ROBERT GORDON UNIVERSITY ABERDEEN

SCHOOL OF PHARMACY & LIFE SCIENCES

RESEARCH PORTFOLIOS

2017/2018

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21/05/18- 027

WELCOME

The School of Pharmacy and Life Sciences is the largest school in Robert Gordon University (RGU) comprising over 50 academic staff.

In 2013, the School moved to modern, purpose-build accommodation equipped with world-class laboratory and support facilities. The School currently delivers undergraduate courses in Biomedical Sciences, Dietetics, Forensic and Analytical Science, Nutrition, and Pharmacy along with postgraduate MSc courses in Clinical Pharmacy Practice and Instrumental Analytical Sciences. The School also has a thriving postgraduate research programme. There are currently more than 40 doctoral students undertaking research in the School and research degrees are offered leading to the awards of Master of Research, Doctor of Philosophy and the Doctorate of Professional Practice.

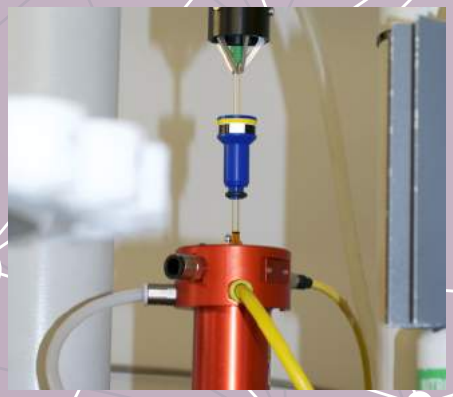
To complement this portfolio of taught courses and postgraduate teaching, staff in the School conduct high-impact research under two main themes; Translational Research and Clinical Practice Research. Key areas within these themes include Analytical, Biological and Pharmaceutical Sciences, Dietetics and Pharmaceutical Care. External grant income in excess of £3M was secured for the 2016-17 session from a variety of sources including Research Councils, Scottish Government, Pharma industry and medical charities. Collaborative projects, including consultancies, are underway with Universities and Research Centres in the Middle East, Europe and the United States.

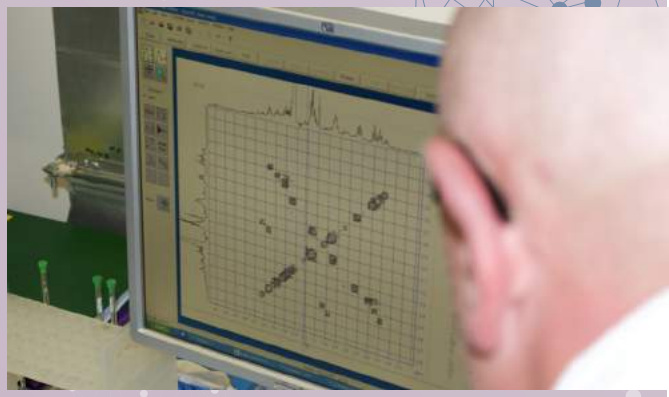
Thank you for enquiring about research in the School of Pharmacy and Life Sciences at RGU. This introduction and welcome can only provide a brief overview of some of the research that is undertaken in the School. Please contact me, or any of the staff listed in this guide, to discuss your research interests.

Prof Donald Cairns
Head of School, PALS.

Staff Listed

TRANSLATIONAL RESEARCH





Optimum health & wellbeing • diet & health • natural products • vascular health; • clinical dietetics • public health policy)

Drug discovery, novel antimicrobial technologies and nanomaterials • natural products • drug & novel matrices design

Environmental monitoring • sensors • clean technology • bioactive natural products & algal biotechnology

PROF. SUSAN J. DUTHIE

TRANSITIONAL RESEARCH THEME LEADER

Associate Head of School (PALS)

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Professor Duthie leads translational research within PALS. Her expertise centers around how diet affects human health and particularly how nutrition influence cell function and genomic stability. She has determined mechanistically how specific phytochemicals (including flavonoids, antioxidant vitamins and folic acid) influence DNA damage and DNA repair.

Recently, Prof. Duthie's work has centred on how B vitamins influence human health and disease. She has established how folate status influences genomic stability, global protein expression (proteomics) and genome-wide DNA methylation in vitro, in rodent models and in human case-control and intervention studies. Moreover, she has investigated how gene-nutrient interactions influence risk of malignancy, specifically how polymorphisms in key folate metabolising enzymes influence genomic stability and incidence of colorectal cancer in humans and has demonstrated how intervention with folic acid decreases DNA damage in healthy volunteers. With regards to CVD, she has shown how folate status alters protein expression and DNA methylation status in human aorta smooth muscle cells and that long-term B vitamin deficiency increases atherosclerosis by perturbing vascular lipid metabolism in transgenic ApoE mice.

1. **Herceg, Z., Ghantous, A., et al. (2018)** Roadmap for investigating epigenome deregulation and environmental origins of cancer. International Journal of Cancer, 142(5) 874-882
2. **Duthie, S.J., Duthie, G.G., et al (2017).** Effect of increasing fruit and vegetable intake by dietary intervention on nutritional biomarkers and attitudes to dietary change: a randomised trial. European Journal of Nutrition, 1-18
3. **Duthie, S.J., Beattie, J.H., et al (2015)**. Nutritional B vitamin deficiency alters the expression of key proteins associated with vascular smooth muscle cell proliferation and migration in the aorta of atherosclerotic apolipoprotein E null mice. Genes and Nutrition, 10(1) 1-11
4. **Elliott, R.M., de Roos, B., Duthie, S.J.,et al (2014).** Transcriptome analysis of peripheral blood mononuclear cells in human subjects following a 36 h fast provides evidence of effects on genes regulating inflammation, apoptosis and energy metabolism. Genes and Nutrition, 9(6) 1-11

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Research Interests

- Mechanisms of action of dietary nutrients on human health and disease
- Impact of plant compounds including phytophenols, flavonoids and anthocyanins on human health; cancer and vascular disease
- Effect of micronutrients on cancer risk; differential effects of diet and supplements on malignant transformation
- Impact of B vitamins and antioxidants on cognitive function and dementia in the elderly
- Impact of natural products from underused ethnic foods on human health

DR. GEMMA BARRON

BSC (HONS), PHD, MRSC, MRSB

Biomedical Science

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Dr Barron's qualifications include a PhD in Medicinal Biochemistry (2010) and First Class BSc Honours degree in Forensic Science (2006) both from Robert Gordon University, Aberdeen.

She moved to the University of Dundee (2010-2013) to undertake post doctoral research on a FP7-SME funded project investigating the early detection of cancer using photonic crystals lasers (EDOCAL) in vitro (skin, brain, bladder and oesophageal cancer cell lines).

Gemma joined Robert Gordon University (2013-present) as a Research Fellow in the Institute of Health and Wellbeing Research. In September 2015, she joined the School of Pharmacy and Life Sciences as a Part-Time Lecturer and Part-Time Research Fellow within the Centre for Obesity Research and Education (CORE).

1. **Barron, P.J., Burgess, K., Cooper, K., Stewart, A.D. (2018).** The effect of pitched and vertical ladder ergometer climbing on cardiorepiratory and psychophysical variables. Applied Ergonomics, 66, 172-176
2. **Barron, G.A., Goua, M., Wahle, K.W.J., Bermano, G. (2017).** Circulating levels of angiogenesis-related growth factors in breast cancer: A study to profile proteins responsible for tubule formation. Oncology Reports, 38(3) 1886-1894
3. **Barron, P.J., Burgess, K., Cooper, K., Stewart, A.D. (2017).** The physiological effect of a 'climb assist' device on vertical ladder climbing. Ergonomics, 60(7) 1008-1013
4. **Kopsida, M., Barron, G.A., Bermano, G., Kong Thoo Lin, P., Goua, M. (2016).** Novel bisnaphthalimidopropyl (BNIPs) derivatives as anticancer compounds targeting DNA in human breast cancer cells. Organic and Biomolecular Chemistry, 14(41) 9780-9789
5. **Barron, G.A., Goua, M., Kuraoka, I., Bermano, G., Iwai, S., Kong Thoo Lin, P. (2015).** Bisnaphthalimidopropyl diaminodicyclohexylmethane induces DNA damage and repair instability in triple negative breast cancer cells via p21 expression. Chemico-Biological Interactions, 242, 307-31

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Research Interests

- Angiogenesis at the cellular/ molecular level
- Cancer therapeutics: DNA damage and repair
- Cancer diagnostics: Biomarkers in disease
- Effect of natural products in cancer

PROF. DONALD CAIRNS

BSC (HONS), PHD, FRPHARMS, C.SCI, C.CHEM, FRSC.

Head of School (PALS).

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Professor Cairns leads the strategic planning, coordination, development and supervision of academic work at the School of Pharmacy and Life Sciences. He is a member of the GPhC, the Royal Pharmaceutical Society, the Association of Pharmaceutical Scientists and in 2008 was made a Fellow of the Royal Society of Chemistry. He has served as a member of the British Pharmacopoeia Commission and an Expert Advisory Group of the Commission on Human Medicines. In 2015 he was made a Fellow of the Royal Pharmaceutical Society.

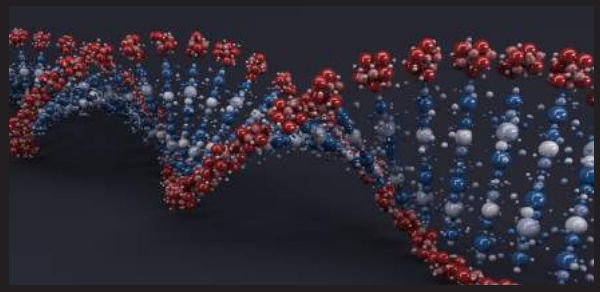
Dr Cairns graduated in pharmacy from the University of Strathclyde in 1980 and after a pre-registration year spent in hospital pharmacy, returned to Strathclyde to undertake a PhD on the synthesis and properties of benzylimidazolines.

Following a year as a post-doctoral research fellow, Dr Cairns moved to Leicester Polytechnic (now De Montfort University) where he held a five-year lectureship in pharmacy. In 1992 he was appointed senior lecturer in medicinal chemistry in Sunderland School of Pharmacy and in 2003 moved to a post of Associate Head of the School of Pharmacy at The Robert Gordon University in Aberdeen. In 2006, he was promoted to Professor of Pharmaceutical and Medicinal Chemistry at RGU and in 2012 was appointed Head within the School.

Research Interests

- The design, synthesis and evaluation of novel prodrugs for the treatment of nephropathic cystinosis
- The design, synthesis and evaluation of selective anticancer agents targeted to high-order forms of DNA
- The molecular modelling of drug / DNA interactions

1. **McKenzie, B., Kay, G., Matthews, K.H., Knott, R., Cairns, D. (2016).** Preformulation of cysteamine gels for treatment of the ophthalmic complications in cystinosis. International Journal of Pharmaceutics, 515(1-2) 575-582
2. **McKenzie, B., Kay, G., Matthews, K.H., Knott, R., Cairns, D. (2015).** 'The hen's egg chorioallantoic membrane (HET-CAM) test to predict the ophthalmic irritation potential of a cysteamine-containing gel: Quantification using PhotoshopÆ and ImageJ.' International Journal of Pharmaceutics 490, pp. 1-8 DOI information: 10.1016/j.ijpharm.2015.05.023
3. **Benylles, A., Cairns, D., Cox, P.J., Kay, G. (2013).** 'Three salts from the Reaction of Cysteamine and Cystamine with l (+) Tartaric Acid' Acta Crystallographica Section C, C69, 658-664, doi: 10.1107/S0108270113012377
4. **Buchan, B., Kay, G., Matthews, K.H., Cairns, D. (2012),** 'Suppository formulations as a potential treatment for Nephropathic Cystinosis' J. Pharm. Sci, DOI 10.1002/jps.23246



DR. STUART CRUICKSHANK

BSC PHD

Pharmacology

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Dr Cruickshank has research skills in the areas of whole-cell patch clamp and extracellular electrophysiology, epifluorescent microscopy, small vessel wire myography, time series analysis (including MESA and autocorrelation).

