

Curriculum vitae

Adrian Williams

**Research Dean for Health and
Professor of Pharmaceutics**

February 2018

Personal Details

Name: Adrian Christopher Williams

Present appointment: Professor of Pharmaceutics and
Research Dean for Health
University of Reading

Date of birth: 30th November 1963

Qualifications:

2013: FAPS; Fellow of the UK Academy of Pharmaceutical Sciences.

2007: FHEA; Fellow of The Higher Education Academy (23322).

1992: C.Chem. F.R.S.C. - Chartered Chemist, Fellow of the Royal Society of Chemistry.

1990: Ph.D. in Pharmaceutical Technology, University of Bradford. "Terpenes and Urea Analogues as Penetration Enhancers for Human Skin"

1987: B.Sc. (Honours) in Combined Sciences, Biology and Chemistry, (C.N.A.A.).

Previous appointments:

2011 to 2015: Head, School of Chemistry, Food and Pharmacy, University of Reading

2008 to 2011: Head, School of Pharmacy, University of Reading.

2004 to 2008: Professor of Pharmaceutics, School of Pharmacy, University of Reading.

2002 to 2004: Professor of Biophysical Pharmaceutics, School of Pharmacy, University of Bradford.

1999 to 2002: Reader in Pharmaceutical Technology, School of Pharmacy, University of Bradford.

1997 to 1999: Senior Lecturer in Pharmaceutical Technology, School of Pharmacy, University of Bradford.

1995 to 1997: Lecturer B in the Department of Pharmaceutical Technology, School of Pharmacy, University of Bradford.

1990 to 1995: Lecturer A in the Department of Pharmaceutical Technology, School of Pharmacy, University of Bradford.

Research and scholarship

Research outputs

ORCID ID: 0000-0003-3654-7916;

h-index: 52; i10-index 98; 11,064 total citations. (Google Scholar)

Refereed research papers published in journals:

Bold indicates principal author

1. Mansfield, E.D.H., Pandya, Y., Mun, E.A., Rogers, S.E., Abutbul-Ionita, I., Danino, D., Williams, A.C. and **Khutoryanskiy, V.V.** “Structure and characterisation of hydroxyethylcellulose-decorated silica nanoparticles”. RSC Advances, DOI: 10.1039/c7ra08716k
2. **Kademoglou, K.**, Williams, A.C. and Collins, C.D. “Bioaccessibility of PBDEs present in indoor dust: A novel dialysis membrane method with a Tenax TA® absorption sink”. Science of the Total Environment (STOTEN). 2018, 621: 1–8. DOI: 10.1016/j.scitotenv.2017.11.097
3. **Lenn, J.**, Neil, J., Donahue, C., Demock, K., Tibbetts, C.V., Cote-Sierra, J., Smith, S.H., Rubenstein, D., Therrien, J.-P., Pendergrast, S., Killough, J., Brown, M.B., and **Williams, A.C.** “RNA aptamer delivery through intact human skin”, J. Invest. Dermatol., 2018, 138, 282-290. DOI: 10.1016/j.jid.2017.07.851.
4. Kabova, E.A., Cole, J.C., Korb, O., Williams, A.C. and **Shankland, K.** “Improved crystal structure solution from powder diffraction data by the use of conformational information”. J. Appl. Cryst., 2017, 50: 1421-1427. DOI: 10.1107/S1600576717012596
5. Kabova, E.A., Cole, J.C., Korb, O., Lopez-Ibanez, M., Williams, A.C. and **Shankland, K.** “Improved performance of crystal structure solution from powder diffraction data through parameter tuning of a simulated annealing algorithm”. J. Appl. Cryst., 2017, 50: 1411–1420. DOI: 10.1107/S1600576717012602
6. Arezki, N.R., **Williams, A.C.**, Cobb, A.J.A. and Brown, M.B. “Design, synthesis and characterisation of linear unnatural amino acids for skin moisturisation.” Int. J. Cosmet. Sci., 2016, 39: 72–82. DOI: 10.1111/ics.12351
7. Mun, E.A., Williams, A.C. and **Khutoryanskiy, V.V.**, “Adhesion of thiolated silica nanoparticles to urinary bladder mucosa: Effects of PEGylation, thiol content and particle size”, Int. J. Pharm., 2016, 512: 32-38. DOI: 10.1016/j.ijpharm.2016.08.026
8. Mansfield, E.D.H, de la Rosa, V.R., Kowalczyk, R.M., Grillo, I, Hoogenboom, R., Sillence, K., Hole, P., Williams, A.C. and **Khutoryanskiy, V.V.**, “Side chain variations radically alter the diffusion of poly(2-alkyl-2-oxazoline)s functionalised nanoparticles through a mucosal barrier”. Biomaterials Science, 2016, 4, 1318-1327. DOI: 10.1039/c6bm00375c.
9. Spillman, M.J., **Shankland, K.**, Williams, A.C. and Cole, J.C. “CDASH: a cloud-enabled program for structure solution from powder diffraction data”. J. Appl. Cryst., 2015, 48, 2033-2039. DOI: 10.1107/S160057671502049X.

10. Mansfield, E.D.H, Sillence, K., Hole, P., Williams, A.C. and **Khutoryanskiy, V.V.**, "POZylation: a new approach to enhance nanoparticle diffusion through mucosal barriers". *Nanoscale*, 2015, 7, 13671-13679. DOI: 10.1039/C5NR03178H
11. **Ng, K.W.**, Lau, W.M. and Williams, A.C., "Towards pain-free diagnosis of skin diseases through multiplexed microneedles: biomarker extraction and detection using a highly sensitive blotting method". *Drug Delivery and Translational Research*, 2015, 5, 387-396. DOI: 10.1007/s13346-015-0231-5
12. Bizley, S.C., Williams, A.C. and **Khutoryanskiy, V.V.** "Thermodynamic and kinetic properties of interpolymer complexes assessed by isothermal titration calorimetry and surface plasmon resonance". *Soft Matter*, 2014, 10, 8254-8260. DOI: 10.1039/c4sm01138d
13. Mun, E.A., Morrison, P.W.J., Williams, A.C. and **Khutoryanskiy, V.V.**, "On the barrier properties of the cornea: a microscopy study of the penetration of fluorescently-labelled nanoparticles, polymers and sodium fluorescein", *Mol. Pharm.*, 2014, 11 (10), 3556-3564. DOI: 10.1021/mp500332m
14. Mun, E.A., Hannell, C., Rogers, S.E., Hole, P., Williams, A.C. and **Khutoryanskiy, V.V.** "On the role of specific interactions in the diffusion of nanoparticles in aqueous polymer solutions", *Langmuir*, 2014, 30, 308-317. DOI: 10.1021/la4029035
15. Aravindan, L, Bicknell, K.A., Brooks, G., **Khutoryanskiy, V.V.** and **Williams A.C.**, "A comparison of thiolated and disulphide-crosslinked polyethylenimine for nonviral gene delivery", *Macromol. Biosci.*, 2013, 13, 1163-1173. DOI: 10.1002/mabi.201300103
16. Majumder, M., Buckton, G., Rawlinson-Malone, C., Williams, A.C., Spillman, M.J., Pidock, E., **Shankland, K.** "Application of hydrogen-bond propensity calculations to an indomethacin-nicotinamide (1:1) co-crystal". *Cryst. Eng. Comm.*, 2013, 15, 4041-4044. DOI: 10.1039/c3ce40367j
17. **Williams A.C.**, "Brian Barry; Innovative Contributions to Transdermal and Topical Drug Delivery". In Special Issue "Developments in Skin Delivery: To Scheuplein and Beyond", *Skin Pharmacology and Physiology*, 2013, 26, 234-242. DOI: 10.1159/000351946.
18. Arif, I.S., Hooper, C.I., Greco, F., **Williams, A.C.**, **Boateng, S.Y.** "Increasing doxorubicin activity against breast cancer cells using PPAR γ -ligands and by exploiting circadian rhythms", *British Journal of Pharmacology*, 2013, 169, 1178-1188. DOI: 10.1111/bhp.12202.
19. Niemczyk, A.I., **Williams, A.C.**, Rawlinson, C.F., Hayes, W., Greenland, B.W., Chappell, D., Khutoryanskaya, O. "Novel polyvinylpyrrolidones to improve delivery of poorly-water soluble drugs; from design to synthesis and evaluation", *Mol. Pharm.*, 2012, 9, 2237-2247. DOI: 10.1021/mp300079x.
20. Sogias, I.A., Williams, A.C., **Khutoryanskiy, V.V.** "Chitosan-based mucoadhesive tablets for oral delivery of ibuprofen". *Int. J. Pharm.*, 2012, 436, 602-610. DOI: 10.1016/j.ijpharm.2012.07.007

21. Bizley, S.C., Williams, A.C., Kemp, F., **Khutoryanskiy, V.V.** "Optimizing layer-by-layer deposition of interpolymer complexes on solid substrates using Biacore". *Soft Matter*, 2012, 8, 6782-6787. DOI: 10.1039/C2SM25652E
22. Rizi, K., Green, R.J., Donaldson, M. **Williams, A.C.**, "Using pH abnormalities in diseased skin to trigger and target topical therapy", *Pharm. Res.*, 2011, 28, 2589-2598. DOI: 10.1007/s11095-011-0488-4
23. Majumder, M., Buckton, G., Rawlinson-Malone, C., Williams, A.C., Spillman, M.J., Shankland, N, **Shankland, K.** "A carbamazepine-indomethacin (1:1) cocrystal produced by milling", *Cryst. Eng. Comm.*, Nov. 2011, 13, 6327-6328. DOI: 10.1039/c1ce05650f
24. Rizi, K., Green, R.J., Khutoryanskaya, O., Donaldson, M. **Williams, A.C.**, "Mechanisms of burst release from polymeric microparticles", *J. Pharm. Pharmacol.*, 2011; 63, 1141-1155. DOI: 10.1111/j.2042-7158.2011.01322.x
25. Rizi, K., Green, R.J., Donaldson, M. **Williams, A.C.**, "Production of pH-responsive microparticles by spray drying: Investigation of experimental parameter effects on morphological and release properties", *J. Pharm. Sci.*, 2011, 100, 566-579. DOI: 10.1002/jps.22291
26. Ali, W., **Williams, A.C.**, and Rawlinson, C.F., "Stoichiometrically governed molecular interactions in drug:Poloxamer solid dispersions", *Int. J. Pharm.*, 2010, 391, 162-168. DOI: 10.1016/j.ijpharm.2010.03.014
27. Sogias, I.A., Khutoryanskiy, V.V. and **Williams, A.C.**, "Exploring the factors affecting the solubility of chitosan in water", *Macromol. Chem. Phys.*, 2010, 211, 426-433. DOI: 10.1002/macp.200900385
28. Aravindan, L, Bicknell, K.A., Brooks, G., Khutoryanskiy, V.V. and **Williams AC.**, "Effect of acyl chain length on transfection efficiency and toxicity of polyethylenimine", *Int. J. Pharm.*, 2009, 378, 201-210. DOI: 10.1016/j.ijpharm.2009.05.052
29. Sogias, I.A., **Williams, A.C.** and Khutoryanskiy, V.V., "Why is chitosan mucosadhesive?", *Biomacromolecules*, 2008, 9 (7), 1837-1842.
30. Khutoryanskaya, O.V., Williams, A.C. and **Khutoryanskiy, V.V.**, "pH-Mediated interactions between poly(acrylic acid) and methylcellulose in the formation of ultrathin multilayered hydrogels and spherical nanoparticles", *Macromolecules*, 2007, 40 (21), 7707-7713.
31. Rawlinson, C.F., **Williams, A.C.**, Timmins, P.T. and Grimsey, I., "Polymer-mediated disruption of drug crystallinity", *Int. J. Pharm.*, 2007, 336, 42-48.
32. DeMatos, L.L., **Williams, A.C.**, Booth, S.W., Petts C.R. and Blagden, N. "Solvent influences on metastable polymorph lifetimes: Real-time interconversions using energy dispersive X-ray diffractometry", *J. Pharm. Sci.*, 2007, 96, 1069-1078.
33. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.** "Can drug-bearing liposomes penetrate intact skin?" *J. Pharm. Pharmacol.*, 2006, 58, 415-429.

