John F. Bower

Contact Information

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Professional Appointments

2017 - present **Professor of Chemistry at the University of Bristol**

2016 - 2017 **Reader in Organic Chemistry at the University of Bristol**

2015 - 2016 **Senior Research Fellow then Senior Lecturer in Organic Chemistry at the University of Bristol**

2014 - 2015 **Proleptic Lectureship in Organic Chemistry at the University of Bristol**

2010 - 2018 **Royal Society University Research Fellow at the University of Bristol**

2008 - 2010 **Postdoctoral Research Associate at the University of Oxford**
Advisor: Professor Timothy Donohoe
Research: The application of olefin metathesis to the synthesis of heteroaromatics.

2007 - 2008 **Postdoctoral Research Associate at the University of Texas at Austin**
Advisor: Professor Michael Krische
Research: The development of novel metal-catalysed carbon-carbon bond forming hydrogenations.

2007 **AstraZeneca Process Catalysis Group,** Bristol, UK.
Research: The identification and optimisation of highly general conditions for the Heck reaction.

2001 - 2002 **AstraZeneca Process Research and Development,** Bristol, UK.
Undergraduate industrial placement year.
Research: The identification of scalable synthetic routes to a variety of drug compounds.

Education

2003 - 2007 **Ph.D. in Organic Chemistry at the University of Bristol**
Advisor: Professor Timothy Gallagher
Research: The application of cyclic sulfamidates to the enantiospecific synthesis of *N*-heterocycles.

1999 - 2003 **MSci. (Hons) (1st Class) at the University of Bristol**
Degree: Chemistry with Industrial Experience

1997 - 1998 **Uppingham School,** Rutland, UK.
Extracurricular research undertaken with Dr. S. A. Cotton.
Research: The preparation and structural confirmation of novel lanthanide complexes.

Professional Affiliations

2014 - present Member of the International Society of Heterocyclic Chemistry (ISHC).
2014 - present Fellow of the Higher Education Academy (HEA).
2014 - present Member of the American Chemical Society (ACS).
2008 - present Member of the Royal Society of Chemistry (MRSC).
2003 - 2008 Associate Member of the Royal Society of Chemistry (AMRSC).

Awards, Prizes and Fellowships

2016 Philip Leverhulme Prize.
2015 Royal Society of Chemistry Hickinbottom Award and associated Briggs Scholarship.
2015 ERC Starter Grant.
2014 Junior Scientists' Programme Fellowship of the 49th "Bürgenstock Conference".
2013 Royal Society of Chemistry and Brazilian Meeting on Organic Synthesis Young Investigator Award.
2013 Royal Society of Chemistry Harrison-Meldola Memorial Prize.
2013 Thieme Chemistry Journal Award.

2010 Royal Society University Research Fellowship (URF).
2010 EPSRC Career Acceleration Fellowship (declined as URF accepted instead).
2007 Faculty of Science PhD Thesis Commendation.
2005 Syngenta Postgraduate Scholarship in Organic Chemistry.
2003 Mike Rothwell Prize from the University of Bristol.
2001 Undergraduate Examination Performance Commendation.
2000 Undergraduate Examination Performance Commendation.

Publications (h-index: 32)

74. X. Ma, I. R. Hazelden, T. Langer, R. H. Munday and J. F. Bower*; **Enantioselective aza-Heck cyclizations of N-tosyloxy carbamates: synthesis of pyrrolidines and piperidines.** *Under revision.*

73. A. G. Dalling, T. Yamauchi, N. G. McCreanor, L. Cox and J. F. Bower*; **Carbonylative C-C bond activation of electron-poor cyclopropanes: rhodium-catalyzed (3+1+2) cycloadditions of cyclopropylamides.** *Angew. Chem. Int. Ed.* **2019**, *58*, 221-225.

72. A. D. J. Calow and J. F. Bower*; **Rhodium(I)-catalyzed reductive carbon-carbon bond formation** *in Rhodium catalysis in organic synthesis: methods and reactions*, K. Tanaka (Ed.), Wiley-VCH. 2019 *In press.* (Invited book chapter)

71. J. J. Farndon, T. A. Young and J. F. Bower*; **Stereospecific alkene aziridination using a bifunctional amino-reagent: an aza-Prilezhaev reaction.** *J. Am. Chem. Soc.* **2018**, *140*, 17856-17860.