His research interests are varied but include understanding how environmental cues, for example pressure, affect physiological function. The partial pressure of oxygen affects vascular smooth muscle, and understanding how such stimulus is transduced gives insight as to how environmental factors are likely to impact vascular function. Long term integration of hydrostatic pressures affect neuronal function and the use of a model invertebrate system has provided insight as to how, over extended periods, sensory feedback modulates interneuron activity.

Dr Cruickshank graduated with a PhD from University of Aberdeen followed by post-doctoral position at University of Strathclyde. For the last 13 years he has been employed as a lecturer in RGU.

1. **Dopinescu C, Widmer H, Rowe I, Wainwright C, Cruickshank SF (2012).** Hypoxia sensitivity of a voltage-gated potassium current in porcine intrapulmonary vein smooth muscle cells. Am. J.Physiol. (Lung Cell.Mol.Physiol.) 303(5):L476-86.doi:10.1152/ajplung.00157.2012
2. **Sunil Jit RJ Logantha, Stuart F Cruickshank, Edward G Rowan, Robert M Drummond (2010)** Spontaneous and electrically evoked Ca2+ transients in cardiomyocytes of the rat pulmonary vein. Cell Calcium, 48(2-3):150-60. doi: 10.1016/j.ceca.2010.08.002
3. **Yildiz I, Deniz E, McCaughan B, Cruickshank SF, Callan JF, Raymo FM. (2010)** Hydrophilic CdSe-ZnS core-shell quantum dots with Reactive Functional Groups on Their Surface. Langmuir 26(13):11503-11 doi: 10.1021/la1010488
4. **Yildiz I, McCaughan B, Cruickshank SF, Callan JF, Raymo FM. (2009)** Biocompatible CdSe-ZnS core-shell quantum dots coated with hydrophilic polythiols. Langmuir 16;25 (12):7090-6 doi: 10.1021/la900148m.
5. **Fraser PJ, Cruickshank SF, Shelmerdine RL, Smith LE, (2008).** Hydrostatic Pressure Receptors and Depth Usage in Crustacea and Fish. J Navigation 55, 2: 159 – 165

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Research Interests

- Vascular smooth muscle physiology
- Pulmonary vein physiology
- [Ca2+]i regulation
- Ion channel function
- Invertebrate neurophysiology

DR. ALBERTO DI SALVO

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Pharmaceutical Sciences

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Dr Di Salvo's research interests lie in the area of selective toxicity and anticancer agents. His key research skills include multistep synthesis, asymmetrisation (enzymatic and non-enzymatic), preparative chromatography and structure elucidation by NMR and mass spectrometry.

Dr Di Salvo attended Edinburgh Napier University and completed a BSc (Hons) in Applied Chemistry followed by a PhD in Medicinal Chemistry Design and synthesis of tumour activated oligopeptide prodrugs that exploit the proteolytic activity of MMP-98168 .

Dr Di Salvo also worked at the Rega Institute for Medical Research, Belgium and the City College of New York, before joining the School of Pharmacy and Life Sciences in Aberdeen..

1. **Di Salvo, A; Dugois, P; Tandeo, D; Peltekian, M; Lin, (2013)** PKT; Synthesis, cytotoxicity and DNA binding of oxoazabenzo[de] anthracenes derivatives in colon cancer Caco-2 cells; EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY, 69, 754-761.
2. **Omran, Z; Kay, G; Di Salvo, A; Knott, RM; Cairns, D. (2011)** PEGylated derivatives of cystamine as enhanced treatments for nephropathic cystinosis; BIOORGANIC & & MEDICINAL CHEMISTRY LETTERS, 21 (1), 45-47.
3. **Liu, F., Di Salvo, A., Herdewijn, P. (2008)** Synthesis of 2818c-Cyclohexenylnucleosides and Corresponding CeNA Building Blocks, Current Protocols in Nucleic Acid Chemistry, June 2008, Volume 1, Unit 1.20.
4. **Dias, N., Goossens, J-F., Baldeyrou, B., Lansiaux, A., Colson, P., Di Salvo, A., Bernal, J., Turnbull, A., Mincher, D.J., and Bailly, C. (2005),** 8165Oxoazabenzo[de]anthracenes conjugated to amino acids: synthesis and evaluation as DNA-binding antitumour agents8166, Bioconjugate Chemistry, 16, 949-958.
5. **Van Valckenborgh, E., Mincher, D.J., Di Salvo, A., Van Riet, I., Young, L., Van Camp, B., and Vanderkerken, K. (2005),** 8165Targeting an MMP-9-activated prodrug to multiple myeloma diseased bone marrow: a proof of principle in the 5T33MM mouse model8166, Leukemia, 19, 1628-1633

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Research Interests

- Medicinal chemistry
- Organic spectroscopy
- Structural elucidation with 2D NMR

DR. CHRISTINE EDWARDS

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Microbial biotechnology,

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Dr Edwards developed her interest in bioactive natural products, in particular toxins produced by cyanobacteria, whilst engaging in her postdoctoral research at the University of Dundee.

Her current research group has facilities for cyanobacterial culture, chemical analysis (high performance liquid chromatography with photodiode array, fluorescence, mass, evaporative light scattering detection), bioassay, and chromatography purification suite.

In 1994, Dr Edwards joined Biotage as a technical support specialist for purification products from R & D to production scale. This involved collaboration with customers on method development and optimisation, and resulted in several publications.

In 2005, she joined the School of Pharmacy and Life Sciences to resume a more active role in research, with emphasis on cyanobacterial toxins, and their occurrence and fate in the environment. She has many years experience on the production of high quality bioactive compounds for research tools.

1. **Turner, A.D., Waack, J., Lewis, A., Edwards, C., Lawton, L. (2018)**. Development and single-laboratory validation of a UH-PLC-MS/MS method for quantitation of microcystins and nodularin in natural water, cyanobacteria, shellfish and algal supplement tablet powders. Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 1074-1075, 111-123
2. **Hameed, S., Lawton, L.A., Edwards, C., et al (2017).** Effects of temperature and salinity on the production of cell biomass, chlorophyll-a and intra- and extracellular nodularins (NOD) and nodulopeptin 901 produced by Nodularia spumigena KAC 66. Journal of Applied Phycology, 29(4) 1801-1810
3. **Delgado-Baquerizo, M., Giaramida, et al (2016).** Lack of functional redundancy in the relationship between microbial diversity and ecosystem functioning. Journal of Ecology, 104(4) 936-946
4. **Faassen, E.J., Antoniou, M.G., et al (2016)**. Conventional laboratory methods for cyanotoxins. Advances in Experimental Medicine and Biology, 619, 513-537
5. **Pestana, C.J., Edwards, C., et al (2015).** Photocatalytic degradation of eleven microcystin variants and nodularin by TiO<inf>2</inf> coated glass microspheres. Journal of Hazardous Materials, 300, 347-353

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Research Interests

- Production of Bioactive compounds
- Exploitation of whisky waste for high values compounds
- Analysis and removal of cyanotoxins (water/shellfish)
- Microbial biotechnology

DR. CARLOS FERNANDEZ

MCHEM PHD CCHEM CSCI MRSC MINSTP MECS

Analytical Chemistry

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Dr Fernandez gained his MChem at the University of Almeria (Spain) in 2002 and then moved to the UK where he undertook a research year at the University of Durham in 2003 investigating Ruthenium complexes using X-Ray diffraction.

In 2005 Dr Fernandez moved to the University of Hull where he took a four year position as a GTA (Graduate Teaching Assistant) along with a PhD. He obtained his PhD in 2009 on "Electrocatalytic Reactions". In 2010 he took a role as a Senior Scientist at Oxtox Ltd. (Manchester) working on the development of an Electrochemical Sensor using Screen-Printed Electrodes to detect methamphetamine, ampthetamine, cocaine and ecstasy in oral fluid for the purpose of roadside testing. In 2013 he took a position at RGU in The School of Engineering as a Research Fellow/Business Development Officer. In 2014 he was appointed as a Lecturer in Analytical Chemistry at the School of Pharmacy & Life Sciences.

1. **Yuan, B., Xu, C., Zhang, R., Lv, D., Li, S., Zhang, D., Liu, L., Fernandez, C. (2017).** Glassy carbon electrode modified with 7,7,8,8-tetracyanoquinodimethane and graphene oxide triggered a synergistic effect: Low-potential amperometric detection of reduced glutathione. Biosensors and Bioelectronics, 96, 1-7
2. **Yuan, B., Xu, C., Zhang, D., Zhang, R., Su, H., Guan, P., Nie, J., Fernandez, C. (2017).** Electrografting of amino-TEMPO on graphene oxide and electrochemically reduced graphene oxide for electrocatalytic applications. Electrochemistry Communications, 81, 18-23
3. **Zhang, J., Xu, C., Zhang, D., Zhao, J., Zheng, S., Su, H., Wei, F., Yuan, B., Fernandez, C. (2017).** Facile synthesis of a Nickel Sulfide (NiS) hierarchical flower for the electrochemical oxidation of H202 and the Methanol Oxidation Reaction (MOR). Journal of the Electrochemical Society, 164(4) B92-B96
4. **Docekalova, M., Uhlirova, D., Stankova, M., Kepinska, M., Sochor, J., Milnerowicz, H., Babula, P., Fernandez, C., Brazdova, M., Zidkova, J., Suchy, P., Kizek, R. (2016).** Characterisation of peroxidase-like activity of thermally synthesized gold nanoparticles. NANOCON 2016 - Conference Proceedings, 8th International Conference on Nanomaterials - Research and Application, 429-434

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Research Interests

- Liquid-Liquid interface & Electrochemistry at the Three Phase Boundary (droplets) & Electrochemiluminescence
- Bioelectrochemistry
- Forensic Electrochemistry
- Graphene Electrochemistry
- Development sensors for Environmental Applications
- Nanocomposites & Energy Storage Devices (Capacitors)

DR. MARIE GOUA

BSC(HONS), PHD, CBIOL, MRSB, FHEA

Biosciences

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Dr Goua's key research interests include nutrient gene interaction, cardiovascular disease and cancer in relation to inflammation. Her skills lie in the areas of cell culture, RNA studies, DNA damage, protein studies and flow cytometry.

Dr Goua carried out her PhD at the Rowett Research Institute where she studied the effects of polyunsaturated fatty acids on adhesion molecules in relation to atherosclerosis. Since finishing her PhD studies she has been interested in assessing the effects of various fatty acids on inflammatory mechanisms such as cytokine expression in prostate and breast cancer cells.

