

EDUCATION

University of Oxford 2018 – 2022	MEDICINE (ACCELERATED GRADUATE-ENTRY) BM BCh Clinical course Pass with Distinction, ranked in top 10% Pre-clinical course Pass with Distinction, ranked second in pre-clinical year
University of Cambridge 2012 – 2016	MANUFACTURING ENGINEERING MEng Pass with Distinction, ranked top of year BA First Class, ranked second in year
Winchester College 2006 – 2011	A-levels/Pre-Us Physics (<i>top in country</i>), Maths (100%), Further Maths, Chemistry, Biology A* GCSEs / IGCSEs Nine subjects, including Maths and English A*

MEDICAL WORK EXPERIENCE

Oxford University Hospitals & University of Oxford Jul 2022 - present	ACADEMIC FOUNDATION DOCTOR Competitive programme combining research with clinical placements in Gastroenterology, General/Geriatric Medicine, Intensive Care, ENT, Emergency Medicine & General Practice. Member of the OxSTAR human factors research group, currently investigating the clinical role of administrative staff in triage and patient experience.
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AWARDS

University of Oxford	2021	Speciality Year Merits: Overall Performance; Community Based Medicine; Orthopaedics, Trauma, Rheumatology and Emergency Medicine (<i>top 10%</i>)
	2019	Martin Wronker Runner-up Prize in Medicine
	2019	Pre-clinical Merits: Overall Performance, OSCE, Critical Appraisal (<i>top 10%</i>)
University of Cambridge	2016	Best Overall MEng Project (<i>top prize, 300 students</i>)
	2016	METIIB Project Prize (<i>top prize, 40 students</i>)
	2015	MET IIA Major Project Prize (<i>top prize, 40 students</i>)
Pembroke College, Cambridge	2016	Ronald Wynn Prize for Engineering
	2013 – 2015	College & Foundation Scholarships & Computing Prize
Royal Academy of Engineering	2014	Engineering Leadership Award (<i>34 awarded, 300+ applicants</i>)
IET	2012	Belling Engineering Prize (<i>top scholarship, over 1100 applicants</i>)
Duke of Edinburgh's	2011	Gold and Silver Awards

PUBLICATIONS

Lancet Digital Health 2022	<i>Accepted, revisions with editor</i> Kotaniadis C; Xie C; Alexander D; Rodrigues J; Siddique M; Lockstone H; Thomas S; Kotronias R; Oikonomou E; Badi I; Shirodaria M; Lumley S; Constantinides B; Sanderson N; Rodger G; Chau K; Lodge A ; Tsakok M; Gleeson F; Adlam D; Rao P; Indrajeet D; Deshpande A; Bajaj A; Hudson B; Srivastava V; Farid S; Krasopoulos G; Sayeed R; Neubauer S; Newby D; Channon K; Deanfield J; Antoniadis C.
Clinical Radiology 2022	Parenchymal involvement on CT pulmonary angiography in SARS-CoV-2 Alpha variant infection and correlation of COVID-19 CT severity score with clinical disease severity and short-term prognosis in a UK cohort Tsakok MT, Watson RA, Lumley SF, Khan F, Qamhawi Z, Lodge A , Xie C; Modernising Medical Microbiology Group, Shine B, Matthews P, Jeffery K, Eyre DW, Benamore R, Gleeson F. 77(2):148-155. doi:10.1016/j.crad.2021.11.002. PMID:34895912
Lancet 2020	ChAdOx1 nCoV-19 vaccine for SARS-CoV-2 (Correspondence) Lodge A . 396(10261):1486. doi:10.1016/S0140-6736(20)32270-4. PMID:33160564

ORAL PRESENTATIONS

National Academic GP Training Conference 2022 Using Process Improvement Methodology from Lean Manufacturing to Improve the Efficiency of Influenza Vaccination in General Practice: A Pilot Quality Improvement Study
Lodge A. Lecture presented: March 31, 2022; Cambridge, United Kingdom

PATENTS

CMR Surgical 2018 Driving arrangement for articulating a surgical instrument
 Chaplin B, Henrywood R, **Lodge A.**
 GB2554915 (A), CN110121308 (A), EP3525710 (A1), JP2019530530 (A), US11129686 (B2), US2020038127 (A1), WO2018069679 (A1)

Cambridge Consultants 2014 Injector Device
 Perkins G, Mogensen L, Tang L, Van Wyk E, **Lodge A,** Harborne W, McLean J.
 GB2554915 (A) CN110121308 (A), EP3525710 (A1), JP2019530530 (A), US11129686 (B2), US2020038127 (A1), WO2018069679 (A1)

AUDITS

Oxford University Hospitals 2020 Retrospective analysis of patient records to determine risk factors, prognostic factors and transmission dynamics of SARS-CoV-2 in the hospital setting
 Mo Y, Eyre D, Lumley S, Walker T, Shaw R, O'Donnell D, Butcher L, Jeffery K, Donnelly C, **Oxford COVID infection review team,** Cooper B.
 Partial results available at: doi.org/10.1101/2021.04.28.21256245

Cambridge University Hospitals 2016 Implementing “Lean” and 5S Process Improvement Techniques in the Emergency Department at a Large Major Trauma Centre. *Eight improvement domains were identified, with trials conducted in three domains that led to sustained efficiency and safety improvements (a closed-loop audit).*
Lodge A. 6-week full-time project with report and presentations to CUH and Institute for Manufacturing leadership

TEACHING EXPERIENCE

University of Oxford Sep 2019 – present **TUTOR IN PRE-CLINICAL AND CLINICAL MEDICINE, WORCESTER COLLEGE (PAID)**
 Taught regular sessions for 3-4 students at a time in pre-clinical and clinical topics.