70. P. Cooper, G. E. M. Crisenza, L. J. Feron and J. F. Bower*; **Iridium-catalyzed α-selective arylation of styrenes by dual C-H functionalization.** *Angew. Chem. Int. Ed.* **2018**, *57*, 14198-14202.

69. S. Grélaud, P. Cooper, L. J. Feron and J. F. Bower*; **Branch-selective and enantioselective iridium-catalyzed alkene hydroarylation *via* anilide-directed C-H oxidative addition.** *J. Am. Chem. Soc.* **2018**, *140*, 9351-9356.

    - Highlighted in *SYNFACTS* **2018**, *14*, 1165.

68. A. G. Dalling and J. F. Bower*; **Synthesis of nitrogen heterocycles via directed carbonylative C-C bond activation of cyclopropanes.** *Chimia*, **2018**, *72*, 595-600. (Invited review article)

67. M. J. Harper, C. J. Arthur, J. Crosby, E. J. Emmett, R. L. Falconer, A. J. Fensham-Smith, P. J. Gates, T. Leman, J. E. McGrady,* J. F. Bower* and C. A. Russell*; **Oxidative addition, transmetallation and reductive elimination at a 2,2′-bipyridyl-ligated gold center.** *J. Am. Chem. Soc.* **2018**, *140*, 4440-4445. (open access)

66. I. R. Hazelden, R. C. Carmona, T. Langer, P. G. Pringle and J. F. Bower*; **Pyrrolidines and piperidines by ligand-enabled aza-Heck cyclizations and cascades of N-(pentafluorobenzoyloxy)carbamates.** *Angew. Chem. Int. Ed.* **2018**, *57*, 5124-5128. (open access)

65. G.-W. Wang and J. F. Bower*; **Modular access to azepines by directed carbonylative C-C bond activation of aminocyclopropanes.** *J. Am. Chem. Soc.* **2018**, *140*, 2743–2747. (open access)

64. X. Ma, J. J. Farndon, T. A. Young, N. Fey and J. F. Bower*; **A simple and broadly applicable C-N bond forming dearomatization protocol enabled by bifunctional amino-reagents.** *Angew. Chem. Int. Ed.* **2017**, *56*, 14531-14535. (open access)

    - Highlighted in *Org. Process Res. Dev.* **2017**, *21*, 1873-1883.

63. J. J. Farndon, X. Ma and J. F. Bower*; **Transition metal free C-N bond forming dearomatizations and aryl C-H aminations by in situ release of a hydroxylamine-based aminating agent.** *J. Am. Chem. Soc.* **2017**, *139*, 14005-14008. (open access)

62. M. J. Harper, E. J. Emmett, J. F. Bower* and C. A. Russell*; **Oxidative 1,2-difunctionalization of ethylene via gold-catalyzed oxyarylation.** *J. Am. Chem. Soc.* **2017**, *139*, 12386-12389. (open access)

61. C. S. Buxton, D. C. Blakemore and J. F. Bower*; **Reductive coupling of acrylates with ketones and ketimines by a nickel-catalyzed transfer hydrogenative strategy**. *Angew. Chem. Int. Ed.* **2017**, *56*, 13824-13828. (open access)

    - Highlighted in *SYNFACTS* **2018**, 21.
    - Highlighted in *Org. Process Res. Dev.* **2018**, *22*, 421-429.

60. N. J. Race, I. R. Hazelden, A. Faulkner and J. F. Bower*; **Recent developments in the use of aza-Heck cyclizations for the synthesis of chiral N-heterocycles.** *Chem. Sci.* **2017**, *8*, 5248-5260. (Invited contribution; open access perspective article)

59. G. A. M. Jardim, T. L. da Silva, M. O. F. Goulart, C. A. de Simone, J. M. C. Barbosa, K. Salomão, S. L. de Castro, J. F. Bower and E. N. da Silva Júnior*; **Rhodium-catalyzed C-H bond activation for the synthesis of quinonoid compounds: significant anti-*Trypanosoma cruzi* activities and electrochemical studies of functionalized quinones.** *Eur. J. Med. Chem.* **2017**, *136*, 406-419.

58. N. J. Race, A. Faulkner, G. Fumagalli, T. Yamauchi, J. S. Scott, M. Rydén-Landergren, H. A. Sparkes and J. F. Bower*; **Enantioselective Narasaka-Heck cyclizations: synthesis of tetrasubstituted nitrogen-bearing stereocenters.** *Chem. Sci.* **2017**, *8*, 1981-1985. (open access)

- Highlighted in *SYNFACTS* **2017**, 182.
- Highlighted in *Org. Process Res. Dev.* **2017**, *21*, 279-291.

