Dr Neill James Liptrott BSc, MSc, PhD, FHEA, FRSB

Department of Pharmacology and Therapeutics, Institute of Systems, Molecular and Integrative Biology, The University of Liverpool

1.1 Personal Details

Date of birth: May 30th 1979
Nationality: British
Work address: Materials Innovation Factory**,** Department of Pharmacology and Therapeutics, Institute of Systems, Molecular and Integrative Biology, The University of Liverpool, 51 Oxford Street, Liverpool, L7 3NY **Tel:** +44 (0) 151 795 7566, **e-mail:** neill.liptrott@liverpool.ac.uk

1.2 Further/Higher education

2004-2008 **Ph.D**. Department of Molecular and Clinical Pharmacology, University of Liverpool. *Pharmacological and Immunological Factors that Influence Antiretroviral Drug Therapy*.

2003-2004 **M.Sc**. Human Immunity (Merit), University of Liverpool

1999-2003 **B.Sc. (Hons)** Molecular Biology (2.2), University of Liverpool

1.3 Additional training, qualifications, and membership.

1.3.1 Additional qualifications

2018 **Certificate in Professional Studies** (CPS, Merit) in Learning and Teaching in HE, University of Liverpool

1.3.2 Memberships of Professional Bodies/Leaned Societies

2022 – present, Fellow of the Royal Society for Biology
2019 - present, Member of the British Toxicological society
2019 – present, Member of the British Pharmacological Society
2018 – present, Member of the American Society for Testing and Materials (ASTM, committee membership E56 – nanomedicines)
2018 – present, Fellow of the Higher Education Authority (HEA)
2015-2018, Member of the Royal Society for Biology
2013 – present, Member of the European Society for Nanomedicine
2011 – present, Executive Board member of the British Society for Nanomedicine
2004 – present, Member of the British Society for Immunology

1.4 Employment Record

2022 – present	**Reader in Pharmacology** – Department of Pharmacology and Therapeutics, University of Liverpool, Liverpool, UK
2018 – 2022	**Lecturer in Pharmacology -** Department of Molecular and Clinical Pharmacology, University of Liverpool, Liverpool, UK
2015- 2018	**Tenure-track Fellow -** Department of Molecular and Clinical Pharmacology, University of Liverpool, Liverpool, UK
2012-2015	**Senior Postdoctoral Research Associate –** Department of Molecular and Clinical Pharmacology, University of Liverpool.
2013	**Guest researcher -** National Cancer Institute Frederick, Nanotechnology Characterisation Laboratory, Frederick, Maryland, USA. *Immunological and Haematological Characterisation of engineered nanomaterials*
2011-2012	**Postdoctoral Research Associate -** Department of Molecular and Clinical Pharmacology, University of Liverpool.
2009-2011	**Postdoctoral Research Associate -** National Biomedical Research Centre for Microbial Disease, Royal Liverpool and Broadgreen University Hospital Trust, Liverpool.
2007-2009	**Research Associate -** National Biomedical Research Centre for Microbial Disease, Royal Liverpool and Broadgreen University Hospital Trust, Liverpool.

1.5 Teaching experience and Activity

Summary. I have experience in **teaching immunology, pharmacology, drug delivery, drug design, advanced materials, and infectious disease** topics to a variety of audiences: undergraduate, MRes, MSc, PhD and professionals at the University of Liverpool as well as other national and international institutions. The majority of my undergraduate teaching is delivered on the **BSc Pharmacology degree program which is consistently ranked highly in the Guardian University League Tables**. As well as the Pharmacology degree program, I have also contributed teaching, assessment, and moderation to the MChem program, at the University of Liverpool. I provide a significant amount of teaching and supervision to **more than 500 undergraduate students** and have **consistently high (outstanding) student ratings**. I contribute to the design of Pharmacology teaching and practical modules and, throughout, have applied the pedagogical theoretical and practical strategies into my teaching that I developed during my tenure on the CPS course.

With respect to postgraduate teaching and supervision, I have a significant role as **strand leader for Nanomedicine** on the MRes in Biomedical Sciences and Translational Medicine that includes approximately 100 students.

In my role as a lecturer on **CHEM426, Introduction to Nanomedicine**, I was involved in developing new lecture materials aimed at chemistry students, to enhance their understanding of fundamental immunology, as it related to nanomedicines.

Contributions to both National and international teaching are evidenced by teaching excellence on the **MSc in Toxicology at the University of Surrey, as well as ETH Zurich** in relation to advanced materials and immunocompatibility.

In September 2023, **I have launched the new MSc in Pharmacology and Toxicology**, at the University of Liverpool and led the development of three new modules for the programme, centred around the expertise in the department of Pharmacology and Therapeutics, as well as integrating existing master level modules from the School of Life Sciences. I created, and adapted, the programme through all levels of School approval resulting in successful approval in July 2023. Although this programme is new, it received more than 80 applications, with an intake of 14 students in its first year.

1.5.1 Undergraduate Teaching at the University of Liverpool

- 2016 – 2022. **Introduction to Physiology and Pharmacology (LIFE 106)** – I deliver lectures (3) on drug development and structure-activity relationships. I am also the moderator for this module as well as responsible for setting and marking assessments. Second semester module with approximately 400 students.
- 2016 – present. **Communication and study skills for the life sciences (LIFE130)** - academic advisor for 1st year undergraduate students, and development of communication skills. Assessment responsibilities for various tasks. Fortnightly meetings with students throughout semester 1 and 2.
- 2016 – present. **Communication and study skills for the life sciences (LIFE223)** – academic advisor for 2nd year undergraduate students, and development of communication skills. Assessment responsibilities for various tasks. Fortnightly meetings with students throughout semester 1 and 2.
- 2016 – present. **Principles of Pharmacology (LIFE207)** – lectures (6) on structure-activity relationships; responsible for setting and marking assessments. First semester modules, with approximately 200 students.
- 2016 – present. **Practical Pharmacology (LIFE234)** – practical pharmacology module, responsible for designing and running, in-person, lab practicals. Second semester modules, with approximately 50 students.
- 2017 – present. **Drug Metabolism and drug response (LIFE315/403)** – lectures (4) on nanotechnology and biocompatibility, responsible for setting and marking assessments. First semester module, with approximately 40 students
- 2016 – present. **Pharmacology Research Projects (PHAR660)** – supervision of 6 undergraduate students for both library dissertations and lab projects. This is a module that runs in both semester 1 and 2, for which I am also deputy module organiser and moderator, for approximately 45 students.

1.5.2 Student Evaluation

Below, are my most recent evaluations from the Health and Life Science Module Survey results, where such evaluations are available:

- Principles of Pharmacology (LIFE207)**: 4.4/5**
- Drug Metabolism and drug response (LIFE315/403)**: 4.4/5**

1.5.3 Postgraduate Teaching at the University of Liverpool

2014 – present **MRes in Biomedical Sciences and Translational Medicine**. In supporting the delivery of this course, I have numerous roles in the programme. There are typically 80-100 students enrolled on the course, which is split into several strands, consisting of smaller numbers of students.

