Rebecca Jane Miriam Goss FRSC FRSE

http://rjmg.wp.st-andrews.ac.uk/rebecca-goss/
Date of Birth: 2nd February 1976. Nationality: British
School of Chemistry, Biomedical Sciences Research Complex, University of St Andrews, Fife, KY169ST
Tel: 01334 463 856 (07740 47 47 28) E-mail: rjmg@st-andrews.ac.uk

The Goss Group are active in the area of elucidating and engineering biosynthesis of **natural products, at the chemical and genetic level, and in blending synthetic biology and synthetic chemistry to make new to nature natural products**. Specifically, our research focuses on natural products with important medicinal properties, particularly anti-infectives, and in understanding how biosynthetically intriguing motifs within these compounds are assembled. From this vantage point we harness individual enzymes as convenient tools for organic synthesis, and engineer a combination of synthetic chemistry and synthetic biology to harness entire biosynthetic pathways in order to enable expeditious access to libraries of medicinally relevant compounds. These libraries may be used to gain a greater understanding as to how the drug acts at the molecular level within the cell. Here we are particularly noted for our pioneering work in **GenoChemetics** and **precision molecular editing** using halogenases in complement with aqueous cross-coupling methodologies that we develop. The Goss group also have active programmes in the complementary areas of natural product and biocatalyst discovery and development. In team with scientists in Chemical Engineering the Goss group have pioneered an Engineered *E. coli* plug and play platform for biocatalysis.

Goss has established a **national and international reputation** presenting >160 invited, plenary and keynote lectures including: Brown Lecture Queens, Canada **2023**, Don Summers Lecture, Utah **2022**, Society Frank Warren Lecture Capetown **2022**, Canadian Chemical Society **2019**, Synthetic Biology of Natural Products **2019**, ASTAR Singapore **2018**, MSD Boston **2018**, GRC Natural Products **2018**, Yale, ETH **2013**

Goss is Director of the re-formalised Institute of Engineering and also CEO of X-Genix.

AWARDS AND HONOURS

2024 EPSRC Open Plus Fellowship
2024 RSC Horizon Prize: UK: India Sustainable Chemistry
2022 RSC Corday Morgan Medal (awarded to the most meritorious contributions to chemistry, in particular for **pioneering the use of enzymatic halogenation/cross-coupling in C-H activation**). This is one of the RSC's most prestigious awards, established in 1949.
2022 CEFIC: Solvay, selected to join 32 top European Chemists, and specifically selected for panel discussion joining 3 others: CEO BASF, CEO Solvay and Ben Ferrigha https://cefic.org/media-corner/newsroom/renowned-chemistry-professors-and-young-european-scientists-recreate-the-iconic-photo-featuring-curie-and-einstein/
2022 Converge Challenge Award: top prize
2021 Award for Disruptive Innovation, AccelerateHer
2021 Royal Society Industrial Fellowship
2020 Elected Fellow of the Royal Society of Edinburgh
2014 ERC consolidator award,
2013 Natural Product Report Emerging Researcher Lectureship

Awarded for our pioneering new approach to natural product analogue generation "GenoChemetics", which marries together Synthetic Biology and Synthetic Chemistry to access new bioactives of medicinal interest. Awarded in subsequent years to scientists at Yale, Harvard and Scripps
2011 Thieme Chemistry Journal Award
2011 JSP award to participate at the Burgenstock Stereochemistry meeting
2011 Selected as the UK's under 40 Organic Chemistry delegate for EuCheM's Young Investigators Workshop
2003 Royal Society Dorothy Hodgkin Fellowship (~10 awarded each year across the UK in science)
2007 RSC Meldola Medal (awarded to the most promising UK chemist under the age of 32) particularly "distinguished for excellent contributions at the interface of organic chemistry and molecular biology"

Employment Record

Professorship in Biomolecular/Organic Chemistry, University of St Andrews
St Andrews first female full professor of Organic Chemistry
2018-onwards

Readership (Associate Professorship) in Biomolecular/Organic Chemistry, University of St Andrews
September 2012 – 2018

Readership in Organic Chemistry, University of East Anglia
January 2012 – September 2012

Senior Lectureship, School of Chemistry, University of East Anglia
December 2010 – January 2012

Lectureship, School of Chemistry, University of East Anglia
July 2005-2010 **(Maternity break 2008)**

Lectureship, School of Biological and Chemical Sciences, University of Exeter
October 2003-June 2005 (Closure of Chemistry in Exeter)

Royal Society BP Dorothy Hodgkin Fellowship
"Combinatorial and Directed Biosynthesis to Create Novel Halogenated "Natural" Products"
October 2003-2007

One Year Teaching Fellowship, School of Chemistry, University of Nottingham
October 2002-September 2003

Post Doctoral Research Associate, Department of Biochemistry, University of Cambridge, Professors J. Staunton (FRS) and P. F. Leadlay (FRS)
November 2000-September 2002

Education

PhD, University of Durham, Professor D. O'Hagan
October 1997-October 2000 (Awarded June 2001)
Various studies including investigations into the stereochemical course of the fluorination event in the biosynthesis of fluoroacetate. Involved a short period at Paris XI.

Degree Chemistry BSc Hons., Hatfield College, University of Durham
First year joint Biology and Chemistry (Awarded June 1997)

EXTERNAL PROFILE

Over 160 external research lectures including many named, plenary and keynote lectures: please see lecture list.

External Examiner

Masters theses (University of Bristol 3, University of Durham 1, Southampton University 1, University of Cambridge 1, University of Sussex 1, UCD 1, Birmingham 1, Aberdeen 1)
PhD thesis (University of Warwick, University of Manchester, Cardiff University, University of Bristol x 3, University of Queensland, University of Cambridge x 4, University of Oxford, University College Dublin, UCL x 2, University of Birmingham), Rhodes University

Royal Society Involvement

My sponsorship by the Royal Society provided me with the opportunity to become involved with a variety of schemes and initiatives. The Royal Society have set up a funding programme to facilitate collaboration between UK and Tanzanian scientists. With a small team of other UK scientists I joined the Vice President of the Royal Society and the RS international grant officers in a fact finding visit to Tanzania in order to help the Royal Society to set up a custom made funding programme. This visit was also very useful on a personal level as it provided me with links to Tanzanian Natural Product Chemists who isolate active components from traditional medicines. I have subsequently organised an run a workshop for UK and Tanzanian scientists with a research focus on bioactives from nature to present and discuss their research.