In line with the research on breast cancer prevention, she is interested in understanding the molecular mechanisms involved in the disease by studying the inflammatory and oxidative pathways in relation to new anti-cancer compounds and, more importantly, natural products.

Research Interests

- Effects of nutrients in diseases
- Angiogenesis at the cellular/ molecular level
- Inflammation and DNA damage
- Natural compounds and their effects in cancer, cardiovascular and neurodegenerative diseases
- The effect of different fatty acids on cardiovascular markers

1. **Pohl, F., Goua, M., Bermano, G., Russell, W.R., Scobbie, L., Maciel, P., Kong Thoo Lin, P. (2018).** Revalorisation of rapeseed pomace extracts: An in vitro study into its anti-oxidant and DNA protective properties. Food Chemistry, 239, 323-332
2. **Barron, G.A., Goua, M., Wahle, K.W.J., Bermano, G. (2017).** Circulating levels of angiogenesis-related growth factors in breast cancer: A study to profile proteins responsible for tubule formation. Oncology Reports, 38(3) 1886-1894
3. **Kopsida, M., Barron, G.A., Bermano, G., Kong Thoo Lin, P., Goua, M. (2016).** Novel bisnaphthalimidopropyl (BNIPs) derivatives as anticancer compounds targeting DNA in human breast cancer cells. Organic and Biomolecular Chemistry, 14(41) 9780-9789
4. **Barron, G.A., Goua, M., Kuraoka, I., Bermano, G., Iwai, S., Kong Thoo Lin, P. (2015).** Bisnaphthalimidopropyl diaminodicyclohexylmethane induces DNA damage and repair instability in triple negative breast cancer cells via p21 expression. Chemico-Biological Interactions, 242, 307-315
5. **Kapravelou, G., MartÌnez, R., Andrade, A.M., Nebot, E., Camiletti-MoirÛn, D., Aparicio, V.A., Lopez-Jurado, M., Aranda, P., Arrebola, F., Fernandez-Segura, E., Bermano, G., Goua, M., Galisteo, M., Porres, J.M. (2015).** Aerobic interval exercise improves parameters of nonalcoholic fatty liver disease (NAFLD) and other alterations of metabolic syndrome in obese Zucker rats. Applied Physiology, Nutrition and Metabolism, 40(12) 1242-1252

DR. GRAEME KAY

FRSC, MAPS, SRPHARMS, MCSFS

Chemical Sciences

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Dr Kay's research projects have been in the area of medicinal, organic and pharmaceutical chemistry. His key research skills include organo-medicinal chemistry, mass spectrometry, NMR and IR spectroscopy. Specialist research facilities available to Dr Kay include the medicinal chemistry research laboratory and the NMR facility.

Dr Kay joined the University in 2005 after a brief spell in industry as a development chemist. Previous to that he was employed at Edinburgh Napier University as a researcher in organo-medicinal chemistry. He was educated at Edinburgh Napier University where he gained a BSc (Hons) degree in Applied Chemistry and a PhD in Anti-Cancer Medicinal Chemistry.

Dr Kay has received over £230,000 in funded research. Awards include:SPARKS, The Children's Medical Research Charity and The Cystinosis Foundation UK, and the Cystinosis Foundation of Ireland.

Research Interests

- Design, synthesis and bio-evaluation of amino-substituted anthraquinones as potential anti-cancer agents
- Design, synthesis and evaluation of novel pro-drugs for the treatment of Cystinosis
- Design, synthesis of non-invasive imaging agents in Atherosclerosis
- Formulation of cysteamine as a dosage form for ophthalmic delivery in Cystinosis

1. **Scipioni, M., Kay, G., Megson, I., Kong Thoo Lin, P. (2018).** Novel vanillin derivatives: Synthesis, anti-oxidant, DNA and cellular protection properties. European Journal of Medicinal Chemistry, 143, 745-754
2. **McKenzie, B., Kay, G., Matthews, K.H., Knott, R., Cairns, D. (2016).** Preformulation of cysteamine gels for treatment of the ophthalmic complications in cystinosis. International Journal of Pharmaceutics, 515(1-2) 575-582
3. **McKenzie, B., Kay, G., Matthews, K.H., Knott, R.M., Cairns, D. (2015).** The hen's egg chorioallantoic membrane (HET-CAM) test to predict the ophthalmic irritation potential of a cysteamine-containing gel: Quantification using Photoshop™; and ImageJ. International Journal of Pharmaceutics, 490(1-2) 1-8
4. **McKenzie, B., Kay, G. (2015).** Eye gels for ophthalmic delivery. Expert Review of Ophthalmology, 10(2) 127-133
5. **Benylles, A., Cairns, D., Cox, P.J., Kay, G. (2013).** Three salts from the reactions of cysteamine and cystamine with L-(+)-tartaric acid. Acta Crystallographica Section C: Crystal Structure Communications, 69(6) 658-664

DR. RACHEL M. KNOTT

BSC, MSC, PHD

Molecular and Cell Biology

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Dr Knott's work is currently focused on the investigation of the mechanism(s) of endothelial cell changes in response to glucose concentration, pressure and oxygen tension in order to develop early interventions for the prevention of diabetic retinopathy which is a severe and debilitating complication of diabetes.

Her work has taken her to many international and national conferences and she has authored over 50 research papers, reviews and chapters in books. She is a reviewer for a number of different journals and is on the editorial panel of the Gavin Journal of Diabetes and is a member of the organising committee for the 13 th Global Diabetes Conference and Medical Expo in Birmingham in 2016 . She has supervised research students and continues to be active in research skill development recognising this to be an important element for the realisation of future research leaders.

Dr Knot graduated from Aberdeen University with a PhD in 1988. Prior to taking up employment at Robert Gordon University in 1999 she worked at the Rowett Research Institute and the University of Aberdeen.

1. **McKenzie, B., Kay, G., Matthews, K.H., Knott, R., Cairns, D. (2016)**. Preformulation of cysteamine gels for treatment of the ophthalmic complications in cystinosis. International Journal of Pharmaceutics, 515(1-2) 575-582
2. **Ibie, C.O., Thompson, C.J., Knott, R. (2015).** Synthesis, characterisation and in vitro evaluation of novel thiolated derivatives of polyallylamine and quaternised polyallylamine. Colloid and Polymer Science, 293(6) 1737-1748
3. **McKenzie, B., Kay, G., Matthews, K.H., Knott, R.M., Cairns, D. (2015).** The hen's egg chorioallantoic membrane (HET-CAM) test to predict the ophthalmic irritation potential of a cysteamine-containing gel: Quantification using Photoshop™; and ImageJ. International Journal of Pharmaceutics, 490(1-2) 1-8
4. **Ibie, C., Knott, R., Thompson, C.J. (2015).** In-vitro evaluation of the effect of polymer structure on uptake of novel polymer-insulin polyelectrolyte complexes by human epithelial cells. International Journal of Pharmaceutics, 479(1) 103-10
5. **Gadad, P.C., Matthews, K.H., Knott, R.M. (2013).** Silymarin released from sterile wafers restores glucose impaired endothelial cell migration. International Journal of Pharmaceutics, 457(1) 40-49

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Research Interests

- Ex vivo explants as model systems for the study of the vascular complication of diabetes
- Molecular mechanisms of vascular change in endothelial cell response due to high and/ or fluctuating concentrations of glucose and oxygen
- Non-alcoholic fatty liver disease: role of vascular change in the onset and progression of hepatic damage
- Use of bioinformatics to inform gene function and disease association in the search for biomarkers of disease and pharmacogenomic predictors

PROF. PAUL KONG THOO LIN

BSC PHD FRSC CCHEM FHEA

Medicinal Chemistry

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Since joining RGU, Prof. Kong Thoo Lin has been active in the design and synthesis of novel compounds/polymers with 'intelligent' functions that can be applied as sensors, to treat and manage diseases (cancer and parasites), to elucidate mechanism of drug action and provide effective drug delivery.

More recently his research has included the isolation and identification of novel compounds from plants materials and the study of their biological activities that can potentially be developed to fight neurodegenerative diseases.

From 1987 till 1992, Professor Paul Kong Thoo Lin worked at the MRC, Laboratory of Molecular Biology, Cambridge, UK, where he was involved in the synthesis of novel degenerate/universal bases and their incorporation in oligonucleotides.

Research Interests

- Targeting Histone Deacetylase Enzymes with novel compounds in cancer cell lines
- Regulation of apoptosis and DNA damage in cancer cells
- Design and synthesis of multi target molecules against cancer
- Anti-inflammatory drug design based on natural products
- The design and application of novel drug delivery systems
- Chemical profiling and biological activities of plant pomace extracts

1. **Pohl, F., Goua, M., Bermano, G., Russell, W.R., Scobbie, L., Maciel, P., Kong Thoo Lin, P. (2018).** Revalorisation of rapeseed pomace extracts: An in vitro study into its anti-oxidant and DNA protective properties. Food Chemistry, 239, 323-332
2. **Scipioni, M., Kay, G., Megson, I., Kong Thoo Lin, P. (2018)**. Novel vanillin derivatives: Synthesis, anti-oxidant, DNA and cellular protection properties. European Journal of Medicinal Chemistry, 143, 745-754
3. **Gaspar, L., Coron, R.P., KongThoo Lin, P., Costa, D.M., Perez-Cabezas, B., Tavares, J., Roura-Ferrer, M., Ramos, I., Ronin, C., Major, L.L., Ciesielski, F., Pemberton, I.K., MacDougall, J., Ciapetti, P., Smith, T.K., Cordeiro-da-Silva, A. (2018).** Inhibitors of Trypanosoma cruzi Sir2 related protein 1 as potential drugs against Chagas disease. PLoS Neglected Tropical Diseases, 12(1).
4. **Malekigorji, M., Alfahad, M., Kong Thoo Lin, P., Jones, S., Curtis, A., Hoskins, C. (2017).** Thermally triggered theranostics for pancreatic cancer therapy. Nanoscale, 9(34) 12735-12745
5. **Kopsida, M., Barron, G.A., Bermano, G., Kong Thoo Lin, P., Goua, M. (2016).** Novel bisnaphthalimidopropyl (BNIPs) derivatives as anticancer compounds targeting DNA in human breast cancer cells. Organic and Biomolecular Chemistry, 14(41) 9780-9789

DR. ANDREW LAMB

HEAD OF GRADUATE SCHOOL

Medical Microbiology

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Dr Lamb's general research interests cover particular aspects of bacteriology and antimicrobial agents.

His specific interests include the development of novel antimicrobial wound dressings, novel antimicrobial technologies, investigation of antibacterial activity of cationic antimicrobial agents, bacterial contamination within clean room environments and veterinary pharmacy.