34. Tekko, I.A., Bonner M.C., Bowen, R.D. and **Williams A.C.**, "Permeation of bioactive constituents from *Arnica montana* preparations through human skin in vitro." J. Pharm. Pharmacol., 2006, 58, 1167-1176.
35. Tekko, I.A., Bonner M.C. and **Williams A.C.**, "An optimised reverse-phase high performance liquid chromatographic method for evaluating percutaneous absorption of glucosamine hydrochloride", J. Pharm. Biomed. Anal., 2006, 41, 385-392.
36. **Williams, A.C.**, Edwards, H.G.M., Lawson, E.E. and Barry, B.W., "Molecular interactions between the penetration enhancer 1,8-cineole and human skin", J. Raman Spectrosc., 2006, 37, 361-366.
37. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, "Drug interaction and location in liposomes: correlation with polar surface area", Int. J. Pharm. 2005, 292, 179-185.
38. Lu, M., **Williams, A.C.**, Timmins, P and Forbes, R.T., "Disorder and dissolution enhancement: deposition of ibuprofen onto insoluble carriers", Eur. J. Pharm. Sci., 2005, 26, 288-294.
39. Ahmed, A, Barry, B.W., **Williams, A.C.** and Davis, A.F., "Penciclovir solubility in Eudragit films; a comparison of X-ray, thermal, microscopic and release rate techniques", J. Pharm. Biomed. Anal., 2004, 34, 945-956.
40. **Williams, A.C.**, Cooper, V.B., Thomas, L., Griffith, L.J., Petts, C.R. and Booth, S.W., "Evaluation of drug physical form during granulation, tableting and storage", Int. J. Pharm., 2004, 275, 29-39.
41. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, "Interactions of surfactants (edge activators) and skin penetration enhancers with liposomes", Int. J. Pharm. 2004, 276, 143-161.
42. O'Brien, L.E., Timmins, P, **Williams, A.C.** and York, P., "Use of in situ FT-Raman spectroscopy to study the kinetics of the transformation of carbamazepine polymorphs", J. Pharm. Biomed. Anal., 2004, 36, 335-340.
43. **Sznitowska, M.**, Janicki, S., Williams, A., Lau, S. and Stolyhwo A., "pH-induced modifications to stratum corneum lipids investigated using thermal, spectroscopic and chromatographic techniques", J. Pharm. Sci., 2003, 92, 173-179.
44. Caspers, P.J., **Williams, A.C.**, Carter, E.A., Edwards, H.G.M., Barry, B.W., Bruining, H.A. and Pupples, G.J., "Monitoring the penetration enhancer dimethyl sulfoxide in human stratum corneum in vivo by confocal Raman spectroscopy", Pharm. Res., 2002, 19, 1577-1580.
45. Campbell Roberts, S.N.C., **Williams, A.C.**, Grimsey, I.M. and Booth, S.W., "Quantitative analysis of mannitol polymorphs. I. FT-Raman spectroscopy", J. Pharm. Biomed. Anal., 2002, 28, 1135-1147.
46. Campbell Roberts, S.N.C., **Williams, A.C.**, Grimsey, I.M. and Booth, S.W., "Quantitative analysis of mannitol polymorphs. II. X-ray powder diffractometry –

- exploring preferred orientation effects”, J. Pharm. Biomed. Anal., 2002, 28, 1149-1159
47. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, “Skin hydration and possible shunt route penetration in controlled estradiol delivery from deformable and standard liposomes”, J. Pharm. Pharmacol., 2001, 53, 1311-1322.
48. Mackay, K.M.B., Williams, A.C. and **Barry, B.W.**, “Effect of melting point of chiral terpenes on human stratum corneum uptake”, Int. J. Pharm., 2001, 228, 89-97.
49. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, “Skin delivery of 5-fluorouracil from ultradeformable and standard liposomes in vitro”, J. Pharm. Pharmacol., 2001, 53, 1069–1077.
50. Stott, P.W., Williams, A.C. and **Barry, B.W.**, “Mechanistic study into the enhanced transdermal permeation of a model β -blocker, propranolol, by fatty acids: a melting point depression effect”, Int. J. Pharm., 2001, 219, 161–176.
51. El Maghraby, G.M.M., **Williams, A.C.** and Barry, B.W., “Oestradiol skin delivery from ultradeformable liposomes: refinement of surfactant concentration”, Int. J. Pharm., 2000, 196, 63-74.
52. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, “Skin delivery of oestradiol from lipid vesicles: Importance of liposome structure”, Int. J. Pharm., 2000, 204, 159-169.
53. Quinn, E.A., **Forbes, R.T.**, Williams, A.C., Oliver, M.J., McKenzie, L. and Purewal, T.S., “Protein conformational stability in the hydrofluoroalkane propellants tetrafluoroethane and heptafluoropropane analysed by Fourier transform Raman spectroscopy”, Int. J. Pharm., 1999, 186, 31-41.
54. Greenhalgh, D.J., **Williams, A.C.**, Timmins, P. and York, P., “Solubility parameters as predictors of miscibility in solid dispersions”, J. Pharm. Sci., 1999, 88, 1182-1190.
55. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, “Skin delivery of oestradiol from deformable and traditional liposomes: mechanistic studies”, J. Pharm. Pharmacol., 1999, 51, 1123-1134.
56. Lawson, E.E., Edwards, H.G.M., Barry, B.W. and **Williams, A.C.**, “Interaction of salicylic acid with verrucae assessed by FT-Raman spectroscopy”, J. Drug Targeting, 1998, 5, 343-351.
57. Stott, P.W., **Williams, A.C.** and Barry, B.W., “Transdermal delivery from eutectic systems; enhanced permeation of a model drug, ibuprofen”, J. Control. Rel., 1998, 50, 297-308.
58. **Williams, A.C.**, Shatri, S.R.S. and Barry, B.W., “Transdermal permeation modulation by cyclodextrins: a mechanistic study”, Pharm. Dev. Tech., 1998, 3, 283-296.

59. Lawson, E.E., Anigbogu, A.N.C., **Williams, A.C.**, Barry, B.W., and Edwards, H.G.M., "Thermally induced molecular disorder in human stratum corneum lipids compared with a model phospholipid system; FT-Raman spectroscopy", *Spectrochim. Acta*, 1998, 54A, 543-558.
60. Taylor, L.S., **Williams, A.C.** and York P., "Particle size dependent molecular rearrangements during the dehydration of trehalose dihydrate - *in situ* FT-Raman spectroscopy", *Pharm. Res.*, 1998, 15, 1207-1214.
61. Al-Saidan, S.M., **Barry, B.W.** and Williams A.C., "Differential scanning calorimetry of human and animal stratum corneum membranes", *Int. J. Pharm.*, 1998, 168, 17-22.
62. Moghimi, H.R., Williams, A.C. and **Barry, B.W.**, "Enhancement by terpenes of 5-fluorouracil permeation through the stratum corneum: Model solvent approach." *J. Pharm. Pharmacol.*, 1998, 50, 955-964.
63. **Sznitowska, M.**, Janicki, S. and Williams, A.C. "Intracellular or intercellular localization of the polar pathway of penetration across stratum corneum", *J. Pharm. Sci.*, 1998, 87, 1109-1114.
64. Taylor, L.S., **York, P.**, Williams, A.C. and Mehta, V., "Characterisation of frozen glucose solutions", *Pharm. Dev. Tech.*, 1997, 2(4), 395-402.
65. Edwards, H.G.M., Farwell, D.W., Turner, J.C.M. and **Williams, A.C.**, "Novel environmental chamber for FT-Raman spectroscopy: study of *in situ* phase change of sulfur", *Applied Spectroscopy*, 1997, 51, 101-107.
66. Lawson, E.E., Barry, B.W., **Williams, A.C.** and Edwards, H.G.M., "Biomedical applications of Raman spectroscopy", *J. Raman Spectrosc.*, 1997, 28, 111-117.
67. Moghimi, H.R., Williams, A.C. and **Barry, B.W.**, "A lamellar matrix model for stratum corneum intercellular lipids. V. Effects of terpene penetration enhancers on the structure and thermal behaviour of the matrix", *Int. J. Pharm.*, 1997, 146, 41-54.
68. Moghimi, H.R., Williams, A.C. and **Barry, B.W.**, "A lamellar matrix model for stratum corneum intercellular lipids. I. Characterisation and comparison with stratum corneum intercellular structure", *Int. J. Pharm.*, 1996, 131, 103-115.
69. Moghimi, H.R., Williams, A.C. and **Barry, B.W.**, "A lamellar matrix model for stratum corneum intercellular lipids. II. Effect of geometry of the stratum corneum on permeation of model drugs 5-fluorouracil and oestradiol", *Int. J. Pharm.*, 1996, 131, 117-129.
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72. Edwards, H.G.M., **Williams, A.C.** and Barry, B.W., "Human skin: A Fourier transform Raman spectroscopic study of the Iceman", *Spectroscopy Europe*, 1996, 8 (1), 10-18.
73. McMahon, L.E., **Timmins, P.**, Williams, A.C. and **York, P.**, "Characterisation of dihydrates prepared from carbamazepine polymorphs", *J. Pharm. Sci.*, 1996, 85, 1064-1069.
74. Moghimi, H.R., Williams, A.C. and **Barry, B.W.**, "A lamellar matrix model for stratum corneum intercellular lipids. III. Effects of terpene penetration enhancers on the release of 5-fluorouracil and oestradiol from the matrix", *Int. J. Pharm.*, 1996, 145, 37-47.
75. Moghimi, H.R., Williams, A.C. and **Barry, B.W.**, "A lamellar matrix model for stratum corneum intercellular lipids. IV. Effects of terpene penetration enhancers on the permeation of 5-fluorouracil and oestradiol through the matrix", *Int. J. Pharm.*, 1996, 145, 49-59.
76. Stott, P.W., Williams, A.C. and **Barry, B.W.**, "Characterization of complex coacervates of some tricyclic antidepressants and evaluation of their potential for enhancing transdermal flux", *J. Control. Release*, 1996, 41, 215-227.
77. **Edwards, H.G.M.**, Williams, A.C. and Farwell, D.W., "Palaeodental studies using FT-Raman spectroscopy", *Biospectroscopy*, 1995, 1, 29-36.
78. **Edwards, H.G.M.**, Williams, A.C. and Barry, B.W., "Potential applications of FT-Raman spectroscopy for dermatological diagnostics", *J. Mol. Structure*, 1995, 347, 379-388.
79. Megrab, N.A., Williams, A.C. and **Barry, B.W.**, "Oestradiol permeation across human skin, silastic and snake skin membranes: the effects of ethanol/water co-solvent systems", *Int. J. Pharm.*, 1995, 116, 101-112.
80. Yamane, M.A., Williams, A.C. and **Barry, B.W.**, "Effects of terpenes and oleic acid as skin penetration enhancers towards 5-fluorouracil as assessed with time; permeation, partitioning and differential scanning calorimetry", *Int. J. Pharm.*, 1995, 116, 237-251.
81. **Williams, A.C.**, Edwards, H.G.M. and Barry, B.W., "The 'Iceman': molecular structure of 5200 year old skin characterised by Raman spectroscopy and electron microscopy", *Biochim. Biophys. Acta*, 1995, 1246, 98-105.
82. Anigbogu, A.N.C., **Williams, A.C.**, Barry, B.W. and Edwards, H.G.M., "Fourier transform Raman spectroscopy of interactions between the penetration enhancer dimethyl sulphoxide and human stratum corneum", *Int. J. Pharm.*, 1995, 125, 419-426.
83. Yamane, M.A., Williams, A.C. and **Barry, B.W.**, "Terpene penetration enhancers in propylene glycol/water co-solvent systems; effectiveness and mechanisms of action", *J. Pharm. Pharmacol.*, 1995, 47, 978-989.