57. G. Fumagalli, S. Stanton and J. F. Bower*; **Recent methodologies that exploit C-C single bond cleavage of strained ring systems by transition metal complexes.** *Chem. Rev.* **2017**, *117*, 9404-9432. (Invited review article)

56. N. J. Race and J. F. Bower*; **Synthesis of heteroaromatic compounds by alkene and enyne metathesis.** *Top. Heterocycl. Chem.* **2017**, *47*, 1-32. (Invited book chapter)

55. G.-W. Wang, N. G. McCreanor, M. H. Shaw, W. G. Whittingham and J. F. Bower*; **New initiation modes for directed carbonylative C-C bond activation: rhodium-catalyzed (3+1+2) cycloadditions of aminomethylcyclopropanes.** *J. Am. Chem. Soc.* **2016**, *138*, 13501-13504. (open access)

54. G. A. M. Jardim, J. F. Bower* and E. N. da Silva Júnior*; **Rh-catalyzed reactions of 1,4-benzoquinones with electrophiles: C-H iodination, bromination and phenylselenation.** *Org. Lett.* **2016**, *18*, 4454-4457.

53. N. G. McCreanor, S. Stanton and J. F. Bower*; **Capture-collapse heterocyclization: 1,3-diazepanes by C-N reductive elimination from rhodacyclopentanones.** *J. Am. Chem. Soc.* **2016**, *138*, 11465-11468. (open access)

52. M. H. Shaw and J. F. Bower*; **Synthesis and applications of rhodacyclopentanones derived from C-C bond activation.** *Chem. Commun.* **2016**, *52*, 10817-10829. (Invited contribution; open access review article)

51. I. R. Hazelden, X. Ma, T. Langer and J. F. Bower*; **Diverse N-heterocyclic ring systems *via* aza-Heck cyclizations of N-(pentafluorobenzoyloxy)sulfonamides.** *Angew. Chem.* **2016**, *128*, 11364-11368; *Angew. Chem. Int. Ed.* **2016**, *55*, 11198-11202. (open access)

50. G. E. M. Crisenza, E. Dauncey and J. F. Bower*; **C2-Alkenylation of N-heteroaromatic compounds *via* Brønsted acid catalysis**. *Org. Biomol. Chem.* **2016**, *14*, 5820-5825. (Invited contribution to the "2016 New Talent Special Issue"; open access)

49. A. S. Henderson, J. F. Bower* and M. C. Galan*; **Carbohydrates as enantioinduction components in stereoselective catalysis.** *Org. Biomol. Chem.* **2016**, *14*, 4008-4017. (open access review article)

48. G. A. M. Jardim, E. N. da Silva Júnior* and J. F. Bower*; **Overcoming naphthoquinone deactivation: rhodium-catalyzed C-5 selective C-H iodination as a gateway to functionalized derivatives.** *Chem. Sci.* **2016**, *7*, 3780-3784. (open access)

47. G. E. M. Crisenza and J. F. Bower*; **Branch selective Murai-type alkene hydroarylation reactions.** *Chem. Lett.* **2016**, *45*, 2-9. (Invited contribution; open access review article)

46. N. J. Race, A. Faulkner, M. H. Shaw and J. F. Bower*; **Dichotomous mechanistic behavior in Narasaka-Heck cyclizations: electron rich Pd-catalysts generate iminyl radicals.** *Chem. Sci.* **2016**, *7*, 1508-1513. (open access)

45. M. H. Shaw, W. G. Whittingham and J. F. Bower*; **Directed carbonylative (3+1+2) cycloadditions of amino-substituted cyclopropanes and alkynes: reaction development and increased efficiencies using a cationic rhodium system.** *Tetrahedron* **2016**, *72*, *Symposium-in-print, Catalytic C–C bond formation by C–H functionalization and C–C bond cleavage,* 2731-2741. (Invited contribution; open access)

44. G. E. M. Crisenza, O. O. Sokolova and J. F. Bower*; **Branch selective alkene hydroarylation by cooperative destabilization: iridium-catalyzed *ortho*-alkylation of acetanilides.** *Angew. Chem.* **2015**, *127*, 15079-15083; *Angew. Chem. Int. Ed.* **2015**, *54*, 14866-14870. (open access)

