

Scott Lovell, PhD

Educational Background

- 10/2014 – 04/2019** Imperial College London – PhD in Chemical Biology
- 10/2013 – 10/2014** Imperial College London – 1st Class MRes in Chemical Biology
- 10/2009 – 06/2013** University of Sheffield – 1st Class MChem, BSc in Chemistry (Industrial)

Research-Related Work Experience

Assistant Professor, Department of Life Sciences, University of Bath; April 2022 – Present

My lab's research focuses on the development of technology platforms to enable discovery of inhibitors for difficult-to-drug proteins in cancer and antibiotic-resistant bacteria.

Dean's Fellow, School of Medicine, Stanford University, Prof. Matt Bogyo; Jan 2021 – March 2022

This fellowship is given to twenty postdocs throughout the school of medicine with the most impactful research projects and covers two years of a postdoc salary.

PDRA, Stanford University, Prof. Matt Bogyo; Oct 2019 – March 2022

My research focused on the development of a phage display screening platform to identify highly selective substrates and mechanism-based covalent inhibitors of serine and cysteine hydrolases.

EPSRC Doctoral Prize Fellow, PDRA, Imperial College London, Prof. Ed Tate; April 2019 – Sep 2019

I was one of fourteen PhD students from the faculty of natural sciences to be awarded a doctoral prize fellowship. The aim of the fellowship is to help newly qualified PhD students increase the impact of their PhD work and launch their independent research careers.

Visiting Researcher, Queensland University of Technology, Prof. Judith Clements; June 2017 – Oct 2017

I was awarded a travel mobility grant by the RSC to carry out research in the lab of Prof. Clements at the Australian Prostate Cancer Research Centre.

PhD Student, CDT in Chemical Biology, Imperial College London, Prof. Ed Tate; Oct 2014 – April 2019

Title: Unlocking *the KLK activome in drug-resistant prostate cancer: biomarker discovery and target validation*

My EPSRC funded PhD project was highly interdisciplinary encompassing chemical synthesis, chemical proteomics, cell biology and enzymology.

MRes Master's Project, Imperial College London, Prof. Ed Tate & Dr Reiko Tanaka; Oct 2013 – Oct 2014

Title: *Activity-based Probes for Proteomic Profiling of Kallikrein-related Peptidases in Prostate Cancer*

AstraZeneca Scholar, Alderley Park, Macclesfield, East Cheshire; June 2013 – Sep 2013

I developed methodology for the synthesis of 1,2-dihydro-1,2,4-triazol-3-ones. This work was published in *Organic Letters* in December 2013.

MChem Master's Project, Sheffield University, Dr Beining Chen; Sep 2012 – June 2013

Title: *A Fragment Approach in the Lead Optimisation of Compounds against Anthrax*

Industrial Placement Student, AstraZeneca, Alderley Park, Macclesfield, East Cheshire; Aug 2011 – Sept 2012

I worked within the Scale-up Synthesis Team (SST) to synthesise anti-cancer drugs on a multi-kilogram scale. I was presented with an innovation award for my work as lead scale-up chemist on the Osimertinib project.

Funding, Presentations and Prizes

Additional Funding

EPSRC New Investigator Award – Project Title: Tackling the Undruggable Proteome with Covalent Macrocycles, **Value:** £670k, **Duration:** 09/2024 – 09/2027

Royal Society Research Grant – Project Title: Synthesis of Targeted Covalent Macrocyclic Libraries, **Value:** £65k, **Duration:** 03/2024 – 09/2025

AMS Springboard Round 8 Awardee – Project Title: A Phage Display Approach to Identify Targeted Covalent Cyclic Peptides for Undruggable Proteins, **Value:** £100k, **Duration:** 04/2023 – 04/2025

MRC Equipment Grant – Project Title: A Combined and Automated High Throughput Parallel Peptide Synthesis Platform, **Value:** £312k, **Role:** Co-Investigator, **Duration:** 10/2022 – 10/2025

Stanford Postdocs at the Interface Grant – Project Title: Interrogating Siglec Immune Checkpoints in Prostate Cancer, **Value:** \$50k, **Duration:** 06/2020 – 06/2021

Cancer Research UK Development Fund – Project Title: Unlocking the KLK Activome in Epithelial Ovarian Cancer: Biomarker Discovery and Target Validation, **Value:** £20k, **Duration:** 10/2018 - 10/2019

Royal Society Chemistry Travel Mobility Grant – Project Title: Unlocking the KLK Activome in drug-resistant prostate cancer: biomarker discovery and target validation, **Value:** £5k, **Duration:** 06/2017 – 10/2017

Invited Talks

Bicycle Therapeutics, May 2024: Screening approaches for the identification of covalent Peptide Inhibitors

Waseda University, April 2024: Screening approaches for the identification of covalent Peptide Inhibitors

Kyoto University, April 2024: Screening approaches for the identification of covalent Peptide Inhibitors

Cancer Research UK Cambridge Institute, University of Cambridge, March 2024: Screening approaches for the identification of covalent Peptide Inhibitors