2018 – present, **Leader of the Nanomedicine Strand** (approximately 4 students)

2015 – present. **Lecturer in research techniques** (semester 1) and frontiers in biomedical sciences (semester 2) modules (approximately 100 students)

2018 – present. **Member of the Board of studies**.

As strand leader:

- Allocate supervisors to research projects
- Prepare a schedule of strand-specific activities for students e.g., feedback sessions, journal clubs, demonstrations, and advanced techniques in advanced material characterisation
- Frequent meeting with nanomedicine students (mentoring and pastoral support)
- Monitoring of attendance
- Chairperson for project presentations
- Organise markers for all aspects of assessment (rotation reports, posters, presentations)
- Organise final marks to students
- Lead on appointing external examiners and speakers for the strand

2023 – present **Programme Director and admission tutor for MSc Pharmacology and Toxicology**. Within the programme's initial intake, there are 14 students all of which I have supported into their project allocations with members of the department. Additionally, as programme director, I am responsible for ensuring delivery of the programme objectives, engagement with module/examiner review boards, and progress meetings.

1.5.4 Past Courses Taught

2015-2019 **CHEM426 – Introduction to Nanomedicine. D**epartment of Chemistry, University of Liverpool. Lectures and seminars, assessment and essay marking, approximately 40 students

1.5.5 National, and International, Contributions and achievements

- Modular Training Programme In Applied Toxicology (University of Surrey, 2016) "Application of Nanotechnology in Drug Delivery"
- ETH Zurich, Annual Winter School (Switzerland), "Lessons learned in assessing the biocompatibility of advanced materials"

1.5.6 Plans for teaching development

I am the programme director for the **MSc Pharmacology and Toxicology**. This MSc program has been highlighted as a priority for the faculty and us supported by industry collaborations. Following successful approval by the University Approval Panels, my aim is to ensure the programme remains at the forefront of both the relevant curriculum and teaching methods. As part of this process, I have been engaging with the education committee of the British Toxicological Society to ensure the programme is relevant as well as disseminating its objectives and content, to the society. In early 2024, I also plan to engage with the British Pharmacological Society, for the same reasons, as well as approaching the Royal Society for Biology, to discuss possible routes to accreditation.

1.6 <u>Leadership, professional, and collegial experience</u>

I am the founder, and principal investigator, of the **University of Liverpool's Immunocompatibility Group** which, currently, consists of 2 PDRAs, 1 RA, 5 PhD students and 2 MSc students. The group is supported by funding from the European Commission and the National Institutes for Health (NIH). I have active roles in local (Knowledge Exchange Steering Group, Platform manager for iiCON, coordinator of the Nanotherapeutics Hub, and Biocompatibility lead for the Centre for Long-acting Therapeutics), national (Lipidic Delivery Systems Centre of excellence, British Society for Nanomedicine, Intracellular Drug Delivery Taskforce) and international (European Nanomedicine Characterisation Lab, Open Innovation Test Bed for Nano-enabled Medical Technologies, ASTM E56 Committee on Nanomedicines, European Technology Platform for Nanomedicine)

1.6.1 Departmental, Institute and University

2018 – present. **Lead, and Principal Investigator, of the Immunocompatibility Group**. My group's research aims to understand the concepts and mechanisms which underly the interface between novel therapies and the immune system; to support their translation to clinical use and gain insight into the fundamental biology behind them. We use advanced techniques and technologies to explore and investigate these areas of research which is supported, generously, by funding from a number of sources. **This work is aligned with the University's research priorities on Advanced Materials and**

Infectious Disease as well as providing cross-disciplinary research in immunology, materials science, and pharmacology.

2021 – present. **Biocompatibility lead for the Centre for Long-acting Therapeutics (CELT)**. In this role, I lead the biocompatibility research programmes within CELT, manage interactions between CELT and NTH, as well as providing support for both pharmacology and chemistry research programmes.

2019 – present. **Coordinator of the Nanotherapeutics Hub**. Based within the Centre of Excellence for Long-acting Therapeutics (CELT), NTH is a priority project for the Liverpool City Region and Combined Authority Health and Life Sciences board, supported by local biomedical companies.

2021 – present. **Platform manager for iiCON (Nanotherapeutics Hub**). As part of the £150 million infection innovation consortium (iiCON), led by LSTM, The Nanotherapeutics Hub provides industry partners access to the Hub's expertise and its network of UK partner organisations to support the development of innovative new antimicrobials, and vaccines, leveraging nanotechnology.

2021 – present. **Knowledge Exchange Lead for Personalised Medicine, Knowledge Exchange Steering Group**. The KESG brings together KE leaders in university research themes (Advanced Materials, Climate Futures, Digital, Heritage, Infectious Disease, Personalised Health and Starting Well, Living Well, ageing well) and KE centres (like the MIF, DIF, CEIDR and Heseltine) with an aim of supporting and overseeing the University's ambition, activity and funds in knowledge exchange. The KESG oversees KE plans in each of the University's research theme areas, identify synergies between different areas of activity, and provide a forum for discussion of large scale KE opportunities and partnerships. The KESG has members of all three faculties and will also oversee and allocate our pump priming funds (such as the Partnership, Recovery and Resilience fund) and funds for developing KE strands of our research themes and the associated partnerships (resourced from HEIF). The KESG will also influence, where possible, the development of international, national and local R&D and innovation strategy.

2015 – present. **Member of the ISMIB research ethics review team**. In this role, I provide expert reviews on ethics applications, as well as supporting the chair of the committee.

2018 – present**. Principal Investigator for the Pharmacology Biobank (PharmB)**. In this role, I support the chief investigator by liaising with clinical research staff and volunteers and have recently enhanced the biobank by enabling the inclusion of non-clinical materials from NHS Blood and Transfusion, significantly enhancing our capabilities.

2018 – present. **Leader of the Nanomedicine** strand for the MRes Biomedical Sciences and Translational medicine

1.6.2 National Leadership roles

2022 – present. **Intracellular Drug Delivery Centre (IDDC) Steering Group**. In this joint venture with the Centre for Process Innovation (CPI), Medicines Discovery Catapult (MDC), University of Strathclyde, and Imperial College London we have established a

National Centre that will provide a bio-foundry for new materials and delivery systems, with a current focus on vaccines and pandemic preparedness, leading to supporting the scientific community in the development of advanced therapeutics. In November 2022, we were awarded £10 million by Innovate UK (£1.6million to UoL) to establish the national infrastructure for the UK; supporting stakeholders in the development of complex medicines, aimed at intracellular drug delivery. In IDDC, I lead the compatibility and safety aspects of the work, as well as the development of new models and assays with which we will improve in vitro-in vivo extrapolation (IVIVE).

