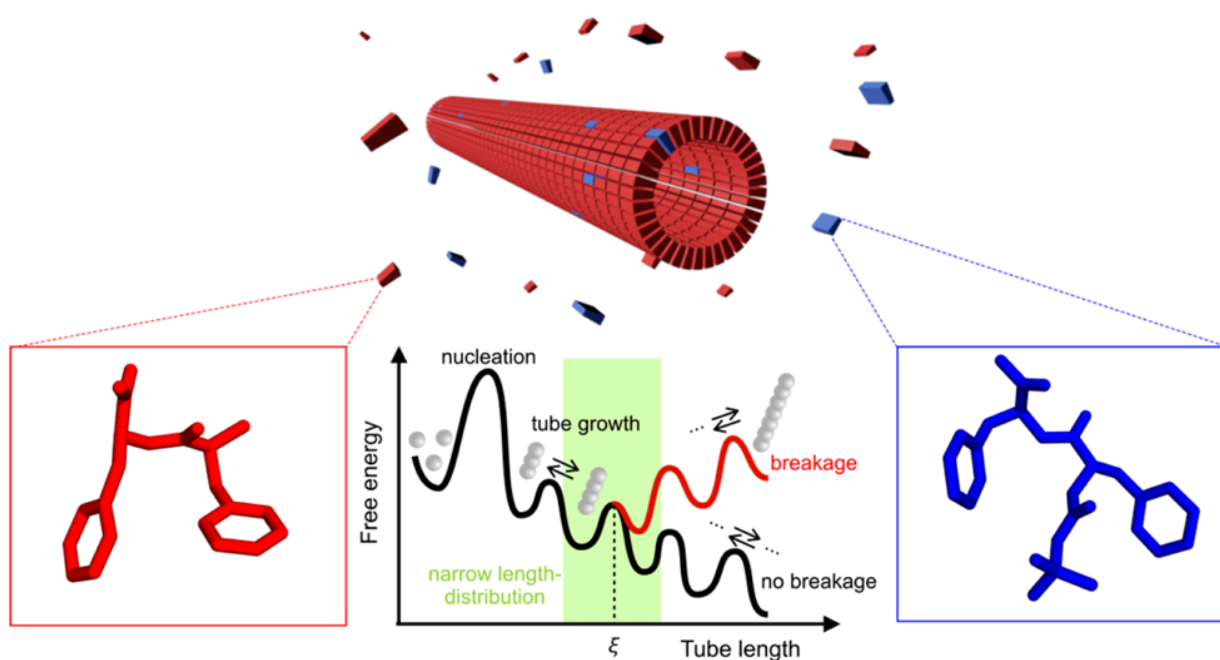




The University of
Nottingham

UNITED KINGDOM • CHINA • MALAYSIA

The School of Pharmacy Journal



August 2016-October 2016

Foreword

Welcome to our latest edition of the School of Pharmacy Journal, a collection of publications and press releases from August to October 2016.

These three months have seen how the School has continued to progress the broad spectrum of research in pharmaceutical science, and make a positive impact in society. The 46 research papers collated in this journal evidence the work of School in the physical, health and social sciences in areas such as analytical chemistry, biomolecular sciences, signalling, polymer chemistry, tropical medicine, pharmaceuticals and formulation, technique development, materials science, immunology, wound management, toxicology, and medicines adherence. As you can see from the author list our publications reflect a 'team science' approach to interdisciplinary work and portray the collaborative nature of our work with postgraduate students, postdoctoral researchers, research officers and academic staff across campuses all contributing to the work. Along with the Pharmacy Malaysia Campus, we welcome the talented and highly-motivated students to the School who have embarked on their PhD studies, and look forward to celebrating their success in developing their chosen field of research and their contribution to our team.

The School has run a number of activities through which we demonstrate the value and impact of our work and hopefully inspire the next generation of scientists. These included the Royal Society Summer exhibition in July, the Leonardo Da Vinci events at Nottingham Castle in September, and expansion of the School of Pharmacy After-School Science Club. We look forward to continuing these and similar activities in the future.