1. **T.P.T. Cushnie, N.H. O'Driscoll and A.J. Lamb (2016)** Morphological and ultrastructural changes in bacterial cells as an indicator of antibacterial mechanism of action. Cellular and Molecular Life Sciences. 73, 23, 4471–4492
2. **N.H. O'Driscoll, O. Labovitiadi and A. J. Lamb (2015).** Evaluation of the practice of veterinary pharmacy. Currents in Pharmacy Teaching and Learning, 7, 606-613. Doi.org/10.1016/j.cptl.2015.06.017
3. **N.H. O'Driscoll, O. Labovitiadi, T.P.T. Cushnie, K.H. Matthews, D.K. Mercer, and A. J. Lamb (2014)** Potassium loss from chlorhexidine-treated bacterial pathogens is time- and concentration-dependent and variable between species. Current Microbiology, 68, 6–11. doi 10.1007/s00284-013-0433-3
4. **P.J. Mugisha, S.B. Abdel Ghani, E. Gado, J. Wilcox, E.O. Medu, A.J. Lamb, and R. C. D. Brown (2013)** Convenient one-pot synthesis of chromone derivatives and their antifungal and antibacterial evaluation. Synthetic Communications, 43 (11), 1549-1556. http://dx.doi.org/10.1080/00397911.2011.647222
5. **N.H. O'Driscoll, O. Labovitiadi, T.P.T. Cushnie, K.H. Matthews, D.K. Mercer, and A. J. Lamb (2013)** Production and evaluation of an antimicrobial peptide-containing wafer formulation for topical application. Current Microbiology, 66, 271-278. doi:10.1007/s00284-012-0268-3

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Research Interests

- Development of novel antimicrobial wound dressings
- Novel antimicrobial technologies
- Investigation of antibacterial activity of cationic antimicrobial agents
- Bacterial contamination within clean room environments
- Veterinary pharmacy

PROF. LINDA A. LAWTON

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Environmental Microbiology

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Prof. Lawton leads an internationally-respected research team, CyanoSol, which has a world wide reputation in the study of the environmental impact and monitoring of natural toxic metabolites from cyanobacteria (blue-green algae).

These toxins pose a significant and increasing risk to human health in both drinking water and at recreational sites hence much of the work is involved in water treatment strategies including advanced oxidative techniques. Her group has pioneered the most widely used analytical procedure for analysis of microcystins, the main group of cyanotoxins. This methodology has now been published as an approved method and has been cited over 600 times in scientific literature. Her research has now extended into broader environmental concerns such as desalination and waste valorisation through using green chemical and biotechnology. She has successfully attracted funding from a wide range of sources including the Research Councils, EU, Charities and Industry. The reputation of her group has led to many fruitful research collaborations both in the UK and around the world including, Germany, Finland, Denmark, Poland, Cyprus, Spain & France.

Research Interests

- Production, detection and removal of cyanotoxins including microcystins, cylindrospermopsin and neurotoxins
- Isolation and characterisation of bioactive compounds from cyanobacteria and other novel biological sources
- Algal biotechnology for biofuels, material and food additives (omega-3, vitamins, pigments)
- Water quality, treatment and advanced oxidative methods for drinking water and waste water remediation
- Application of photocatalytic technologies to environmentally sustainable energy and chemicals

1. **Turner, A.D., Waack, J., Lewis, A., Edwards, C., Lawton, L. (2018).** Development and single-laboratory validation of a UH-PLC-MS/MS method for quantitation of microcystins and nodularin in natural water, cyanobacteria, shellfish and algal supplement tablet powders. Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 1074-1075, 111-123
2. **Tokode, O., Prabhu, R., Lawton, L.A., Robertson, P.K.J. (2017).** A photocatalytic impeller reactor for gas phase heterogeneous photocatalysis. Journal of Environmental Chemical Engineering, 5(4) 3942-3948
3. **Hameed, S., Lawton, L.A., et al (2017).** Effects of temperature and salinity on the production of cell biomass, chlorophyll-a and intra- and extracellular nodularins (NOD) and nodulopeptin 901 produced by Nodularia spumigena KAC 66. Journal of Applied Phycology, 29(4) 1801-1810
4. **Nagarajan, S., Skillen, N.C., et al (2017).** Comparative assessment of visible light and UV active photocatalysts by hydroxyl radical quantification. Journal of Photochemistry and Photobiology A: Chemistry, 334, 13-19
5. **Nagarajan, S., Stella, L., Lawton, L.A., Irvine, J.T.S., Robertson, P.K.J. (2017).** Mixing regime simulation and cellulose particle tracing in a stacked frame photocatalytic reactor. Chemical Engineering Journal, 313, 301-308

DR. LINDSEY MASSON

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Nutrition

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Dr Masson's main area of expertise is in the use of dietary assessment methods in epidemiological studies (of both children and adults), statistical analysis of epidemiological studies (including studies with a complex survey design), and systematic review methodology. Lindsey is also a member of the Nutrition Society Scottish Section committee.

She obtained her BSc (Hons) Health Sciences, MSc Human Nutrition and Metabolism, and PhD Human Nutrition from the University of Aberdeen. Before joining Robert Gordon University, she was employed by the University of Aberdeen This included 4 years as a Research Fellow in Epidemiology, and 6 years as a Lecturer in Human Nutrition Epidemiology which included acting as Programme Coordinator for the MSc Human Nutrition and Metabolism.

Dr Masson is a Registered Nutritionist with the UK Voluntary Register of Nutritionists, held by the Association for Nutrition.

1. **Thies, F., Mills, L.M., Moir, S., Masson, L.F. (2017).** Cardiovascular benefits of lycopene: Fantasy or reality?. Proceedings of the Nutrition Society, 76(2) 122-129
2. **McNeill, G., Masson, et al (2017).** Socio-economic differences in diet, physical activity and leisure-time screen use among Scottish children in 2006 and 2010: Are we closing the gap?. Public Health Nutrition, 20(6) 951-958
3. **Macdiarmid JI, Wills WJ, Masson LF, Craig LC, Bromley C, McNeill G. (2015)** Food and drink purchasing habits out of school at lunchtime: a national survey of secondary school pupils in Scotland. Int J Behav Nutr Phys Act 12(1):98. doi: 10.1186/s12966-015-0259-4.
4. **Thies F, Masson LF, Bofetta P and Kris-Etherton P. (2014)** Oats and CVD risk markers: a systematic literature review. Br J Nutr 112(Suppl 2): S19-30. doi: 10.1017/S0007114514002281.
5. **Thies F, Masson LF, Bofetta P and Kris-Etherton P. (2014)** Oats and bowel disease: a systematic literature review. Br J Nutr 112(Suppl 2): S31-43. doi: 10.1017/S0007114514002293.

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Research Interests

- Monitoring food and nutrient intakes in Scotland
- Use of dietary assessment methods in epidemiological studies of cardiovascular disease, cancer and obesity
- Improving diet in cancer survivors
- Systematic literature reviews on gene-diet interactions, genotype-disease associations, and diet-disease associations.

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DR. KERR H. MATTHEWS

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Pharmaceutics

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Dr Matthews has research interests in the general area of pharmaceutics. Since filing an international patent on 'Wafers for wounds' in 2003, he has continued with the development of this foundation technology as a topical antimicrobial dressing, whilst teaching and supervising at both undergraduate and postgraduate levels.

He has authored/co-authored 55 publications, including a book chapter, and has over 1000 citations. A review of drug delivery dressings co-authored in 2008 has been cited 570 times as of May 2016, placing it in the top 1% of its academic field.

Following his PhD in 1989, Dr Matthews' expertise in polymer science has been applied in diverse areas of commercial interest from the manufacture of video tapes (3M UK Ltd.) to laminated papers (James River Corp.); high tensile fibres and conducting gels for lithium batteries (IRC in Polymer Science and Technology, University of Leeds); artificial arteries and biomaterials (N.A.I.R., Japan); drug delivery systems (Scherer DDS Ltd.); tissue repair & wound healing (Pfizer) and topical antimicrobial therapies (RGU).

Following a return to academia as a Lecturer in 2002 (University of Strathclyde) he subsequently moved to Robert Gordon University in 2004.

1. **O'Driscoll, N.H., Cushnie, T.P.T., Matthews, K.H., Lamb, A.J. (2018).** Colistin causes profound morphological alteration but minimal cytoplasmic membrane perforation in populations of Escherichia coli and Pseudomonas aeruginosa. Archives of Microbiology, 1-10
2. **McKenzie, B., Kay, G., Matthews, et al (2016).** Preformulation of cysteamine gels for treatment of the ophthalmic complications in cystinosis. International Journal of Pharmaceutics, 515(1-2) 575-582
3. **McKenzie, B., Kay, G., Matthews, K.H.,et al (2015).** The hen's egg chorioallantoic membrane (HET-CAM) test to predict the ophthalmic irritation potential of a cysteamine-containing gel: Quantification using Photoshop^Æ and ImageJ. International Journal of Pharmaceutics, 490(1-2) 1-8
4. **Bibi, S., Bremner, D.H., Macdougall-Heasman, M., Reid, R., Simpson, K., Tough, A., Waddell, S., Stewart, I.J., Matthews, K.H. (2015).** A preliminary investigation to group disparate batches of licit and illicit diazepam tablets using differential scanning calorimetry. Analytical Methods, 7(20) 8597-8604

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Research Interests

- Antimicrobial wafers as topical delivery systems for chronic wounds
- Solid and liquid drug delivery systems – design and manufacture
- Hydrogels – natural, synthetic and semi-synthetic polymers for pharmaceutical and biomedical application
- Biomaterials
- Materials Science – rheology and thermoanalytical techniques
- Characterisation of counterfeit medicines

DR. BARBARA MCKENZIE

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Pharmaceutics

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Dr McKenzie's area of expertise is the formulation of medicines and particularly the formulation of ophthalmic and respiratory medicines. She has investigated the potential to deliver medicines systemically, using biodegradable coatings for drugs with challenging stability profiles.

Dr McKenzie has also developed an ophthalmic gel for the treatment of ocular complications of the rare disease Nephropathic cystinosis, and recently, her work has centred on developing a quantitative technique to measure ophthalmic irritation. Historically, the Draize rabbit test has been used widely to determine the ophthalmic irritation of many chemicals, from medicines to cosmetics. The current focus of her research is to establish an equivalent technique which uses fertilised hen's egg placental membranes. She has established a method which uses computer software to categorise the level of irritation, using a technique which has been used by forensic scientists.

Dr McKenzie is currently working with engineers to develop an ex-vivo ophthalmic model, to aid the understanding of drug retention within the cornea and ophthalmic tissues. Part of this work also involves microdialysis, a technique designed to measure drug concentration within the aqueous humor.

1. **McKenzie, B., Kay, G., Matthews, K.H., Knott, R., Cairns, D. (2016).** Preformulation of cysteamine gels for treatment of the ophthalmic complications in cystinosis. International Journal of Pharmaceutics, 515(1-2) 575-582
2. **McKenzie, B., Kay, G., Matthews, K.H., Knott, R.M., Cairns, D. (2015).** The hen's egg chorioallantoic membrane (HET-CAM) test to predict the ophthalmic irritation potential of a cysteamine-containing gel: Quantification using Photoshop™; and ImageJ. International Journal of Pharmaceutics, 490(1-2) 1-8
3. **McKenzie, B., Kay, G. (2015).** Eye gels for ophthalmic delivery. Expert Review of Ophthalmology, 10(2) 127-133
4. **Buchan B, Kay G, Matthews KH, Cairns D. (2012).** Suppository formulations as a potential treatment for nephropathic cystinosis. Journal of Pharmaceutical Sciences. 101, 10, p. 3729-3738.
5. **Buchan B, Kay G, Heneghan A, Matthews KH, Cairns D. (2010).** Gel formulations for treatment of the ophthalmic complications in cystinosis. International Journal of Pharmaceutics. 392, 1-2, p. 192-197.