2011 – present. **British Society for Nanomedicine, Trustee and skills & training officer**. The Society's mission includes the direct explanation of the ongoing science and commercial developments to allow the public to understand and stay in touch with this exciting area as it impacts future global healthcare. The Society is affiliated to other leading organisations involved with nanomedicine including: CLINAM, the European Technology Platform for Nanomedicine, the British Pharmacological Society and the American Society for Nanomedicine. In this role, **I am connecting with other courses, around the UK, to offer students greater opportunities to develop additional skills** in the nanotechnology field.

2020 – present. **Intracellular Drug Delivery Taskforce, lead for immunocompatibility**. As a broader development of the LNP Centre of Excellence, this taskforce is liaising directly with government, and funding agencies, to develop future research programmes and funding grand challenges, that will enhance the UK drug delivery ecosystem, and support industry in innovative delivery systems. In this role, I am leading grand challenge design around immunocompatibility of advanced drug delivery systems.

2023 – present. **Academic-in-Residence, National Measurement Laboratory (NML), UK**. In April 2023, after a successful four-year partnership, I took up the Academic-in-Residence role at NML. In this role, I advise NML on the development of strategies to support UK industries developing complex medicines and materials, to progress innovative therapeutics into clinical applications.

2022 – present. **Nanomedicine Focus Group Co-lead, Academy of Pharmaceutical Sciences (APS)**. The primary aim of the Focus Group is to facilitate and promote the understanding of nanomedicines from a pure science base through the evolving regulatory environment and finally manufacture. Drawing on expertise from industry, academia, regulatory and clinical practice, the group encourages the exchange of information and collaboration across all parties. Through establishing an active and open community in this fast-moving field, this Focus Group develops opportunities that nanotechnology offers, investigate any barriers to their adoption and works together to propose solutions. My role here is to, primarily, link to other roles and organisations that I am involved in, or lead, to develop the UK network in this space

1.6.3 International Leadership roles

2015 – present. **European Nanomedicine Characterisation Lab, lead for immuno- and haematotoxicology**. I lead the biological characterisation work on advanced therapeutics such as nanomedicines as well as being a member of the executive board that steers the international infrastructure. In this role, I liaise with international stakeholders as well as regulatory agencies such as the European Medicines Agency (EMA) and lead collaborative work on harmonisation of testing strategies and regulatory requirements.

2019 – present. **Open Innovation Test Bed (OITB) for Nano-enabled Medical Technologies**. Within this infrastructure, I lead work programmes on nano-enabled medical technologies biodistribution and biocompatibility. The OITB provides support and resources for key, industrial, stakeholders developing these medical technologies.

2018 - present. **ASTM E56 Committee on Nanomedicines, technical lead for immunotoxicological assay development**. As part of my committee role, I lead sub-groups on harmonisation of testing strategies between UK, EU and USA regulators such as the EMA and FDA. As the technical lead for immunotoxicology, I lead a working group consisting of experts from the FDA, industry and the Joint Research Commission (JRC), developing new assays and standards.

2023 – present. **Chair, Working Group on Safety and Characterisation, European Technology Platform for Nanomedicine (ETPN)**. In this role, as Chair, I lead the ETPN's activities to harmonise approaches in the development of innovative therapeutics by ensuring robust characterisation and safety assessment. The ETPN works closely with the European Commission advising on policies, related to complex medicines, and funding with which to ensure researchers and industry are at the forefront of therapeutics development.

1.6.4 Grant reviews

I have acted as an invited grant reviewer, in additional to internal reviews, by the following organisation (number of times):

- Biotechnology and Biological Sciences Research Council (2)
- Medical Research Council (1)
- UKRI Future Leader Fellowships (1)
- European Commission (Horizon 2020 and Horizon Europe) (2)
- National Science Centre, Poland (6)
- Austrian Science Foundation (1)
- Aix-Marseille University, Excellence Initiative (1)
- Carnegie Trust, for the Universities of Scotland (10)

1.6.5 Scientific reviews

I am, regularly, invited to review scientific manuscripts as a recognised expert. Examples of there, are as follows:

- Nature Nanotechnology
- Nature Biomedical Engineering
- Nanomedicine: Nanotechnology, Biology and Medicine
- British Journal of Clinical Pharmacology
- Antimicrobial Agents and Chemotherapy
- Journal of Antimicrobial Chemotherapy
- EMBO Molecular Medicine
- The Lancet EClinical Medicine
- Journal of Interdisciplinary Medicine

1.7 <u>Research Experience and impact activity</u>

SUMMARY. My, overarching, research interest is on how the body recognises and responds to exogenous materials such as nanotherapeutics, complex medicines, advanced therapeutics, and nanobiomaterials. This has led to the establishment of an internationally recognised research programme, in the academic space, as well as developing national and international infrastructures that support the development and clinical translation of new materials, for biomedical applications. As well as academic institutions, this work also involved a number of national Catapult centres, as well as large pharmaceutical companies. I am considered an emerging leader in the field, as evidenced by: (a) **research funding [1.7.1]**, my current research income, as both PI and Co-I is in excess of £9,000,000 (b) supervision, (c) invitations to speak [1.8], (d) inclusion on national and international taskforces [1.6.1-1.6.3], and (e) research outputs [2.0]. My success in attracting funding has allowed me to develop, and lead, the Liverpool Immunocompatibilty Group (https://www.immunocompatibility-group.com/). Additionally, my work has supported the translation of innovative therapeutics, beyond the lab and into clinical trials.

1.7.1 Grant funding

Awarded

Title: Building the UK Intracellular Drug Delivery Centre (IDDC)
Awarding body: Innovate UK.
Period: 2023-2026.
Amount: £1,650,000. **Ownership:** 100% **Role:** PI

Title: SINPAIN: A game changer for the treatment of osteoarthritis: a cost effective combined advanced therapy to treat knee osteoarthritis.
Awarding body: European Commission (Horizon Europe).
Period: 2022-2026.
Amount: £635,040. **Ownership:** 100%. **Role:** PI

Title: SAFE-N-MEDTECH: Safety Testing In The Life Cycle Of Nanotechnology-Enabled Medical Technologies For Health.
Awarding body: European Commission (Horizon 2020).
Period: 2019-2023.
Amount: £756,960. **Ownership:** 100% **Role:** PI

Title: REFINE: Regulatory Framework for Nano(bio)materials.
Awarding body: European Commission (Horizon 2020).
Period: 2018-2022.
Amount: £717,103. **Ownership:** 67%. **Role:** PI

Title: Characterising the influence of nanoparticle characteristics on their interference/ interaction with endotoxin.
Awarding body: The Royal Society.
Period: 2015-2016.
Amount: £15,000. **Ownership:** 100% **Role:** PI

Title: Investigation of the use of nanotechnology to reduce the side effects associated with antiretroviral protease inhibitors.
Awarding body: British Society for Antimicrobial Chemotherapy.
Period: 2015-2016.
Amount: £15,000. **Ownership:** 100% **Role:** PI

Title: Long-acting NRTI Therapies for HIV.
Awarding body: National Institutes for Health (NIH).
Period: 2018-2022.
Amount: £2,036,808. **Ownership:** 20% **Role:** Co-I