Professor Phil Williams
Phil.Williams@nottingham.ac.uk
Director of Research
(Nottingham)



Professor Nashiru Billa
Nashiru.Billa@nottingham.edu.my
Associate Dean (Research)
(Malaysia)

Contents

- [Staff Research News](#)
- [Student News](#)
- [General News](#)
- [Highlighted Papers](#)
- **Press Releases**
 - [Claire Anderson says 'Join me in Nanjing'](#)
 - [How a pharmacist made a career in pain and anaesthesia](#)
 - [Frankie Rawson wins a poster prize](#)
 - [Postgraduate student wins first prize for best poster presentation](#)
 - [PhD student wins best poster presentation prize](#)
 - [Gizem Osman receives EPSRC Doctoral Prize](#)
 - [Pharmacy leadership and management team wins Lord Dearing Award](#)
 - [University of Nottingham hold the fort](#)
 - [Twelve new students join the CDT in Advanced Therapeutics and Nanomedicines](#)
- **Collated Research Papers**

[Effect of Food Status on the Gastrointestinal Transit of Amphotericin B-Containing Solid Lipid Nanoparticles in Rats](#)

Hilda Amekyeh, Nashiru Billa, Kah-Hay Yuen and Sheau Chin Sherlyn Lim.

AAPS Pharmscitech (2016) 17, 1060-1066

DOI: 10.1208/s12249-015-0438-2

Find here: <http://link.springer.com/article/10.1208%2Fs12249-015-0438-2>

[Making Silicone Rubber Highly Resistant to Bacterial Attachment Using Thiol-ene Grafting](#)

E.P. Magennis, A.L. Hook, P. Williams and M.R. Alexander.
ACS Applied Materials & Interfaces (2016) 8, 30780-30787
DOI: 10.1021/acsami.6b10986

[Controlling the Physical Dimensions of Peptide Nanotubes by Supramolecular Polymer Coassembly](#)

Lihi Adler-Abramovich, Pini Marco, Zohar Amon, Rhiannon C. Creasey, Thomas C.T. Michaels, Aviad Levin, David Scurr, Clive J. Roberts, Tuomas P.J. Knowles and Saul J.B. Tendler.
ACS Nano (2016) 10, 7436-7442
DOI: 10.1021/acsnano.6b01587

[Highly efficient intracellular transduction in three-dimensional gradients for programming cell fate](#)

Hoda M. Eltaher, Jing Yang, Kevin M. Shakesheff and James E. Dixon.
Acta Biomaterialia (2016) 41, 181-192
DOI: 10.1016/j.actbio.2016.06.004

[Engineering serendipity: High-throughput discovery of materials that resist bacterial attachment.](#)

E.P. Magennis, A.L. Hook, M.C. Davies, C. Alexander, P. Williams and M.R. Alexander.
Acta Biomaterialia (2016), 1;34:84-92
DOI: 10.1016/j.actbio.2015.11.008

[Dietary Fats and Pharmaceutical Lipid Excipients Increase Systemic Exposure to Orally Administered Cannabis and Cannabis-based Medicines](#)

A. Zgair, J.C Wong, J.B. Lee, J. Mistry, O. Sivak, K.M. Wasan, I.M. Hennig, D.A. Barrett, C.S. Constantinescu, P.M. Fischer and P. Gershkovich.
American Journal of Translational Research (2016) 8(8):3448-59.

[Probing the Relationship Between Detected Ion Intensity, Laser Fluence, and Beam Profile in Thin Film and Tissue in MALDI MSI](#)

Rory Steven, Alan M. Race and Josephine Bunch.
Journal of the American Society for Mass Spectrometry (2016) 27, 1419-1428
DOI: 10.1007/s13361-016-1414-0

[SpectralAnalysis: Software for the Masses](#)

Alan M. Race, Andrew D. Palmer, Alex Dexter, Rory T. Steven, Iain B. Styles and Josephine Bunch.

Analytical Chemistry (2016) 88, 9451-9458

DOI: [10.1021/acs.analchem.6b01643](https://doi.org/10.1021/acs.analchem.6b01643)

[MALDI Imaging of Liquid Extraction Surface Analysis Sampled Tissue](#)

Elizabeth C. Randall, Alan M. Race, Helen J. Cooper and Josephine Bunch.