84. Megrab, N.A., Williams, A.C. and **Barry, B.W.**, "Oestradiol permeation through human skin and silastic membrane: effects of propylene glycol and supersaturation", *J. Control. Release*, 1995, 36, 277-294.
85. **Edwards, H.G.M.**, Williams, A.C., Farwell, D.W., Barry, B.W. and Rull, F., "Novel spectroscopic deconvolution procedure for complex biological systems: vibrational components in the FT-Raman spectra of Ice-man and contemporary skin", *J. Chem. Soc. Faraday Trans.*, 1995, 91, 3883-3887.
86. Taylor, L.S., **York, P.**, Williams, A.C., Edwards, H.G.M., Mehta, V., Jackson, G.S., Badcoe, I.G. and Clarke, A.R., "Sucrose reduces the efficiency of protein denaturation by a chaotropic agent", *Biochim. Biophys. Acta*, 1995, 1253, 39-46.
87. **Williams, A.C.**, Edwards, H.G.M. and Barry, B.W., "Raman spectra of human keratotic biopolymers; skin, callus, hair and nail", *J. Raman Spectrosc.*, 1994, 25, 95-98.
88. **Edwards, H.G.M.**, Farwell, D.W. and Williams, A.C., "FT-Raman spectrum of cotton; A polymeric biomolecular analysis". *Spectrochim. Acta*, 1994, 50A, 807-811.
89. **Williams, A.C.**, Edwards, H.G.M. and Barry, B.W., "A comparison of FT-Raman spectra of mammalian and reptilian skin", *Analyst*, 1994, 119, 563-566.
90. **Williams, A.C.** and Edwards, H.G.M., "Fourier transform Raman spectroscopy of bacterial cell walls", *J. Raman Spectrosc.*, 1994, 25, 673-677.
91. **Williams, A.C.**, Barry, B.W., Edwards, H.G.M. and Farwell, D.W., "A critical comparison of some Raman spectroscopic techniques for studies of human stratum corneum", *Pharm. Res.*, 1993, 10, 1642-1647.
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93. Edwards, H.G.M., Farwell, D.W., **Williams, A.C.** and Barry, B.W., "Raman spectroscopic studies of the skins of the Sahara sand viper, the carpet python and the American black rat snake", *Spectrochim. Acta*, 1993 49A, 913-919.
94. **Williams, A.C.**, Cornwell, P.A. and Barry, B.W., "On the non-Gaussian distribution of human skin permeabilities", *Int. J. Pharm.*, 1992, 86, 69-77.
95. **Williams, A.C.**, Edwards, H.G.M. and Barry, B.W., "Fourier Transform Raman Spectroscopy: a novel application for examining human stratum corneum", *Int. J. Pharm.*, 1992, 81, R11-R14.
96. Barry, B.W., Edwards, H.G.M. and **Williams, A.C.**, "Fourier Transform Raman and infrared vibrational study of human skin: assignment of spectral bands", *J. Raman Spectrosc.*, 1992, 23, 641-645.
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99. **Williams, A.C.** and Barry, B.W., "Urea analogues in propylene glycol as penetration enhancers in human skin", *Int. J. Pharm.*, 1989, 56, 43-50.
100. **Williams, A.C.** and Barry, B.W., "Essential oils as novel skin penetration enhancers", *Int. J. Pharm.*, 1989, 57, R7-R9.

Review articles published in journals

1. El Maghraby, G.M.M., and **Williams, A.C.** "Vesicular systems for delivering conventional small organic molecules and larger macromolecules to and through human skin", *Expert Opinion on Drug Delivery*, 2009, 6 (2), 149-164.
2. El Maghraby, G.M.M., **Barry, B.W.**, and Williams, A.C. "Liposomes and skin: From drug delivery to model membranes", *Eur. J. Pharm. Sci.* 2008, 34, 203-222.
3. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, "Can drug-bearing liposomes penetrate intact skin?" *J. Pharm. Pharmacol.*, 2006, 58, 415-429.
4. **Williams, A.C.**, "Taking the transdermal route; technological advances point to a new star in drug delivery", *Pharmaceutical Manufacturing and Packaging Sourcer*, Winter 2004, 84-87.
5. **Williams, A.C.**, "Recent advances in transdermal drug delivery", *Eur. J. Hosp. Pharm.*, 2004, 10: 53.
6. **Williams, A.C.** and Barry, B.W., "Penetration enhancers", *Advanced Drug Delivery Reviews*, 2004, 56: 603-618.
7. **Williams, A.C.** and Barry, B.W., "Skin absorption enhancers", *In Critical Reviews in Therapeutic Drug Carrier Systems* (Bruck, S.D., Ed), CRC Press Inc. Boca Raton, Florida, USA, 1992, 9 (3,4), 305-353.
8. **Williams, A.C.** and Barry B.W., "Raman Spectroscopy", *J. Toxicol. – Cutaneous and Ocular Toxicol.*, 2001, 20, 497-511. (Reprinted from *Percutaneous Absorption* (Bronaugh, R.L. and Maibach, H.I., Eds.), 3rd Edition, Marcel Dekker, New York and Basel, 1999, pp 488-514).
9. Lawson, E.E., **Edwards, H.G.M.**, Williams, A.C. and Barry, B.W., "Applications of Raman spectroscopy to skin research", *Skin Research and Technology*, 1997, 3: 147-154.

Authored book

1. **Williams, A.C.** "Transdermal and Topical Drug Delivery; from theory to clinical practice". Pharmaceutical Press, London. 2003.

Chapters in books

1. **Williams A.C.** "Topical and transdermal drug delivery". In: Aulton's Pharmaceuticals; The design and manufacture of medicines (Aulton M. E. and Taylor, K.M.G. Eds.), Elsevier, Chapter 40, 2017.
2. **Ng, K.W., Lau, W.M. and Williams, A.C.** "Synergy between chemical penetration enhancers". In: Percutaneous Penetration Enhancers; Chemical Methods in Penetration Enhancement (Dragicevic-Curic, N and Maibach, H.I. Eds.), Springer, Berlin, 373-385 (Chapter 25), 2015.
3. **Williams A.C.** "Urea and derivatives". In: Percutaneous Penetration Enhancers (Dragicevic-Curic, N and Maibach, H.I. Eds.), Springer, Berlin, 301-308 (Chapter 20), 2015
4. **Williams A.C.** "Topical and transdermal drug delivery". In: Aulton's Pharmaceuticals; The design and manufacture of medicines (Aulton M. E. and Taylor, K.M.G. Eds.), Churchill Livingstone, London, Chapter 39, 2013.
5. **Williams, A.C.** and Walters K.A., "Chemical penetration enhancement; possibilities and problems". In: Dermatologic, Cosmeceutic and Cosmetic Development; Therapeutic and novel approaches (Walters, K.A. and Roberts, M.S. Eds.), Informa Healthcare, USA, Chapter 30 (pp 497-505), 2008.
6. **Williams A.C.** "Pharmaceutical solvents as vehicles for topical dosage forms" In: Solvent Systems and their Selection in Pharmaceuticals and Biopharmaceutics (Augustijns, P and Brewster, M.E. Eds.), Springer & AAPS Press, USA, Chapter 13 (pp 403 – 426), 2007.
7. **Williams, A.C.** and Barry, B.W., "Chemical penetration enhancement" In: Enhancement in Drug Delivery (Touitou, E. and Barry B.W. Eds), CRC Press, Boca Raton, USA, Chapter 12 (pp 233 – 254), 2007.
8. Ahmed, A., **Williams, A.C.**, Barry, B.W. and Davis, A.F., "Improving the dissolution rate of ibuprofen: does this enhance permeation from aqueous polymer film formulation?" In Perspectives in Percutaneous Penetration, (Brain, K.R. and Walters, K.A., Eds.), STS Publishing Ltd., Cardiff, Vol. 8a, 31, 2004.
9. **Ahmed, A.**, Williams, A.C., Barry, B.W. and Davis, A.F., "Formulation of ibuprofen in aqueous latex films: drug delivery through silastic membranes" In Perspectives in Percutaneous Penetration, (Brain, K.R. and Walters, K.A., Eds.), STS Publishing Ltd., Cardiff, Vol. 8a, 32, 2004.
10. **Williams, A.C.**, "Deformable liposomes?" In Perspectives in Percutaneous Penetration, (Brain, K.R. and Walters, K.A., Eds.), STS Publishing Ltd., Cardiff, Vol. 8a, 15, 2004.