Title: European nanomedicine Characterisation Laboratory.
Awarding body: European Commission (Horizon 2020).
Period: 2015-2019.
Amount: £645,058. **Ownership:** 40% **Role:** Co-I

Title: Investigating how cell based regenerative medicine therapies modulate T-cells and macrophages to ameliorate acute kidney injury.
Awarding body: KRUK.
Period: 2018-2021.
Amount: £349,028. **Ownership:** 5% **Role:** Co-I

Title: RenalToolBox.
Awarding body: European Commission (Horizon 2020).
Period: 2018-2023.
Amount: £4,071,175. **Ownership:** 10% **Role:** Co-I

Title: Bioengineered substrates for human pluripotent stem cell culture.
Awarding body: Wellcome Trust.
Period: 2015-2018.
Amount: £100,417. **Ownership:** 10% **Role:** Co-I

Title: Exploring how cell therapies ameliorate renal damage**.**
Awarding body: Mersey Kidney First.
Period: 2018-2021.
Amount: £202,271. **Ownership:** 10% **Role:** Co-I

Title: Multi-modal high-resolution preclinical PET+SPECT+CT scanner.
Awarding body: Wellcome Trust.
Period: 2018-2023.
Amount: £939,518. **Ownership:** 5% **Role:** Co-I

Under Review

Title: Establishment of a Nanotherapeutics Centre, for the North.
Awarding body: Liverpool City Region/Combined Authority.
Period: 2022-2025.
Amount: £2,300,000. **Decision Expected**: March 2023. **Role:** PI

Title: PROBIOHM: A unique platform for efficient, scalable, and sustainable production of bioactive human milk proteins
Awarding body: European Commission (Horizon Europe)
Period: 2024-2028.
Amount: £866, 890. **Decision Expected**: April 2024. **Role:** PI

Title: PhageCraft: a platform for the responsible design and engineering biology of bacteriophages.
Awarding body: BBSRC
Period: 2024 - 2026.
Amount: £356,723. **Decision Expected**: October 2023. **Role:** PI

Title: Determining critical attributes of lipids, and LNPs, linked to immune stimulation
Awarding body: Seqirus-Pandemic institute
Period: 2024 - 2026.

Amount: £477,935. **Decision Expected**: January 2024. **Role:** PI

Title: Assessment of isolation and purification procedures for bacteriophages – links to appropriate assessment of immunocompatibility
Awarding body: HEIF
Period: 2023-2024.
Amount: £46, 972. **Decision Expected**: September 2023. **Role:** PI

Title: Repurposing of Niclosamide for use dengue infection – towards development of structural analogues for immune modulation via long acting injectables (LAI)
Awarding body: HEIF
Period: 2023-2024.
Amount: £46, 972. **Decision Expected**: September 2023. **Role:** PI

Title: NATLAHUB HALo: National Hub for Long Acting Therapeutics
Awarding body: EPSRC
Period: 2024 – 2027.
Amount: £8,570,334. **Decision Expected**: April 2024. **Role:** Co-I

Title: ARTEMIS: Advanced virtual patient for modelling, prevention, prediction and treatment of the metabolic syndrome
Awarding body: European Commission (Horizon Europe; EIC Pathfinder)
Period: 2024 – 2027.
Amount: £381,453. **Decision Expected**: April 2024. **Role:** Co-I

1.7.2 Post-doctoral Supervision

2017 – present. **Dr Christopher David**. Academic PDRA. *Development of novel immunotoxicological assays and models, to support the development of nano(bio)materials*. University of Liverpool

2018 – 2022. **Dr Alice Howarth**, Academic PDRA. *In vitro biodistribution of nano(bio)materials*. University of Liverpool.

2018 – 2021. **Dr Thomas Wilm**. Academic PDRA. *Investigating how cell based regenerative medicine therapies modulate T-cells and macrophages to ameliorate acute kidney injury*. University of Liverpool

2021 - present. **Dr Danielle Brain.** *Development of novel immunotoxicological assays and models, to support the development of intracellular drug delivery systems.* University of Liverpool

1.7.3 Research assistant supervision

2023 – present. **Beth Heaton**. Investigation of the immunocompatibility of biomaterials for immune modulation.

1.7.4 PhD Supervision

Completed

2018-2021**. Danielle Brain.** *Immunocompatibility assessment of long-acting therapeutics: acute vs chronic exposure***.** Funding: National Institutes for Health (NIH). **Role**: Primary Supervisor

2017 – 2020**. Tamiris Borges Da Silva.** *Investigation of the immunomodulatory effects of MSC-derived extracellular vesicles on human monocyte-derived macrophages***.** Funding: Wellcome Trust **Role**: Co-supervisor

2017 – 2020**. Ioana-Roxana Martinas.** *Exploring how cell therapies ameliorate renal damage***.** Funding: Mersey Kidney First **Role**: Co-supervisor

2019 – 2022. **Francesco Amadeo**. *Assessing the properties and efficacy of UC-MSC as a therapy for renal disease.* Funding: European Commission **Role**: Co-supervisor

Ongoing

2018-2021**. Alex Plant-Hately.** *Linking immunocompatibility assessment, of lipidic nanoparticles, to complex adverse events: consequences for cardiac complications.* Funding: European Commission **Role**: Primary Supervisor

2020-2023**. Bethany Heaton.** *Determining the immunological response to chronic nanobiomaterials exposure.* Funding: European Commission **Role**: Primary Supervisor

2018-2021**. Doaa Ahmed Mohamed.** *Physiologically based, pharmacokinetic modelling to predict intra-tumoral distribution of iron oxide nanoparticles. F*unding: European Commission **Role**: Primary Supervisor

2018-2023**. Nicolas Cottura.** *Physiologically based, pharmacokinetic modelling of long-acting therapeutics.* Funding: National Institutes of Health (NIH) **Role**: Co-supervisor

2019-2022. **Daniel Traynor**. *Developing novel, biocompatible, radiosensitisers for head and neck cancer*. Funding: UKRI **Role**: Co-supervisor

2023 - present**. Pingqing Fan.** *Development of novel delivery systems, for nucleic acids***.** Funding: XJTLU **Role**: Co-supervisor

2023 - present**. Zerun Hao.** *Application of novel gene delivery systems in combating cancer.* Funding: XJTLU **Role**: Co-supervisor

2023 – Present. **Jessica Hollett**. *Development of novel fibre-gel composites for regenerative medicine*. Funding: UoL **Role**: Co-supervisor

2022 – Present. **Muhammad Dimas Rahmana**. *Development of 3D models to study endometriosis*. Funding: Indonesian Ministry of Education **Role**: Co-supervisor

2022 – Present. **Huan Xu**. *Development of transdermal protein delivery systems, for chronic diseases*. Funding: XJTLU **Role**: Co-supervisor

1.7.5 Present collaborations

External
Prof. Kiril Afonin. Project: Nucleic acid nanoparticles for advanced gene delivery. External: UNCC (USA)

Prof Remzi Becer. Project: Development of targeted lipidic delivery systems for the optimisation of a molecular toolbox. External: University of Warwick