Royal Society of Chemistry Involvement

CBF now CBiF: I have served on the executive committee of the **RSC Chemical Biology Forum** (CBF)now renamed as the Chemistry Biology interface Forum CBiF. CBiF
Having had a break from being an invited member of CBiF, I have returned as an elected member
Organic Division (Formerly Perkin) I completed a term of service for the RSC Organic Division Executive. I have assisted in initiating a new annual South and East (London, Cambridge, East Anglia- and Pharma and Biotech in this region) Organic Symposium.
BOG: I served for 6 years as secretary to the RSC Bioorganic Chemistry group. The Bioorganic group have a large and developing portfolio of postgraduate, national and international conferences that seek to meet the needs of the interests group's members. Additional activities with BOG have included my involvement on the organising committee for an international meeting on "Directing Biosynthesis" (Cambridge 2006), the RSC annual Bioorganic Postgraduate meeting (Bath 2008), Chemistry of the Cell 3 (UCL 2008), and organising part of the IUPAC meeting (Glasgow 2009). I have also organised UK lecture tours for Professor John Vederas, University of Alberta (2008), Professor Sarah O'Connor, MIT (2007), and Professor Tobias Ritter, Harvard (2010)

Consultancy

I have acted as consultant for:

Servier (Paris)
GSK (Stevenage)
Merck (New Hampshire)
Novartis (Basel)

Institution Review

Invited to review institutes and be on strategic advisory boards for institutes nationally and internationally, due to time limitations I have accepted this only for the community serving Joint Genome Institute, DOE funded and based at the Lawrence Berkeley labs. I am also a member of their specialised metabolite focus group.

Editorial Boards and Peer Review of Various Papers and Grant Applications Including:-

Associate Editor Chem Soc Rev, one of 6 Associate Editors, Impact Factor 54.6
Member of the Advisory Editorial Board for RSC Chemical Communications
Member of the Advisory Editorial Board for RSC Natural Product Reports
Member of the Royal Society, Newton Grant Committee
Volkswagen Foundation, EPSRC funding committees
Elected Member of the RSC Chemistry Biology Interface Division

Journal articles: Nature Reviews, Biochemistry, Metabolic Engineering, Organic and Biomolecular Chemistry, Chemical Communications, ChemBioChem and Chemical Science.
Grant applications: Royal Society, BBSRC, EPSRC, Leverhulme, National Research Foundation South Africa, International Foundation for Science-Portugal (IFS), Chem-Them Netherlands (NWO) and The Marsden Fund, Volkswagen Foundation (Germany).

Society Membership

Royal Society of Chemistry
Royal Society of Edinburgh

Previously, and now a lapsed member of:
American Chemical Society
Biochemical Society
Society for General Microbiology
Higher Education Academy

Funding Awarded >£10M as PI

In prep

EPSRC Open Plus Fellowship	(*award just announced*)	£1.8M	PI
UKRI Advanced Manufacturing	(*award just announced*)	£280K	PI
St Leonard's Studentship	(*award just announced*)	£90K	PI

Awarded

2023-2025	BBSRC super Follow on Fund	£800K	PI
2022-2024	BA Refugee funding, host for Head of Department of international University of Kyiv		

2022-2024	IAA	£49K	PI
2022-2024	ERC Proof of Concept (converted with UKRI)	£150K	PI
2022-2023	Scottish Enterprise Phase 2	£265	PI
2021-2024	IBIOIC Entrepreneurial studentship	£90K*	PI
2021-2023	Royal Society Industry Fellowship to Goss	£148K	PI
2021-2022	IAA FOR X-GENIX	£22.5K	PI
2020-2021	SARIRF priming funding to establish E@ST	£72802	PI
2020-2022	BBSRC Follow on Fund	£252K	PI
2020-2021	SARF Funding X-Genix	£32853	PI
2020-2021	RSE Enterprise Fellowship for Sunil Sharma	£90K	Host
2020-2021	BBSRC studentship with Unilever	£90K	PI
2020-2021	Scottish Enterprise – High Growth Spin out Program	£120K	PI
2020-2021	ISSF Funding: Halogenase Development	£15K	PI
2020-2021	IBIOIC Funding: Halogenase Development	£15K	PI
2020-2022	MRC SA Funding	£1.445M	CoI
2020-2022	EPSRC: GCRF: Antibiotics and Africa,	£531,970	CoI
2018	Royal Society Wolfson SMART centre (St Andrews Multidisciplinary Anti-infective Research and Therapeutics Centre)	£165700	PI
2018	SULSA Funding to establish and support SHINE	£20K	PI
2018-2022	IBIOIC studentship	£90K	PI
2018-2022	EastBIo studentship	£90K	PI
2018	ISSF	£16K	PI
2018	IAA with Gayle Doherty, and Cristina Pubill	£18K	PI
2017-2019	IBIOIC Synthetic Biology Award with Ingenza and Lucite	£200K	PI
2017-2018	Syngenta	£10K	PI
2015-2017	Marie Curie IIF for Cristina Pubil	€183,455	PI
2015-2016	IBioIC with Ingenza	£96K	PI
2015-2019	H2020 EMBRIC (Marine Research) Linking across Europe to develop best practice in the discovery of bioactives from the marine environment	€376,262 / €9,041,611	CoI
2014-2019	ERC consolidator	€2M	PI
2014-2017	FP7 ERA IB: Biochemistry and applications of halogenases to antibiotic and agrochemical development	£442.5K	CoI
2013-2017	GSK Case Award	~£90K	PI
2012-2016	EU Integrating Marine Biotechnology Bluegenics Leading WP6 on development of marine bioactives And analogue generation	~ €375K / Euro6M	CoI
2013-2014	Impact Acceleration Award	£21K	PI
2012-2015	Syngenta Case Award	~£90K	PI
2012	Biochemical Society studentship	~1.6K	PI
2011-2014	BBSRC (ranked 4th[st]/~120 at panel)	£350K	PI
2011-2013	Marie Curie IIF	Euro 210K	PI
2011-2014	BBSRC (ranked 1[st]/~100 at panel)	£387K	PI
2010-2014	MRC CASE award/Aquapharm	£90.06K	PI
2010	Nuffield Summer Studentship	£1.4K	PI
2010-2011	BigC	£50.893	CoI
2009-2011	Leverhulme F/00204/AO	£111.5K	PI
2009-2012	MRC Millstein in collaboration with Dr Matt Hutchins (UEA)	£394.32K	CoI
2009-2015	INTERREG UEA, Southampton, Caen, Rouen	£1183.174K	CoI
2008	Royal Society Tanzania Network Grant	£10K	PI
2008	Nuffield Summer Studentship	£1.4K	PI