43. A. S. Henderson, S. Medina, J. F. Bower* and M. C. Galan*; **Nucleophilic aromatic substitution (S_NAr) as a facile approach to challenging carbohydrate-aryl ethers.** *Org. Lett.* **2015**, *17*, 4846-4849. (open access)

42. M. H. Shaw, R. A. Croft, W. G. Whittingham and J. F. Bower*; **Modular access to substituted azocanes *via* a rhodium-catalyzed cycloaddition-fragmentation strategy.** *J. Am. Chem. Soc.* **2015**, *137,* 8054-8057. (open access)

41. A. Faulkner, J. S. Scott and J. F. Bower*; **An umpolung approach to alkene carboamination: palladium catalyzed 1,2-amino-acylation, -carboxylation, -arylation, -vinylation and -alkynylation.** *J. Am. Chem. Soc.* **2015**, *137,* 7224-7230. (open access)

40. S. Medina, A. S. Henderson, J. F. Bower and M. C. Galan*; **Stereoselective synthesis of glycosides using (salen)Co catalysts as promoters.** *Chem. Commun.* **2015**, *51*, 8939-8941. (open access)

39. M. H. Shaw, N. G. McCreanor, W. G. Whittingham and J. F. Bower*; **Reversible C-C bond activation enables stereocontrol in Rh-catalyzed carbonylative cycloadditions of aminocyclopropanes.** *J. Am. Chem. Soc.* **2015**, *137*, 463-468. (open access)

38. A. S. Henderson, J. F. Bower* and M. C. Galan*; **Carbohydrate-based *N*-heterocyclic carbenes for enantioselective catalysis.** *Org. Biomol. Chem*. **2014**, *12*, 9180-9183. (Contribution to the "2015 RSC Prize and Award Winners Collection"; open access)

37. G. E. M. Crisenza, N. G. McCreanor and J. F. Bower*; **Branch selective iridium-catalyzed hydroarylation of monosubstituted alkenes *via* a cooperative destabilization strategy.** *J. Am. Chem. Soc.* **2014**, *136*, 10258-10261. (open access)

36. A. Faulkner, N. J. Race, J. S. Scott and J. F. Bower*; **Copper catalyzed Heck-like cyclizations of oxime esters.** *Chem. Sci.* **2014**, *5*, 2416-2421. (open access)

35. N. J. Race and J. F. Bower*; **Palladium catalyzed cyclizations of oxime esters with 1,2-disubstituted alkenes: synthesis of dihydropyrroles.** *Org. Lett.* **2013**, *15*, 4616-4619. (open access)

34. M. H. Shaw, E. Y. Melikhova, D. P. Kloer, W. G. Whittingham and J. F. Bower*; **Directing group enhanced carbonylative ring expansions of amino-substituted cyclopropanes: rhodium catalyzed multicomponent synthesis of *N*-heterobicyclic enones.** *J. Am. Chem. Soc.* **2013**, *135*, 4992-4995. (open access)

33. P. M. Murray,* J. F. Bower, D. K. Cox, E. K. Galbraith, J. S. Parker and J. B. Sweeney*; **A robust first-pass protocol for the Heck-Mizoroki reaction.** *Org. Process Res. Dev.* **2013**, *17*, 397-405.

32. A. Faulkner, J. S. Scott and J. F. Bower*; **Palladium catalyzed cyclizations of oxime esters with 1,1-disubstituted alkenes: synthesis of α,α-disubstituted dihydropyrroles and studies towards an asymmetric protocol.** *Chem. Commun.* **2013**, *49*, 1521-1523. (open access)

31. A. Faulkner and J. F. Bower*; **Highly efficient Narasaka-Heck cyclizations mediated by P(3,5-$(CF_3)_2C_6H_3)_3$: facile access to *N*-heterobicyclic scaffolds.** *Angew. Chem.* **2012**, *124*, 1707-1711; *Angew. Chem. Int. Ed.* **2012**, *51*, 1675-1679.

30. T. J. Donohoe,* J. F. Bower and L. K. M. Chan; **Olefin cross-metathesis for the synthesis of heteroaromatic compounds.** *Org. Biomol. Chem.* **2012**, *10*, 1322-1328.

    - Highlighted as a "Hot" Emerging Area.