Prof. Yvonne Perrie. Project: Structure-activity relationships between liposomes and complement activation. External: University of Strathclyde

Prof. Rongjun Chen. Project: Development of alternative polymers to PEG – application in the formulation of, truly, stealth nanotherapeutics. External: Imperial College London

Dr Mohamed Abdel-Mohsen. Project: Influence of glycomic profiles in complement activation. External: The Wistar Institute and Penn Centre for AIDS Research

Dr Rob Vandebriel. Project: Immunotoxicological assessment of nanobiomaterials (REFINE). External: RIVM - National Institute for Public Health

Dr Clovis Palmer. Project: Influence of immuometabolism on immune responses in infectious disease External

Prof. Geir Bjorkoy. Project: Impact of infectious disease on cardiac tissue, mediated by autophagy. External: Norwegian University of Science and Technology (NTNU)

Dr Bryant Nelson. Project: Standardisation of immunotoxicological assessment of nanobiomaterials. External: National Institutes of Health (NIH and ASTM)

Dr Sven Even Borgos. Project: Interindividual variability in Immunotoxicological responses to nanobiomaterials. External: SINTEF

Prof Imran Saleem. Project: Development of novel antimicrobial peptide nanoparticles to treat infectious disease. External: Liverpool John Moores University

Dr Joe Vetro. Project: Immunomodulation of macrophage phenotype using nano-polyplexes External: University of Nebraska Medical Centre

Dr Joe Vetro. Project: Nucleic acid based nano-therapies for cancer. External: University of Nebraska Medical Centre

Dr Clare Hoskins. Project: Biocompatibility of novel nanomedicine applications in cancer therapy. External: University of Keele.

Dr Adriele Prina-Mello. Project: Complement activation by novel nanomaterials. External: Trinity College Dublin

Internal

Prof. Andrew Owen. Project: Development of long-acting injectable formulations of HIV antiretrovirals.

Prof Steve Rannard. Project: Development of novel polymers of pro-drugs for HIV treatment.

Prof. Patricia Murray. Project: Assessment of novel model systems to investigate renal inflammation.

Prof. Rachel Williams. Project: Biocompatibility of, novel, advanced materials for oral implantable devices

Prof. Christian Hedrich. Project 1: relationship between complement, inflammasomes, and endothelial cells to the development of cardiac complications in inflammatory disease; Project 2: Influence of vitamin D treatment on SARS-CoV-2 receptor expression, and viral permissiveness, in paediatric patients.

Dr Lucy Bosworth. Project: interaction of macrophages with novel biomaterials.

Dr Bettina Wilm. Project: Impact of extracellular vesicles on macrophage function and phenotype.

Dr Amy Chadwick. Project: influence of glucose uptake transporter inhibition on immune cell bioenergetics – relevance to differential immune responses.

Dr Marco Giardiello. Project: Synthesis, and characterisation, of novel inorganic-organic hybrid nanoparticle based radiosensitisers

Dr Jason Parsons. Project: Synthesis, and characterisation, of novel inorganic-organic hybrid nanoparticle based radiosensitisers

Dr Tom McDonald. Project: New immunotherapy tools, for the treatment of solid mass tumours, via macrophage reprogramming.

Dr Dan Carr. Project: Impact of genetic variability on patient responses to long-acting injectables – influence on granuloma formation.

1.7.6 Research experience

During the summer months, I offer voluntary placements for research experience within my group. These students are, primarily University of Liverpool undergraduate students seeking to gain greater lab experience in general but, also immunology and immunocompatibility as it relates to nanotherapeutics and advanced materials.

1.8 Invitations to speak

Session Chair

- Biosafety and Nanotoxicology, NanoMed Europe 2023, Liverpool, UK
- Nanomedicine approaches to treatment options. 1ST British Society for Nanomedicine Young Researchers meeting (Liverpool, UK, 6-7th august 2015)

Invited Speaking Engagements

- "What is nanotechnology, and how can we exploit it for therapeutics?" National Pint of Science Event (Liverpool, UK, 2023)
- University of Liverpool Knowledge Exchange Workshop for Personalised Health, workshop organiser and Chair (Liverpool, UK, 2023)
- Assessing immunological responses to next-gen vaccine candidate delivery systems – the links to physical and chemical characteristics. Malvern Panalytical's Annual Pharma Conference (Oxford, UK, 2023)
- Benefits of integrating sex-gender analysis into research in emerging fields at Gendered interactions between diversity and quality in research. Science knowledge for equitable and just future, Keynote/Plenary by Invitation (Salzburg, 2022)
- Measuring & Modulating Immunogenicity of LNP-Payload Composition at Understanding Immune Responses Linked to Physio-Chemical Characteristics of Non-Viral Delivery Systems, by Invitation (Boston, MA, USA, 2022)
- Advanced Therapy Medicinal Products (ATMP) at Interactions between the immune system and Nano(bio)materials - linking PCC to Biological effects, by Invitation (Belfast, 2022)
- EURAMET (European Association of National Metrology Institutes) (November, 2021) – "Challenges in the development of Long-acting Therapeutics"
- Middle Tennessee State University (October, 2021), USA – "Immunological interactions, and applications, of lipid-based therapeutic delivery systems"
- University of Cambridge EPSRC IRC seminar (22nd April 2021), UK "Investigating the immune interactions of liposomes – unravelling direct, and indirect, effects on complex systems"
- CLINAM - 12th European and Global Summit for Clinical Nanomedicine, Targeted Delivery and Precision Medicine (September 2020), Switzerland "Concentration-

dependant vs concentration-independent safety and biocompatibility considerations for nanomedicines”