2007-2010	BBSRC	BB/E008984/1	£259.424K	PI
2007-2010	EPSRC	EP/E000894/1	£55.948K	PI
2007-2009	Leverhulme	F/00204/AF	£93.898K	PI
2003-2007	Royal Society Dorothy Hodgkin Fellowship		£145.240K	PI
2003-2007	EPSRC/Biotica CASE		£70K	PI
2006 SGM	Summer Studentship		£1.68K	PI
2005	Nuffield Summer Studentship		£1.3K	PI
2004	Pfizer Summer Studentship		£1.8K	PI
2004	SGM Summer Studentship		£1.68K	PI

Current Research Group

Postdoctoral Research Associates
Dr Sunil Sharma
Dr Ying Zhang
Dr Rose Lynch
Dr Yunpeng Zhang
Dr Helen Connaris
Dr Ming Tong
Dr Olena Holodaeva (visiting researcher: Head of School of Chemistry and Pharmacognosy, IU Kyiv

PhD. Students

Mr Jacob Peatfield-muter	Undergraduate York
Miss Yaxin Yue	
Mr Sixing Lin	
Miss Piyasiri Chueakwon	
Mr Peeranat Jatooratthawichot	
Miss Montella Simeon-Gordon	Undergraduate Glasgow
Miss Viktorija Stikonaite	Undergraduate St Andrews

Graduated PhD Students

Dr Simon Lanceron	2010	Undergraduate: Marseille, France, Employed at Eli Lilly
Dr Emma Rackham	2011	Undergraduate: Aston, Birmingham, Employed within by Chirotech, Cambridge
Dr Phillip Newill	2011	Undergraduate: Bangor, UK
Dr Funsho Obasanjo	2012	Undergraduate: UCL, UK, Employed in Nigerian government research institute
Dr Mike Winn	2012	Undergraduate: UEA, Employed as PDRA in Dublin
Dr Amany Ragab	2012	Undergraduate: Tanta Egypt, subsequently employed as research group leader and lecturer in Tanta
Dr Dan Tromans	2013	Undergraduate: Swansea, UK employed as a tutor then as a lecturer and programme leader for Science and Engineering at Kaplan International College
Dr Antoine Abou Fayad	2014	Undergraduate: Beirut, Lebanon, Employed as PDRA for Prof Rolf Muller, Saarland, now PI at American University of Beirut
Dr Joseph Zarins Tutt	2015	Undergraduate: UEA, Employed by Lonza
Dr Emma Bogosyan	2015	Undergraduate UEA, UK, Employed by European Lead factory
Mr Kevin Mahoney	2015	Undergraduate:Belfast, Employed in process chemistry
Dr Duncan Smith	2016	Undergraduate: UEA, Employed at the University of Manchester
Dr Enrico Marelli	2017	Employed as PDRA in Italy
Dr Danai Gkotsi	2017	Undergraduate: Aberdeen Employed as PDRA Goss group

Dr Frida Michailidou	2017	Undergraduate: Thessaloniki, Greece, then Lyon Employed in ETHZ now as group leader
Dr Chris Cartmel	2019	Undergraduate Bangor, PDRA Prince Edward Island, Canada, interviewing for group leader positions
Dr Hannes Ludewig	2020	Employed as PDRA at Brandweis
Dr Chris Bailey	2020	Undergraduate Manchester, Employed as PDRA at the University of Dundee
Dr Emily Abraham	2020	Undergraduate Bristol, Employed as a PDRA at St Barts, London
Dr Alan Obled	2021	Undergraduate Lyon, PDRA St Andrews
Dr Gemma Fisher	2022	University of St Andrews, Clinical trials analyst
Mr David Burnet		Undergraduate St Andrews
Miss Ying Zhang		Undergraduate Beijing
Dr Scarlett Ferino		Undergraduate St Andrews: Waters KTP scientist
Mr Sam Molyneux		Undergraduate Cambridge: PDRA Manchester
Miss Hannah Lawther		Undergraduate Aberdeen: Smithsonian Washington

Previous Postdoctoral Co-Workers

Dr Ed Bower	PDRA Stirling
Dr Jinlian Zhao	Employed as PDRA in Warwick
Dr Jo Saddler	BBSRC Discovery fellow, Edinburgh
Dr Jack Connolley	PDRA Manchester
Dr Cristina Pubil	Assistant Prof, Sussex
Dr Sabine Grüschow,	Employed as PDRA St Andrews
Dr Tania Barberi	PDRA Italy
Dr Amany Ragab	Assistant Prof. Egypt
Dr Hong Gao	Employed as a PDRA in Edinburgh
Dr Moualan Gan	Employed as Assistant Prof. in Beijing
Dr Matthias Agbo	Employed as Associate Prof. in Kenya
Dr Michael Corr	Employed as PDRA in Cancer Research Group, Newcastle

Dr Andreas Tsoligkas (Joint project with Dr Mark Simmons, Birmingham Chemical Engineering) Employed at Johnson Matthey Catalysts

Dr Refaat Hamed	Employed as a lecturer at Bradford University
Dr Abhijeet DebRoy	Employed as a senior scientist BASF (near Mumbai)
Dr Joanne Foulkes	Employed as a lecturer at Liverpool John Moore's
Dr Prabs Dehal	Abbot labs

<u>Teaching summary</u>

I have had significant and diverse teaching responsibility from my time in Cambridge, Nottingham, Exeter, UEA and St Andrews. My teaching has been rated as excellent through student surveys and through peer review, I have also been nominated several times for teaching awards. I am also passionate about the communication of science to the wider public and am currently investigating innovative new directions.

