

CURRICULUM VITAE  
University of Pittsburgh  
School of Medicine

**BIOGRAPHICAL**

**Name:** Gerald R. V. Hammond

**Home address:** 6105 Spirit St. Apt 573, Pittsburgh PA 15206    **Birthplace:** Birmingham, UK

**Home phone:** (301) 503-6090

**Citizenship:** UK

**Business address:** Department of Cell Biology,  
University of Pittsburgh School of Medicine, S327  
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**EDUCATION and TRAINING**

**UNDERGRADUATE**

Sep 1998- Jun 2001	University College London, UK	B.Sc. (Hons)., 2001	Cell Biology
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**GRADUATE**

Sep 2001-Dec 2005	University College London, UK	Ph.D., 2005	Biochemistry
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**POSTGRADUATE**

Jan 2006-Mar 2006	University College London, UK	Giampietro Schiavo; Post-doctoral scientist
Mar 2006-Dec 2011	Department of Pharmacology, University of Cambridge, UK	Robin Irvine; Post-doctoral scientist
Jan 2012-Jan 2015	Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health	Tamas Balla; Research Fellow

**APPOINTMENTS and POSITIONS**

**ACADEMIC**

2015-current	Department of Cell Biology, University of Pittsburgh School of Medicine	Assistant Professor
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**MEMBERSHIP in PROFESSIONAL and SCIENTIFIC SOCIETIES**

Biochemical Society	2006-
American Association for the Advancement of Science	2013-
American Society for Cell Biology	2002-
American Society for Biochemistry and Molecular Biology	2015-

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**HONORS**

University College London Physiology Department Prize	1999, 2000
Wellcome Trust Biomedical Vacation Scholarship	2000
Dean's list in recognition of outstanding academic achievement in obtaining the degree of Bachelor of Science	2001
EURESCO travel grant – joint EURESCO/EMBO workshop: "Exocytosis: Membrane Structure and Dynamics"	2002
EMBO travel grant – joint EMBO/FEBS workshop: "Frontiers of Cellular Microbiology and Cell Biology"	2004
FEBS Youth Travel Grant – "Spatial 2009: Conference on systems dynamics of intracellular communication – overcoming distance in signaling networks"	2009
Biochemical Society General Travel Grant – 34 <sup>th</sup> European Symposium on Hormones and Cell Regulation	2009
20	2011
Awarded NIH Fellows Award for Research Excellence	2013
Biochemical Society General Travel Grant – 39 <sup>th</sup> European Symposium on Hormones and Cell Regulation	2014

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**PUBLICATIONS****Refereed Articles**