- EPFL/CCMX Winter School (2-5th February 2020), Switzerland “Concepts in Nanobiomaterial biocompatibility”
- CLINAM - 11th European and Global Summit for Clinical Nanomedicine, Targeted Delivery and Precision Medicine 3-6th September 2018), Switzerland “New Frontiers in Characterizations: The Example of Liposomal Irinotecan Nanomedicine”
- Nanomed 2018 (26-28th June 2018), Manchester “Investigating immunological interactions of nanomaterials – relevance to European Nanomedicine Characterisation Laboratory (EUNCL)”
- EuPAT 9 The Ninth pan-European Conference on PAT and QbD Sciences (15-16th may 2018), Manchester. “Emerging developments in the manufacture and analysis of nanomedicines”
- CYTO 2017 (Hynes Convention Centre, Boston, MA, USA, 10th-14th June 2017) “Investigating the relationship between exosomes and nanomaterial biocompatibility: natural vs. engineered nanoparticles”
- ATREUM Conference – Addressing the Translational Challenges and Setting the Future UK Research Direction (Crewe Hall, UK, 3rd-6th April 2017) “Nanomaterials; investigating their biological interactions to speed up clinical translation”
- European Nanomedicine Meeting (King’s College London, UK, 2nd-3rd April 2017) “The Science of Biocompatibility Testing”
- 7th APS International PharmSci Conference (University of Strathclyde, UK, 5th-7th September 2016) “Assessing the biocompatibility of nanomaterials and nanomedicines – bottlenecks in the successful translation of new materials into clinical studies”
- 2nd UKRMP meeting on Nanoparticles for Stem Cell Tracking (Liverpool, UK, 21-22nd September 2015) “Investigating Nanoparticle Compatibility with Immunological & Haematological systems”
- 1st Joint Nanomedicine Society meeting (Grenoble, France, 7-9th December 2015) “Determining the relationship between nanoparticle characteristics and immunotoxicity”
- Nanoparticles for cell tracking workshop (Liverpool, UK 21-22 September 2015) “Considerations for the assessing the biocompatibility of nanomaterials”
- Keele Nanopharmaceutics Symposium (Keele University, Keele, UK 21-22 September 2015) “Determining the safety of engineered nanomaterials”
- University of Northumbria, (February 2015) “Investigating the biocompatibility and toxicity of engineered nanomaterials - Importance of standardisation in defining structure-activity relationships”
- Preclinical modelling workshop (University of Keele, February 27-28th 2014) “Use of in vitro testing for assessing the immunogenicity of nanomaterials”
- Cancer Research UK (London Research Institute, Cancer Research UK (London, UK, July 2013) “Application of flow cytometry to the investigation of nanoparticle characteristics and protein binding of antiretroviral based solid drug nanoparticles.”

- 20th Conference on Retroviruses and Opportunistic infections (Atlanta, Georgia, USA, March 2013) “New Approaches to antiretroviral drug delivery”

1.9 Industrial collaborations

My work involves regular engagement with pharmaceutical companies, as well as SMEs and spin-out companies. In addition to academic projects, this also takes the form of consultancy work and contract service work.

1.9.1 Academic projects

GSK. *Development of improved, ex vivo, models to determine protein therapeutics immunogenicity.* Collaborator: Dr Geoff Williams

CSL Seqirus. *High throughput investigation of the immunological properties of ionisable lipids – towards rational design of nucleic acid vaccines for influenza*. Collaborator: Dr Gill Otten

Croda. *Application of novel lipid technologies for biomedical applications*. Collaborator: Dr Damian Kelly

Apconix, *Consultancy on projects relating to nanotherapeutics and other complex medicines*. Collaborator: Dr Sean Hammond

Medicines Discovery Catapult, *various consultancy projects with SMEs in the field of complex medicines*. Collaborators: Dr Sarah Brockbank and Dr Emily Offer

PQ Silicas UK. *Assessment of micron-sized silica particles as delivery vehicles for gene therapies*. Collaborator: Dr Ian McKeown

AstraZeneca. *Assessment of nanoparticle surface chemistry on immune recognition and response to polymeric nanomaterials*. Collaborator: Dr Marianne Ashford

Exactmer technologies. *Impact of mon-disperse vs polydisperse polyethylene glycol coatings on complement response in human plasma*. Collaborator: Prof. Andrew Livingstone

MiNA therapeutics. *Determining the immunocompatibility of mRNA based advanced therapeutics*. Collaborator Prof. Nagy Habib

1.9.2 Consultancy and contract research

CNR Nanotech. *Immunocompatibility assessment of calcium phosphate nanoparticles, for delivery of peptide-mimetic therapeutics in cardiovascular applications*. **£18,270**

ABF Pharmaceutical Services. *Clinical trial sample processing, for immunological analysis (REEF-IT)*. **£9,231**

ABF Pharmaceutical Services. *Clinical trial sample processing, for immunological analysis (Janssen).* **£8,268**

Janssen Pharmaceuticals. *Flow cytometric assessment of rilpivirine long-acting therapeutics, for protein corona determination*. **£2,000**

GE Healthcare UK. *Evaluating the potential of Ceretec as a stem cells tracking agent*. **£15,000**

1.10 Other relevant activities

In addition to my role as a mentor to staff and students at the University of Liverpool, I am also a mentor on the "Women in Advanced Therapies" (WIAT) programme, ran internationally by Phacilitiate. As part of the program, I have a dedicated mentor-mentee relationship with a younger research fellow, and participate in regular round table discussion on aspects of career progression.

2. Publications and submitted papers

PEER REVIEWED PUBLICATIONS [h-index – 24, i10-index = 39, total publications =58]

I have a significant publication record, particularly in the **fields of immunopharmacology, advanced materials, and nanomedicine research**. To date, I have authored 58 original peer-reviewed research papers as well as 2 book chapters. The 30 authored original researched papers have a total of over 670 citations in top-tier journals such as Journal of Nanobiotechnology (IF – 4.946), Advanced Healthcare Materials (IF – 5.11), Nanomedicine London (IF – 4.727), Nanotoxicology (IF – 6.428) and Nature Communications (IF – 12.124) and Advanced Drug Delivery Reviews (IF – 13.3).

During the REF reading exercise, 2 of these publications were judged as 3* or above and eligible for return in the REF, underpinned by total research funding of around £8 million as both PI and Co-I.

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BOOK CHAPTERS

2016 **Liptrott, N.J.**, Curley, P., Tatham, L.T. and Owen, A. "Opportunities and Challenges in Nanotechnology-enabled antiretroviral Drug Delivery", 2nd Edition, Handbook of Immunological Properties of Engineered Nanomaterials

2015 McDonald, T.O., Siccardi, M., Moss, D., **Liptrott, N.J.,** Giardiello, M., Rannard, S. and Owen, A. "The Application of Nanotechnology to Drug Delivery in Medicine". Nano Engineering (1st edition), Global Approaches to Health and Safety Issues

MEETING ABSTRACTS

2023

INVESTIGATING THE IMMUNOLOGICAL RESPONSES OF HEPATIC AND IMMUNE CELLS LINKED TO THE BIORETENTION OF IRON OXIDE NANOPARTICLES. Heaton, B, Ahmed Mohamed, D, Liptrott, NJ. CLINAM, Switzerland.

INVESTIGATING THE IMPACT OF BIORETENTION OF IRON OXIDE NANOPARTICLES, ON LIVER PARENCHYMAL AND IMMUNE CELL RESPONSES – TOWARDS IMMUNE-COMPETENT, PHYSIOLOGICALLY RELEVANT, MODELS OF NANOPARTICLE EXPOSURE AND RESPONSE. Heaton, B, Ahmed Mohamed, D, Liptrott, NJ. Nanomed Europe 23, Liverpool, UK

PBPK MODELLING FOR INTRATUMORAL BIODISTRIBUTION OF MAGNETIC IRON OXIDE NANOPARTICLES IN HUMAN. Ahmed Mohamed, D, Heaton, B, and Liptrott, NJ. Nanomed Europe 23, Liverpool, UK

2022

EXPOSURE OF ANTIRETROVIRALS, EFAVIRENZ AND LOPINAVIR, TO A HUMAN MONOCYTIC CELL LINE, LEADS TO REDUCED GLUCOSE UPTAKE VIA INTERACTIONS WITH SLC2A1 AND ALTERED BIOENERGETIC CELL PROFILES. Heaton, B, Brain, D, David, CAW and Liptrott, NJ. British Toxicological Society Congress, Birmingham, UK