I am strongly involved in service to the Scientific Community have significant additional administrative experience from my involvement in various RSC committees including the **RSC Chemical Biology Interface Forum** (to which I was elected), as **Secretary to the BioOrganic Group** (to which I was invited) and as an **Executive Member of RSC Organic Division** (to which I was invited).

1st year BioOrganic Chemistry: 10 lectures, exam marking for a large cohort (~160 students), tutorials and workshops
4th/5th year Chemistry + Society (45 students) ,Course Coordinator, 16 lectures, exam marking

4th year co-supervision of a company based research project student, 4 days contact + travel for 3 visits.
4th/5th year, year-long research projects currently supervising 3xBSc +2xMSc
4th year dissertation project (1 student)
(On sabbatical I have supervised 3 project students and 1 dissertation student due to high volumes of undergraduates this year)

Previous Teaching

1st year/2nd year society and chemistry 3 lectures
1st year organic labs
2nd year Organic Chemistry: 15 lectures
2nd year Organic labs
2nd year Medicinal chemistry
MSc Biochemistry, "preparing grant applications", 2 lectures
PhD/MSc introduction to biocatalysis, PKSs, NRPSs 3 lectures

Previously :Coordinator for Biocatalysis Taught Component for Criticat Doctoral Training Centre (University of St Andrews) This externally funded program has ended

Previously: Coordinating St Andrews Teaching Contribution in Biocatalysis to The IbioIC industrial Biotechnology training programe. This externally funded program has ended

Schools Outreach

I am passionate about inspiring the next generation of potential scientists. To this end I have been involved in a number of activities including:-

Schools Demonstration Lecture Tour: I arranged and delivered a series of eight demonstration lectures to secondary school children in the Isle of Man. The lectures combined concepts in Physics, Chemistry and Biology and were designed to convey how important science is to life at every level. Schools on the Isle of Man have little interaction with universities. Having enjoyed financial support from the Manx government through my degree and PhD, I am keen to repay this support through continued interaction with secondary schools on the Island.

Currently involved in applications for:
-Outreach activity in antibiotic discovery
-Poetry + Science "Not-men-clature" – to use combinations of poetry and science demonstration to inspire more young girls to realise that they too could have a career in science
Leading SHINE: Scottish Health Innovation Network for Entrepreneurship

Innovation and Additional Service

I am strongly involved in service to the Scientific Community have significant additional administrative experience from my involvement in various RSC committees including the **RSC Chemical Biology Interface Forum** (to which I was elected), as **Secretary to the BioOrganic Group** (to which I was invited) and as an **Executive Member of RSC Organic Division** (to which I was invited).

Leading the spin out of X-Genix, having drawn together a strong international team (CEO and Founder)

I have led the re-formalisation of a cross-University integrated Institute of Engineering, and am now director. The institute has over 230 active PIs

Research Lectures

1. Plenary, Peptides, Singapore December 2025
2. Scotsman Life Science Panel, November, 2025
3. Invited, ELRIG, October 2025
4. Invited, Concept Life Sciences, September, 2025
5. Invited, Imperial Organic Chemistry Symposium, July 2025
6. Plenary, Spanish Organic Chemistry Symposium, June 2025
7. Plenary, Italian Workshop on Organic Chemistry, June 2025
8. Invited Speaker, RSC Chemical Biology Symposium, May 2025
9. Invited Speaker, Frontiers of Natural Product Chemistry, Halle, Germany, May 2025
10. Invited Speaker **NUS, Singapore** 2024
11. Invited Speaker, **GSK**, 2024
12. Daniell Lecture, KCL, **London**, 2024
13. Keynote Speaker, Green Chemistry, **Melbourne** 2024
14. Invited Speaker, RSC Corday Morgan Award Lecture, **Leicester** 2023
15. Invited Speaker, RSC Corday Morgan Award Lecture, **Bath** 2023
16. Invited Speaker, Memorial Sloan Kettering Institute, **New York**
17. Invited Speaker, Life Mine, **New York**
18. Invited speaker, Café Scientifique, **Dunkeld**, Scotland, 2024
19. Invited Speaker, Omura Institute, Kitasato University, **Tokyo**, 2024
20. Invited Speaker, Staunton Memorial Symposium, **Cambridge**, 2024
21. Invited speaker Global Industrial Microbiology, **Shanghai**, 2024
22. Meeting chair Synthetic Biology of Natural Products 4, **Cancun**, 2024
23. UK/Japan Meeting **Kyoto**, 2024
24. RSC Scotland, Organic meeting, **Dundee**, 2024
25. Keynote Speaker, GRS Marine Natural Products **Ventura** 2024
26. Keynote Speaker at IMINA symposium **Copenhagen** 2023
27. Invited Speaker, **Hong Kong**: UK bioinorganic chemistry 2023
28. Invited Speaker, Sustainability: National Academie de Sciences + Royal Society, **Paris** 2023
29. Keynote: Brown Lecture **Queens Canada**, June 2023
30. Keynote Speaker Nordic Natural Products, **Helsinki** 2023
31. Invited speaker GRC Nucleic acids (unable to participate)

