

Professional Experience

2021 –	Full Professor of Chemistry: Colorado State University
2018 –	Head of Organic Chemistry: Colorado State University
2018 – 2021	Associate Professor: Colorado State University
2014 – 2017	Associate Professor in Organic Chemistry: University of Oxford
2010 – 2014	University Lecturer in Organic Chemistry: University of Oxford
2010 – 2017	Tutorial Fellow in Organic Chemistry: St Hilda's College, Oxford
2009 – 2010	Fulbright UK-US Distinguished Research Fellow: UCLA with Prof. K. N. Houk
2007 – 2009	Junior Research Fellow: St Catharine's College, Cambridge

Education

2005 – 2008	PhD in Chemistry, University of Cambridge with Prof. Jonathan M. Goodman
2000 – 2004	MA MSci Natural Sciences, Trinity Hall, University of Cambridge 1st class degree, ranked top in the University; Rafael Prize for Organic Chemistry; Trinity Hall prize in Natural Sciences

Recent Awards & Honors

2019	Fellow of the Royal Society of Chemistry (FRSC)
2018	<i>Cell: Trends in Chemistry</i> Editorial Board
2017	<i>Nature Journals</i> Outstanding Reviewer
2016	<i>Chem. Soc. Rev.</i> Emerging Investigator
2015	ACS COMP Division Outstanding Junior Faculty Award
2015	RSC Harrison-Meldola Memorial Medal
2015	<i>Thieme Chemistry Journal</i> Award
2014	Molecular Graphics and Modelling Society Silver Jubilee Award
2014	ACS Organic Division Young Academic Investigators Award

Selected Recent Publications (of 137 published articles; full list at patonlab.colostate.edu)

[Phosphorus-mediated sp²–sp³ couplings for C–H fluoroalkylation of azines](#), Zhang, X.; Nottingham, K. G.; Patel, C.; Alegre-Requena, J. V.; Levy, J. N.; Paton, R. S.; McNally, A. *Nature* **2021**, 594, 217–222.

[Mechanistic Investigation of Rh \(I\)-Catalyzed Asymmetric Suzuki-Miyaura Coupling with Racemic Allyl Halides](#). van Dijk, L. et al. *Nature Catalysis* **2021**, 4, 284–292

[Prediction of homolytic bond dissociation enthalpies for organic molecules at near chemical accuracy with sub-second computational cost](#). St John, P.; Guan, Y.; Kim, Y.; Kim, S.; Paton, R. S. *Nat. Commun.* **2020**, 11, 2328.

[Cofactor-independent pinacolase directs non-Diels-Alderase biogenesis of the Brevianamides](#). Ye, Y. et al. *Nat. Catal.* **2020**, 3, 497–506.

[Fungal Indole Alkaloid Biogenesis through Evolution of a Bifunctional Reductase/Diels-Alderase](#). Dan, Q. et al. *Nature Chemistry* **2019**, 11, 972–980.

[Heterobiaryl synthesis by contractive C–C coupling via P\(V\) intermediates](#). Hilton, M. C.; Zhang, X.; Boyle, B. T.; Alegre-Requena, J. V.; Paton, R. S.; McNally, A. *Science* **2018**, 62, 799–804.

[Asymmetric nucleophilic fluorination under hydrogen bonding phase-transfer catalysis](#) Pupo, G.; Ibba, F.; Ascough, D. M. H.; Vicini, A. C.; Ricci, P.; Christensen, K.; Morphy, J. R.; Brown, J. M.; Paton, R. S.; Gouverneur, V. *Science* **2018**, 360, 638–642.