11. **Sznitowska**, M., Janicki, S., Williams, A., Stolyhwo, A. and Lau, S., "The effects of pH 1-12 on stratum corneum structure and permeation" In Perspectives in Percutaneous Penetration, (Brain, K.R. and Walters, K.A., Eds.), STS Publishing Ltd., Cardiff, Vol. 8a, 33, 2004.
12. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, "In vitro skin delivery of 5-fluorouracil from ultradeformable vesicles" In: Perspectives in Percutaneous Penetration (Brain, K.R. and Walters, K.A., Eds.), STS Publishing Ltd., Cardiff, Vol. 7a, 58, 2002.
13. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, "Penetration enhancers in liposomes for skin delivery of oestradiol. Can they replace surfactants?" In: Perspectives in Percutaneous Penetration (Brain, K.R. and Walters, K.A., Eds.), STS Publishing Ltd., Cardiff, Vol. 7a, 59, 2002.
14. Mackay, K.M.B., **Williams, A.C.** and Barry, B.W., "Effect of melting point of chiral terpenes on stratum corneum uptake" In: Perspectives in Percutaneous Penetration, (Brain, K.R. and Walters, K.A., Eds.), STS Publishing Ltd., Cardiff, Vol. 7a, 55, 2002.
15. Patel, L., **Williams, A.C.** and Barry, B.W., "A comparative study of transdermal permeation from 5-aminolevulinic acid formulations" In: Perspectives in Percutaneous Penetration, (Brain, K.R. and Walters, K.A., Eds.), STS Publishing Ltd., Cardiff, Vol. 7a, 60, 2002.
16. **Williams, A.C.**, "Some pharmaceutical applications of Raman spectroscopy" in Handbook of Raman Spectroscopy; from the Research Laboratory to the Process Line (I. Lewis and H.G.M. Edwards, Eds.) Marcel Dekker Inc, New York, 2001, 575-591.
17. El Maghraby, G.M.M., Williams, A.C. and **Barry, B.W.**, "Mechanistic studies of improved oestradiol skin delivery from different lipid vesicles", In: Perspectives in Percutaneous Penetration, Vol. 6b (Brain, K.R. and Walters, K.A., Eds.), STS Publishing Ltd., Cardiff, 2000.
18. **Williams, A.C.** and Barry, B.W., "Raman spectroscopy", In: Percutaneous Absorption (Bronaugh, R.L. and Maibach, H.I., Eds.), 3rd Edition, Marcel Dekker, New York and Basel, 1999, pp 488-514.
19. Moghimi, H.R., **Barry, B.W.** and Williams, A.C., "Stratum corneum and barrier performance – a model lamellar approach, In: Percutaneous Absorption (Bronaugh, R.L. and Maibach, H.I., Eds.), 3rd Edition, Marcel Dekker, New York and Basel, 1999, pp 515-553.
20. **Williams, A.C.** and Barry, B.W., "Chemical penetration enhancement: Possibilities and problems" in Dermal Absorption and Toxicity Assessment (Roberts, M.J. and Walters, K.A., Eds.), Marcel Dekker Inc., New York, 1998, Chapter 13, pp. 297-312.

21. **Williams, A.C.**, Lawson, E.E., Barry, B.W. and Edwards, H.G.M., "Probing the stratum corneum barrier using FT-Raman spectroscopy", In Prediction of Percutaneous Penetration, Vol.5b (Brain, K.R., James, V.J. and Walters, K.A. (Eds.), STS Publishing Ltd., Cardiff, 1998, pp.5-8.
22. Williams, A.C., Megrab, N.A. and **Barry, B.W.**, "Permeation of oestradiol through human epidermal and silastic membranes from saturated transcutol/water systems", In Prediction of Percutaneous Penetration, Vol.4b (Brain, K.R., James, V.J. and Walters, K.A., Eds), STS Publishing Ltd., Cardiff, 1996, 135-138.
23. Bugay, D.E. and **Williams, A.C.**, "Vibrational spectroscopy". In Physical Characterization of Pharmaceutical Solids (Brittain, H.G. Ed.), Marcel Dekker Inc., New York, 1995, 59-91.
24. **Williams, A.C.**, "Urea and its derivatives as penetration enhancers". In Percutaneous Penetration Enhancers (Maibach, H.I. and Smith, E.W., Eds.), CRC Press, Boca Raton, Florida, 1995, 289-296.
25. **Williams, A.C.** and Barry, B.W., "Raman spectroscopy". In Percutaneous Penetration Enhancers (Maibach, H.I. and Smith, E.W., Eds.), CRC Press, Boca Raton, Florida, 1995, 419-426.
26. Barry, B.W. and **Williams, A.C.**, "Permeation enhancement through skin". In: Encyclopedia of Pharmaceutical Technology, Vol.11 (Swarbrick, J. and Boylan, J.C., Eds), Marcel Dekker Inc., New York, 1995, 449-493.
27. Barry, B.W. and **Williams, A.C.**, "Terpenes as skin penetration enhancers", In Pharmaceutical Skin Penetration Enhancement (Walters, K.A. and Hadgraft, J., Eds), Marcel Dekker, New York and Basel, 1993, pp.95-111.
28. Anigbogu, A.N.C., **Williams, A.C.**, Barry, B.W. and Edwards, H.G.M., "Fourier Transform Raman spectroscopy in the study of interactions between terpene penetration enhancers and human skin". In Prediction of Percutaneous Penetration; Methods, Measurements, Modelling, Vol.3 (Brain, K.R., James, V.J. and Walters, K.A., Eds), STS Publishing, Cardiff, 1993, 27-36.
29. **Williams, A.C.** and Barry, B.W. "Transdermal oestradiol permeation: the effects of terpene penetration enhancers". In Prediction of Percutaneous Penetration; Methods, Measurements, Modelling, Vol.2 (Scott, R.C., Guy, R.H., Hadgraft, J. and Boddé, H.E., Eds) IBC Technical Services, London, 1991, 386-393.
30. **Williams, A.C.** and Barry, B.W., "The use of terpenes as skin penetration enhancers", In Prediction of Percutaneous Penetration; Methods, Measurements, Modelling" (Scott, R.C., Guy, R.H. and Hadgraft, J., Eds) IBC Technical Services, London, 1990, 224-230.

Published Book review

1. **Williams A.C.**, "Transdermal Drug Delivery" review, Int. J. Pharm., 261: 171.

Patent applications

1. Topical conjugates and compositions, filed 6th November 2014. Patent application number 1419794.1. PCT/EP2015/075991 6th November 2015. Ongoing
2. Dermal Compositions, filed 12th November 2012. WO2014072747 A1. Published 15th May 2014. Patents filed in 10 territories plus PCT. Dropped for commercial reasons June 2017.
3. Excipients and their use, Patent application number 0906703.4, filed 20th April 2009. Dropped April 2010
4. Trans-membrane passage of active ingredients, Patent application number 96 110515, filed 25th May 1996. Dropped May 1997.

Other Media Output

1. Thames Valley Clinical Trials Unit launch, interview with BBC South Today, 17th October 2016.
2. Commercialisation of self-healing polymer, interview with BBC News 8th April 2016; 505,000 audience on BBC News 24.
3. "Herbal remedy secret uncovered", BBC News, 18th Sept. 2003; <http://news.bbc.co.uk/1/hi/health/3104730.stm>
4. "Pharmacists investigate 'Iceman' skin", article in The Pharmaceutical Journal, 1995, 254, p.217.
5. "Getting under the Iceman's Skin" Interview with Chris Bridgeman for Overseas Radio Division of Central Office of Information regarding the Iceman, 1994.
6. "Iceman cometh", article in Yorkshire on Sunday, 18th December 1994, following interview with Philip Chapman.

Postgraduate Research Student Supervision.

1. Nov. 2017- present: Jessica Neil, "Novel ex vivo human skin inflammatory pathway models for developing topical medicines to treat autoimmune dermatological diseases". PhD part time by distance.
2. Oct 2017 – present: Lauren Rickerby, "Challenging the molecular weight exclusion limit for topical and transdermal drug delivery", PhD. Co-funded by MedPharm and EPSRC.
3. Oct. 2017 – present: Xiaoning Shan, "polyoxazoline-based microgels for mucus-diffusion". PhD.
4. Oct. 2016 – present: J. Al Mahrooqi. "Nanoparticulate drug delivery systems" PhD.
5. Aug. 2016 – present: I. Shah, "Novel insect repellent compositions", PhD.

6. Oct. 2014 – present: C. Pereira, “Chiral selectivity in transdermal drug delivery”, PhD. Co-Funded by MedPharm and RETF.
7. March 2013 – March 2017: K. Kademoglou, “A-TEAM”, Marie Curie funded ITN. “Bioaccessibility of flame retardants”. PhD awarded.
8. Feb 2013 – June 2016: E. Mansfield “Probing diffusion characteristics of nanomaterials in biological viscous media using nanoparticles tracking analysis”, part funded by Nanosight Ltd. PhD, awarded.
9. April 2013 – Dec. 2016: K. Obeid “hyperbaric oxygen; mechanisms of wound healing”, PhD awarded.
10. Oct 2012 – Dec. 2015: J. Lenn “Counterintuitive topical delivery of aptamer macromolecules”. Fully funded by Stiefel Laboratories, USA. PhD, awarded.
11. Oct 2012 - March 2016 A. Alsalem “Description of Antibiotic Stewardship Electronic Referral System (AnSWeR) in a UK teaching hospital and its impact upon e-prescribing” PhD awarded.
12. Oct 2011 - July 2015: N. Arezki. “Un-natural amino acids as novel skin moisturisers”. MRC Case award with MedPharm. PhD awarded. 9 month suspension for maternity leave
13. Nov 2011-Oct 2015: E. Kabova “Computational structure elucidation”, PhD, awarded.
14. Oct 2010 - Dec 2014: S. Bizley “Layer-by-layer coatings for controlled drug delivery”, PhD awarded. 3 month suspension to take teaching fellowship.
15. Oct 2010 - August 2014: E. Mun “Hydrophobically modified chitosan for drug delivery”, PhD awarded.
16. Oct 2010- Sept. 2014: M. Spillman “Global optimisation of diffraction data for structure elucidation”, PhD awarded
17. Oct 2010 - June 2015: C. Wilson “Bio-responsive topical drug delivery systems”, EPSRC DTC funded. PhD awarded. (suspended studies for 9 months so completed within 4 years)
18. March 2008 - Oct 2011: I. Arif “Modulating the anti-proliferative activity and cardiotoxicity of doxorubicin with melatonin and PPAR γ -ligands”, PhD awarded.
19. Jan. 2008 - Nov. 2011: W. Ali “Improving dissolution of poorly-water soluble drugs: from dosage form design to manufacture”, PhD awarded.
20. June 2007 – June 2013: M. Majumder “Polymorphic pharmaceutical co-crystals”, (part-time external). PhD awarded.
21. Oct. 2006 – Sept. 2010: L. Aravindan “Engineering polyethylenimine-based gene delivery vectors with improved transfection efficiency”, PhD awarded.
22. Oct. 2006-July 2011: A. Niemczyk “Synthesis of novel crosslinked polyvinylpyrrolidone carriers to enhance the dissolution of poorly-water soluble drugs”, PhD, co-funded by Bristol-Myers Squibb / RETF (suspended for family reasons for 9 months). PhD awarded.