32. Invited speaker European Symposium on Medicinal Chemistry, **Croatia**, 2023
33. Invited Speaker, RSC Corday Morgan Award Lecture, **Oxford,** 2023
34. Invited Speaker **Newcastle**, February, 2023
35. Invited Speaker Royal Society Fellows day
36. Invited Speaker, **Munich**: Bioorganic July 2022
37. Conference Organiser: Synthetic Biology of Natural Products III, Mexico 2022
38. Keynote/ Don Summers Memorial Lecture, **Utah**, 2021 (online)
39. Invited speaker University of California **Santa Barbara** (online)
40. Invited Speaker, ESOC, **Ghent** 2021 (rescheduled to 2023)
41. Keynote/ Frank Warren Lecture, **UCT, SA** 2021 (online)
42. Keynote/ RSC Chem Soc Rev Desktop Lecture with Charlie Moore (Novartis)
43. Invited Speaker RSC/AZ Organic Symposium – moved online
44. Keynote Speaker, IUPAC, 31st Symposium on Chemistry of Natural Products, **Naples** 2020 - postponed
45. Invited Speaker, Joint Genome Institute, **Oakland**, California, 2020 – rescheduled for 2021
46. Invited Speaker **San Diego**, SIMS, 2020
47. Plenary Speaker, European Colloquium on Heterocyclic Chemistry, **Rouen,** 2020 rescheduled for 2021
48. Invited Speaker, Late Stage Functionalisation, **Manchester**, 2020
49. Invited Speaker, Women in Chemistry, **Nottingham**, 2020
50. Invited speaker -SynBio **Nice** -declined
51. Invited Speaker SCOTchem Natural Products, **Aberdeen** 2019
52. Invited Speaker NPRONET, **London**, 2019
53. Speaker –Scottish Metabolomics Network, **Glasgow**, 2019
54. Invited Speaker Japan Chemical Society, **Sendai**, 2019
55. Invited Speaker, **Tokyo University**, 2019
56. Invited Speaker, **Kitasato Institute, Tokyo**, 2019
57. Invited Speaker, Canada Chemical Conference, **Quebec**, 2019
58. Invited Speaker Fusion, Synthetic Biology of Natural Products, **Mexico**, 2019
59. Invited Speaker CBC Novo Nordisk Natural Products, **Copenhagen,** 2019
60. Invited speaker **Sussex**, February 2018
61. Invited Speaker, GSK, September 2018
62. Invited Speaker, ASP**, USA,** July 2018
63. Invited Speaker **MSD, USA**, July 2018
64. Invited Speaker, GRC Natural Products, **New Hampshire, USA,** July 2018
65. Invited Speaker, Warwick, June 2018
66. Plenary Speaker, European Symposium on BioOrganic Chemistry, **Gregynog** May, 2018
67. Invited Speaker, **University of York** 2018
68. Invited Speaker, Biosystems Design 4.0, **Singapore**, May 2018
69. Invited Speaker, **Wuhan, China**, April, 2018
70. Invited Speaker, Natural Product Discovery and Development, **Florida**, USA, January 2017
71. Plenary Lecturer, Mona Congress, **Jamaica**, January 2018
72. Invited Speaker, University of **Basel**, December 2017
73. Invited Speaker, NPRONET, **Manchester**, October 2017
74. Invited Speaker, Dial a Molecule, **Liverpool**, May 2017
75. Invited Speaker, Halogenation, **Glasgow**, June 2017
76. Invited Speaker, ISBA, **Korea**, May 2017
77. Invited Speaker, **Tubingen** Natural Products Meeting May 2017
78. Seminar Speaker, **Servier**, France, May 2017
79. Seminar Speaker, **Edinburgh**, March, 2017
80. Invited Speaker, Synthetic Biology of Natural Products, **Mexico**, March 2017

81. Seminar Speaker, **Muenster**, March, 2017
82. Plenary lecture **Norwegian** Chemical Society annual meeting January 2017
83. Invited Speaker, Polyomics, **Glasgow**, February, 2017
84. Invited Speaker, **Scottish Metabolomics** Network, November 2016
85. Invited Speaker, **Turkey** BNP, September 2016
86. Invited Speaker, EUCHEM, **Seville**, September 2016
87. Keynote Speaker invitation **Canberra** declined due to teaching commitments
88. Invited Speaker, Cambridge postgraduate symposium March 2016- declined due to teaching commitments
89. IBIOIC speaker January 2016
90. Invited Speaker Oxford postgraduate symposium November 2015- declined due to teaching commitments
91. Keynote Speaker, 3rd India/UK Med Chem Congress, **Hyderabad**, November 2015–Declined invitation
92. Invited Speaker, **Leipzig**, December 2015
93. Invited Speaker, **Bonn** declined due to teaching commitments
94. Invited Speaker, **NPronet, Manchester**, September 2015 Declined
95. Invited Speaker, **Oxford** Chemistry, Pfizer Symposium, October 2015 Declined
96. Invited Speaker, NOST, **India**, October 2015 Declined
97. Invited Speaker, RSC Oxford/Cambridge Synthesis meeting **Cambridge** July 2015
98. Keynote Speaker, Biotrans, **Vienna**, July 2015
99. Keynote Speaker, Dial a Molecule, **Warwick**, June 2015
100. Invited Speaker, Max Plank, Chemical Ecology, **Jena**, January 2015
101. Invited Speaker, **Newcastle**, January 2015
102. Invited Speaker, Dublin Symposium, **Dublin** December 2014
103. Invited Speaker, Chemical Ecology, **Jena** December 2014
104. Invited speaker, Natural Products **Capetown**, September 2014
105. Invited Seminar Speaker, UCT **Capetown**, September 2014
106. Invited Speaker, ERAIB, **Dresden**, September 2014
107. Invited Speaker, Bluegenics, **Rekjavic**, September 2014
108. Invited speaker, GRC Biocatalysis, Bryant University, **Smithfield USA** July 2014
109. Invited speaker, International ELRIG, **Telford**, March 2014
110. Speaker, Perkin Meeting, Heriot Watt, **Edinburgh**, December 2013
111. Keynote speaker, and RSC NPR award lecture, CIFARP, Ribiero de Preto, **Brazil**, November 2013
112. Invited speaker, (declined) International Symposium on antibacterial research of the DFG, **Bonn**, November 2013
113. Invited speaker, Biofilm Workshop, **Dublin**, November 2013
114. Speaker, VAAM Workshop, Biology of Bacteria Producing Natural Products, **Frankfurt**, September 2013
115. Invited speaker, **Yale**, September 2013
116. Plenary speaker invitation (declined) Hetrocyclic and Astex, **Cambridge**, September 2013
117. Invited speaker, Transatlantic Frontiers of Organic Chemistry, Kloster, Seeon, **Germany**, August 2013
118. Invited speaker, Joint JCS and RSC Symposium on Chemical Biology, **Kyoto**, Japan, March, 2013
119. Invited speaker, SGM Annual meeting, **Manchester**, March 2013 – (requested representation by senior PDRA)
120. Invited speaker, **GSK Stevenage**, November, 2012
121. Invited speaker, New Frontiers in Natural Product Chemistry, **Nottingham**, September, 2012
122. Invited speaker, CHINA, September, 2012 (withdrawn, due to moving to St Andrews)