Analytical Chemistry (2016) 88, 8433-8440

DOI: [10.1021/acs.analchem.5b04281](https://doi.org/10.1021/acs.analchem.5b04281)

[Anti-encystment and amoebicidal activity of *Lonicera japonica* Thunb. and its major constituent Chlorogenic acid in vitro](#)

Tooba Mahboob, Abdul-Majid Azlan, Tian-Chye Tan, Chandramathi Samudi, Shamala Devi Sekaran, Veeranoot Nissapatorn and Christophe Wiart.

Asian Pacific Journal Of Tropical Medicine (2016) 9, 844-850

DOI: [10.1016/j.apjtm.2016.07.008](https://doi.org/10.1016/j.apjtm.2016.07.008)

[Insight into the relationship between the cell culture model, cell trafficking and siRNA silencing efficiency](#)

Victoria Capel, Driton Vllasaliu, Peter Watts and Snow Stolnik.

Biochemical And Biophysical Research Communications (2016) 477, 260-265

DOI: [10.1016/j.bbrc.2016.06.054](https://doi.org/10.1016/j.bbrc.2016.06.054)

[Application of Targeted Molecular and Material Property Optimization to Bacterial Attachment-Resistant \(Meth\)acrylate Polymers](#)

Kevin Adlington, Nam T. Nguyen, Elizabeth Eaves, Jing Yang, Chien-Yi Chang, Jianing Li, Alexandra L. Gower, Amy Stimpson, Daniel G. Anderson and Robert Langer.

Biomacromolecules (2016) 17, 2830-2838

DOI: [10.1021/acs.biomac.6b00615](https://doi.org/10.1021/acs.biomac.6b00615)

[Identification of polymer surface adsorbed proteins implicated in pluripotent human embryonic stem cell expansion](#)

M. Hammad, W. Rao W, J.G.W Smith, D.G. Anderson, R. Langer R, L.E. Young, D.A. Barrett, M.C. Davies, C. Denning and M.R. Alexander.

Biomaterials Science (2016) 4 (9), 1381-1391.

DOI: [10.1039/C6BM00214E](https://doi.org/10.1039/C6BM00214E)

[Supporting adherence for people starting a new medication for a long-term condition through community pharmacies: a pragmatic randomised controlled trial of the New Medicine Service](#)

Rachel Ann Elliott, Matthew J. Boyd, Nde-Eshimuni Salema, James Davies, Nicholas Barber, Rajnikant Laxmishanker Mehta, Luasz Tanajewski, Justin Waring, Asam Latif and Georgios Gkountouras.

BMJ Quality & Safety (2016) 25, 747-758

DOI: [10.1136/bmjqs-2015-004400](https://doi.org/10.1136/bmjqs-2015-004400)

[PEGylation of paclitaxel largely improves its safety and anti-tumor efficacy following pulmonary delivery in a mouse model of lung carcinoma](#)

Tian Luo, Cristina Loira-Pastoriza, Harshad Patil, Bernard Ucakar, Giulio Muccioli, Cynthia Bosquillon and Rita Vanbever.

Journal Of Controlled Release (2016) 239, 62-71

DOI: [10.1016/j.jconrel.2016.08.008](https://doi.org/10.1016/j.jconrel.2016.08.008)

[High throughput screening for discovery of materials that control stem cell fate](#)

Ashka K. Patel, Mark W. Tibbitt, Adam D. Celiz, Martyn C. Davies, Robert Langer, Chris Denning, Morgan R. Alexander and Daniel G. Anderson.

Current Opinion In Solid State & Materials Science (2016) 20, 202-211

DOI: [10.1016/j.cossms.2016.02.002](https://doi.org/10.1016/j.cossms.2016.02.002)

[Efficacy and Safety of Cannabidiol and Tetrahydrocannabivarin on Glycemic and Lipid Parameters in Patients With Type 2 Diabetes: A Randomized, Double-Blind, Placebo-Controlled, Parallel Group Pilot Study](#)

Khalid A. Jadoon, Stuart H. Ratcliffe, David A. Barrett, E. Louise Thomas, Colin Stott, Jimmy D. Bell, Saoirse E. O'Sullivan and Garry D. Tan.