DEVELOPMENT OF A PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL FOR INTRATUMORAL BIODISTRIBUTION OF MAGNETIC IRON OXIDE NANOPARTICLES. Ahmed Mohamed, D, Heaton, B, and Liptrott, NJ. PAGE Conference, Ljubljana, Slovenia

EFFECTS OF NANO-ENABLED CHEMOTHERAPEUTIC DELIVERY SYSTEMS UPON TISSUE BASED IMMUNE CELLS. Plant-Hately, A and Liptrott, NJ. British Toxicological Society Congress, Birmingham, UK

2021

ASSESSMENT OF CELL-MEDIATED EFFECTS, RELATED TO INFUSION REACTIONS TO NANO-ENABLED CHEMOTHERAPEUTIC DELIVERY SYSTEMS. Plant-Hately, A, Brain, D, and Liptrott, NJ. Liverpool Cancer Research Network Meeting, Liverpool, UK

2020

GLUCOSE UPTAKE IN IMMUNE CELLS IS LOWER IN THE PRESENCE OF HIV ANTIRETROVIRALS DUE TO INTERACTIONS WITH GLUCOSE UPTAKE TRANSPORTERS – AN IN VITRO AND IN SILICO INVESTIGATION. Heaton, B, and Liptrott, NJ. British Pharmacological Society, 2020, Liverpool, UK

INVOLVEMENT OF PATTERN RECOGNITION RECEPTORS IN THE IMMUNE RESPONSE TO LIPID-BASED NANOPARTICLES - A COMPARISON OF BASOPHIL AND MAST CELL LINES. Plant-Hately, A, Brain, D, and Liptrott, NJ. British Pharmacological Society, 2020, Liverpool, UK

2019

SERUM DERIVED EXOSOMES AFFECT RESPONSE TO INFLAMMATORY STIMULI: IMPACT ON A549 CELL RESPONSE TO TNFa. Brain, D, Martinas, I, David, CAW and Liptrott, NJ. British Society for Immunology Congress 2019, Liverpool, UK.

2018

ASSESSMENT OF ANTIRETROVIRAL IMPACTS ON CELLULAR HEALTH FOLLOWING INCORPORATION INTO SOLID DRUG NANOPARTICLES. David, C.A.W., Beebe, E., Giardiello, M., McDonald, T.O., Rannard, S., Owen, A. and Liptrott, N.J**.** 11th Clinical Nanomedicine Conference (CLINAM), Basel, Switzerland

INVESTIGATION OF KU-812 CELLS AS AN IN VITRO MODEL FOR BASOPHIL ACTIVATION AND ASSESSMENT OF COMPLEMENT RELATED INTERACTIONS. Christopher A.W. David, Alex Plant-Hately, and Neill J. Liptrott 11th Clinical Nanomedicine Conference (CLINAM), Basel, Switzerland

INVESTIGATION OF NANOPARTICLE MEDIATED NETOSIS IN PRIMARY HUMAN NEUTROPHILS – LINKS TO INFLAMMATORY DISEASE. Angela Midgley, Clare Stretton, Adam Guinness, Christopher David, Andrew Owen, Michael W Beresford and Neill J. Liptrott. 11th Clinical Nanomedicine Conference (CLINAM), Basel, Switzerland

ADDRESSING BOTTLENECKS IN THE SUCCESSFUL TRANSLATION OF NOVEL NANOMATERIALS INTO CLINICAL STUDIES: INTRODUCTION TO EUNCL. Liptrott, NJ. The Ninth pan-European Conference on PAT and QbD Sciences, Manchester, UK

2017

ASSESSMNT OF THE POTENTIAL NTERACTIONS OF HYPERBRANCHED POLYDENDRONS WITH IMMUNOLOGICAL AND HAEMATOLOGICAL SYSTEMS. David, CAW, Giardiello, M., Rannard, S Owen, A. and Liptrott, NJ. BSNM Early Career Researchers Meeting, Belfast, UK

POTENTIAL FOR IMMUNE MODULATION BY INHIBITION OF AUTOPHAGIC PROCESSES. David, CAW, Owen, A. and Liptrott, NJ. 3rd Keele Nanopharmaceutics Symposium, Keele, UK

2016

THE IMPACT OF NANOPARTICLES ON THE RELEASE OF NEUTROPHIL EXTRACELLULAR TRAPS (NETS) FROM PRIMARY HUMAN NEUTROPHILS. Midgley, A., Stretton, A., David, C., Owen, A., Beresford, M.W. and **Liptrott, N.J.** 9th Clinical Nanomedicine Conference (CLINAM), Basel, Switzerland

PRECLINICAL ASSESSMENT OF G2':2000PEG-PHPMA$_{100}$EGDMA$_{0.8}$ POLYMERIC NANOPARTICLES. David, C., Rannard, S., Owen, A. and **Liptrott, N.J.** British Society for Nanomedicine Early Career Researchers Meeting 2016, Swansea, UK

2015

DETERMINING THE PHYSICO-CHEMICAL CHARACTERISTICS OF NANOPARTICLES THAT RELATE TO NEGATIVE EFFECTS ON CELLULAR HEALTH USING IN VITRO SYSTEMS. David, C., Owen, A. and **Liptrott, N.J.** European Nanomedicine Meeting 2015, Grenoble, France

EUROPEAN NANOTECHNOLOGY CHARACTERISATION LABORATORY **Liptrott, N.J.** 1st Annual Conference of the British Society for Nanomedicine, Liverpool, UK

OPTIMISATION OF METHODOLOGY TO ASSESS THE IMPACT OF NANOMATERIALS ON AUTOPHAGY. David, C., Owen, A. and **Liptrott, N.J.** 1st Annual Conference of the British Society for Nanomedicine, Liverpool, UK

OPTIMISATION OF HIGHER THROUGHPUT ASSAYS FOR ASSESSING THE IMPACT OF NANOMATERIALS ON AUTOPHAGY. David, C., Owen, A. and **Liptrott, N.J.** University of Liverpool Poster Day 2015, Liverpool

UTILITY OF KINETIC MEASUREMENT OF OXIDATIVE STRESS IN NANOTOXICOLOGICAL ASSAY DEVELOPMENT. David, C., Raymant, M., Owen, A. and **Liptrott, N.J.** Nanotechnology in Medicine 2015, Manchester

DETERMINING THE PHYSICOCHEMICAL CHARACTERISTICS OF NANOPARTICLES THAT RELATE TO NEGATIVE EFFECTS ON CELLULAR HEALTH USING IN VITRO SYSTEMS. David, C., Owen, A. and **Liptrott, N.J.** European Nanomedicine Meeting 2015, Grenoble

2014

INTERACTIONS OF ANTIRETROVIRAL DRUGS WITH THE SLC22A1 (OCT1) DRUG TRANSPORTER Moss, DM, **Liptrott, NJ**, Siccardi, M and Owen, A. Conference on Retroviruses and Opportunistic Infections 2015, Seattle, Washington, USA

TOXICOLOGICAL INVESTIGATION OF LOPINAVIR SOLID DRUG NANOPARTICLES. **Liptrott, N.J.,** Giardiello, M., David, C.A.W., Rannard, and Owen, A. . Clinical Nanomedicine and Targeted Medicine. The European CLINAM & EPTN Summit, Switzerland.