23. Oct. 2006-January 2011: K. Rizi "Novel bio-responsive drug delivery systems to treat atopic dermatitis", Fully funded by Stiefel Laboratories. PhD awarded. Suspension for maternity, completed within 4 years registration.
24. Oct 2005 - June 2014: J. Morris, "Enteric coating of barium sulphate to image the large bowel". PhD awarded. Suspensions for ill health, completed within 6 years registration.
25. Oct 2005-Dec 2008: I.A. Sogias "Mucoadhesion of chitosan and derivatives: from mechanisms to dosage form design", Ph.D. awarded.
26. Oct. 2004-Sept. 2009: S.J. Ahmed "Crystal engineering of pharmaceutical salts and co-crystals", PhD. Awarded.
27. Oct. 2002-Oct 2006: L. DeMatos "Solute clustering in pharmaceutical crystallisation", School of Life Sciences CASE with Merck, Sharp and Dohme, Ph.D. awarded
28. Oct. 2002-Aug 2006: C. Rawlinson "Drug polymer systems for improving dissolution of poorly water soluble drugs" Fully funded by Bristol-Myers Squibb, Ph.D. awarded
29. Oct. 2001-Sept 2005: M. El-Baseir "Liposomes for transdermal drug delivery", Ph.D. awarded
30. Oct. 2001-June 2006: I. Tekko "Transdermal drug delivery of natural products", Ph.D. awarded (> 4 years, medical reasons – car accident, hospital)
31. Oct. 1999-August 2003: A. Ahmed: (BBSRC CASE Award with SmithKline Beecham). "Drug release and permeation from in-situ formed films for use in dermatology", Ph.D. awarded.
32. Oct. 1999 - Dec. 2002: C. Patel: (BBSRC CASE Award with SmithKline Beecham) "Polymeric and sugar carriers to enhance the dissolution of poorly-water soluble drugs", Ph.D. awarded
33. Oct. 1998 - Aug. 2002: M. Lu: (BBSRC CASE award with Bristol-Myers Squibb), "Improving poorly water-soluble drug delivery through stabilised amorphous systems", Ph.D. awarded
34. 1998-2001: S.N.C. Roberts: (EPSRC CASE award with Merck, Sharp and Dohme), "Solid and solution phase investigations of mannitol polymorphs", Ph.D. awarded.
35. 1997-2000: E. A. Quinn: "The stability of proteins in hydrofluoroalkane propellants", Ph.D. awarded.
36. 1996-2000: K.M.B. Mackay: "Effect of melting point on the permeation of oestradiol and terpenes through human skin", Ph.D. awarded.
37. 1996-1999: G. M. M El-Maghraby: "New drug delivery systems through liposomes", Ph.D. awarded
38. 1996: F. Guagliano (ERASMUS exchange Ph.D. student from Professor C. Caramella, University of Pavia, Italy): "Spectroscopic studies of mucoadhesion".

39. 1995-2000: E.J. Vining: "Promotion of oestradiol permeation through human skin", Ph.D. awarded.
40. 1995-1999: M. Nusrat: "Permeation of psoralens through human skin", M. Phil. awarded.
41. 1995-1999: D.J. Greenhalgh: "Approaches to overcoming physicochemical barriers to oral drug absorption", Ph.D. awarded.
42. 1994-1998: M.W. Edge: "Infrared and Raman methods for measurement of transdermal permeation through human skin". Ph.D. awarded.
43. 1994-1995: C.L. Armstrong: "Several pharmaceutical applications of Fourier-transform Raman spectroscopy". M.Phil. awarded.
44. 1993-1996: P.W. Stott: "Enhanced transdermal permeation of model drugs from coacervate and eutectic formulations". Ph.D. awarded.
45. 1992-1995: H.R. Moghimi: "Modelling the intercellular lamellar lipid structure of human stratum corneum for drug permeation studies". Ph.D. awarded.
46. 1992-1995: A.M.A. Abdolqader: "Colloidal properties and transdermal permeation enhancement by ϵ -aminocaproic acid esters". M.Phil. awarded.
47. 1992-1994: S.R.S.S. Shatri: "Permeation enhancement and inhibition by cyclodextrins in human skin". M.Phil. awarded.
48. 1991-1995: N.A. Megrab: "Oestradiol permeation through human skin, silastic and snake membranes; effects of supersaturation and binary co-solvent systems". Ph.D. awarded.
49. 1991-1995: M.A. Yamane: "Terpene penetration enhancers in human and snake skin; permeation, differential scanning calorimetry and electrical conductivity studies". Ph.D. awarded.
50. 1991-1994: A.N.C. Anigbogu (Commonwealth Scholar): "Raman and infrared spectroscopy of human skin and its interactions with penetration enhancers; studies of 8-methoxypsoralen permeation". Ph.D. awarded.

Postdoctoral Research Fellow supervision

1. April 2015 – April 2017: S. Bizley: topical formulations for equine therapeutics (collaboration with Royal Veterinary College)
2. Jan. 2014-July 2015: G. Walton: Gut microbiota effects on drug delivery.
3. Jan. 2013- Dec 2013: A. Smith: Novel peptides for wound healing (PI: I.W. Hamley)
4. March 2012-Dec 2013: K.W. Ng. Microneedles for in situ diagnostic use.
5. Oct. 2008 – July 2009. A. Turkson: Novel preservative conjugates for cosmetics. CommercialiseSE PoC fund.
6. Oct. 2001-Oct 2002. E.A. Carter: Spectroscopic imaging of in vivo permeation.

7. Jan. 1997-Jan 1999. E.E. Lawson: Raman spectroscopic investigations of human skin.

Grant Awards

In preparation:

1. 2017: Sukhorukov, G., Khutoryanskiy, V.V., Williams A.C. et al. "Digital signals to Control Vehicle targeting and therapeutic Release (DISCOVER)". Outline application for an EPSRC IRC in Targeted Therapeutic Delivery. Co-Investigator.

Awarded:

1. 2017: Williams A.C. MedPharm half-funded studentship (£60,000).
2. 2014: Williams A.C. and Cobb, A.J.A. MedPharm fully funded PhD project. (£60,000).
3. 2014: Smith, R.K., Dudhia, J and Williams A.C. Horserace Betting Levy Board (HBLB) grant "Rationally designing bespoke topical delivery systems for equine therapeutics" (£185,855)
4. 2014: Williams A.C., MedPharm half-funded studentship (£36,000).
5. 2012: Hamley, I.W. (P.I), Williams, A.C. and Connon, C.J. BBSRC Research Grant "Smart Materials for Wound Healing: A New Fast Acting in situ Method to Treat Skin and Eye Wounds" BB/J019836/1 (£121,976).
6. 2011: Williams A.C., MRC Doctoral Training Grant award, (£110,338; of which £92,838 from MRC and £17,500 from MedPharm as industrial CASE partner). DTG grant ref: G1100186.
7. 2010: Williams A.C., EPSRC Doctoral Training Grant award for 3.5 studentships, "Targeted Drug Delivery" (£207,830).
8. 2009: Greco, F. and Williams A.C., University follow on commercial fund support (£10,235)
9. 2008: Greco F. and Williams A.C. CommercialISE PoC fund award (£21,807)
10. 2008: Greco F. and Williams A.C. CommercialISE PoC fund award (£7,900 market research award)
11. 2008: Williams A.C. and Brooks G. CommercialISE PoCKeT Fund award (£64,267; including £14,267 from UoR ring-fenced pot)
12. 2007: Williams A.C. BBSRC Doctoral Training Grant, Reading School of Pharmacy. (£305,379); BB/F017189/1
13. 2007: Williams A.C. and Greco F. University of Reading Feasibility Fund Award, (£14,010)
14. 2007: Williams A.C. and Brooks G. University of Reading Feasibility Fund Award, (£13,000)
15. 2005: Williams A.C., Stiefel fully-funded studentship (£79,500)

- 16.2005: Williams A.C. and Hayes, W. Bristol-Myers Squibb / RETF studentship (£30,000 BMS + £24,000 University)
- 17.2002: Williams, A.C., Bristol-Myers Squibb fully funded studentship (£60,000).
- 18.2002: Williams, A.C. and Blagden N., Merck, Sharp & Dohme to support a research studentship (£18,000).
- 19.2002: Williams A.C., Research support, Simmons and Simmons (£20,000).
- 20.2001: Williams, A.C., EPSRC CASE studentship with Merck Sharp & Dohme (£45,000).
- 21.1999: Williams, A.C., BBSRC CASE studentship with SmithKline Beecham, (£45,000).
- 22.1999: Barry, B.W. and Williams, A.C., BBSRC CASE studentship with SmithKline Beecham, (£45,000).
- 23.1998: Williams, A. C., BBSRC CASE studentship with Bristol-Myers Squibb, (£45,000).
- 24.1998: Williams, A.C., EPSRC CASE studentship with Merck, Sharp & Dohme, (£45,000).
- 25.1997: Forbes, R.T. and Williams, A.C., 3M fully funded research studentship, (£55,000).
- 26.1997: Williams, A.C. and Barry, B.W., Astra Arcus research grant for work on drug permeation through skin, (£7,000).
- 27.1995: Williams, A.C. and York, P., BBSRC CASE studentship with Bristol-Myers Squibb, (£45,000).
- 28.1995: Barry, B.W. and Williams, A.C., SmithKline Beecham grant to support research in transdermal drug delivery, (£18,000).
- 29.1995: Williams, A.C. and Barry, B.W., Astra Pain Control for transdermal drug delivery research, (£2000).
- 30.1995: Barry, B.W. and Williams, A.C., SmithKline Beecham research grant for work on the permeation of anti-viral drugs through the skin, (£3,000).
- 31.1995: Williams, A.C., Pfizer Academic Travel Award, (£400).
- 32.1994: Edwards, H.G.M. and Williams, A.C., APS Ltd. for FT-Raman investigations of pharmaceuticals, (£658).
- 33.1994: Williams, A.C., Barry B.W. and York, P., University of Bradford research grant by special bid, (£1800).
- 34.1994: Williams, A.C., Royal Society travel grant, (£560).
- 35.1994: Williams, A.C., Pfizer Academic Travel Award, (£350).
- 36.1994: Barry, B.W. and Williams, A.C., University of Bradford Project-Linked Research Studentship.

37. 1993: Barry, B.W. and Williams, A.C., Crawford Pharmaceuticals research grant for work on penetration of drugs through human skin, (£2,500).
38. 1993: Williams, A.C., York, P. and Barry, B.W., University of Bradford Earmarked Equipment Fund, (£12,000)
39. 1993: Williams, A.C. and Edwards, H.G.M., Glaxo Manufacturing Services for FT-Raman investigations of pharmaceuticals, (£350).
40. 1992: Williams, A.C., Rhône-Poulenc Rorer research grant for work on penetration of drugs through human skin, (£2,000).
41. 1992: Williams, A.C., Hazleton U.K. donation of research materials, (value £500).
42. 1992: Barry, B.W. and Williams, A.C., SmithKline Beecham research grant for work on penetration of drugs through human skin, (£3,000).
43. 1992: Barry, B.W. and Williams, A.C., Allergan (USA) research grant for work on penetration of drugs through human skin, (\$2,580).
44. 1992: Williams, A.C., Chrystyn, H. and Barry, B.W., University of Bradford Earmarked Equipment Fund, (£9,830).
45. 1992: Williams, A.C., Crowther, N.J., Barry, B.W. and York, P., University of Bradford research grant by special bid, (£2,000).
46. 1991: Williams, A.C., Pfizer Academic Travel Award, (£200).
47. 1991: Barry, B.W. and Williams, A.C., Bradford University Earmarked Equipment Fund, (£11,000).
48. 1991: Williams, A.C., Edwards, H.G.M., Barry, B.W., Johnson, A.F. and York, P., Special allocation from University of Bradford Earmarked Equipment Fund, (£169,000).
51. 1991: Williams, A.C. and Barry, B.W., University of Bradford research grant by special bid, (£1,000).