1. Meunier, F. A., Osborne, S. L.<sup>§</sup>, **Hammond, G. R. V.<sup>§</sup>**, Cooke, F. T., Parker, P. J., Domin, J. and Schiavo, G. PI 3-kinase C2 $\alpha$  is essential for ATP-dependent priming of neurosecretory granule exocytosis. *Mol. Biol. Cell.* 2005 16:4841-51. PMID: [16055506](#)
2. **Hammond, G. R. V.\***, Dove, S. K., Nicol, A., Zicha, D., Pinxteren, J. and Schiavo, G\*. Elimination of plasma membrane phosphatidylinositol (4,5)-bisphosphate is required for exocytosis from mast cells. *J. Cell Sci.* 2006 119:2084-94. PMID: [16687737](#)
3. **Hammond, G. R. V.\***, Sim, Y., Lagnado, L. and Irvine, R. F\*. Reversible binding and rapid diffusion of proteins in complex with inositol lipids serves to coordinate free movement with spatial information. *J. Cell Biol.* 2009. 184:297-308. PMID [19153221](#)
4. **Hammond, G. R. V.\***, Schiavo, G. and Irvine., R. F. Novel Immunocytochemical Techniques Reveal Multiple, Distinct Cellular Pools of PtdIns4P and PtdIns(4,5)P<sub>2</sub>. *Biochem J.* 2009, 422 (1):23-35. PMID [19508231](#)
5. Lindner, M., Leitner, M. G. Halaszovich, C. R., **Hammond, G. R. V.** and Oliver, D. Probing the regulation of TASK potassium channels by PI(4,5)P<sub>2</sub>. *J Physiol.* 2011. 589 (13): 3149-3162. PMID [21540350](#)
6. Delint-Remirez, I., Willoughby, D., **Hammond, G. R. V.**, Ayling, L. J. and Cooper, D. M. F. Palmitoylation targets AKAP79 protein to lipid rafts and promotes its regulation of calcium-sensitive adenylyl cyclase type 8. *J Biol Chem.* 2011. 286 (38): 32962-32975. [PMC3190942](#)
7. Ayling, L. J., Briddon, S. J., Halls, M. L., **Hammond, G. R. V.**, Vaca, L., Pacheco, J., Hill, S. J. and Cooper, D. M. F. Adenylyl cyclase AC8 defines its micro-environment by recruiting the actin cytoskeleton in a cholesterol-rich environment. *J. Cell Sci.* 2012, 125 (4): 869-886. [PMC3311928](#)
8. Kruse, M., **Hammond, G. R. V.** and Hille, B. Regulation of Voltage-gated potassium channels by PI(4,5)P<sub>2</sub>. *J Gen Physiol.* 2012. 140 (2): 189-205. [PMC3409096](#)
9. **Hammond, G. R. V.\***, Anderson, K. E., Fischer, M. J., Holdich, J., Koteci, A., Balla, T. and Irvine, R. F\*. PI4P and PI(4,5)P<sub>2</sub> are essential but independent lipid determinants of membrane identity. *Science*, 2012. 337 (6095): 727-730. PMID [22722250](#)
10. Lukacs, V., Yudin, Y., **Hammond, G. R. V.**, Sharma, E., Fukami, K. and Rohacs, T. Distinctive changes in plasma membrane phosphoinositides underlie differential regulation of TRPV1 in nociceptive neurons. *J Neurosci.* 2013. 33(28): 11451-63. PMID [23843517](#)
11. Bojjireddy, N. Botyanszki, J., **Hammond, G. R. V.**, Creech, D., Peterson, R., Kemp, D., Snead, M., Brown, R., Wilson, S., Harrison, S., Moore, C. and Balla, T. Pharmacological and Genetic targeting of PI4KA reveals its important role in maintaining plasma membrane PtdIns4P and PtdIns(4,5)P<sub>2</sub> levels and cellular responsiveness to Gq-coupled receptors. *J Biol Chem.* 2014. 289 (9): 6120-32. PMID [24415756](#)
12. **Hammond, G. R. V.\***, Machner, M. and Balla, T. A Novel Probe for Phosphatidylinositol-4-Phosphate Reveals Multiple Pools Beyond the Golgi. *J Cell Biol.* 2014. 205 (1). PMID [24711504](#)
13. **Hammond G. R. V.\***, Takasuga, S., Sasaki, T., Balla, T. The ML1Nx2 Phosphatidylinositol 3,5-Bisphosphate Probe Shows Poor Selectivity in Cells. Falasca M, editor. *PLoS ONE.* 2015;10(10):e0139957. PMID [26460749](#)
14. Xie, S., Bahl, K., Reinecke, J.B., **Hammond, G. R. V.**, Naslavsky, N., Caplan, S. The endocytic recycling compartment maintains cargo segregation acquired upon exit from the sorting endosome. *Mol Biol Cell.* American Society for Cell Biology; 2016 Jan 1;27(1):108–26. PMID [26510502](#)
15. Tóth, J. T., Gulyás, G., Tóth, D.J., Balla, A., **Hammond, G. R. V.**, Hunyady, L., et al. BRET-monitoring of the dynamic changes of inositol lipid pools in living cells reveals a PKC-dependent PtdIns4P increase upon EGF and M3 receptor activation. *BBA - Molecular and Cell Biology of Lipids.* Elsevier B.V; 2016 Mar 1;1861(3):177–87. PMID [26692031](#)

\*denotes corresponding authors. <sup>§</sup>denotes equal contribution

## Reviews, Invited Papers, Book Chapters

1. **Hammond, G. R. V.**, Thomas, C. and Schiavo, G. Nuclear Phosphoinositides and their functions. In "Phosphoinositides in Subcellular Targeting and Enzyme Activation", **Curr. Top. Microbiol. Immunol.** 2004 282: 177-206. PMID [14594218](#)
2. **Hammond, G. R. V.** and Koffer, A. Use of Permeabilised Mast Cells to Analyse Regulated Exocytosis. In "Cell Biology: A Laboratory Handbook", 3rd Edition (2005). Edited by J. Celis.
3. **Hammond, G. R. V.** and Schiavo, G. The polyphosphoinositol lipids: under-PPIning synaptic function in health and disease. **Dev. Neurobiol.** 2007 vol. 67 pp. 1232-47. PMID [17514716](#)
4. **Hammond, G. R. V.**, Cheetham, C. E. J and Balla, T. Genetically-encoded Fluorescent Probes and Live-cell Imaging. *Submitted*, Encyclopedia of Cell Biology, Eds. Ralph A Bradshaw, Philip Stahl and John Heuser.
5. **Hammond, G. R. V.** and Balla, T. Phosphoinositide binding domains: key to inositol lipid biology. *In press*, **Biochimica et Biophysica Acta**.
6. **Hammond, G. R. V.** Does PtdIns(4,5)P2 concentrate so it can multi-task? *Biochem Soc Trans.* Portland Press Limited; 2016 Feb 15;44(1):228–33. PMID [26862209](#)

## Other Publications

1. **Hammond, G. R. V.** Membrane Biology: Making Light Work of Lipids. **Curr. Biol.** 2012. 22 (20): R869-R871. PMID: [23098593](#)
2. **Hammond, G. R. V.** and Balla, T. A Tail of New Lipids. **EMBO J.** 2014. 33 (19). PMID [25180229](#).