29. T. J. Donohoe,* J. F. Bower, D. B. Baker, J. A. Basutto, L. K. M. Chan and P. Gallagher; **Synthesis of 2,4,6-trisubstituted pyridines *via* an olefin cross-metathesis/Heck-cyclisation-elimination sequence.** *Chem. Commun.* **2011**, *47*, 10611-10613.

28. T. J. Donohoe,* J. A. Basutto, J. F. Bower and A. Rathi; **Heteroaromatic synthesis *via* olefin cross-metathesis: entry to polysubstituted pyridines.** *Org. Lett.* **2011**, *13*, 1036-1039.

27. J. F. Bower and M. J. Krische*; **Formation of C-C bonds *via* iridium catalyzed hydrogenation and transfer hydrogenation.** *Top. Organomet. Chem.* **2011**, *34*, 107-138.

26. T. J. Donohoe,* J. F. Bower and J. A. Basutto; **Olefin cross-metathesis based approaches to furans: procedures for the preparation of di- and trisubstituted variants.** *Nature Protocols* **2010**, *5*, 2005-2010.

25. T. J. Donohoe,* N. J. Race, J. F. Bower and C. K. A. Callens; **Substituted pyrroles *via* olefin cross-metathesis**. *Org. Lett.* **2010**, *12*, 4094-4097.

24. T. J. Donohoe* and J. F. Bower; **An expedient route to substituted furans *via* olefin cross-metathesis.** *Proc. Natl. Acad. Sci. U.S.A.* **2010**, *107*, 3373-3376.

    - Highlighted in *Nature Chem.* **2010**, *2*, 244.
    - Commentary in *Proc. Natl. Acad. Sci. U.S.A.* **2010**, *107*, 3279-3280.
    - Highlighted as "Editors' Choice" in *Science* **2010**, *327*, 923.

23. J. F. Bower,* J. Rujirawanich and T. Gallagher*; ***N*-Heterocycle construction *via* cyclic sulfamidates. Applications in synthesis.** *Org. Biomol. Chem.* **2010**, *8*, 1505-1519.

22. T. J. Donohoe,* J. F. Bower, J. A. Basutto, L. P. Fishlock, P. A. Procopiou and C. K. A. Callens; **Ring-closing metathesis for the synthesis of heteroaromatics: evaluating routes to pyridines and pyridazines.** *Tetrahedron* **2009**, *65*, *Symposium-in-print, Modern applications of transition metal catalysis in heterocycle synthesis,* 8969-8980.

21. T. J. Donohoe,* L. P. Fishlock, J. A. Basutto, J. F. Bower, P. A. Procopiou and A. L. Thompson; **Synthesis of substituted pyridines and pyridazines *via* ring closing metathesis.** *Chem. Commun.* **2009**, 3008-3010.

20. J. F. Bower and M. J. Krische*; **Hydrogenation for C-C bond formation.** In *Handbook of Green Chemistry – Green Catalysis, Volume 1: Homogeneous Catalysis*. P. T. Anastas and R. H. Crabtree (Eds.), Wiley-VCH: Weinheim, **2009**, 205-254.

19. J. F. Bower, I. S. Kim, R. L. Patman and M. J. Krische*; **Catalytic carbonyl addition through transfer hydrogenation: a departure from preformed organometallic reagents.** *Angew. Chem.* **2009**, *121*, 36-48; *Angew. Chem. Int. Ed.* **2009**, *48,* 34-46.

18. R. L. Patman, J. F. Bower, I. S. Kim and M. J. Krische*; **Formation of C-C bonds *via* catalytic hydrogenation and transfer hydrogenation: vinylation, allylation and enolate addition of carbonyl compounds and imines.** *Aldrichimica Acta* **2008**, *41*, 95-104.

17. J. S. Parker,* J. F. Bower, P. M. Murray, B. Patel and P. Talavera; **Kepner-Tregoe decision analysis as a tool to aid route selection. Part 3. Application to a back-up series of compounds in the PDK project.** *Org. Process Res. Dev.* **2008**, *12*, 1060-1077.

16. F. Shibahara, J. F. Bower and M. J. Krische*; **Diene hydroacylation from the alcohol or aldehyde oxidation level *via* ruthenium-catalyzed C-C bond-forming transfer hydrogenation: synthesis of β,γ-unsaturated ketones.** *J. Am. Chem. Soc.* **2008**, *130*, 14120-14122.