Evidence of research esteem.

Invited International Conference presentations

1. Williams, A.C., "How much does size matter?", 15th International Conference on Perspective in Percutaneous Penetration, La Grande Motte, France, March 2016.
2. Williams, A.C., "Microneedles and iontophoresis: Have we reached the limit of skin penetration enhancement?", 14th International Conference on Perspective in Percutaneous Penetration, La Grande Motte, France, March 2014.
3. Williams A.C., "Novel small molecule hydrotropes", Stiefel Laboratories, North Carolina, USA, November 2012.
4. Williams, A.C., "Formulation issues of dermal products", CiToxLAB Dermal Minisymposium, Paris, France, October 2012.

5. Williams, A.C., "Nano-drug delivery systems: small is beautiful?", University of Leiden, Holland, 2009.
6. Williams, A.C., "Raman spectroscopy; from preformulation to product", 10th International Workshop on Physical Characterisation of Pharmaceutical Solids, Bamberg, Germany, May 2008
7. Williams, A.C., "Permeation from natural products; fact or fiction?", 11th International Conference on Perspective in Percutaneous Penetration, La Grande Motte, France, March 2008.
8. Williams, A.C., "Do corneocytes leak?" Session chair / debate leader, Gordon Research Conference on the Barrier Function of Mammalian Skin, Newport, Rhode Island, Aug 2007.
9. Williams, A.C., "Controlled release transdermal therapeutic systems – current trends and future directions", Human and veterinary controlled release systems; current trends and future prospects, Controlled Release Society, Istanbul, Turkey, May 2005.
10. Williams, A.C., "Skin and permeant interactions; Raman investigations", Symposium on Skin and Formulation, Association de Pharmacie Galenique Industrielle, Paris, 2003.
11. Williams, A.C., "Mechanism of action of deformable liposomes", Gordon Research Conference on the Barrier Function of Mammalian Skin, Bristol, Rhode Island, 2003.
12. Williams, A.C., "Deformable liposomes?" 8th International Conference on Prediction of Percutaneous Penetration, Antibes Juan-Les-Pins, France, 2002.
13. Williams, A.C. "Solid dispersions. Revisiting an old friend", Novartis, Basel, Switzerland, July 2000.
14. Williams, A.C., Carter, E.A., Edwards, H.G.M. and Barry, B.W., "Drug penetration into and permeation through human skin assessed by Raman spectroscopy", Biomedical Applications of Raman Spectroscopy, Bios '99, The International Society for Optical Engineering San José, Ca, USA, 1999.
15. Williams, A.C., Lawson, E.E., Barry, B.W. and Edwards, H.G.M., "Probing the barrier; Raman spectroscopy", 5th International Conference on Prediction of Percutaneous Penetration, Montpellier, France, 1997.
16. Williams, A.C., Lawson, E.E., Edwards, H.G.M. and Barry, B.W., "In vitro-in vivo correlation of FT-Raman spectra of human stratum corneum", 12th Annual Meeting of the American Association of Pharmaceutical Scientists, Boston, USA, 1997.
17. Edwards, H.G.M., Williams, A.C. and Barry, B.W., "FT-Raman spectroscopic studies of human stratum corneum", International meeting on Raman spectroscopy in Cancer Research, Danish Chemical Society/Danish Molecular Spectroscopy Group, National University Hospital, University of Copenhagen, Denmark, 1996.

18. Edwards, H.G.M. and Williams, A.C., "FT-Raman spectroscopy; biological and biomedical applications", Dpto. de Quimica-Fisica, University of Sao Paulo, Brazil, 1995.
19. Edwards, H.G.M. and Williams, A.C., "Applications of FT-Raman spectroscopy to industrial problems", Industria e Universidade Trabalhando Juntas Para o Pais, FIESP Meeting, University of Sao Paulo, Brazil, 1995.
20. Edwards, H.G.M. and Williams, A.C., "FT-Raman spectroscopic studies of skin", Plenary Lecture at 2nd International Symposium of FT-IR Spectroscopy, Turku, Finland, 1995.
21. Williams, A.C., "The modes of action of skin penetration enhancers", Astra Arcus, Sweden, 1994.
22. Williams, A.C., "Raman spectroscopy of stratum corneum", Gordon Research Conference on the Barrier Function of Mammalian Skin, New Hampshire, USA, 1993.

Invited National Conference presentations

1. Williams A.C., "You can't put that in there: Passive bio-Macromolecule Delivery to the Skin". Skin@Bath Network Symposium, Invited lecture, December 2017.
2. Williams A.C., "Transdermal and Topical Formulations: Science meets Art". Invited lecture to MedPharm, Guildford, December 2015.
3. Williams, A.C. "Rationally designed skin moisturisers". Advances of Personal Care Formulation, Formulation and Science Technology Group of the Royal Society of Chemistry, Chester Zoo, September 2015.
4. Williams AC., "To market to market to make a few quid? Skin delivery at the interface of industry and academia". PharmSci Annual Meeting of the Academy of Pharmaceutical Sciences of Great Britain, University of Hertfordshire, September 2014.
5. Williams, A.C., "Obtaining Funding from Industry", Academy of Pharmaceutical Sciences of Great Britain Conference on "How to get funded", University of Reading, May 2010
6. Williams, A.C., "Future Directions in Pharmacy Education", RPSGB symposium, University of Reading. Round Table Discussion Leader, March 2010.
7. Williams, A.C., "Nano-drug delivery systems; they don't make diamonds as big as bricks", I.Chem.E. Nanotechnology Meeting, University of Oxford, May 2009.
8. Williams, A.C., "Patchy responses to transdermal delivery", British Pharmaceutical Conference, Manchester, September 2008.
9. Williams A.C., "A Thick Skin is a Gift from God", Thames Valley Life Sciences Network Event, May 2007.
10. Williams, A.C., "Spectroscopic techniques", European Continuing Education Course on Particle size, characterisation and surface area measurement of pharmaceutical materials, London, Feb 2007

11. Williams, A.C., "Properties and Processing of Pharmaceutical Powders", European Continuing Education Course, London, Jan 2007
12. Williams, A.C., "*Arnica montana* Creams; remedy or ruse?" The Association for Science Education Annual Conference, University of Reading, Jan 2006.
13. Williams, A.C., "Vibrational Spectroscopy; the good, the bad and the ugly", AstraZeneca Materials Science Symposium, Macclesfield, 2005.
14. Williams, A.C., "Ensuring correct interpretation of thermal analysis data", Polymorph and Crystallisation Conference, IIR Life Sciences, London, Dec. 2005.
15. Williams, A.C., "Interpreting thermal analysis data", Polymorph and Crystallisation Conference, IIR Life Sciences, London, 2004.
16. Williams, A.C., "Raman spectroscopy; theory and practice", Unilever Research Meeting, Port Sunlight, 2003.
17. Williams, A.C., "Vibrational spectroscopy; some like it hot", Plenary lecture, Thermal analysis and Skin, Thermal Methods Group, Royal Society of Chemistry Meeting, London, 2003.
18. Williams, A.C., "Vibrational spectroscopy of biological tissues". Unilever Research Meeting, Port Sunlight, 2002.
19. Williams, A.C., "Use of Raman spectroscopy to monitor form change in tablets", British Crystallographic association (BCA) spring meeting, Nottingham, 2002.
20. Williams, A.C., "Spectroscopic powder assessment", European Continuing Education Course on Properties and Processing of Pharmaceutical Powders, London, 2001
21. Williams, A.C., "Infrared and Raman Spectroscopies", European Continuing Education Course on Particle size, Characterisation and Surface Area Measurement of Pharmaceutical Materials, London, 2001.
22. Williams, A.C., "Liposomal drug delivery to and through the skin", Strakan Pharmaceuticals Ltd., Galashiels, 2001.
23. Williams, A.C., "Raman spectroscopy for BMS: Brilliant Molecular Spectroscopy", Bristol-Myers Squibb, Moreton, Merseyside, 2000.
24. Williams, A.C., "Raman spectroscopy in Pharmaceutical Sciences", New Technologies Forum on Raman Spectroscopy, Royal Pharmaceutical Society of Great Britain, London, 1999.
25. Williams, A.C., "Infrared and Raman spectroscopies", Particle Size, Characterisation and Surface Area Measurement of Pharmaceutical Materials Course, London, 1999.
26. Williams, A.C., "Some pharmaceutical applications of Raman spectroscopy", Joint Pharmaceutical Analysis Group, London, 1999.
27. Williams, A.C., "Some novel strategies for improving transdermal drug delivery", De Montfort University, Leicester, 1999.

28. Williams, A.C., "Raman spectroscopy: a phenomenon for pharmaceuticals?", Distinguished Scholar Award, Queen's University of Belfast, Belfast, 1999.
29. Williams, A.C., "Some pharmaceutical applications of Raman Spectroscopy", Sanofi Research, Alnwick, 1998
30. Williams, A.C., "Raman spectroscopy: applications in pharmaceutical analysis", Pharmaceutical Analytical Sciences Group, Autumn Meeting, Fitzwilliam College, Cambridge, 1998.
31. Williams, A.C., "Maximising the bioavailability of topical drugs", Introductory Course on the Biology of the Skin, Fitzwilliam College, Cambridge, 1998.
32. Williams, A.C., "A thick skin is a gift from God", Young Persons UKAPS Meeting, Nottingham, 1997.
33. Williams, A.C., "Determination of polymorphs in situ", Joint Pharmaceutical Analysis Group, Royal Society of Chemistry and RPSGB, London, 1997.
34. Williams, A.C., "Raman spectroscopy - now and the future", 134th British Pharmaceutical Conference, Scarborough, 1997.
35. Williams, A.C., "Transdermal drug delivery", Theory and Practice of Sustained and Controlled Release Drug Delivery Systems Course, London, 1997.
36. Williams, A.C., "Novel approaches for transdermal drug delivery and pharmaceutical applications of Raman spectroscopy", Pfizer Central Research, Sandwich, Kent, 1997.
37. Williams, A.C., "Maximising the bioavailability of topical drugs" Introductory Course on the Biology of the skin, Fitzwilliam College, Cambridge, 1997.
38. Williams, A.C., "Raman spectroscopic studies of thermal and enhancer perturbation of human stratum corneum lipids", Skin Alliance Meeting, London 1997.
39. Williams, A.C., "Novel formulations for transdermal drug delivery", Kings College, London, 1997.
40. Williams, A.C., "Some techniques for preformulation characterisation", Bristol-Myers Squibb, Merseyside, 1996.
41. Williams, A.C., "Strategies for improving transdermal drug delivery", Unilever Research, Port Sunlight, 1996.
42. Williams, A.C., "The molecular nature of the stratum corneum barrier", Skin Research Centre, University of Leeds, 1996.
43. Williams, A.C., "Maximising the bioavailability of topical drugs", Introductory Course on the Biology of the Skin, Fitzwilliam College, Cambridge, 1996.
44. Williams, A.C., "Supersaturated solutions for transdermal drug delivery", The School of Pharmacy, University of London, London, 1995.
45. Edwards, H.G.M., Williams, A.C. and Barry, B.W., "The Iceman; FT-Raman spectroscopy of 5200-year-old skin", Bruker Spectrospin FT-IR/FT-Raman Users Meeting, Coventry, U.K., 1995.