123. Invited speaker, Bacterial natural products workshop Novartis, **Basel**, September 2012 – (requested representation by senior PDRA)
124. Keynote speaker, the 2012 International Congress on Natural Products Research, **New York**, August, 2012
125. Invited speaker, Gordon Research Conference on Natural Products, **New Hampshire**, July, 2012
126. Invited speaker, **ETH Zurich**, July, 2012
127. Invited speaker, **Institute of Chemical Research of Catalonia, ICIQ**, June, 2012
128. Keynote speaker, Synthetic Biology to Dial-a-Molecule, **GSK, Stevenage**, May, 2012
129. Keynote speaker, European Symposium on BioOrganic Chemistry, **Gregynog** May, 2012
130. Invited speaker, **Dresden**, May 2012
131. Invited speaker, David O'Hagan's Fluorine award symposium, ACS**, San Diego**, March, 2012
132. Invited speaker, **Minnesota Centre for Drug Design,** March 2012
133. Invited speaker, **Nebraska Medical Centre,** March 2012
134. Invited speaker, **Michigan**, March 2012
135. Invited speaker, **Leeds**, February 2012
136. Speaker, Zing Natural Products, Lanzarote, February 2012
137. Invited speaker, **Gröningen**, January 2012
138. Invited speaker, **St Andrews**, Scotland, November, 2011
139. Invited lecture, Institute for Technical Biochemistry, **Stuttgart**, October, 2011
140. Invited speaker, **Munster**, October 2011
141. Speaker, Gregynog Young Organic Chemists meeting, **Gregynog**, October 2011
142. Speaker, ESF/EMBO Synthetic Biology, **St Felieu**, Spain, October 2011
143. Invited speaker, **Syngenta**, Jealotts Hill, UK, September 2011
144. Invited speaker, Texas South Western, **Dallas,** September 2011
145. Invited speaker, ACS Fall Meeting, BIOL: **Pfizer symposium**, **Denver**, August 2011
146. Invited speaker, Synthetic Biology Symposium, Imperial, **London** July 2011
147. Selected as UK <40year old Organic Chemistry representative, EUCHEMS, **Crete**, July 2011
148. Invited speaker, Department of Chemistry, University of **Geneva**, July 2011
149. Short Talk, NADD 2011, **Naples**, June 2011
150. Invited Lecture, **Novartis, Basel**, May 2011
151. Short talk **Bürgenstock**, May 2011
152. Invited speaker, Department of Chemistry, University of **Cardiff**, April 2011
153. Invited speaker, Annual Meeting of the Chemical Society of **Japan**, Chemical Biology Symposium, March 2011, *cancelled*
154. Invited speaker, RSC Heterocyclic Symposium, Imperial, **London**, January 2011
155. Invited speaker, Department of Chemistry, **EPFL**, December 2010
156. ESF, Industrial Microbiology, Bielefield, **Germany**, November 2010
157. Invited speaker, Department of Chemistry, University College **London**, October 2010
158. Selected speaker, Natural Products, **Italy**, September 2010
159. Nominated for ACS Fall Meeting-Pre tenure Organic symposium, **Boston**, August 2010 (16/64 nominees invited)
160. Invited speaker, Department of Chemistry, University of **Warwick**, June 2010
161. Invited speaker, Department of Chemistry, University of **Bristol**, June 2010
162. Invited speaker, Department of Biological and Chemical Sciences Seminar, **QMUL**, March 2010
163. Invited speaker, International Natural products Meeting, **Brazil**, November 2009
164. Invited speaker, Young Organic Chemists Symposium, Imperial, **London**, April 2009
165. Invited speaker, Zing Natural Products, **Antigua**, March 2009
166. Invited speaker, York Mini Symposium on Natural Products, **York**, December 2008

167. Invited speaker/consultant, GSK Young Academics Symposium, **GSK**, **Stevenage**, October 2008
168. Invited speaker, Department of Chemistry, **Oxford**, June 2008
169. Selected speaker, Natural Products **Italy**, May 2008
170. **Bürgenstock**, International Stereochemical Meeting, April 2008 (poster)
171. Invited speaker, Zing Natural Products **Antigua**, February 2008
172. Keynote speaker, RSC Natural Product Symposium, University of Nottingham, **Nottingham**, October 2007
173. Invited speaker, Department of Chemistry, **Edinburgh**, May 2007
174. Young Organic Chemists Workshop, **Gregynog**, October 2007
175. RSC, Biosynthesis, **Firbush,** September**,** 2007
176. RSC "Directing Biosynthesis" International Meeting, Robinson College, **Cambridge**, September 2006
177. Plenary Lecture, Society of General Microbiology, National Meeting **Dublin**, August 2006
178. IUPAC "Biodiversity and Natural Products" International Meeting, **Kyoto**, August 2006
179. Invited speaker, Department of Chemistry University of **Cape town**, February 2006
180. Invited speaker, Department of Chemical Engineering, **Bath**, November 2005
181. Invited speaker, Microbes in **Norwich** National Meeting, 2005
182. Invited speaker, Department of Chemistry **Liverpool,** 2005
183. RSC, Nucleic Acids **Firbush,** 2005
184. Invited speaker, SouthWest Regional Organic Meeting **Bristol,** 2005
185. IUPAC "Biodiversity and Natural Products" International Meeting, **New Delhi**, February 2004
186. Invited speaker, Department of Chemistry University of **Leeds**, 2004
187. Invited speaker, Department of Molecular Biology, University of **Gothenburg, Sweden**, 2004

Publications

* Denotes corresponding author

A number of publications are prepared, pending submission following 2 further patent filings:-

1. CHEESY1: A Novel Halogenase from the Salty Food Associated Microbe, *Chromohalobacter japonicus,* Regioselectively Halogenates a Wide Range of Medicinally Privileged Heterocycles
   Y. Zhang, and RJM Goss*
   ACS Catalysis in press