Invited Lectures

ROBERT S. PATON, PHD
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Gordon Conference on Stereochemistry · IUPAC World Chemistry Congress, Montreal · Gordon Conference on Physical Organic Chemistry · Genentech · GSK · 24th Annual ACS Green Chemistry & Engineering Conference · University of Missouri – St. Louis · University of Denver · Frontiers in Physical Organic Chemistry, Southwest & Rocky Mountain Regional ACS Meeting, El Paso · Princeton University · UCLA · Machine Learning and Informatics for Chemistry and Materials, Telluride · Mechanistic Homogeneous Catalysis – A Meeting between Theory and Experiment, Stockholm · ISTCP X, Tromsø, Norway · University of Vienna · UC Denver · Hanyang University · Pukyong University · 2nd International Symposium on Organic Reaction Mechanism, Shenzhen · Computational Catalysis for Sustainable Chemistry, Spain · 37th RMC, U. of British Columbia, Vancouver · *Predictive Catalysis* 2018, Girona, Spain · 11th EUCO-TCC, Barcelona, Spain · Complutense University of Madrid · Colorado School of Mines · *Challenges in Computational Homogeneous Catalysis*, Stockholm, Sweden · *V ENEQUI*, Coimbra, Portugal · University of Cologne · University of Liverpool · KAIST · International School Marcial Moreno Mañas 2016, San Sebastian (plenary) · RSC Early Career Symposium 2016, University of Strathclyde (plenary) · RCOM9, Marseilles, France · Queens University Belfast · 3rd Hans Suschitzky Symposium, University of Salford · RSC South East Symposium, University of East Anglia (plenary) · UK-Japanese Symposium on Asymmetric Catalysis, University of Manchester · University of Cambridge · Federal University of São Carlos · Warwick University · Heriot-Watt University · University of Geneva · POSTECH · International Symposium on Synthesis and Catalysis, Evora (plenary) · University of Helsinki · Computational Molecular Science 2015, University of Warwick · ICIQ · Imperial College London · RTWH Aachen · ACS Organic Division Young Investigators Award Symposium, San Francisco · Oxford · UCLA · University College London · Transatlantic Frontiers of Chemistry Meeting 2013, Kloster Seeon, Germany · Young Chemists Meeting 2013, Imperial College London · Seoul National University · Centre for Computational Chemistry, University of Bristol · Centre for Coordination Chemistry (LCC), University of Toulouse · ICQC Satellite Meeting, UCLA · University of Birmingham · University of Nottingham

Research Activities

- 2021: Instructor – Colorado State Coding Camp for High Schoolers
- 2019: Co-founder of the NSF Center for Computer Assisted Synthesis
- 2019: Organizer, ACS National Meeting COMP symposia *Probing Reactive Intermediates Through Chemical Computations and Immersive Virtual Reality for Molecular Design*
- 2014-2017: Chemistry tutor for residential courses aimed at increasing participation in higher-education. Lectured high-school students from schools under-represented in higher education: 70% of students attending obtained offers from Oxford/Cambridge/Imperial. Authored a book on Chemistry problems distributed throughout UK schools, and was head-mentor for the UK at the International Chemistry Olympiad.
- Editorial Board Member, *Cell: Trends in Chemistry*; *Journal of Molecular Graphics and Modelling*; *Heteroatom Chemistry*; *Chemistry – Methods*; *Magnetic Resonance in Chemistry*
- *Nature Journals* Outstanding Reviewer (2017) *Publons* top reviewers in Chemistry, 99th percentile 2017-2019.
- External PhD examiner at the Universities of Cambridge, Helsinki and Heriot-Watt.

Current Support

- 09/01/2020 – 08/31/2022 Mechanism, Selectivity and Reaction Dynamics in Hydrogen Atom Transfer (ACS-PRF New Directions Grant \$110,000)
- 06/01/2020 – 05/31/2023 Discovering Modular Catalysts for Asymmetric Synthesis with Computation (NSF CAT \$420,786.70)
- 05/01/2020 – 04/30/2022 End-To-End Optimization for Battery Materials and Molecules By Combining Graph Neural Networks And Reinforcement Learning (ARPA-E \$1,800,000; CSU allocation \$270,000)
- 09/01/2019 – 08/31/2022 CCI Phase I: NSF Center for Computer Assisted Synthesis (NSF \$1,800,000; CSU allocation \$259,239)

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