15. R. L. Patman, V. M. Williams, J. F. Bower and M. J. Krische*; **Carbonyl propargylation from the alcohol or aldehyde oxidation level employing 1,3-enynes as surrogates to preformed allenyl metal reagents: a ruthenium catalyzed C-C bond forming transfer hydrogenation.** *Angew. Chem.* **2008**, *120*, 5298-5301; *Angew. Chem. Int. Ed.* **2008**, *47*, 5220-5223.

    - Highlighted in *Org. Process Res. Dev.* **2008**, *12*, 1021-1030.

14. F. Shibahara, J. F. Bower and M. J. Krische*; **Ruthenium catalyzed C-C bond forming transfer hydrogenation: carbonyl allylation from the alcohol or aldehyde oxidation level employing acyclic 1,3-dienes as surrogates to preformed allyl metal reagents.** *J. Am. Chem. Soc.* **2008**, *130*, 6338-6339.

    - Highlighted as "News of the Week" in *Chem. Eng. News* **2008**, *86*, 10.
    - Highlighted in *SYNFACTS* **2008**, 831.

13. J. F. Bower, R. L. Patman and M. J. Krische*; **Iridium catalyzed C-C coupling *via* transfer hydrogenation: carbonyl addition from the alcohol or aldehyde oxidation level employing 1,3-cyclohexadiene.** *Org. Lett.* **2008**, *10*, 1033-1035.

    - Highlighted in *SYNFACTS* **2008**, 505.

12. J. F. Bower, E. Skucas, R. L. Patman and M. J. Krische*; **Catalytic C-C coupling *via* transfer hydrogenation: reverse prenylation, crotylation and allylation from the alcohol or aldehyde oxidation level.** *J. Am. Chem. Soc.* **2007**, *129,* 15134-15135.

    - Highlighted in *SYNFACTS* **2008**, 293.

11. E. Skucas, J. F. Bower and M. J. Krische*; **Carbonyl allylation in the absence of preformed allyl metal reagents: reverse prenylation *via* iridium catalysed hydrogenative coupling of dimethylallene.** *J. Am. Chem. Soc.* **2007**, *129,* 12678-12679.

10. J. F. Bower, P. Szeto and T. Gallagher*; **Cyclic sulfamidates as precursors to alkylidene pyrrolidines and piperidines.** *Org. Lett.* **2007**, *9,* 4909-4912.

9. J. F. Bower, P. Szeto and T. Gallagher*; **Enantiopure 1,4-benzoxazines *via* 1,2-cyclic sulfamidates. Synthesis of levofloxacin.** *Org. Lett.* **2007**, *9,* 3283-3286.

8. J. F. Bower, A. J. Williams, H. Woodward, P. Szeto, R. M. Lawrence and T. Gallagher*; **Reactivity of cyclic sulfamidates towards phosphonate-stabilised enolates: synthesis and applications of α-phosphono lactams.** *Org. Biomol. Chem*. **2007**, *5,* 2636-2644.

7. J. F. Bower, T. Riis-Johannessen, P. Szeto, A. J. Whitehead and T. Gallagher*; **Stereospecific construction of substituted piperidines. Synthesis of (-)-paroxetine and (+)-laccarin.** *Chem. Commun.* **2007**, 728-730.

- Highlighted in *SYNFACTS* **2007**, 574.

6. J. F. Bower, P. Szeto and T. Gallagher*; **Cyclic sulfamidates as versatile lactam precursors. An evaluation of synthetic strategies towards (-)-aphanorphine.** *Org. Biomol. Chem*. **2007**, *5,* 143-150.

5. J. F. Bower, S. Chakthong, J. Švenda, A. J. Williams, R. M. Lawrence, P. Szeto and T. Gallagher*; **Reactivity of cyclic sulfamidates towards sulfur-stabilised enolates. Stereocontrolled synthesis of functionalised lactams.** *Org. Biomol. Chem*. **2006**, *4*, 1868-1877.

4. J. F. Bower, P. Szeto and T. Gallagher*; **Cyclic sulfamidates as lactam precursors. An efficient asymmetric synthesis of (-)-aphanorphine.** *Chem. Commun.* **2005**, 5793-5795.

3. J. F. Bower, J. Švenda, A. J. Williams, J. P. H. Charmant, R. M. Lawrence, P. Szeto and T. Gallagher*; **Cyclic sulfamidates as vehicles for the synthesis of substituted lactams.** *Org. Lett.* **2004**, *6,* 4727-4730.