Diabetes Care (2016) 39, 1777-1786

DOI: [10.2337/dc16-0650](https://doi.org/10.2337/dc16-0650)

[A validated, rapid, simple and economical high-performance liquid-chromatography method to quantify palm tocopherol and tocotrienols](#)

Yin Leng Kua, Suyin Gan, Andrea Morris and Hoon Kiat Ng.

Journal Of Food Composition And Analysis (2016) 53, 22-29

DOI: [10.1016/j.jfca.2016.09.003](https://doi.org/10.1016/j.jfca.2016.09.003)

[The impact of surface chemistry modification on macrophage polarisation](#)

Hosam M. Rostam, Sonali Singh, Fabian Salazar, Peter Magennis, Andrew Hook, Taramjit Singh, Nihal E. Vrana, Morgan R. Alexander and Amire Ghaemmaghami.

Immunobiology (2016) 221(11), 1237-1246.

DOI: [10.1016/j.imbio.2016.06.010](https://doi.org/10.1016/j.imbio.2016.06.010)

[Use of the Dynamic Gastric Model as a tool for investigating fed and fasted sensitivities of low polymer content hydrophilic matrix formulations](#)

Laura M. Mason, Simona Chessa, Hiep Huatan, David E. Storey, Pravnav Gupta, Jonathan Burley and Colin D. Melia.

International Journal Of Pharmaceutics (2016) 510, 210-220

DOI: 10.1016/j.ijpharm.2016.06.034

[TIME management by medicinal larvae](#)

David I. Pritchard, Vaclav Cerovsky, Yamni Nigam, Samantha F. Pickles, Gwendolyn Cazander, Peter H. Nibbering, Anke Bultemann and Wilhelm Jung.

International Wound Journal (2016) 13, 475-484

DOI: 10.1111/iwj.12457

[GPCRs through the keyhole: the role of protein flexibility in ligand binding to \$\beta\$ -adrenoceptors](#)

Abigail L. Emtage, Shailesh N. Mistry, Peter M. Fischer, Barrie Kellam and Charles A. Laughton

Journal of Biomolecular Structure and Dynamics (2016) 1-6

DOI: 10.1080/07391102.2016.1226197

Find here:

<http://www.tandfonline.com/doi/full/10.1080/07391102.2016.1226197?scroll=top&needAccess=true>

[Synthesis, Characterization and Evaluation of In Vitro Toxicity in Hepatocytes of Linear Polyesters with Varied Aromatic and Aliphatic Co-monomers](#)

Deepak Kakde, Leagh G. Powell, Kuldeep K. Bansal, Steve Howdle, Derek Irvine, Giuseppe Mantovani, Gavin Millar, Lea Ann Dailey, Vicki Stone, Helinor J Johnston, Cameron Alexander

Journal of Controlled Release (2016) 244, 214-228

DOI: 10.1016/j.jconrel.2016.08.003

[Image based machine learning for identification of M1 and M2 macrophages](#)

H.M. Rostam, P.M. Reynolds, S. Singh, M.R. Alexander, N. Gadegaard and A. Ghaemmaghami.

The Journal of Immunology (2016) 196 (1 Supplement), 126.25-126.25

Find here: http://www.jimmunol.org/content/196/1_Supplement/126.25

[Amphiphilic Block Copolymers From a Renewable \$\epsilon\$ -decalactone Monomer: Prediction and Characterization of Micellar Core Effects on Drug Encapsulation and Release](#)

Deepak Kakde, Vincenzo Taresco, Kuldeep K. Bansal, E. Peter Magennis, Steven M Howdle, Giuseppe Mantovani, Derek J Irvine, Cameron Alexander
Journal of Materials Chemistry B (2016) 4, 7119
DOI: 10.1039/c6tb01839d

[Mechanisms of Polymer-Templated Nanoparticle Synthesis: Contrasting ZnS and Au](#)

Lucia Podhorska, Derfogail Delcassian, Angela E. Goode, Michael Agyei, David W. McComb, Mary P. Ryan and Iain E. Dunlop.
Langmuir (2016) 32, 9216-9222
DOI: 10.1021/acs.langmuir.6b01900

[Surface chemistry of Ti6Al4V components fabricated using selective laser melting for biomedical applications](#)