RSC Chemical Biology and Bio-Organic Group Forum, January 2024: Screening approaches for the identification of covalent Peptide Inhibitors

Centre for Targeted Protein Degradation, University of Dundee, March 2023: Screening approaches for the identification of covalent Peptide Inhibitors

RSC Protein and Peptide Seminar Group Online Seminar Series, March 2023: Screening approaches for the identification of covalent Peptide Inhibitors

Australian Prostate Cancer Research Centre, Queensland University of Technology, June 2017: Unlocking the KLK activome in Drug-resistant Cancer: Biomarker Discovery and Target Validation

Awards

AstraZeneca Scientific Innovation Award, April 2012: I optimized a synthetic route to a lead anti-cancer compound (now marketed with the trade name Tagrisso) resulting in a project's timeline being condensed by three months.

Publications Since 2020

- Douglas EJA, Wulandari SW, Lovell SD & Laabei M. Novel antimicrobial strategies to treat multi-drug resistant *Staphylococcus aureus* infections, *Microbial Biotechnology*, 2023, 16 (7), 1456-1474
- Faucher FF, Abegg D, Ipock P, Adibekian A, **Lovell S**, & Bogyo M. Solid Phase Synthesis of Fluorosulfate Containing Macrocycles for Chemoproteomic Workflows, *Israel Journal of Chemistry*, 2023, 63 (3), e202300020
- Zhang L, **Lovell S**, Vita E De, Jagtap PKA, Lucy D, Grocin AG, Kjaer S, Borg A, Hennig J, Miller AK & Tate EW. A KLK6 Activity-Based Probe Reveals a Role for KLK6 Activity in Pancreatic Cancer cell Invasion, *Journal of the American Chemical Society*, 2022, 144 (49), 22493-22504
- **Lovell S**, Zhang L, Kryza T, Neodo A, Bock N, Vita E De, Williams ED, Engelsberger E, Xu C, Bakker AT, Maneiro M, Tanaka RJ, Bevan CL, Clements JA, & Tate EW. A Suite of Activity-Based Probes to Dissect the KLK Activome in Drug-Resistant Prostate Cancer, *Journal of the American Chemical Society*, 2021, 143 (23), 8911–8924.
- Kryza T*, Khan T*, **Lovell S***, Harrington BS, Yin J, Parkin A, Pajic M, Koistinen H, Rantala JK, Magdolen V, He Y, Tate EW and Hooper JD, Substrate-biased activity-based probes identify the urokinase-plasminogen axis as a master regulator of metastatic signaling by orphan membrane receptor CDCP1, *Nature Chemical Biology*, 2021, 17 (7), 776-783, * equal contribution.
- Steuten K, Kim H, Widen JC, Babin BM, Onguka O, **Lovell S**, Bolgi O, Cerikan B, Neufeldt CJ, Cortese M, Muir RK, Bennett JM, Geiss-Friedlander R, Peters C, Bartenschlager R, & Bogyo M. Challenges for Targeting SARS-CoV-2 Proteases as a Therapeutic Strategy for COVID-19. *ACS Infectious Diseases*, 2021, 7 (6), 1457–1468
- Chen S, **Lovell S**, Lee S, Fellner F, Mace PD and Bogyo M. Identification of highly selective covalent inhibitors by phage display. *Nature Biotechnology*. 2021, 39 (4), 490-498
- Faucher F, Bennett JM, Bogyo M and **Lovell S**. Strategies for Tuning the Selectivity of Chemical Probes that Target Serine Hydrolases. *Cell Chem Biol*, 2020, 27 (8), 937-952.
- Simões BM, Santiago-Gómez A, Chiodo C, Moreira T, Conole D, **Lovell S**, Alferez D, Eyre R, Spence K, Sarmiento-Castro A, Kohler B, Morisset L, Lanzino M, Andò S, Marangoni E, Sims AH, Tate EW, Howell SJ and Clarke

RB. Targeting STAT3 signaling using stabilised sulforaphane (SFX-01) inhibits endocrine resistant stem-like cells in ER-positive breast cancer. *Oncogene.*, 2020, 39 (25), 4896-4908

- Barry R, Ruano-Gallego D, Radhakrishnan ST, **Lovell S**, Yu L, Kotik O, Glegola-Madejska I, Tate EW, Choudhary JS, Williams HRT and Frankel G. Faecal neutrophil elastase-antiprotease balance reflects colitis severity. *Mucosal Immunol.* 2020, 13(2), 322-333.
- Kryza T, Bock N, **Lovell S**, Rockstroh A, Lehman ML, Lesner A, Panchadsaram J, Silva LM, Srinivasan S, Snell CE, Williams ED, Fazli L, Gleave M, Batra J, Nelson C, Tate EW, Harris J, Hooper JD and Clements JA. The molecular function of kallikrein-related peptidase 14 demonstrates a key modulatory role in advanced prostate cancer. *Mol Oncol.* 2020 14 (1), 105-128