2. Cycloaddition as a sweet route to "Double C-Glycosylation" Yielding New Antibiotics with Activity against the Notorious Gram Negative Pathogena, *Pseudomonas aeruginosa*
   Kevin P. P. Mahoney, Rhea T. Bown, Sunil V. Sharma, Rosemary Lynch, Tom Fereday, Edward Spence, G. Richard Stevenson , David B. Cordes, Alexandra M. Z. Slawin and Rebecca J. M. Goss
   Biomoleculesin press

3. Novel *Bacillus* strain produces 2,5-diketopiperazine antibiotics
   Alan M.C. Obled[1], Refaat B. Hamed[1,2], Sunil V. Sharma[1], Yunpeng Wang[1], Rosemary Lynch[1], Marie-Lise Bourguet-Kondracki[5], and Rebecca J.M. Goss [1]*
   Biomoleculesin press

4. The Identification and heterologous expression of the biosynthetic gene cluster encoding the antibiotic and anticancer agent: marinomycin
Emily Abraham, Hannah A. Lawther, Yunpeng Wang, Joseph Zarins Tutt, Gerry Sann Rivera, Charles Chengcang Wu, Jack Connoly, Gordon Florence, Matthias Agbo, Hong Gao*, and Rebecca J. M. Goss*
Biomolecules, **2024** *in press*

5. Compendium of metabolomic and genomic datasets for cyanobacteria: Mined the Gap
S. Ferrinho and RJM Goss*
Water Research, **2024** *in press*

6. The impact of viral infection on the chemistries of the Earth's most abundant photosynthesisers: metabolically talented, aquatic cyanobacteria
Y. Wang,* H. Connaris, S. Ferrinho and RJM Goss*
Biomolecules, **2023**, 13, 8, 1218
https://doi.org/10.3390/biom13081218

7. A fully aqueous and air compatible cross-coupling of sp^3 primary alkyl halides: not only possible but facile
S. Molyneux, and RJM Goss*
ACS Catalysis, **2023**, 13, 9, 6365-6374.
DOI https://doi.org/10.1021/acscatal.3c00252

8. Artificial Intelligence Approaches to Natural Product Drug Discovery
Michael W. Mullowney[1#,] Katherine R. Duncan[2#], Somayah S. Elsayed[3#], Neha Garg[4#], Justin J.J. van der Hooft[5#], Nathaniel I. Martin[6#], David Meijer[5#], Barbara Terlouw[5#], Friederike Biermann[7], Kai Blin[8], Janani Durairaj[9], Marina Gorostiola González[10,11], Eric J.N. Helfrich[7], Florian Huber[12], Stefan Leopold-Messer[13], Kohulan Rajan[14], Tristan de Rond[15], Jeffrey A. van Santen[16], Maria Sorokina[17,18], Marcy J. Balunas[19], Mehdi A. Beniddir[20], Doris van Bergeijk[3], Laura M. Carroll[21], Chase M. Clark[22,23], Chris Dejong[24], Chao Du[3], Scarlet Ferrinho[25], Francesca Grisoni[26], Albert Hofstetter[27], Willem Jespers[10], Olga V. Kalinina[28,29,30], Satria A. Kautsar[31], Tiago F. Leao[32], Joleen Masschelein[33,34], Evan R. Rees[35], Raphael Reher[36], Daniel Reker[37], Philippe Schwaller[38], Marwin Segler[39], Michael A. Skinnider[40], Allison S. Walker[41], Egon Willighagen[42], Barbara Zdrazil[43], Nadine Ziemert[44], Rebecca J.M. Goss[25], Pierre Guyomard[45], Andrea Volkamer[46], William H. Gerwick[15], Hyun Uk Kim[47], Rolf Müller[28], Gilles P. van Wezel[3,48], Gerard van Westen[10*], Anna K.H. Hirsch[28*], Roger Linington[49*], Serina L. Robinson[50*], Marnix H. Medema[5,51*]
Nat Rev Drug Discov. **2023** Nov;22(11):895-916.
DOI: 10.1038/s41573-023-00774-7.

9. "Modern Development in Biocatalysis"Scarlet A. Ferrinho, Samuel A. Molyneux, Rebecca J. M. Goss,* Elizabeth L. Bell, Amy Crossley, Anthony P. Green, Kathryn Yeow, Elaine O'Reilly* , **2023**, *Modern Development in Catalysis*, Volume 2, Chapter 14.

10. A GenoChemetic strategy for derivatization of the violacein natural product scaffold
Hung-En Lai, Alan M. C. Obled, Soo Mei Chee, Rhodri M. Morgan, Rosemary Lynch, Sunil V. Sharma, Simon J. Moore, Karen M. Polizzi, Rebecca J. M. Goss*, Paul S. Freemont*
ACS Chemical Biology **2021**, 16, 11, 2116–2123
DOI: 10.1021/acschembio.1c00483

11. An expedient, mild and aqueous method for Suzuki–Miyaura diversification of (hetero)aryl halides or (poly)chlorinated pharmaceuticals
S. V. Sharma, C. Pubill, E. Morelli, R. J. M. Goss
Organic Chemistry Frontiers, **2021**, 8, 5722-5727
DOI https://doi.org/10.1039/D1QO00919B

12. Halogenases: An emerging palette of opportunities for SynBioChem and C-H functionalisation

Charlotte Crowe, Samuel Molyneux, Sunil V. Sharma, Ying Zhang, Danai S. Gkotsi, and Rebecca J. M. Goss*
Chem. Soc. Rev. **2021**, 50, 9443-9481
DOI https://doi.org/10.1039/D0CS01551B

13. Antiviral Drug Discovery: Preparing for the next pandemic
S. Adamson*, K. Chibale, R. J. M. Goss, M. Jaspars, D. I. Newman and R. A. Dorrington*
Chem. Soc. Rev. **2021**,**50**, 3647-3655 **https://doi.org/10.1039/D0CS01118E**

14. Synthesis and conformational analysis of fluorinated uridine analogues provide insight into a neighbouring-group participation mechanism
F. Michailidou, T. Lebl, A. M. Z. Slawin, S. V. Sharma, M. J. B. Brown, and R. J. M. Goss*
Molecules, **2020**, 25, 5513- **doi.org/10.3390/molecules25235513**

15. Natural products incorporating pyrimidine nucleosides and their modified analogues
F. Michailidou, D. Burnett, S. V. Sharma, S. G. Van Lanen, R. J. M. Goss*
Elsevier CONAPII **2019** Comprehensive Natural Products III. Chemistry and Biology, Ed. Liu, H.-W. and Begley, T. P.