THE IN VIVO EFFECTS OF SOLID DRUG NANOPARTICLE AND CONVENTIONAL EFAVIRENZ ON ANXIOGENESIS IN RODENTS. P. Curley, M. Giardiello, **N.J. Liptrott**, P. Martin, T. McDonald, M. Siccardi, J. McAdams, S. Rannard, T. Kirkham and A. Owen. 2014 Conference on Retroviruses and Opportunistic Infections, Boston, MA, USA

EVOLUTION OF CELLULAR AND VIRAL RESISTANCE IN HIV-INFECTED PATIENTS WITH LYMPHOMA. McFaul, K. **Liptrott, N.J.**, Cox, A. Martin, P., Egan, D., Owen, A., Kelly, S., Karolia, Z., Shaw, K., Bower, M., Boffito, M. 3rd Joint Conference of BHIV and BASHH, Liverpool, UK

2013

INTERACTION OF GOLD NANOPARTICLES WITH HUMAN LYMPHOCYTES: IMPACT OF THE INTRODUCTION OF A "MIX MATRIX" CAP. **Liptrott, N.**, Kendall, E., Nieves, D., Fernig, D., and Owen, A. Clinical Nanomedicine and Targeted Medicine. The European CLINAM & EPTN Summit, Switzerland.

IMMUNOLOGICAL SAFETY ASSESSMENT AND VIRAL EFFICACY OF NOVEL PICKERING STABILISED NANOEMULSIONS CONTAINING LOPINAVIR AND EFAVIRENZ J. Hobson, **N. Liptrott**, S. Rannard and A. Owen. Clinical Nanomedicine and Targeted Medicine. The European CLINAM & EPTN Summit, Switzerland.

UTILISING IN VITRO-IN VIVO EXTRAPOLATION TO INVESTIGATE EFAVIRENZ PENETRATION INTO THE CENTRAL NERVOUS SYSTEM. P. Curley, P. Martin, **N. Liptrott**, D. Back, A. Owen and M. Siccardi, 14th International Workshop on Clinical Pharmacology of HIV Therapy

ENHANCED PHARMACOLOGICAL PROPERTIES OF EFAVIRENZ FORMULATED AS SOLID DRUG NANOPARTICLES. P. Martin, **N.J. Liptrott**, T McDonald, M Giardiello, P Roberts, P Curley, D Smith, M Siccardi, S Rannard, and A Owen (20th Conference on Retroviruses and Opportunistic Infections, Atlanta, Georgia, USA)

2012

UPTAKE OF ANTIRETROVIRAL BASED SOLID DRUG NANOPARTICLES IN PRIMARY MONOCYTE DERIVED MACROPHAGES AND THEIR IMPACT ON MACROPHAGE FUNCTION. **N.J. Liptrott**, P. Martin, M. Giardiello, T. McDonald, S. P. Rannard and A. Owen (British Pharmacology Society Winter meeting, London, UK)

2010

ASSOCIATION OF ABCC10 POLYMORPHISMS WITH NEVIRAPINE PLASMA CONCENTRATIONS IN THE GERMAN COMPETENCE NETWORK FOR HIV/AIDS. **NJ Liptrott**, S Pushpakom, C Wyen, J Rockstroh, S Mauss, H Knechten, N Brockmeyer, E Hopper-Borge, D Back, A Owen, and German Competence Network for HIV/AIDS (17th Conference on Retroviruses and Opportunistic Infections, San Francisco, California February 2010; Abstract #286)

GENETIC VARIANTS OF ABCC10 ARE ASSOCIATED WITH KIDNEY TUBULAR DYSFUNCTION IN PATIENTS TREATED WITH TENOFOVIR-CONTAINING REGIMENS . S Pushpakom, **NJ Liptrott**, S Rodríguez-Nóvoa, P Labarga, V Soriano, M Albalater, E Hopper-Borge, D Back, S Khoo, and A Owen (17th Conference on Retroviruses and Opportunistic Infections, San Francisco, California, February 2010; Abstract #352)

RALTEGRAVIR IS A SUBSTRATE FOR THE INFLUX TRANSPORTERS OAT1 AND PEPT1 AND THE EFFLUX TRANSPORTER PGP, BUT IS NOT TRANSPORTED BY OATP1A2, OATP1B1, OATP1B3, OCT1, NTCP, OR PEPT2. D Moss, W-S Kwan, **NJ Liptrott**, M Siccardi, D Anstee, S Khoo, D Back, and A Owen (17^{th} Conference on Retroviruses and Opportunistic Infections, San Francisco, California, February 2010; Abstract #293)

2009

EVALUATING THE EFFECT OF GENDER ON DARUNAVIR AND RITONAVIR EXPOSURE IN HIV INFECTED SUBJECTS (A POST-HOC ANALYSIS OF THE GRACE PK SUB-STUDY). Else L, **Liptrott N.J.**, Moss D, Dutton J, Fraser W, Kakude T, Mrus J, Back D. (11th International Workshop on Clinical Pharmacology of HIV Therapy, Sorrento, 2009)

2008

INTERFERON GAMMA GENOTYPE (874T>A) IS ASSOCIATED WITH CCR5 EXPRESSION IN HIV+ PATIENTS. Liptrott, N.J., Chandler, R., Khoo, S.H., Back, D.J., Owen, A. (15^{th} Conference on Retroviruses and Opportunistic Infections, Boston, Massachusetts, February 2008; Abstract #297)

2007

INFLUENCE OF PD-1 GENOTYPE ON VIROLOGICAL AND IMMUNOLOGICAL RESPONSE IN PATIENTS INITIATING HAART. Liptrott, N.J., Mahungu, T., Youle, M., Johnson, M.**,** Smith, C., Khoo, S.H., Back, D.J., Owen, A. (14^{th} Conference on Retroviruses and Opportunistic Infections, Los Angeles, California February 2007; Abstract #452)

2006

THE IMPACT OF CYTOKINES ON THE EXPRESSION OF HIV RELEVANT MEMBRANE BOUND PROTEINS. Liptrott, NJ, Back DJ, Penny M, Khoo SH, Owen A. 9th European ISSX Meeting, Manchester, June 2006 *Awarded 2^{nd} place in the competition for best predoctoral presentation*

RELATIONSHIP OF G516T POLYMORPHISM TO LYMPHOCYTE EXPRESSION OF CYP2B6. Owen A, Cook C, **Liptrott N.J.**, Khoo S, Back D. (13th Conference on Retroviruses and Opportunistic Infections, Denver, February 2006; Abstract #765)