46. Williams, A.C., "Maximising the bioavailability of topical drugs", Introductory Course on the Biology of the Skin, Fitzwilliam College, Cambridge, 1995.
47. Edwards, H.G.M., Williams, A.C. and Barry, B.W., "The Iceman Cometh: An FT-Raman spectroscopic study of human skin", 147th Infrared and Raman Discussion group meeting, King's College, University of London, 1995.
48. Williams, A.C., "Penetration enhancement - possibilities and problems", Young Person's Sub-Committee of the UK Association of Pharmaceutical Scientists Meeting, An Introduction to Transdermal Drug Delivery, University of Nottingham, 1994.
49. Edwards, H.G.M. and Williams, A.C., "Raman Spectroscopy of Biological Systems", Biomedical Materials IRC, Queen Mary College, University of London, 1993.
50. Williams, A.C. and Edwards, H.G.M., "Pharmaceutical applications of FT-Raman spectroscopy", The Industrial Meeting of the Infrared and Raman Discussion Group, The Royal Society of Chemistry, London, 1993.
51. Williams, A.C., "Maximising bioavailability of topical drugs", Introductory Course on the Biology of the Skin, Fitzwilliam College, Cambridge, 1993.
52. Edwards, H.G.M. and Williams, A.C., "Applications of FT-Raman spectroscopy to biological materials", Bruker Spectrospin FT-Raman Seminar, Coventry, UK, 1992.
53. Williams, A.C. and Barry, B.W., "Differential scanning calorimetry and skin penetration enhancers", Thermal Methods Group, The Royal Society of Chemistry, London, UK, 1990.

Evidence of research leadership within the School/Department

2006-2008: Member SCFP Research Committee

2005-2007: Pharmacy RAE (Unit 13) lead.

2004-2008: Director of Research, School of Pharmacy; Chair of School of Pharmacy Research committee

Contribution to research activities within the wider University

2015-present: Member, University Board for Research and Innovation

2015-present: Member, University Committee on Research Infrastructure

2015-present: Member, University Research Committee.

2015-present: Chair, Health Research Theme for Community of Practice; Academic Forum.

2015-present: Member, Thames Valley Clinical Trials Unit Steering Committee

2011-2015: Member, University Research Platforms Steering Group

2011-2015: Member, Chemical Analysis Facility Management Committee

2008-present: Member of Strategy Group for Centre for Integrative Neuroscience and Neurodynamics

2007 – 2008: Member of Working Group on Postgraduate Research Student Recruitment Strategy

2007: Member of Feasibility group for the Chemical Analysis Facility.

2006 – 2010: Member of Chemical Analysis Facility planning group; responsibility for molecular spectroscopy.

2005 – 2015: Member CfAM Steering Group / Management Group

2004 - 2006: Member of Life Sciences Faculty Research Committee

Contribution to research activities at national/international level

Refereeing

Grant Awarding Bodies.

1. Commonwealth Scholarship Commission
2. MRC
3. Moorfields Eye Charity
4. EPSRC
5. BBSRC
6. Wellcome Trust
7. Royal Society of Chemistry
8. Leverhulme Trust (Senior Research Fellowship).
9. The United States – Israel Bi-national Agricultural Research and Development Fund (BARD)
10. VolkswagenStiftung (Volkswagen Foundation, Germany)
11. Royal Pharmaceutical Society of Great Britain, Academic Excellence Awards.

International Scientific Journals.

1. Nature Biotechnology
2. Nature Materials (Dr. M. Bellantone, Senior Editor)
3. Pharmaceutical Research (Professor V.H.L. Lee, Editor-in-Chief).

4. Journal of Pharmaceutical and Biomedical Analysis (Professor A.F. Fell, Editor-in-Chief).
5. Journal of Pharmacy and Pharmacology (Professors D.Q.M. Craig and D. Jones, Editors).
6. Journal of Pharmaceutical Sciences (Professor W.I. Higuchi, Editor).
7. Journal of Raman Spectroscopy (Professor D.A. Long, Editor).
8. Vibrational Spectroscopy; Analytical Chimica Acta (Professor J.H. van der Maas, Editor)
9. Veterinary Research Communications (Professor M.M.H. Sewell, Editor-in-Chief).
10. International Journal of Biological Macromolecules (Professor E.D.T. Atkins, Editor-in-Chief)
11. Chemistry and Physics of Lipids (Professor F. Paltauf, Managing Editor).
12. Journal of Controlled Release (Dr. D.R. Friend, USA Editor).
13. Pharmacy and Pharmacology Communications (Professors D.Q.M. Craig and D. Jones, Editors).
14. Journal of Physical Chemistry (Professor M. Gruebele, Senior Editor).
15. European Journal of Pharmaceutical Sciences (Professor Per Artursson, Editor-in-Chief).
16. PharmSci (AAPS internet Journal)
17. Thermochemica Acta (Professor D.Q.M. Craig, Editor).
18. Biochimica et Biophysica Acta (Prof. Minoru Fukuda, Executive Editor, General Subjects)
19. Journal of Drug Targeting (Prof. S. Akhtar, Editor)
20. The Journal of Investigative Dermatology (Prof. J. Bouwstra, Editor)
21. Acta Pharmaceutica (Prof. S. Lutteroti, Editor-in-Chief)

Involvement in Conference Organisation.

1. 2017-2018: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Session Chair and invited speaker
2. 2015-2016: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Session Chair and invited speaker
3. 2013-2014: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Session Chair and invited speaker.
4. 2013: Session Chair “Formulation and skin permeation”, 13th Annual Meeting of Skin Forum, UCL, London.

5. 2011-2012: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Plenary Session Chair.
6. 2009-2010: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Session Chair.
7. 2007-2008: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Invited speaker.
8. 2005-2006: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Session Chair.
9. 2003-2004: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Session Chair.
10. 2002: AAPS Symposium Co-ordinator; “New Technologies for Transdermal Drug Delivery”, Toronto.
11. 2001-2002: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Session Chair.
12. 2001: Chairman of “Materials Science” session at 138th British Pharmaceutical Conference, Glasgow.
13. 2000: Chairman of “Materials Science” session at 137th British Pharmaceutical Conference, Birmingham.
14. 1999-2000: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. “Hot Topics” Session Chair.
15. 1997-1998: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference. Poster Discussion Leader.
16. 1997-1998: Member of the Organising Committee for the 17th Annual Meeting of Pharmaceutical Scientists. Meeting Chair.
17. 1996-1997: Member of the Scientific Advisory Board for the “Perspectives on Percutaneous Penetration” Conference.
18. 1996-1997: Member of the Organising Committee for the 16th Annual Meeting of Pharmaceutical Scientists. Meeting Secretary.

External Higher Degree Examining.

1. 2017: P.J. Bentley, PhD thesis “Investigation of the functionality of white soft paraffin with regards to ointments”, School of food and nutritional Sciences, University of Leeds.
2. 2017: S. Vanstone, PhD thesis “Optical drilling of the human nail plate to facilitate transungual drug delivery”, Department of Pharmacy and Pharmacology, University of Bath.
3. 2016: C.F. Goh, PhD thesis “Mechanistic studies on drug deposition in the skin”, The School of Pharmacy, UCL.

4. 2015: L. Hawarden, PhD thesis "Polymer drug dispersions: Understanding structure and dynamics", The School of Pharmacy, University of East Anglia
5. 2015: F. Caserta, PhD thesis "The effect of heat and penetration enhancers on drug transport into and across human skin" The School of Pharmacy, University of Hertfordshire.
6. 2014: B Hossin, PhD thesis "The rational design of an anti-fungal nail lacquer using Hansen solubility parameters" The School of Pharmacy, UCL.
7. 2014: K Frederiksen, PhD thesis "In situ polymeric film-forming systems for sustained topical drug delivery", Department of Pharmacy and Pharmacology, University of Bath.
8. 2013: E. Albarahmieh, PhD thesis "Design and evaluation of hot melt extruded transdermal patches", The School of Pharmacy, University of East Anglia.
9. 2012: C.J. Martin, PhD thesis "Development, characterisation and evaluation of sugar glass microneedles", The School of Pharmacy, University of Wales, Cardiff.
- 10.2010: M. Zhao, PhD thesis "The development of spray dried solid dispersion systems for the formulation of low Tg and low solubility drugs", The School of Pharmacy, University of East Anglia.
- 11.2009: R.H. Khengar, PhD thesis "Optimisation of topical drug delivery to the human nail", Department of Pharmacy, King's College, University of London.
- 12.2009: A. Djabri, Ph.D. thesis "Iontophoresis in paediatric medicine: Non-invasive drug delivery and monitoring applications", The School of Pharmacy, University of Bath.
- 13.2009: N. Mohamed, Ph.D thesis "Pharmaceutical analysis and in vitro aerodynamic characterisation of inhaled theophylline formulations containing drug particles prepared by supercritical fluid processing", The School of Pharmacy, University of Bradford.
- 14.2009: J. Caussin, Ph.D thesis "Stratum corneum hydration; mode of action of moisturizers on a molecular level", Referent. University of Leiden, Holland.
- 15.2009: R. Panchagnula, D.Sc. application "Studies on the molecular basis of drug delivery and evaluation of drug products", The School of Pharmacy, University of Strathclyde.
- 16.2008: W.M. Lau, PhD thesis ""Improved topical therapeutic systems based on co-drugs", The School of Pharmacy, University of Wales, Cardiff.
- 17.2008: J. Frum, PhD thesis "Percutaneous drug delivery and the role of follicles and defects", The School of Pharmacy, University of Strathclyde.
- 18.2008: D.I.J. Morrow, PhD thesis "Novel drug delivery approaches to photodynamic therapy", The School of Pharmacy, Queen's University, Belfast.
- 19.2008: P.A.F.G.D. Santos, PhD thesis "Transdermal drug delivery using spray formulations", The School of Pharmacy, University of London.