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Research Interests

- Ophthalmic drug delivery using gels and in-situ gelling polymers
- Nephropathic cystinosis, its complications and its treatment
- Pulmonary delivery of drugs for systemic delivery
- Rectal drug delivery for systemic treatment

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DR. WOLFRAM MEIER-AUGENSTEIN

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Wolfram Meier-Augenstein is a Professor at Robert Gordon University, Aberdeen, a registered forensic expert advisor with the British National Crime Agency and a member of the Advisory Board of the journal Rapid Communications in Mass Spectrometry. He holds a doctorate in natural sciences awarded by the Ruprechts-Karl University Heidelberg (Germany) in 1989.

From 2010 to 2014 he served as Director of the Forensic Isotope Ratio Mass Spectrometry Network (FIRMS) while from 2009 to 2013 he was a Council member of the British Association for Human Identification (BAHID).

Dr Meier-Augenstein was one of the scientists consulted by An Garda SÌoch·na investigating the case of the dismembered torso found in the Dublin Royal Canal. He was also one of the scientists consulted by the police investigating the Norfolk headless body case. Dr Meier-Augenstein is the author of the first textbook dedicated to principles and forensic applications of stable isotope analytical techniques.

1. **Minet, E.P., Goodhue, R., Meier-Augenstein,W., et al (2017).** Combining stable isotopes with contamination indicators: A method for improved investigation of nitrate sources and dynamics in aquifers with mixed nitrogen inputs. Water Research, 124, 85-96
2. **Schimmelmann, A., Qi, H., Coplen, T.B., Brand, W.A., Fong, J., Meier-Augenstein, W., et al (2016).** Organic Reference Materials for Hydrogen, Carbon, and Nitrogen Stable Isotope-Ratio Measurements: Caffeines, n-Alkanes, Fatty Acid Methyl Esters, Glycines, l -Valines, Polyethylenes, and Oils. Analytical Chemistry, 88(8) 4294-4302
3. **Meier-Augenstein, W., Kemp, H.F., Schenk, E.R., Almirall, J.R. (2014).** Discrimination of unprocessed cotton on the basis of geographic origin using multi-element stable isotope signatures. Rapid Communications in Mass Spectrometry, 28(5) 545-552
4. **Meier-Augenstein, W., Hobson, K.A., Wassenaar, L.I. (2013).** Critique: Measuring hydrogen stable isotope abundance of proteins to infer origins of wildlife, food and people. Bioanalysis, 5(7) 751-767
5. **Nicdaeid, N., Jayamana, S., Kerr, W.J., Meier-Augenstein, W., Kemp, H.F. (2013).** Influence of precursor solvent extraction on stable isotope signatures of methylamphetamine prepared from over-the-counter medicines using the Moscow and Hypophosphorous routes. Analytical and Bioanalytical Chemistry, 405(9) 2931-2941

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Research Interests

- Human provenancing
- Elucidating shifts in stable isotopic composition of synthetic drugs to link precursor/s to product
- Elucidating shifts in stable isotopic composition of explosives to link precursor(s) to product
- Determining authenticity and provenance of food by way of stable isotope analysis
- Determining authenticity and provenance of pharmaceutical drugs by way of stable isotope analysis

DR. SIMON OFFICER

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Analytical and Pharmaceutical Analysis

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Dr Officer lecturers with expertise in spectroscopy and laser based sensing having been involved in a number of related research projects over the last 15 years. This has involved applications of fluorescence sensing, UV excimer curing of surfaces, development of optical/polymeric materials including glass, development of photocatalytic coatings and fluorescent taggants.

Dr Officer gained his 1st Class BSc Honours degree in Applied Chemistry in 2001 before completing his PhD entitled "Alternative Strategies for Security Labelling/Encoding of Paper and Plastic Products" in 2005 from The Robert Gordon University. Following this, he carried out his postdoctoral research advancing the technology developed from his PhD and helped expand the applications into the biomedical and environmental fields. This involved working on various projects funded by industry (NCR Financial Solutions Group Ltd, Dundee, ITI Techmedia and Prime Technologies LLC) which led to filing three patents. He was appointed as a lecturer in the School of Pharmacy & Life Sciences in 2008.

1. **Cruickshank, L., Officer, S., Pollard, P., Prabhu, R., Stutter, M. , Fernandez, C. (2015)**. Rare elements electrochemistry: the development of a novel electrochemical sensor for the rapid detection of europium in environmental samples using gold electrode modified with 2-pyridinol-1-oxide, analytical sciences, 31(7), pp. 623-627. Doi:10.2116/analsci.31.623.
2. **Hauser, F.M., Knupp, G. Officer, S. (2015)**. Improvement in fingerprint detection using tb(iii)-dipicolinic acid complex doped nanobeads and time resolved imaging, forensic science international, 253, pp. 55-63. Doi:10.1016/j.forsciint.2015.05.010
3. **Hauser, F.M., Knupp, G., Officer, S. (2015).** Improvement in fingerprint detection using tb(iii)-dipicolinic acid complex doped nanobeads and time resolved imaging. Forensic science international, 253, 55-63
4. **Cruickshank, L., Officer, S., Pollard, P., Prabhu, R., Stutter, M., Fernandez, C. (2015).** Rare elements electrochemistry: the development of a novel electrochemical sensor for the rapid detection of europium in environmental samples using gold electrode modified with 2-pyridinol-1-oxide. Analytical sciences, 31(7) 623-627
5. **Cushnie, T.P.T., Robertson, P.K.J., Officer, S., et al (2010)**. Photobactericidal effects of tio 2 thin films at low temperatures - a preliminary study. Journal of photochemistry and photobiology a: chemistry, 216(2-3) 290-294

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Research Interests

- Synthesis and spectral analysis of lanthanide complexes for a variety of applications
- Sol-gel synthesis of nano and micro sized beads
- Spectroscopy and laser based sensing
- Development of a novel latent fingerprint development powder
- Development of a novel environmental soil tracer

DR. BRUCE PETRIE

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Environmental Analysis

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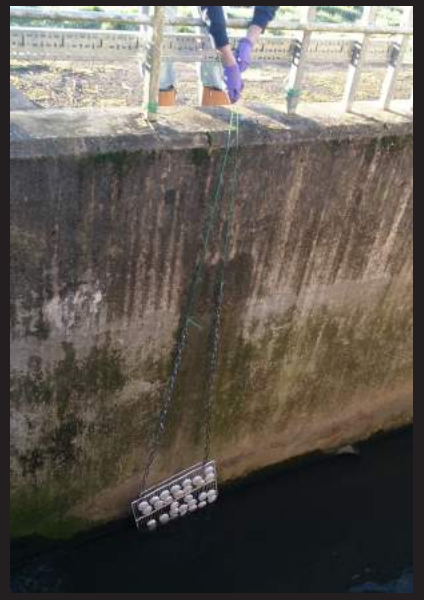
Dr Petrie has research interests in the source, fate and effects of organic contaminants (e.g., pharmaceuticals and personal care products) in the environment.

He spent 3 years working as a Research Officer at the Department of Chemistry, University of Bath. He joined RGU as Application Supervisor in 2016 before being appointed Lecturer in 2017. He obtained his PhD in Environmental Chemistry at Cranfield Water Science Institute in 2013.

Research Interests

- Investigating the source, fate and effects of: organic contaminants (e.g., pharmaceuticals and personal care products) in the environment.



1. **Petrie, B., Smith, B.D., Youdan, J., Barden, R., Kasprzyk-Hordern, B. (2017)** Multi-residue determination of micropollutants in Phragmites australis from constructed wetlands using microwave assisted extraction and ultra-high-performance liquid chromatography tandem mass spectrometry, Analytica Chimica Acta, vol. 959, pp. 91-101.
2. **Petrie, B., Proctor, K., Youdan, J., Barden, R., Kasprzyk-Hordern, B. (2017)** Critical evaluation of monitoring strategy for the multi-residue determination of 90 chiral and achiral micropollutants in effluent wastewater, Science of the Total Environment, vol. 579, pp. 569-578.
3. **Archer, E., Petrie, B., Kasprzyk-Hordern, B., Wolfaardt. (2017)** The fate of pharmaceuticals and personal care products (PPCPs), endocrine disrupting contaminants (EDCs), metabolites and illicit drugs in a WWTW and environmental waters, Chemosphere, vol. 174, pp. 437-446.
4. **Petrie, B., Gravell, A., Mills, G., et al (2016),** In-situ calibration of a new ChemcatcherÆ configuration for the determination of polar organic micropollutants in wastewater effluent, Environmental Science and Technology, vol. 50, pp. 9469-9478.
5. **Petrie, B., Youdan, J., Barden, R., Kasprzyk-Hordern, B. (2016),** New framework to diagnose the direct disposal of prescribed drugs in wastewater – a case study of the antidepressant fluoxetine, Environmental Science and Technology, vol. 50, pp. 3781-3789.

DR. IAIN ROWE

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Biomedical Science

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Dr Rowe is a Lecturer in Biomedical Science at RGU with laboratory research focussed on electrophysiological and imaging techniques to investigate: (i) the biophysical relationship between potassium channel structure and function; (ii) post-translation modification of channel activity by metabolic signals and pharmacology; and (iii) the pharmacological modulation and physiological impact of potassium channels in complex biological systems.

Ongoing projects include work with Dr Stuart Cruickshank and Dr Helene Widmer (RGU) on: the pulmonary vein as a therapeutic target in cardiovascular disease; the use of bioinformatics to support the utilisation of farm animal tissue for more effective preclinical screening; and utilisation of data on single-nucleotide polymorphisms to investigate ion channel function. Non-laboratory research involves investigation of: the role of inter-professional learning (IPL); quality improvement methodology; and cloud-based resources in pharmacy and biomedical education.