## PROFESSIONAL ACTIVITIES

### TEACHING

#### Medical School

<i>Year(s) Taught</i>	<i>Course</i>	<i>Lecture Hours(s)</i>	<i>Tutorial or PBL Hour(s)</i>
2016	CLRES 2700: Fundamentals of Bench Research	1	

#### Graduate

	<i>Course</i>	<i>Lecture Hours(s)</i>	<i>Tutorial or PBL Hour(s)</i>
2016	MSCBMP2880 - Cellular Biology of Normal and Disease States	4	
2016	ISB2030 - Quantitative Imaging	2	2
2016	MSCBMP2840 Regulation of Membrane Traffic	2	

*Graduate Faculty member*

Cell Biology and Molecular Physiology, Integrated Systems Biology and Medical Scientist Training programs.

*Graduate Students*

6/2016- Rachel Wills, CBMP

*Rotation Students*

1/2016-3/2016 Rachel Wills, IBGP

*Thesis Committee*

2015- Chelsea Merkel, IBGP

*Comprehensive Exam Committee*

10/2015 Chelsea Merkel, IBGP

6/2016 Paige Rudich, IBGP

10/2016 Amity Eaton, IBGP

**RESEARCH****Grant Support:**

Department of Cell Biology Start-up funds	P.I., 100% effort	2/2015-2/2018	
1R35GM119412-01: NIH(NIGMS) R35	P.I., 51% effort	7/2016-6/2021	\$228,888 (\$352,488)
CMRF	P.I., 25% effort	7/2016-6/2017	\$24,939

*Active*

*Pending*

None

### **Seminars and Invited Lectureships**

- 2003 Seminar at the Sloan Kettering Memorial Institute, New York, NY.
- 2005 60<sup>th</sup> Harden conference: "Inositol phosphates and lipids – regulation and function", UK.
- 2007 Abruzzo Symposia 2007 – "Phosphoinositides on the slopes". Abruzzo, Italy.
- 2008 UK phosphoinositide meeting 2008, London, UK.
- 2009 Seminar at the Department of Biochemistry, University of Bristol, UK
- 2011 Keystone Symposium on Inositide Signaling in Pharmacology and Disease, UK
- 2012 Seminar at the Department of Biochemistry, University of Bristol, UK
- 2014 Invited seminar at the Department of Pharmacology and Physiology, University of Rochester Medical center, NY.
- 2014 Invited seminar at the Department of Physiology, University of California San Francisco, CA.
- 2014 Invited oral presentation in the "[Quantitative Imaging of Cellular Lipids \(229\)](#)" workshop at the 2014 meeting of the ASBMB, San Diego, CA
- 2014 "[Emerging Topics in Flippases and Membrane Asymmetry \(351\)](#)" symposium at the 2014 meeting of the ASBMB, San Diego, CA
- 2014 Invited seminar at the Department of Cell Biology, University of Pittsburgh School of Medicine, PA.
- 2014 Invited Seminar at the MRC Laboratory of Molecular Cell Biology, University College London, UK.
- 2014 Invited Seminar at the Department of Molecular Virology, University of Heidelberg, Germany.
- 2015 Invited seminar at the Children's Hospital of Pittsburgh Molecular Medicine seminar series. Pittsburgh, PA.
- 2015 "[Does PtdIns\(4,5\)P2 Concentrate So It Can Multitask?](#)" symposium at the 2015 meeting of the ASBMB, Boston, MA
- 2015 "[How to multitask without concentrating](#)" at Signalling 2015: Cellular Functions of Phosphoinositides and Inositol Phosphates. Cambridge, UK.
- 2016 "[Does a lipid concentrate to multitask?](#)" at 2016 Toronto Organelle Function and Dynamics conference, Toronto, Canada.
- 2016 Invited seminar at the Department of Cell Biology, Hospital for Sick Children, Toronto, Canada.

- 2016 Invited seminar at the Department of Cell Biology, University of Pittsburgh, PA.
- 2016 "The where and what for of inositol lipid signaling" at the 52nd New York Lipid and Vascular Biology Research Club, Weill Cornell, New York, NY.
- 2016 "How inositol lipids charge cell membranes", Invited seminar at Duquesne University, Pittsburgh, PA

**Other research related activities**

- Ad-hoc reviewer for Journal of Cell Science, Journal of Biological Chemistry, Cancer letters, Biophysical Journal, Oncogene, PLOS Biology, PNAS, Journal of Cell Biology, Elife, Lipid Insights.
- Ad-hoc reviewer for Agence Nationale de La Recherche (ANR, France) and Vanderbilt University Diabetes Research and Training Center.

**List of Current Research Interests**

- Nanoscopic organization and functional compartmentalization of the plasma membrane
- Mechanisms of inositol lipid homeostasis
- Subversion of host cell inositol lipid metabolism by intercellular pathogens
- Lipid signaling in vasoconstriction and hypertension

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**SERVICE**

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|---|--------|
| Organizing committee, Cell Biology Department Retreat                           | 2015-  |
| External examiner, Daniel Shiwarski, Carnegie Mellon University, Pittsburgh, PA | 9/2016 |