2. J. F. Bower, S. A. Cotton,* J. Fawcett, R. S. Hughes and D. R. Russell; **Praseodymium complexes of 2,2′-bipyridine; the crystal and molecular structures of $Pr(bipy)_3(NCS)_3$, $Pr(bipy)_2(NO_3)_3$, $Pr(bipy)_2Cl_3(OH_2)\cdot EtOH$ and $Pr(bipy)(S_2CNEt_2)_3$.** *Polyhedron* **2003**, *22,* 347-354.

1. J. F. Bower, S. A. Cotton,* J. Fawcett* and D. R. Russell; **Bis(2,2'-bipyridyl-*N*,*N*')tris(nitrato-*O*,*O*')neodymium.** *Acta Cryst.* **2000**, *C56,* e8-e9.

Research Presentations

83. Invited Lecture, 19th Brazilian Meeting on Organic Synthesis (BMOS), Tiradentes, Brazil, October 5-8, 2020.
82. Invited Lecture, Karl-Ziegler Symposium, GDCh-Wissenschaftsforum Chemie 2019 (WiFo 2019), Aachen, Germany, September 15-18, 2019.
81. Invited Lecture, 8th International Symposium on Advances in Synthetic and Medicinal Chemistry (EFMC-ASMC'19), Athens, Greece, September 1-5, 2019**.**
80. University of Leeds, May 9, 2019.
79. Merck, Rahway, USA, May 1, 2019
78. Princeton University, USA, April 30, 2019.
77. GlaxoSmithKline, Philadelphia, USA, April 29, 2019.
76. AstraZeneca, Cambridge, February 19, 2019.
75. Shanghai University, Symposium on Nickel and Related Chemistry, China, November 6, 2018.
74. Keynote Lecture, GlaxoSmithKline Emerging Academics Symposium, Stevenage, October 25, 2018.
73. University of Strasbourg, France, October 8, 2018.
72. Invited Lecture, UK-India Symposium on Advances in Organic Chemistry, Jesus College, Oxford, September 28, 2018.
71. Invited Lecture, JGP Chem & ChemEn International Workshop: Sustainability-Oriented Organic Synthesis, Kyoto University, Katsura Campus, Kyoto, Japan, September 3-4, 2018.
70. Invited Lecture, 4th International Symposium on C-H Activation (ISCHA-4), Keio University, Yokohama, Japan, August 30-September 2, 2018.
69. Invited Lecture, 3rd International Symposium on Precisely Designed Catalysts with Customized Scaffolding, Osaka, Japan, August 29, 2018.
68. Genentech, San Francisco, USA, May 16, 2018.
67. Pfizer, La Jolla, USA, May 14, 2018.
66. University of Utah, USA, May 10, 2018.
65. University of Texas Southwestern Medical Center, Dallas, USA, May 8, 2018.
64. University of Texas at Austin, USA, May 7, 2018.
63. Bayer, Frankfurt, Germany, April 20, 2018.
62. University of Cambridge, January 18, 2018.
61. University of Geneva, Switzerland, November 28, 2017.
60. Lilly Pharmaceuticals, Erl Wood, October 9, 2017.
59. Invited Lectures (x 2), 2nd Summer School on Interfaces and Energy (ICASEC 2017), Göttingen, Germany, September 24-28, 2017
58. Syngenta Lectureship, Syngenta, Stein, Switzerland, September 21, 2017.