1. **Steven, K., Howden, S., Mires, G., Rowe, I., et al (2017).** Toward interprofessional learning and education: Mapping common outcomes for prequalifying healthcare professional programs in the United Kingdom. Medical Teacher, 39(7) 720-744
2. **Ciprian Dopinescu, Helene Widmer, Rowe, I., et al (2012)** Hypoxia sensitivity of a voltage-gated potassium current in porcine intrapulmonary vein smooth muscle cells. Am. J.Physiol. (Lung Cell.Mol.Physiol.) Published ahead of print July 6, 2012, doi:10.1152/ajplung.00157.2012
3. **Fiona Ross, J. Nicole Rafferty, et al (2011)** BKCa channel α-subunit splice variants are differentially modulated by AMP-activated protein kinase dependent phosphorylation. J.Biol.Chem. 286, 11929-11936
4. **Owen Jeffries, Nina Geiger, Iain C.M. Rowe, et al (2010)** Palmitoylation of the S0-S1 linker regulates cell surface expression of voltage- and calcium- activated potassium (BK) channels. J.Biol.Chem. 285, 33307-33314
5. **Lie Chen, Iain C. M. Rowe, Hans-Guenther Knaus, Peter Ruth & Michael J. Shipston. (2010)** Membrane trafficking of large conductance calcium-activated potassium (BK) channels is regulated by alternative splicing of a transplantable, acidic trafficking motif in the RCK1-RCK2 linker. J.Biol.Chem. 285, 23263-23273

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Research Interests

- Potassium channel physiology
- Potassium channel pharmacology
- Metabolic regulation of ion channels
- Ion channels in pulmonary tissue
- Hypothalamic control of appetite

DR. COLIN THOMPSON

PHD, MAPS, MRSC, FHEA

Drug Delivery

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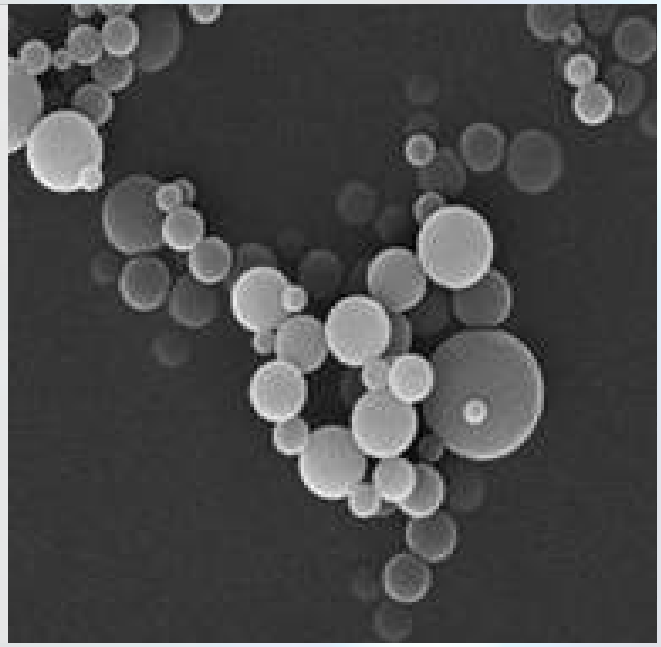
Dr Thompson has been an undergraduate, postgraduate and research fellow within the School and a lecturer in Drug Delivery since July 2009.

He teaches a variety of undergraduate modules across all four years on the MPharm course as well as other life sciences undergraduate and postgraduate degrees. He is also a Fellow of the Higher Education Academy and a Member of the Academy of Pharmaceutical Sciences and the Royal Society of Chemistry.



1. **Ibie, C. O., Knott, R. and Thompson, C. J., (2015).** In-vitro evaluation of the effect of polymer structure on uptake of novel polymer-insulin polyelectrolyte complexes by human epithelial cells. International Journal of Pharmaceutics 479, 103-117.
2. **Ibie, C. O., Thompson, C.J., Knott, R. (2015).** Synthesis, characterisation and in vitro evaluation of novel thiolated derivatives of polyallylamine and quaternised polyallylamine. Colloid and Polymer Science, 293(6) 1737-1748
3. **Thompson, C.J., Hansford, D., Higgins, S., Rostron, C., Hutcheon, G.A. and Munday, D.L., (2009).** Preparation and evaluation of microspheres prepared from novel polyester-ibuprofen conjugates blended with non-conjugated ibuprofen. Journal of Microencapsulation 26(8), 676-683.
4. **C. Thompson and W. P. Cheng (2011).** Chemically Modified Polyelectrolytes for Intestinal Peptide and Protein Delivery. In: Peptide and Protein Delivery, C Van der Walle (Ed.). Elsevier: London, 2011.
5. **Cheng, W. P., Thompson, C., Ryan, S. M., Aguirre, T., Tetley, L. and Brayden, D. J., (2010).** In vitro and in vivo characterisation of a novel peptide delivery system: Amphiphilic polyelectrolyte-salmon calcitonin nanocomplexes. Journal of Controlled Release 147(2), 289-297.

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Research Interests

- Targeted drug delivery via I/V route using polymeric nanoparticles and polymer-drug conjugates
- Buccal delivery of drugs using natural and semi-synthetic polymers
- Solid lipid nanoparticles and nanostructured lipid carriers for drug solubilisation and delivery
- Amphiphilic polymers and polyelectrolytes for macromolecule delivery
- Microencapsulation of drugs using biodegradable polymers

DR. KYARI YATES

BENG MSC PHD

Environmental Chemistry, Forensic & Analytical Sciences

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Dr Yates's research interest lies in environmental chemistry with a particular emphasis on fate, distribution and effects of persistent organic pollutants (POPs) and passive sampling methodologies in various matrices.

Dr Yates also has an interest in environmental sensing and monitoring as well as the recycling of used drilling fluids and remediation of oily waste waters.

He worked as an environmental Chemist at the Fisheries Research Services Marine Laboratory (now Marine Scotland Science Marine Laboratory) Aberdeen before joining the Macaulay Land Use Research Institute, Aberdeen (now James Hutton Institute) where he worked as an Analytical Chemist.

In 2010 he was appointed a Lecturer with the School of Pharmacy and Life Sciences at RGU.

1. **Wuyep, E.O., Oluyemi, G.F., Yates, K., Akisanya, A.R. (2018).** Geomechanical effects of oilfield chemicals on sand failure in reservoir rocks. Journal of Petroleum Science and Engineering, 165, 347-357
2. **Shand, C.A., Wendler, R., Dawson, L., Yates, K., Stephenson, H. (2017).** Multivariate analysis of Scotch whisky by total reflection x-ray fluorescence and chemometric methods: A potential tool in the identification of counterfeits. Analytica Chimica Acta, 976,14-24
3. **Siddique, S., Kwoffie, L., Addae-Afoakwa, K., Yates, K., Njuguna, J. (2017).** Oil Based Drilling Fluid Waste: An Overview on Environmentally Persistent Pollutants. IOP Conference Series: Materials Science and Engineering, 195(1)
4. **Zhang, Z., Troldborg, M., Yates, K., Osprey, M., Kerr, C., Hallett, P.D., Baggaley, N., Rhind, S.M., Dawson, J.J.C., Hough, R.L. (2016).** Evaluation of spot and passive sampling for monitoring, flux estimation and risk assessment of pesticides within the constraints of a typical regulatory monitoring scheme. Science of the Total Environment, 569-570, 1369-1379
5. **Adegbotolu, V. U., Njuguna, J., Pollard, P., and Yates, K. (2014).** Waste to Want: Polymer nanocomposites using nanoclays extracted from Oil based drilling mud waste. IOP Conf. Ser.: Mater. Sci. Eng. 64 012023 doi:10.1088/1757-899X/64/1/012023

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Research Interests

- Fate, distribution and effects of persistent organic pollutants (POPs)
- Development of analytical methodologies for environmental monitoring
- Passive sampling methodologies in various matrices
- Recycling of used drilling fluids and cuttings

PRACTICE RESEARCH

Innovations in pharmacy practice
• sustainable models of integrated multidisciplinary care • independent prescribing • pharmaceutical care • interprofessional learning • self-care • technology enhanced practice

Medicines use • Medicine effectiveness and safety • specific medicine groups • individual medicines • Medicine processes and procedures

Improving nutritional care • working with food suppliers • modification of food products

PROF. DEREK STEWART

BPHARM (HONS), MSC, PHD, PGCERT
CLINICAL PRACTICE THEME LEADER

Pharmacy Practice, Lead for Practice Research,

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Prof. Stewart leads the Clinical Practice theme. He has expertise in a wide spectrum of health services research methodologies and methods. His research spans very many different practice research areas, with particular focus on developing, implementing and evaluating models of care, and the safe and effective use of medicines.

He has led pharmacy practice research generating evidence of impact on patients, professionals, organisations and society at local, national and international levels. He has an international reputation in the field on non-medical prescribing education, policy, practice and research.

He collaborates widely with academics and practitioners across the globe and is currently leading major research programmes in the Middle East and is a key player in a European Commission funded study of inappropriate polypharmacy being led by the Scottish Government.

1. **Stewart D, McDonald C, MacLeod J, MacLure K, Gray G, McIntosh T. (2018)** The behaviors and experiences of the community pharmacy team on the provision of multi-compartment compliance aids. Research in Social and Administrative Pharmacy;14:347-345. doi:10.1016/j.sapharm.2017.04.004
2. **Adawi R, Tonna A, Stewart D, Rayan C, Eledrisi M, Abdelaziz H. (2018)** Assessment of the impact of pharmacists' input on the screening, management and prevention of metabolic syndrome. PROSPERO. CRD42018089862.
3. **Gibson-Smith K, Paudyal V, MacLure K, Forbes-McKay K, Buchanan C, Wilson L, MacLeod J, Smith A, Stewart D. (2018)** Relocating patients from a specialist homeless healthcare centre to general practices: a multi-perspective study. British Journal of General Practice;e105. doi:10.3399/bjgp18X69457
4. **McLay JS, Izzati N, Pallivalapila AR, Shetty A, Pande B, Rore C, Moza Al Hail, Stewart D. (2017)** Pregnancy, prescription medicines and the potential risk of herb-drug interactions: a cross-sectional survey. BMC Complementary and Alternative Medicine;17:543.
5. **Gibson-Smith K, Booth JL, Stewart D, Pfleger S, McIver L, MacLure K. (2017)** Supporting shared decision-making and people's understanding of medicines: an exploration of the acceptability and comprehensibility of patient information. Pharmacy Practice;15(4):1082 doi:10.18549/PharmPract.04.1082

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Research Interest

- Development, implementation and evaluation of non-medical prescribing models of practice; appropriate prescribing in all patients groups, particularly older people
- Patient safety in general and medication errors specifically
- Use, effectiveness and harm associated with complementary and alternative medicines
- Access to medicines, particularly in remote and rural areas; development of strategies to reduce medication waste
- Medicines adherence, associated behavioural determinants

DR. SCOTT CUNNINGHAM

BSC (HONS) , PGDIP, PHD

Clinical Pharmacy

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Dr Cunningham is a senior lecturer and group leader for Clinical Pharmacy and Pharmacy Practice at the School of Pharmacy and Life Sciences.

He is a Chair of the Royal Pharmaceutical Society Faculty Accreditation Panel and has a broad interest in all aspects of quality assurance related to pharmacist development. Dr Cunningham is an external examiner for pharmacy courses and regularly reviews for a number of journals. Dr Cunningham is an active researcher with research interests spanning many aspects of pharmacy practice and education.

Dr Cunningham is involved in researching aspects of pharmacist prescribing including: the training programme, why some pharmacists choose to train as prescribers and others do not; how pharmacist prescribers actually practise; the views of the pharmacist prescribers and their doctor colleagues.

1. **Stewart, D., Gibson Smith, K., MacLeod, J., Strath, A., Paudyal, V., Forbes-McKay, K., Cunningham, S., MacLure, K. (2018)**. The experiences and beliefs of older people in Scottish very sheltered housing about using multi-compartment compliance aids. International Journal of Clinical Pharmacy, 1-9
2. **Rushworth, G.F., Cunningham, S., Pfleger, S., Hall, J., Stewart, D. (2018).** A cross-sectional survey of the access of older people in the Scottish Highlands to general medical practices, community pharmacies and prescription medicines. Research in Social and Administrative Pharmacy, 14(1) 76-85
3. **West, L.M., Cordina, M., Cunningham, S. (2017).** Erratum to: Clinical pharmacist evaluation of medication inappropriateness in the emergency department of a teaching hospital in Malta (Pharmacy Practice, (2012), 10, 4, (181-187), 10.4321/s1886-36552012000400001). Pharmacy Practice, 15(3)
4. **Stewart, D., Jebara, T., Cunningham, S., Awaisu, A., Pallivalapila, A., MacLure, K. (2017).** Future perspectives on nonmedical prescribing. Therapeutic Advances in Drug Safety, 8(6) 183-197
5. **Stewart, D., Anthony, B., Morrison, C., MacRae, Y., Dixon, L., Friel, E., Yoong, E., Cunningham, S., MacLure, K. (2017).** Evaluating pharmacist input into the pharmaceutical care of patients in dispensing medical practices in remote and rural areas of Scotland. Family Practice, 34(4) 491-499

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Research Interests

- Transdisciplinary education and practice
- Pharmacist prescribing and e-Health implementation
- Medication Adherence in Chronic conditions
- Remote and Rural Healthcare

PROF. LESLEY DIACK

PHD

Transdisciplinary and Technology Enhanced Learning

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Professor Lesley Diack has worked at RGU since 2003, actively working on and researching transdisciplinary and technology enhanced learning. She was the principal investigator on a Scottish Government funded Interprofessional Education (IPE) project and author of the 2008 report.

