016).
- EPSRC Chemistry College (2003 - ).

### **Editorial Advisory Boards and Conference Committees**

- Royal Society Discussion Meeting, '*Chemistry of Molecular Imaging*', organising committee (March 2017).
- Royal Society Kavli Meeting, '*Chemistry of Molecular Imaging*', organising committee (March 2017).
- Dalton Discussion Meeting, '*Metals for Imaging*', York, organising committee (Sept 2014).
- Royal Society Discussion Meeting, '*The Chemistry of the Elements*', organising committee (May 2014).
- Royal Society Kavli Meeting, '*Electron Solvation and Transfer*', organising committee (May 2014).
- Asian Chemical Conference, Singapore, International Advisory Board (July 2013).
- Imperial/GSK PET Conference, Co-founder and Director (2008-2012).
- Scientific Reports, Nature Group, Editorial Board (2014 - ).
- American Journal of Nuclear and Medical Imaging, Editorial Board (2013 - ).
- Imperial College Press, Chair of Chemistry Committee (2011-2015).

### **University and Departmental Roles and Committees**

- Deputy Director of 'Comprehensive Cancer Imaging Centre' (2008-2013);
- Deputy Director of King's-Imperial EPSRC Centre for Doctoral Training in Medical Imaging (2013 - ).
- College KTA Bid leader (2010).
- Head of Research Section and Reviewer (line manager of 10 academic staff) (2009 - ).

- Member of Departmental Research Strategy and Reviewers Committee (2009 - ).
- Imaging Sciences Strategy Committee (2012 - ).

#### **Plenary, Keynote and Invited Lectures (since 2013)**

- 2018:** Society of German Young Chemists, Spring Symposium, Konstanz, Germany, 21-23 March (Plenary).  
Anglo-China Symposium on Frontiers of Inorganic Chemistry, Hong Kong, 14-16 May (Keynote).
- 2017:** Le Studium International Meeting, Orleans, France, 11-13 December (Keynote, *illness prevented travel*).
- 2016:** International Conference on Coordination Chemistry (ICCC36), Brest, France, 3-8 July (Invited).  
International Conference on Imaging and Catalysis, Hong Kong, 15 Nov (Plenary).  
Phosphor Safari: International Symposium on Luminescence, Spectroscopy and Applications, Hong Kong, 28 Nov-1 Dec (Keynote).
- 2015:** 13<sup>th</sup> International Ferrocene Symposium, Leipzig, 22-24 Feb (Plenary).  
International Conference on Science, Technology and Applications of Rare Earths (STAR 2015), Kerala, India, 23-25 April (Plenary).  
5<sup>th</sup> Asian Coordination Chemistry Conference, Hong Kong, 12-15 July (Invited and Session Chair).  
International Conference on Catalysis, Prague, 2-4 Nov (Plenary).
- 2014:** International Conference on Coordination Chemistry (ICCC35), Singapore, 20-25 July (Invited and Session Organiser and Chair).  
REAXYS from Graduation to Innovation Symposium, Chemnitz, Germany 24 June (Plenary).
- 2013:** International Imaging Symposium, Hong Kong, 26-27 March (Keynote).  
Asian Chemistry Conference, Singapore, 18-23 July (Invited, and Session Organiser and Chair).

#### **Departmental Seminars and Industrial Lectures (since 2013)**

- 2018:** Medicines Discovery Catapult (June), International Iberian Nanotechnology Laboratory, Braga (July).
- 2017:** Reading (June), Peking University Graduate School Shenzhen (July), Imperial College (Oct), Sultan Qaboos University, Oman (Oct), South China Technical University and Sun-Yat Sen University, China (Nov), Hong Kong University (Nov).
- 2016:** Hong Kong PolyU (Jan), Fudan University, China School of Pharmacy (May), Institute of Chemical Technology, Prague (Nov).
- 2015:** Fudan University, China, School of Chemistry (May); Fudan University, China, School of Pharmacy (May); Hong Kong Baptist University (July), King's College London (Nov).
- 2014:** Oxford (Feb); Leeds (March); Oxford Cancer Institute, Churchill Hospital (May).
- 2013:** BP – Industrial (March); Hong Kong Chinese University (Aug); Hong Kong City University (Aug); Bristol (Oct); Hull (Nov); University of Oman (Dec).

#### **Outreach and Media**

Schools lectures at Harrow College (*The Lord Rayleigh Lecturer 2016*), Bradfield College (*The Ryde Lecturer 2017*), Eton College, The Abbey School Reading, Charterhouse School, Sevenoaks School, Highgate School, Royal Grammar School, Guildford.  
Nuffield Summer Project 6<sup>th</sup> Form Student, Hattie Jones, won best 'Big Bang UK Young Scientist', 2010.

Media stories based on our work on **self-assembling nanoparticles** that target tumours  
[http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news\\_16-7-2014-10-0-13](http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_16-7-2014-10-0-13);  
<http://www3.imperial.ac.uk/aboutthissite/homepage/july2014>);  
<http://www.laboratorytalk.com/home/features/small-and-mighty/406897.article>;  
<http://www.materialstoday.com/materials-chemistry/news/nanoparticles-could-improve-cancer-survival/>  
<http://eandt.theiet.org/news/2014/jul/imperial-tumours.cfm>

Media stories based on our **cyclic oligomeric ferrocenes** work – an ACS Molecule of the Year 2016.  
<http://yearinreview.cenmag.org/molecules-of-the-year/> - C&EN (print issue: 2016-12-19).  
<http://www.rsc.org/chemistryworld/2016/06/ferrocene-ring-oligomers-come-full-circle> - Chemistry World.  
<http://cen.acs.org/articles/94/i27/Presenting-ferrocene-Ferris-wheel.html> - C&EN (print issue: 2016-07-04).  
<http://www.nature.com/nchem/journal/v8/n9/covers/index.html> Journal front cover (*Nature Chem.*, **8**, 2016).  
<http://www.nature.com/nchem/journal/v8/n9/full/nchem.2584.html> News and Views (*Nature Chem.*, **8**, 819, 2016).