Jayasheelan Vaithilingam, Elisabetta Prina, Ruth D. Goodridge, Richard J.M. Hague, Steve Edmonson, Felicity R.A.J. Rose and Steven D.R. Christie.
Materials Science & Engineering C-Materials for Biological Applications (2016) 67, 294-303
DOI: 10.1016/j.msec.2016.05.054

[A Novel Hybrid Dual Analyzer SIMS Instrument for Improved Surface and 3D-Analysis](#)

A. Pirkl, R. Moellers, H. Arlinghaus, F. Kollmer, E. Niehuis, A. Makarov, S. Horning, M. Passarelli, R. Havelund, P. Rakowska, A. Race, A.G. Shard, A. West, P. Marshall, C.F. Newman, M. Alexander, C. Dollery and I.S. Gilmore.
Microscopy and Microanalysis (2016) 22 (S3), 340-341
DOI: 10.1017/S1431927616002555

[Bioengineering of the Plant Culture of Capsicum frutescens with Vanillin Synthase Gene for the Production of Vanillin](#)

Marcus Jenn Yang Chee, Grantley W. Lycett, Teng-Jin Khoo and Chiew Foan Chin.
Molecular Biotechnology (2016) 1-8.
DOI: 10.1007/s12033-016-9986-2

[Linking in Vitro Lipolysis and Microsomal Metabolism for the Quantitative Prediction of Oral Bioavailability of BCS II Drugs Administered in Lipidic Formulations](#)

Paloma Benito-Gallo, Maria Marlow, Vanessa Zann, Peter Scholes and Pavel Gershkovich.
Molecular Pharmaceutics (2016) 13, 3526-3540
DOI: 10.1021/acs.molpharmaceut.6b00597

[DNA-templated silver nanoclusters: structural correlation and fluorescence modulation](#)

S.Y. New, S.T. Lee and X.D. Su.

Nanoscale (2016) 8, 17729-17746.

DOI: 10.1039/C6NR05872H

[MIR137 is an androgen regulated repressor of an extended network of transcriptional coregulators](#)

Emeli M. Nilsson, Kristian B. Laursen, Jonathan Whitchurch, Andrew McWilliam, Niels Ødum, Jenny L. Persson, David M. Heery, Lorraine J. Gudas and Nigel P. Mongan.

Oncotarget (2016)

[Targeted suppression of AR-V7 using PIP5K1 alpha inhibitor overcomes enzalutamide resistance in prostate cancer cells](#)

Martuza Sarwar, Julius Semenas, Regina Miftakhova, Athanasios Simoulis, Brian Robinson, Anette Gjørloff Wingren, Nigel P. Mongan, David M. Heery, Heather Johnsson and Per-Anders Abrahamsson.

Oncotarget (2016) 7, 63065-63081

DOI: 10.18632/oncotarget.11757

[Rapid quantification of low level polymorph content in a solid dose form using transmission Raman spectroscopy](#)

J.A. Griffen, Andrew W. Owen, Jonathan Burley, Vincenzo Taresco and Pavel Matousek.

Journal Of Pharmaceutical And Biomedical Analysis (2016) 128, 35-45

DOI: 10.1016/j.jpba.2016.05.017

[Support Tools in Formulation Development for Poorly Soluble Drugs](#)

Gudrun A. Fridgeirsdottir, Robert Harris, Peter M. Fischer and Clive J. Roberts.

Journal of Pharmaceutical Sciences (2016) 105, 2260-2269

DOI: 10.1016/j.xphs.2016.05.024

[Tuning the Conformation of Synthetic Co-Polypeptides of Serine and Glutamic Acid Through Control Over Polymer Composition](#)

Anne Canning, Arianna Pasquazi, Martin Fijten, Sunil Rajput, Lee Buttery, Jonathan W. Aylott and Mischa Zelzer.

Journal Of Polymer Science Part A-Polymer Chemistry (2016) 54, 2331-2336

DOI: 10.1002/pola.28104

[One-pot RAFT and Fast Polymersomes Assembly: A "beeline" From Monomers to Drug-Loaded Nanovectors](#)

F. Mastrotto, A.F. Breen, G. Sicilia, S. Murdan, A.D. Johnstone, G.E. Marsh, C. Grainger-Boulton, N.A Russell, C. Alexander and G. Mantovani.