She has worked on other funded IPE and pedagogical projects totalling over £1.2m, including projects with Police Scotland, Cancer Link Aberdeen and the North (CLAN), Janssen-Cilag, and with collaborators in Japan and Qatar. She is the only Honorary Fellow of the Centre for the Advancement of Interprofessional Education in Scotland, one of only a few Principal Fellows of the Higher Education Academy as well as a Certified Member of the Association of Learning Technology. She has presented widely on education and technology topics nationally and internationally and has published articles on both.

Prior to coming to RGU Professor Diack worked as a lecturer and researcher at the University of Aberdeen for a number of years including a Wellcome funded project investigating the Aberdeen Typhoid Outbreak of 1964.

1. **El-Awaisi, A., Joseph, S., El Hajj, M.S., Diack, L. (2017).** A comprehensive systematic review of pharmacy perspectives on inter-professional education and collaborative practice. Research in Social and Administrative Pharmacy, Nov 2017.
2. **El-Awaisi, A., Saffouh El Hajj, M., Joseph, S., Diack, L. (2016).** Interprofessional education in the Arabic-speaking Middle East: Perspectives of pharmacy academics. Journal of Interprofessional Care, 30(6) 769-776
3. **West, L.M., Diack, L., Cordina, M., Stewart, D. (2016).** A focus group based study of the perspectives of the Maltese population and healthcare professionals on medication wastage. International Journal of Clinical Pharmacy, 38(5) 1241-1249
4. **West, L.M., Diack, L., Cordina, M., Stewart, D. (2016).** A cross-sectional survey of the Maltese general public on medication wastage. International Journal of Clinical Pharmacy, 38(2) 261-270
5. **El-Awaisi, A., Diack, L., Joseph, S., Hajj, M.E. (2016).** Perspectives of pharmacy students, pharmacy academics and practicing pharmacists on interprofessional education and collaborative practice: a comprehensive systematic review protocol. JBI Database of Systematic Reviews and Implementation Reports, 13(12) 70-92

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Research Interests

- Transdisciplinary education and practice
- Technology Enhanced Learning
- Mobile Apps for Health and social care
- Social media use for health and health professional
- Patient care pathways
- Innovation

DR. KATIE MACLURE

PHD, MSC, BSC (HONS), DIPSYSPRAC, PGCERT

ehealth, technology-enabled care, non-medical prescribing

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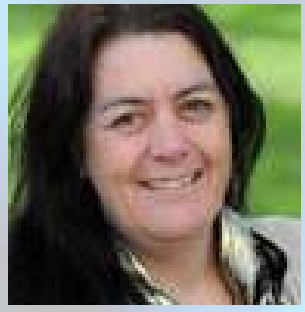

Dr Maclure has expertise in a wide range of health services research with a particular interest in ehealth and digital literacy, technology-enabled care, non-medical prescribing (NMP), equality of care for disadvantaged groups and pharmacy practice.

Dr MacLure works with research partners across the globe and is currently involved in a major research project around medication error reporting in the Middle East and a European Commission funded study of inappropriate polypharmacy being led by the Scottish Government. Closer to home, Katie's research focus in Scotland includes evaluation of pharmacy dispensing technologies and pharmacist access to clinical electronic health records.

Dr Maclure also teaches undergraduate and postgraduate students qualitative and mixed methods approaches to research.

1. **Smith, K.G., Paudyal, V., MacLure, K., Forbes-McKay, K., Buchanan, C., Wilson, L., MacLeod, J., Smith, A., Stewart, D. (2018).** Relocating patients from a specialist homeless healthcare centre to general practices: A multi-perspective study. British Journal of General Practice, 68(667) e105-e113
2. **Stewart, D., Gibson Smith, K., MacLeod, J., Strath, A., Paudyal, V., Forbes-McKay, K., Cunningham, S., MacLure, K. (2018).** The experiences and beliefs of older people in Scottish very sheltered housing about using multi-compartment compliance aids. International Journal of Clinical Pharmacy, 1-9
3. **Stewart, D., Gibson-Smith, K., MacLure, K., Mair, A., Alonso, A., Codina, C., Cittadini, A., Fernandez-Llimos, F., Fleming, G., Gennimata, D., Gillespie, U., Harrison, C., Junius-Walker, U., Kardas, P., Kempen, T., Kinnear, M., Lewek, P., Malva, J., McIntosh, J., Scullin, C., Wiese, B. (2017).** A modified Delphi study to determine the level of consensus across the European Union on the structures, processes and desired outcomes of the management of polypharmacy in older people. PLoS ONE, 12(11)
4. **MacLure, K., Stewart, D. (2017).** From policy towards pharmacy practice: A review of the intended use of ehealth in pharmacy in Scotland. Health Policy and Technology, 6(3) 279-285
5. **Paudyal, V., MacLure, K., Buchanan, C., Wilson, L., Macleod, J., Stewart, D. (2017).** 'When you are homeless, you are not thinking about your medication, but your food, shelter or heat for the night': behavioural determinants of homeless patients' adherence to prescribed medicines. Public Health, 148,1-8

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Research Interests

- eHealth: in relation to pharmacy IT strategy, integrated healthcare and digital literacy
- Pharmacy practice and education: non-medical prescribing, consultation skills, pharmacovigilance, technology in pharmacy, role of pharmacy in care of older people
- Research Methods: with a focus on qualitative approaches, research governance, systems practice, systematic reviews

DR. KATIE GIBSON SMITH

PHD

Self care

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Dr Gibson Smith's general research interests include self-care, unreached populations and pharmacy practice.

Her specific interests target theoretical approaches and behaviour change in relation to self-care behaviour e.g. physical activity, diet, healthcare in offshore and homeless populations; and the access and usage of healthcare and medicines.

1. **Gibson Smith, K., Paudyal, V., MacLure, K., Forbes-McKay, K., Buchanan, C., Wilson, L., MacLeod J, Smith A, Stewart D. (2018)** Relocating patients from a specialist homeless healthcare centre to general practices: a multi-perspective study. British Journal of General Practice 2018;e105 doi:0.3399/bjgp18X694577
2. **Gibson Smith, K., Paudyal, V., Klein, S., Stewart, D. (2018)**. Health, self-care and the offshore workforce – opportunities for behaviour change interventions: an epidemiological survey. Rural and Remote Health. In press.
3. **Stewart, D., Gibson Smith, K., MacLeod, J., Strath, A., Paudyal, V., Forbes-McKay, K., Cunningham, S., MacLure, K. (2018).** The experiences and beliefs of older people in very sheltered housing about using multi-compartment compliance aids. International Journal of Clinical Pharmacy. In press.
4. **Stewart, D., Gibson Smith, K., MacLure, K., et al. (2018)**. A modified Delphi study to obtain consensus across the European Union on the structures, processes and desired outcomes of the management of polypharmacy in older people. PLOS One. 12 (11).
5. **Gibson Smith, K., Booth, J., Stewart, D., et al. (2017).** Supporting shared decision-making and people's understanding of medicines: An exploration of the acceptability and comprehensibility of patient information. Pharmacy Practice. 15(4): 1082.

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Research Interests

- Self-care: theoretical approaches and behaviour change in relation to self-care behaviour e.g. physical activity, diet
- Unreached populations: healthcare in offshore and homeless populations
- Pharmacy practice: accessing and using healthcare and medicines

DR. TRUDI MCINTOSH

PHD

Medicines use, effectiveness and safety

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Dr McIntosh's general research interests are in the area of Pharmacist and other non medical prescribing, their prescribing decision-making and the use of multi-compartment compliance aids.

Dr McIntosh is the School Lead for pharmacist and other non-medical prescribing; her primary teaching role is in suporting pharmacists studying to become Pharmacist Independent Prescribers. Dr McIntosh contributes to undergraduate pharmacy practice teaching, and to non-medical prescribing teaching in the School of Nursing and Midwifery. She also supervises undergraduate and post-graduate research. She recently completed her PhD into "Social and cognitive influences on prescribing decisions among non-medical prescribers".

Dr McIntosh is also very interested in the development of pharmacist prescribing in West Africa.

1. **Reid, F., Power, A., Stewart, D., Watson, A., Zlotos, L., Campbell, D., McIntosh, T., Maxwell, S. (2018)**. Piloting the United Kingdom 'Prescribing Safety Assessment' with pharmacist prescribers in Scotland. Research in Social and Administrative Pharmacy, 14(1) 62-68
2. **Stewart, D., McDonald, C., MacLeod, J., MacLure, K., Gray, G., McIntosh, T. (2018).** The behaviors and experiences of the community pharmacy team on the provision of multi-compartment compliance aids. Research in Social and Administrative Pharmacy 2018;14:347-345. doi:10.1016/j.sapharm.2017.04.004
3. **McIntosh, T., Stewart, D. (2016).** A qualitative study of UK pharmacy pre-registration graduates' views and reflections on pharmacist prescribing. International Journal of Pharmacy Practice, 24(2) 139-141
4. **McIntosh, T., Stewart, D., Forbes-McKay, K., McCaig, D., Cunningham, S. (2016).** Influences on prescribing decision-making among non-medical prescribers in the United Kingdom: Systematic review. Family Practice, 33(6) 572-579
5. **McIntosh, T., Stewart, D., Munro, K. (2009).** What do Royal Pharmaceutical Society branches mean to pharmacists in Scotland?. Pharmaceutical Journal, 283(7561) 76-78

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Research Interests

- Pharmacist and other non medical prescribing, and particularly their prescribing decision-making.
- The use of multi-compartment compliance aids.

DR. MYRA MACKENZIE

PHD, HCPC REGISTERED DIETITIAN

Dietetics

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Dr Makenzie has research interests in the pedagogy of dietetic education and in understanding the sociological and psychological determinants of dietary intake.

She qualified as a dietitian in 1980, and after 2 years spent in a rotational post at Addenbrookes Hospital, Cambridge, she undertook a PhD entitled 'Diet and Functional Bowel disorders' supervised jointly by Dr Rodney Burnham at the London Hospital and Professor John Dickerson at the University of Surrey.

Following this, she worked as a clinical dietitian in a variety of different roles, including paediatrics, cystic fibrosis and enteral nutrition.

Dr Mackenzie is a longstanding member of the British Dietetic Association, and sits on the Quality Standards Committee for dietetic education. She is an HCPC registered dietitian and a Senior Fellow of the Higher Education Academy.