PEER TUTOR (VOLUNTARY)

Arranged and ran ten tutorials for 4-10 pre-clinical students at a time after noticing that their teaching had been significantly impacted by the Covid pandemic.
 38 of 39 students rated the delivery of the sessions and the usefulness in meeting their learning objectives as “very good” or “excellent”. Students rated their confidence in the subject before and after the sessions, and all students reported an increase in confidence. References available.

Cambridge University Heartstart Oct 2013 – Dep 2017

INSTRUCTOR & INSTRUCTOR TRAINING OFFICER (VOLUNTARY)

Responsible for training quality of 200+ first aid instructors. Worked with paramedics and the BHF to restructure training and certification processes to reduce waste and improve quality of instruction. Trained hundreds of adults, schoolchildren, and medical students over this time. Provided Basic Life Support Training to medical students at the University of Cambridge.

ENGINEERING WORK EXPERIENCE

CMR Surgical

Jul 2016 – Aug 2018

MECHANICAL ENGINEER

CMR Surgical is developing a next-generation robotic surgical system used in the NHS & worldwide. I joined a start-up with 40 employees; it is now a \$3bn company with over 400.

- Worked with surgeons and scientists to develop protocols, collect data and write-up an animal and two cadaver trials, to establish non-inferiority of robotic surgical system. Reports and analysis were used in regulatory submissions and to justify further trials.
- Led development of robotic scissor instruments. Designed complex parts, often at the limit of technological capability, for multiple manufacturing processes including metal and plastic injection moulding, micromachining, EDM, forming, brazing and additive manufacturing.
- Analysed design and production parts with computer modelling and tolerance analysis.
- Supported manufacturing partners to develop manufacturing processes for very challenging to manufacture parts, including over-moulding of very delicate parts, high-precision EDM of MIM parts, design and manufacture of high-load miniature bearings and manufacture of custom cable.
- Designed test rigs and wrote test procedures for testing of robotic surgical instruments. Analysed and reported data to demonstrate safety, performance, and regulatory compliance.
- Conducted FMEA and FMECA analyses and implemented outputs to improve product safety.
- Led initial work to evaluate biocompatibility of surgical instruments and worked with senior colleagues and external consultancies to plan testing and regulatory submissions.
- Coordinated prototype build activity, including discussions with suppliers and managers to ensure components and resources were available to meet very tight development timelines.

Cambridge Consultants

USA

2015 (7 weeks)

UK

2013 (12 weeks)

Sep 2011 – Jul 2012

TECHNOLOGY SCHOLAR, MEDICAL ANALYSIS & MODELLING GROUP

- Headed a feasibility review for a new wireless medical product, interacting with suppliers, senior engineers, and the client (a 'big-3' pharmaceutical company) within the first few weeks of joining. Submitted a report, presented results, and responded to questions from the client.
- Developed two auto-injectors in a small team of mixed expertise, transforming a novel idea from a concept generation session into testable, commercially viable prototypes.
- Assisted with data collection and analysis for a user study for a novel medical app.
- Improved the actuation mechanism of a major inhaler development through experimentation and data analysis, bringing actuation success from <10% to >99.9%.
- Gave three recruitment presentations to 100+ people and mentored another staff member.

VOLUNTARY EXPERIENCE

South Central Ambulance Service

Jan 2020 – Jun 2021

East of England Ambulance Service

Oct 2016 – Aug 2018

Ecohouse Initiative

Oct 2012 – Dec 2015

TEAM LEADER, MEDICAL STUDENT FIRST RESPONDER

Recruited, trained, and mentored other medical students to become ambulance first responders. Attended high-priority 999 calls to provide life support and rapid medical assessment.

TEAM LEADER, COMMUNITY FIRST RESPONDER

Attended over 100 high-priority 999 calls, including several cardiac arrests. As a team leader, organised training, mentored new members, analysed response data, and liaised with ambulance service to establish how best to deploy services to ensure efficient use of responder time.

DIRECTOR OF PERMANENT HOUSING

- Headed a team of 30, working with academics and a charity in South America to improve the design of the temporary and permanent low-cost housing they build in 19 countries. Secured commercial and government funding for a full-scale permanent housing project in Ecuador.
- Travelled to Ecuador in summer 2014 to work with our local partners and the government on housing and education projects. Developed innovative system to improve targeting of government education schemes and demonstrated it to the development ministry.