Polymer Chemistry (2016) 7, 6714

DOI: 10.1039/c6py01292b

[Properties of acyl modified poly\(glycerol-adipate\) comb-like polymers and their self-assembly into nanoparticles](#)

Vincenzo Taresco, Jiraphong Suksiriworapong, Rhianonn Creasey, Jonathan Burley, Giuseppe Mantovani, Cameron Alexander, Kevin Treacher, Jonathan Booth and Martin Garnett

Journal of Polymer Science Part A-Polymer Chemistry (2016) 54, 3267-3278

DOI: 10.1002/pola.28215

[Development, printability and post-curing studies of formulations of materials resistant to microbial attachment for use in inkjet based 3D printing](#)

B. Begines, A. Hook, M. Alexander, C. Tuck and R. Wildman.

Rapid Prototyping Journal (2016) 22(5), 835 – 841.

DOI: 10.1108/RPJ-11-2015-0175

[Scalable synthesis of multicolour conjugated polymer nanoparticles via Suzuki-Miyaura polymerisation in a miniemulsion and application in bioimaging](#)

J.M. Behrendt, Jair A. Esquivel Guzman, Laura Purdie, Helen Willcock, John J. Morrison, Andrew B. Foster, Rachel K. O'Reilly, Mark C. McCairn and Michael L. Turner.

Reactive & Functional Polymers (2016) 107, 69-77

DOI: 10.1016/j.reactfunctpolym.2016.08.006

[New N-acyl Amino Acid-Functionalized Biodegradable Polyesters for Pharmaceutical and Biomedical Applications](#)

Vincenzo Taresco, Jiraphong Suksiriworapong, Ioanna D. Styliari, Richard H. Argent, Sadie M.E. Swainson, Jonathan Booth, Eleanor Turpin, Charles A Laughton, Jonathan C. Burley, Cameron Alexander, Martin C Garnett

RSC Advances (2016) 6, 109401

DOI: 10.1039/c6ra21464a

[The fitness burden imposed by synthesising quorum sensing signals](#)

A. Ruparell, J.F. Dubern, C.A. Ortori, F. Harrison, N.M. Halliday, A. Emtage, M.M. Ashawesh, C.A. Laughton, S.P. Diggle and P. Williams.

Scientific Reports (2016) 6, 33101

DOI: 10.1038/srep33101

[Distinct microenvironmental cues stimulate divergent TLR4-mediated signaling pathways in macrophages](#)

Anna M. Piccinini, Lorena Zuliani-Alvarez, Jenny M.P. Lim and Kim S. Midwood.

Science Signaling (2016) 9, 443, ra86

DOI: 10.1126/scisignal.aaf3596

Find here: <http://stke.sciencemag.org/content/9/443/ra86.full>

[Film thickness measurement and contamination layer correction for quantitative XPS](#)

J. Walton, M.R. Alexander, N. Fairley, P. Roach and A.G. Shard.

Surface and Interface Analysis (2016) 48 (3), 164-172

DOI: 10.1002/sia.5934

[Structural Derivatization of Clusianone and In Vitro Cytotoxicity Evaluation Targeting Respiratory Carcinoma Cells](#)

Sree Vanessa Nagalingam, Kok Wai-Ling and Khoo Teng-Jin.

Thieme (2016) 3(01) e10-e13

DOI: 10.1055/s-0035-1568332

[The role of acid-base imbalance in statin-induced myotoxicity](#)

Dhiaa A. Taha, Cornelia A. De Moor, David A. Barrett, Jong Bong Lee, Raj D. Gandhi, Chee Wei Hoo and Pavel Gershkovich.