1. **MACKENZIE, M. NEWMAN, E. and PASIEKA, E. (2016)** Exploring social care placements in pre-registration dietetic education. Submitted to : International Journal of Practice-based Learning in Health and Social Care
2. **CAWLEY, R. and MACKENZIE-FRASER, M. (2012)** Validation of a food frequency questionnaire for estimating calcium intake in young female adults . Gut; 61:Suppl 2 A86
3. **KUMARASAMY,Y., AGUILAR, G.E., GOMARIA,E., MACKENZIE-FRASER, M. (2011).** Systematic review of the diagnostic accuracy of monitoring the nutritional status of patients with HIV/AIDS using a validated screening tool. Int. J Evidence based Health care. 10(3): 270
4. **RODGERS, A and MACKENZIE-FRASER, M. (2011)** Student Nurses' training and attitudes towards the use of the Malnutrition Universal Screening Tool. Proceedings of the Nutrition Society 70, OCE5, E322
5. **TRAVIS, H.E and MACKENZIE-FRASER, M. (2011)** The accuracy of MUST assessments by staff in a care home setting. Proceedings of the Nutrition Society 70, 0CE5, E322

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Research Interests

- Nutrition and hydration in the elderly
- Gut function and diet
- Dietetic pedagogy
- Sociological and psychological impacts on food choice

DR. NOËLLE O'DRISCOLL

PHD MPHARM MRPHARMS SFHEA MAPS

Pharmaceutical Microbiology

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Dr O'Driscoll's research areas include the development of novel antimicrobial agents for clinical use, assessment of the public understanding of antibiotic resistance and multi-drug resistant bacteria and most recently the use of mobile apps for educational and healthcare purposes.

Investigation of microbial contamination of clean rooms, operators and products produced within these areas is another longstanding area of research. The interaction of pharmacists with veterinary pharmacy and the delivery of information to under/postgraduate pharmacists on veterinary medicines is also a main research theme.

Dr O'Driscoll is a Member of The Royal Pharmaceutical Society of Great Britain, the Academy of Pharmaceutical Sciences, the Infection Prevention Society and is a Senior Member of the Higher Education Academy. Prior to RGU, Dr O'Driscoll worked extensively in community and hospital pharmacy both in Scotland and Ireland.

Research Interests

- Novel antimicrobials - the development of novel delivery/formulation methods for existing antibacterial agent
- Veterinary Pharmacy - the prescribing, sale, supply and dispensing of veterinary medicines
- Contact Lenses - the assessment of the hygiene protocols and investigation of the microbial contamination
- Aseptic Suites - assessment and control of microbial contamination of CleanRooms, operators and products
- Antibiotic resistance

1. **O'Driscoll, N.H., Cushnie, T.P.T., Matthews, K.H., Lamb, A.J. (2018).** Colistin causes profound morphological alteration but minimal cytoplasmic membrane perforation in populations of Escherichia coli and Pseudomonas aeruginosa. Archives of Microbiology, 1-10
2. **Cushnie, T.P.T., O'Driscoll, N.H., Lamb, A.J. (2016).** Morphological and ultrastructural changes in bacterial cells as an indicator of antibacterial mechanism of action. Cellular and Molecular Life Sciences, 73(23) 4471-4492
3. **O'Driscoll, N.H., Labovitiadi, O., Lamb, A.J. (2015)**. Evaluation of the practice of veterinary pharmacy. Currents in Pharmacy Teaching and Learning, 7(5) 606-613
4. **O'Driscoll, N.H., Juwah, C., Labovitiadi, O., Lamb, A.J. (2014).** Veterinary pharmacy within the United Kingdom: Review of current practice and education. Pharmacy Education, 14(1) 26-30
5. **O'Driscoll, N.H., Juwah, C., Labovitiadi, O., Lamb, A.J. (2014).** Veterinary pharmacy: Coverage in the undergraduate pharmacy curriculum and perspectives of practicing pharmacists. Pharmacy Education, 14(1) 86-92

PROF. ALISON STRATH

FRPHARMS

Community Pharmacy Practice,

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Professor Strath has active research interests in pharmacy practice, eHealth and models of community pharmacy remuneration. Other interests include pharmacy education, interprofessional learning, pharmaceutical care, prescribing, medicine safety, patient safety, quality improvement and workforce development.

She has attracted funding from NHS Education for Scotland (NES) and the Higher Education Academy (HEA). One programme has led to the establishment of a joint academic fellow with the School of Medicine at the University of Dundee to develop, evaluate and determine the effectiveness of a medical and pharmacy student teaching programme aimed at enhancing their interprofessional working.

Professor Strath also works part-time with Scottish Government where she is responsible for developing and implementing new community pharmacy services and supporting the ePharmacy Technology Programme. This role includes policy development and implementation. She provided the pharmaceutical input to the Scottish Government's H1N1 Pandemic Flu response in 2009.

1. **Stewart, D., Gibson Smith, K., MacLeod, J., Strath, A., et al (2018).** The experiences and beliefs of older people in Scottish very sheltered housing about using multi-compartment compliance aids. International Journal of Clinical Pharmacy, nan(nan) 1-9
2. **Steven, K., Howden, S., Mires, G., Rowe, I., Lafferty, N., Arnold, A., Strath, A. (2017).** Toward interprofessional learning and education: Mapping common outcomes for prequalifying healthcare professional programs in the United Kingdom. Medical Teacher, 39(7) 720-744
3. **Inch, J., Notman, F., Watson, M., Green, D., Baird, R., Ferguson, J., Hind, C., McKinstry, B., Strath, A., Bond, C. (2017).** Tele-pharmacy in rural Scotland: a proof of concept study. International Journal of Pharmacy Practice, 25(3) 210-219
4. **MacLure, K., MacLeod, J., Forbes-McKay, K., Paudyal, V., Cunningham, S., Strath, A., Lynch, R., Stewart, D. (2016).** A Case Study Investigation into the Use of Multi-compartment Compliance Aids in Older People Resident in Very Sheltered Housing. Patient, 9(6) 583-590
5. **Alqubaisi, M., Tonna, A., Strath, A., Stewart, D. (2016).** Quantifying behavioural determinants relating to health professional reporting of medication errors: a cross-sectional survey using the Theoretical Domains Framework. European Journal of Clinical Pharmacology, 72(11) 1401-1411

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Research Interests

- Models of pharmacy practice including eHealth technologies and remuneration models
- Quality improvement
- Patient safety, human factors and simulation in healthcare
- Interprofessional learning in undergraduate and postgraduate education
- Healthcare policy development and implementation

DR. ANTONELLA TONNA

BPHARM (HONS), MSC, PHD,MRPHARMS, MFRPSII

Clinical Pharmacy

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Dr Tonna was previously a hospital pharmacist in Malta for around 10 years and was instrumental in setting up numerous services, mainly the ward based clinical pharmacy service in 2002. She moved to the UK and was involved in primary care research in Edinburgh and then worked as a clinical pharmacist at the John Radcliffe Hospital, Oxford.

Dr Tonna is a member of the Scottish Antimicrobial Pharmacists' Association with a key role in developing research. She is also responsabile for facilitates workshops and student symposia as part of the annual European Association of Hospital Pharmacists Congress.

Dr Tonna graduated with a BPharm (Hons) from the University of Malta in 1994. In 2001 she completed an MSc in Clinical Pharmacy at Robert Gordon University and graduated in 2001, completing a PhD in 2011.

1. **Tonna, A.P., Weidmann, A.E., Laing, R.B.S., Tonna, I., Macartney, G.M., Paudyal, V., Stewart, D. (2017).** A qualitative study of determinants of patient behaviour leading to an infection related hospital admission. Journal of the Royal College of Physicians of Edinburgh, 47(1) 40-46
2. **Alqubaisi, M., Tonna, A., Strath, A., Stewart, D. (2016).** Quantifying behavioural determinants relating to health professional reporting of medication errors: a cross-sectional survey using the Theoretical Domains Framework. European Journal of Clinical Pharmacology, 72(11) 1401-1411
3. **Alqubaisi, M., Tonna, A., Strath, A., Stewart, D. (2016).** Exploring behavioural determinants relating to health professional reporting of medication errors: a qualitative study using the Theoretical Domains Framework. European Journal of Clinical Pharmacology, 72(7) 887-895
4. **Hogan-Murphy, D., Tonna, A., Strath, A., Cunningham, S. (2015).** The medication therapy management pyramid shifting medication review to an integrated medication therapy management process. European Journal of Hospital Pharmacy, 22(6) 358-365
5. **Fleming, A., Tonna, A., O'Connor, S., Byrne, S., Stewart, D. (2015).** Antimicrobial stewardship activities in hospitals in Ireland and the United Kingdom: a comparison of two national surveys. International Journal of Clinical Pharmacy, 37(5) 776-781

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Research Interests

- Antimicrobial stewardship and the role of the pharmacist in optimising antimicrobial use
- Exploring individuals' views and perceptions using qualitative research methods
- Exploration of patient and prescribing behaviour relating to antimicrobial prescribing and use
- Exploring patient and carer involvement in delivery of pharmacy education

DR. ANITA WEIDMANN

PHD

Pharmacy Education, Molecular Biology

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Dr Weidmann's general research interests lie within the field of diabetes and obesity. Her research skills span both Molecular Biology and cell signalling as well as pharmacy Education research in this area.

Her key research interests include the applied and practical impact of diabetes and obesity relevant to Pharmacy, the effects of flavonoid antioxidants on the regulation of TRB3 expression in hepato and adipocytes, and molecular cell changes in response to changing glucose and oxygen concentrations

Dr Weidmann also has a keen interest in the development of clinical pharmacy education and services across other European countries. Key research interests in this area include evaluation based research of existing clinical services and education; needs assessment for the development of clinical services to inform legislative changes and academic curricula.

1. **Weidmann, AE., Donat, I., Ortner, A., (2017).** Austrian pharmacy students' views, experiences and attitudes on an elective clinical Pharmacy teaching event delivered in the English language. Pharmacy Education. Accepted for publication.
2. **Mills, P., Weidmann, A. and Stewart, D. (2017).** Hospital Electronic Prescribing System Implementation Impact on Discharge Information Communication and Prescribing Errors: A Before and After Study, European Journal of Clinical Pharmacology. Accepted for publication (IF: 2.966)
3. **Tonna A, Weidmann AE, Laing RBS, Tonna I, MacCartney GM, Paudyal V, Stewart D. (2017)**. A qualitative study of determinants of patients behaviour leading to an infection related hospital admission. Journal of the Royal College of Physicians of Edinburgh. 47:40-46.
4. **Brincat A, West LM, Stewart D, Weidmann A, (2016).** Patients' lived experiences of cytotoxic medications prescribed for the management of malignant solid tumours: a systematic review. PROSPERO 2016:CRD42016048457
5. **Mills, P., Weidmann, A. and Stewart, D. (2016).** Hospital electronic prescribing system implementation impact on discharge information communication and associated prescribing errors: a before and after study. International journal of pharmacy and practice, 24(Suppl 3), article 0056, page 49.

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Research Interests

- The applied and practical impact of diabetes and obesity relevant to Pharmacy
- The effects of flavonoid antioxidants on the regulation of TRB3 expression in hepato and adipocytes
- Molecular cell changes in response to changing glucose and oxygen concentrations
- Evaluation based research of existing clinical services and education; needs assessment for the development of clinical services to inform legislative changes and academic curricula.