- 20.2007: Z. Ding, PhD thesis "A calorimetric study of drug/polymer interactions", The School of Pharmacy, University of London.
- 21.2007: Y. Chen, Ph.D. thesis "The use of thermo-setting gels as trans-scleral drug delivery systems", The School of Pharmacy, The University of East Anglia.
- 22.2006: F.C. Clarke, Ph.D. thesis "Near infrared microscopy and image analysis for pharmaceutical process control", The School of Pharmacy, University of London.
- 23.2006: S.A. Coulman, Ph.D. thesis "Gene delivery to human skin using microneedle arrays", The School of Pharmacy, University of Wales, Cardiff.
- 24.2006: R Manduva, Ph.D. thesis "The development of novel thermoanalytical approaches for the characterisation of pharmaceutical polymorphs", The School of Pharmacy, The University of East Anglia.
- 25.2005: K. Devine, M.Phil. thesis "Hair lipids – their structure and function in the mechanical and physical properties of human hair", The University of Liverpool.
- 26.2005: K Abdulmajed, Ph.D. thesis "Synthesis and topical delivery of retinyl ascorbate co-drug", The School of Pharmacy, University of Wales, Cardiff.
- 27.2003: H.P. Stedul, M.Phil. thesis "Physicochemical characterisation of a pharmaceutical peptide", The School of Pharmacy, Queen's University Belfast.
- 28.2003: G. McNaughton, Ph.D. thesis "Rational design, synthesis and evaluation of topical antiviral prodrugs", The School of Pharmacy, University of Wales, Cardiff.
- 29.2003: A. Abdo, Ph.D. thesis "Solubility parameters of some acidic drugs in aqueous cyclodextrin solutions", Lancaster University.
- 30.2002: M.P.L. Reason, Ph.D. thesis "An investigation of drug partitioning into lipid membranes using a thickness shear mode biosensor", The School of Pharmacy, DeMontfort University, Leicester.
- 31.2000: W.L. Yoon, Ph.D. thesis "Transferability of near infra-red spectra for the identification of pharmaceuticals", The School of Pharmacy, University of London.
- 32.2000: C.B.F. Rosado, Ph.D. thesis "Formulation strategies in transdermal delivery", The School of Pharmacy, University of Wales, Cardiff.
- 33.1997: C.J. Little, Ph.D. thesis "Development of stratum corneum model membranes", The School of Pharmacy, University of Wales, Cardiff.
- 34.1994: A.M. Tudor, Ph.D. thesis "The application of Fourier-transform Raman spectroscopy to the analysis of pharmaceuticals and biomaterials", The School of Pharmacy, University of Nottingham.

External Research Appointments

1. 2017-2022: Invited member, Commonwealth Scholarship Commission Panel of Advisers
2. 2015-present: Member, Oxford Academic Health Sciences Network R&D Oversight Group

3. 2012: Chair: BBSRC Pathfinder Review Panel meeting, (16-17 August 2012). "Evaluation of microneedle technology and strategies to overcome potential barrier to exploitation". Queens' University, Belfast
4. 2002-2016: Member of EPSRC Peer Review College.

Editorial Boards

1. 2010-present; Member, Editorial Board, Journal of Drug Delivery (Open Access).
2. 2004-present: Member of Editorial Board, Journal of Pharmaceutical Sciences
3. 2004-present: Member of Editorial Board, Current Drug Delivery.
4. 2002-present: Member of Editorial Board, Journal of Pharmacy and Pharmacology.

External appointments assessor

1. 2017: Promotion case assessor, Al-Zaytoonah University of Jordan.
2. 2016: External member, Chair selection panel, Queens' University Belfast
3. 2015: University of Nottingham Malaysia promotions case evaluator (Chair)
4. 2014: DeMontfort University promotions case evaluator (Reader)
5. 2014: University of Wales promotions case evaluator (Chair)
6. 2014: University of Wales promotions case evaluator (Reader)
7. 2013: Queens' University Belfast promotions case evaluator (Chair).
8. 2013: UCL promotions case evaluator (Chair).
9. 2012: UCL promotions case evaluator (Reader).
10. 2012: Queens' University Belfast promotions case evaluator (Chair).
11. 2011: UCL promotions case evaluator (Reader).
12. 2011: University of the Arts, London promotions case assessor (Chair).
13. 2010: University of Wales promotions case evaluator (Reader)
14. 2010: External member, Chair selection panel, University of East Anglia
15. 2010: Promotion case evaluator (Chair), The London School of Pharmacy.
16. 2007: University of Wales promotions case evaluator (Senior Lecturer)
17. 2007: Promotion case evaluator, Al-Isra Private University, Amman – Jordan.

- 18.2006: External member of Faculty of Science and Engineering Validation Panel for validation of the M.Sc. in Pharmaceutical Licensing and Business Development, University of Brighton.
- 19.2005: Member of Board of Advisors, Senior Academic Appointments, King's College London.

Industrial & other appointments

1. 2017 – present: Expert in litigation matter for Foley & Lardner LLP, Washington DC, USA.
2. 2016-present: Member Scientific Board for a French pharmaceutical company (non-disclosure).
3. 2016: Member, Pfizer Topical Pain Advisory Board.
4. 2015-2017: Expert and testimony in litigation matter for Olswang LLP, UK
5. 2013 – 2015: Expert and testimony in litigation matter for Olswang LLP, UK
6. 2013: Expert in litigation matter for Pinsent Masons LLP, UK.
7. 2013: Expert in litigation matter for Simmonds and Simmonds LLP, Germany.
8. 2010: Expert in litigation matter for Taylor Wessing LLP., UK
9. 2010: Member Scientific Advisory Board, MedPharm, UK.
- 10.2010: Expert in litigation matter for Weil, Gotshal & Manges, LLP, USA.
- 11.2008: Expert in litigation matter for S.J Berwin LLP., UK
- 12.2008: Consultant for Xenon Pharmaceuticals Inc, Canada
- 13.2009: Expert in litigation matter for HLLB Shaw, UK
- 14.2007-2012: Consultant and Member of Scientific Advisory Board, Syntopix plc, UK
- 15.2006: Consultant for Unilever UK Central resources Limited, UK.
- 16.2002: Consultant for Johnson & Johnson, UK.
- 17.2000: Appointed as a Specialist in the field of Polymorphism and Raman Spectroscopy by European Pharmacopoeia Commission.
- 18.1996: Expert for Merseyside Police Serious Crime Squad with non-destructive determination of magnesium stearate in ecstasy tablets.

Teaching

Reading School of Pharmacy

Responsible for design, development and accreditation of Pharmaceutics provision on M.Pharm. programme, 2004-2009

New programme development:

Pharmaceutical Calculations workshops
 Extemporaneous Dispensing workshops / practicals
 Aseptics practical sessions (joint with SBS)
 PM2MP2 Pharmaceutical formulations
 PM3MP3 Advanced Pharmaceutics
 Electives; Projects

New lectures / tutorials / workshops:

CH1MP2 Physical chemistry; PM1MP1 Pharmaceutical formulations

Current teaching

PM3A: Therapeutics 2

- 5 x 2h lectures and 2 x 2h workshop on skin and its diseases, plus exams

Teaching Quality Management, Locally and Nationally**Locally**

1. 2014-2016: Member UoRM Pharmacy Programme Board.
2. 2013-2014: Member MPharm Accreditation Strategy Group; planning for 5-year MPharm and re-accreditation.
3. 2013: Food Periodic Review (minor role)
4. 2012-2014: Member Pharmacy Programme Approval and Accreditation Committee (for Iskandar)
5. 2012: Pharmacy Periodic Review.
6. 2005-2009: Involvement with initial accreditation of MPharm at Reading: Led stages 6 and 7 accreditation meetings (2008-2009).

Nationally

1. 2015-present: External examiner for MPharm programme (Pharmaceutics), The University of Sunderland
2. 2010: External Assessor, MSc in Pharmaceutical Technology, University of Bradford
3. 2010: Member, Medway School of Pharmacy Periodic Review Panel.
4. 2009-2013: External examiner for MPharm programme (Pharmaceutics), The Welsh School of Pharmacy, Cardiff.
5. 2008: Member, Strategy Group, Joint Programmes Board (London, East and South East)

6. 2006: External member of Faculty of Science and Engineering Validation Panel for validation of the M.Sc. in Pharmaceutical Licensing and Business Development, University of Brighton.
7. 2005-2009: External examiner for M.Pharm. programme (Pharmaceutics), the London School of Pharmacy.

Other Activities

Knowledge Transfer, Enterprise and Outreach

1. Neo Innova commercialisation agreement: Joint patent and exploitation for novel insect repellents. 2015- present
2. MRC CASE award with MedPharm, 2011-2017: patent published, licence agreements being sought.
3. Lecture "From Molecules to Man". Life Sciences Showcase event, University of Reading, May 2007.
4. Invited lecture "*Arnica Montana* Creams; remedy or ruse?" The Association for Science Education Annual Conference, University of Reading, Jan 2006.
5. Invited lecture "A Thick Skin is a Gift from God", Thames Valley Life Sciences Network Event, May 2007.
6. CommercialISE funding to develop novel topical formulations
7. Collaboration with PharMaterials in support of a PhD project, 2005-2013.
8. Collaboration with John K King and company to exploit research findings on efficacy of *Arnica Montana* preparations. 2004

Administration and other activities

University of Reading

1. 2017-present: Member, Medical School Bid Development Board
2. 2017-present: Member, Personal Titles Committee.
3. 2017-present: Member, Thames Valley Science Park Project Board.
4. 2016-present: Member, OOC Steering Group.
5. 2015-2016: Member, Academic Structures Implementation Group
6. 2014-2017: Member, Procurement Board
7. 2014–present: Member, Health Strategy Group.
8. 2014-2016: Member, Efficiency and Effectiveness Programme Board.
9. 2014-2016: Member, Operational Design Board

10. 2012 - 2013: Member, University Gender Pay Gap Working Group.
11. 2012- 2015: Member, SCFP Athena Swan committee
12. 2011- 2015: Head, School of Chemistry, Food and Pharmacy
13. 2011- 2015: Member, Faculty Management Board (Life Sciences)
14. 2011- 2015: Chair, School Management Board (CFP)
15. 2011- 2015: Member, Faculty of Life Sciences promotion committee
16. 2009 – 2012: Senate appointed Member, Grievance Committee
17. 2008 – 2011: Head of School of Pharmacy
18. 2008 – present: Member of Senate,
19. 2008 – 2011: Member SCFP Management Board
20. 2007 – 2011: Member of Faculty of Life Sciences Space Steering Committee
21. 2006 - 2011: Member CIPPET Strategy Group
22. 2005 - 2007: Chair of SCFP IT committee
23. 2005 - 2006: Member SCFP Executive Committee
24. 2004 - 2011: Member (Chair 2008-2011) Pharmacy Management Board
25. 2004 - 2011: Member Pharmacy Board of Studies
26. 2004 - 2006: Member of Life Sciences Faculty Research Committee
27. 2004 - 2008: Deputy Head of School of Pharmacy

External:

1. 2017-present: University of Reading Partnership Governor, Royal Berkshire NHS Foundation Trust.
2. 2017-2022: Invited member, Commonwealth Scholarship Commission Panel of Advisers
3. 2015-present: Member, Oxford Academic Health Sciences Network R&D Oversight Group
4. 2008-2012: Member, Council of University Heads of Pharmacy (CUHOPS)