Translational Research (2016) 174, 140-160

DOI: 10.1016/j.trsl.2016.03.015

Staff Research News

- [Professor Morgan Alexander](#) gave the following invited talks:
 - NanoInnovation – Rome, September 2016.
 - The European Society for Mathematical and Theoretical Biology and the Society for Mathematical Biology, July 2016.
- [Dr Paulius Mikulskis](#) attended The European Society for Mathematical and Theoretical Biology and the Society for Mathematical Biology, July 2016.
- [Professor Clive Roberts](#) has been elected to the PhSC Executive Board.
- [Professor Cameron Alexander](#) has been elected Chair of EPSRC Strategic Advisory Team for Physical Sciences (August 2016).

and invited to give talks at the following International Conferences:

- “Encoding information into polymers for detection and treatment of disease” – National Science Foundation of China/Royal Society of Chemistry International Symposium on Novel Polymer Synthesis to Solve Tomorrow’s Problems – Hangzhou, China, September 26-28th 2016.
- [Dr Franco Falcone](#) has reviewed a grant proposal for the National Centre Poland.
- [Professor Christophe Wiart](#) was invited to Inside Story on [Aljazeera TV](#) for an interview with Chief Medical Officers in the UK and members of the United Nations on the topic of ‘The rise of the ‘superbugs’: Is resistance futile?’
- [Professor Christophe Wiart](#) has signed 2 new contracts with CRC Press to write two academic publications.

Student News

- Twelve new PhD students have joined the EPSRC (Engineering and Physical Sciences Research Council) funded Centre for [Doctoral Training in Advanced Therapeutics and Nanomedicine](#) at Nottingham and UCL London Schools of Pharmacy. The new cohort is welcomed by the Centre's current PhD students.
- PhD student Hosam Abu Awwad presented a poster entitled "Controlled Release of GET Peptides and Enhanced Intracellular Delivery of Therapeutics" in the 7th APS (Academy of Pharmaceutical Sciences) International PharmSci conference, which took place at The University of Strathclyde, Glasgow, Scotland from 5th to 7th of September 2016. He was awarded the best poster presentation prize with a £100 prize.
- PhD candidate Jacqueline Hicks presented a poster entitled "Manipulating Diazonium Films on ITO for More Efficient CNT Sensors" at the UK'S Electrochem conference, University of Leicester in August. Jacqueline was awarded first prize for the best poster presentation, and she was awarded a £150 prize. This was well deserved and it highlights the high standard of work Jacqueline is currently contributing to the group.

General News

- [Professor Kevin Shakesheff](#), [Professor Paul Williams](#), [Elizabeth Hudson](#) and others attended meetings with selected MPs to discuss, for example, antimicrobial resistance. Events included 'The Future of Healthcare Technologies', 'Health, Life Sciences and Innovation showcase' and 'Developing STEM Skills of the Future,' on 25th October 2016.
- [Professor Morgan Alexander](#), [Ricky Wildman](#), [Yinfeng He](#), Peter Magennis and [Andrew Hook](#) delivered a Leonardo Study Day in Nottingham Castle on Friday 16th September 2016 for ~120 15-17 year olds. This was part of the Leonardo Da Vinci events at Nottingham Castle, focusing on what the ultimate Renaissance man might be doing in science today. The workshop "Materials for Man: from the idea to a product" was an interactive session with demonstrations to share knowledge and research. Da Vinci was an artist, court engineer, anatomist and inventor and this session illustrated how such interdisciplinary behaviour is now common place in scientific research. Using examples from their own research they showed how this modern interdisciplinary approach using medicine, biology, materials, chemistry, physics, engineering and business has led to the discovery of a new type of plastic which can be used to create products designed to reduce the instances of infections acquired in hospitals. The session received some excellent feedback from those who attended.
- Amanda Pearce (Team Leader for Drug Delivery), [Taranjit Singh](#), [Olutoba Sanni](#), [Professor Morgan Alexander](#), [Andrew Hook](#), [Paul Williams](#), [Derek Irvine](#), Professor [Cameron Alexander](#), [Steve Howdle](#) and others were involved in the [Royal Society Summer Exhibition 'Plastics Inside Us'](#). Visitors could handle medical implants on a full scale human body, test our model antibacterial plastic surfaces by battling against toy microbes and discover what links everyday plastics to life-saving medical devices. This took place 4th-10th July.
- The School of Pharmacy After-School Science Club, coordinated by [Dr Keith Spriggs](#), has expanded the number of staff, post-grads and undergrads in the Science Club who are able to deliver a range of activities to primary school children in 6 schools in and around Nottingham. A session was delivered at Berridge School, Hyson Green, Nottingham on the scientific method Elizabeth Hudson and others (11 May 2016).