57. Invited Lecture, 26th International Society of Heterocyclic Chemistry (ISHC) Congress, Regensburg, Germany, September 3-8, 2017.
56. Invited Lecture, 25th International Symposium: Synthesis in Organic Chemistry, University of Oxford, July 17-20, 2017.
55. Invited Lecture, Cardiff-Bath-Bristol Centre for Doctoral Training in Catalysis Spring Conference, June 8, 2017.
54. Invited Lecture, Bioheterocycles 2017, XVII Conference on Heterocycles in Bioorganic Chemistry, Galway, Ireland, May 28-June 1, 2017.
53. Evotec Drug Discovery, Milton Park, April 19, 2017.
52. Evotec Lecture, University of Bath, March 7, 2017.
51. University of Sheffield, February 8, 2017.
50. University of Copenhagen, Denmark, November 3, 2016.
49. University of Oxford, October 13, 2016.
48. RSC nominated UK representative, EuCheMS Young Investigator Workshop, Huelva, Spain, September 16-18, 2016.
47. École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, September 14, 2016.
46. ACS Organic Division Young Academic Investigators Symposium, 252nd ACS National Meeting and Exposition, Philadelphia, USA, August 21-25, 2016. (one of two speakers selected from Europe)
45. Invited Lecture, 4th RSC Early Careers Symposium, University of Strathclyde, June 23-24, 2016.
44. Hickinbottom Award Lecture, RSC Organic Division North-West Regional Meeting, University of Central Lancashire, May 18, 2016.
43. University of Birmingham, May 17, 2016.
42. University of York, May 11, 2016.
41. Invited Lecture, 5th UK-Japanese Symposium on Asymmetric Catalysis, University of Manchester, March 14-15, 2016.
40. Lilly Pharmaceuticals, Erl Wood, February 19, 2016.
39. University of Warwick, February 1, 2016.
38. Werner Chemical Society Invited Lecture, Trinity College Dublin, Ireland, January 22, 2016.
37. East China University of Science and Technology, Shanghai, China, January 14, 2016.
36. Shanghai Institute of Organic Chemistry, China, January 13, 2016.
35. East China Normal University Shanghai, China, January 12, 2016.
34. Fudan University, Shanghai, China, January 11, 2016.
33. Mini Symposium on Organometallics in Synthesis, University of Nottingham, December 16, 2015.
32. Hickinbottom Award Lecture, University of Liverpool, December 2, 2015.
31. Gordon Stone Symposium, University of Bristol, November 4, 2015.
30. Hickinbottom Award Lecture, Queen Mary University of London, October 21, 2015.
29. GlaxoSmithKline Emerging Academics Symposium, Stevenage, October 20, 2015.
28. Heidelberg University-Bristol University Catalysis Workshop, Heidelberg, Germany, September 15, 2015.
27. Invited Lecture, 35th Meeting of the Spanish Royal Society of Chemistry, A Coruña, Spain, July 19-23, 2015.
26. Cardiff University, January 16, 2015.
25. Invited Lecture, RSC Heterocyclic Group Meeting, Institute of Cancer Research, Chelsea, January 9, 2015.
24. AstraZeneca, Macclesfied, November 27, 2014.
23. Institute of Cancer Research, Sutton, May 22, 2014.
22. Harrison-Meldola Memorial Prize Lecture, RSC Organic and Dalton Division North-West Regional Meeting, University of Manchester, May 15, 2014.
21. Short Talk, 49th "Bürgenstock Conference", Brunnen, Switzerland, May 5, 2014.
20. Invited Lecture, Young Chemists' Conference, Imperial College, April 4, 2014.
19. Harrison-Meldola Memorial Prize Lecture, Imperial College, January 23, 2014.
18. Keynote Lecture (Harrison-Meldola Memorial Prize), 42nd Scottish Regional Meeting of the Organic Division of the RSC, Heriot-Watt University, December 18, 2013.

17. Universidade Estadual de Campinas (UNICAMP), Brazil, November 21, 2013.
16. Universidade de São Paulo, City of São Paulo Campus, Brazil, November 19, 2013.
15. Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, November 18, 2013.
14. 15th Brazilian Meeting on Organic Synthesis (BMOS), Campos do Jordão, Brazil, November 10-13, 2013.
13. Pfizer Neusentis Synthesis and Catalysis Symposium, University of Cambridge, November 1, 2013.
12. Lilly Pharmaceuticals, Erl Wood, July 18, 2013.
11. University of Texas at Austin, USA, May 16, 2013.
10. Nanyang Technological University, Singapore, November 26, 2012.
9. Osaka University (Suita Campus), Japan, November 22, 2012.
8. Osaka University (Toyonaka Campus), Japan, November 21, 2012.
7. Nagoya University, Japan, November 20, 2012.
6. Gifu University, Japan, November 19, 2012.
5. Kyoto University-Bristol University Organic Synthesis Workshop, Kyoto, Japan, November 16-17, 2012.
4. Invited Lecture, International Isotope Society UK Group Conference, University of Cambridge, October 12, 2012.
3. Mini Symposium on Catalysis in Organic Synthesis, University of Nottingham, March 28, 2012.
2. Wilson Baker Symposium, University of Bristol, March 14, 2012.
1. SCI Young Chemists' Panel "Innovations in Chemical Synthesis", SCI, London, December 2, 2011.