16. SynBio-SynChem Approaches to Diversifying the Pacidamycins through the Exploitation of an Observed Pictet-Spengler Reaction
C. Cartmel, A. Abou Fayad, R. Lynch, S. V. Sharma, Nils Hauck, B. Gust, R. J. M. Goss*
Chem.Bio.Chem., **2020**, https://doi.org/10.1002/cbic.202000594

17. SynBio: Green and clean sustainable solutions for designer pharmaceuticals, catalysts and bioremediation
R. J. M. Goss*, J. Connolly, and J. Sadler
Curr. Opin. Chem. Biol., **2020**, 58, A1-A3 DOI: 10.1016/j.cbpa.2020.11.001

18. Halogenases: structures and functions
H. Ludewig. S. Molyneux, S. Ferrinho, K. Guo and R. J. M. Goss*
Curr. Opin. Struct. Biol., **2020**, 65, 51-60 doi.org/10.1016/j.sbi.2020.05.012

19. *Nicotiana benthamiana* as a transient expression host to produce auxin analogues
K. Davis, D. S. Gkotsi, D. R. M. Smith, R. J. M. Goss, L. Caputi, and S. E. O' Connor*
Frontiers in plant science, **2020**, 11, 581675 doi.org/10.3389/fpls.2020.581675

20. Zelkoyamycins B-E, cyclic octapeptides containing rare amino acid residues from an endophytic kitasatospora sp, X. Hao, J. Yu, Y. Wang, J. Connolly, Y. Liu, Y. Zhang, L. Yu, S Cen,* R. J. M. Goss,* and M. Gan*
Org Lett, **2020**, 22, 9346-9350 doi.org/10.1021/acs.orglett.0c03565

21. A Marine Viral Halogenase, that Iodinates Diverse Substrates
Danai S. Gkotsi, Hannes Ludewig, Sunil V. Sharma, Jack A. Connolly, Jagwinder Dhaliwal, Yunpeng Wang, William P. Unsworth, Richard J. K. Taylor, Matthew M. W. McLachlan, Stephen Shanahan, James H. Naismith & Rebecca J. M. Goss*
Nature Chemistry, **2019**, 11, 1091- 1097 https://rdcu.be/bUkjA
Highlighted in : https://cen.acs.org/biological-chemistry/biochemistry/Newly-discovered-enzyme-adds-iodine/97/i41

22. A natural solution to the photoprotection and isolation of the potent polyene antibiotic marinomycin.

Christopher S. Bailey,[a] Joseph S. Zarins-Tutt,[a] Matthias Agbo,[a] Hong Gao,[a] Alberto Diego Taboada,[b] Maoluo Gan,[a] Emily R. Abraham[a], Grahame Mackenzie,[b] * P. Andrew Evans[c] * and Rebecca J. M. Goss[a] *Chem Sci,* **2019**, DOI 10.1039/C9SC01375J *Chem Sci Pick of the week, Highlighted in C&EN News, https://cen.acs.org/pharmaceuticals/Pollen-shells-protect-drugs-UV/97/i22* For interview with Alan @kasujja #BBCNewsday @BBCworldservice click chirb.it/J5GKna For Times Review : https://www.thetimes.co.uk/article/antibiotic-found-in-ocean-could-help-beat-superbugs-cx238tmr7.

13. Natural Products Incorporating Pyrimidine Nucleosides
Freideriki Michailidou[1], David Burnett[1], Sunil Vishnuprasadji Sharma, Steven Gary Van Lanen[2], Rebecca Jane Miriam Goss[1]*
Comprehensive Natural Products III Book chapter, In press

14. Phenylalanine meta-hydroxylase: a single residue mediates mechanistic control of aromatic amino acid hydroxylation.
S. Gruschow, J. Sadler, P. Sharrat, R. J. M. Goss, ChemBioChem. **2019** doi: 10.1002/cbic.201900320.

15. Buchwald Hartwig diversification of unprotected halotryptophans, halotryptophan containing tripeptides and the natural product barettin in aqueous conditions

Yohann J. G. Renault,[a†] Rosemary Lynch,[a†] Enrico Marelli,[a†] Sunil. V. Sharma,[a] Cristina Pubill-Ulldemolins,[a, b] Joshua A. Sharp,[a] Chris Cartmell,[a] Paco Cárdenas,[c] Rebecca J. M. Goss[a]* *Chem Commun.* **2019**, 55, 13653-13656.

16. Heck diversification of indole based substrates under aqueous conditions: from indoles to unprotected halo-tryptophans and halo-tryptophans in a natural and a new to nature natural product. Cristina Pubill-Ulldemolins,[a,b] † Sunil V. Sharma,[a] † Christopher Cartmell,[a] † Jinlian Zhao,[a] Paco Cárdenas,[c] and Rebecca J. M. Goss*[a] *Chem. Eur. J.* **2019** https://doi.org/10.1002/chem.201901327

17. Discovery pipelines for marine resources – an ocean of opportunity for biotechnology? D. Smith, A. Buddie, R. J. M. Goss, J. Overman, World Journal of Microbiology and Biotechnology **2019** 35 (7), 107

18. Isotopic labeling studies reveal the patulin detoxification pathway by the biocontrol yeast *Rhodotorula kratochvilovae*
Cristina Pinedo, Sandra A. I. Wright, Isidro G. Collado, Rebecca J. M. Goss, Raffaello Castoria, Patrizia Hrelia, Francesca Maffei,Rosa Durán-Patrón, Journal of natural products 81 (12), 2692-2699

19. Halogenases: powerful tools for biocatalysis (mechanisms applications and scope)
DS Gkotsi, J Dhaliwal, MMW McLachlan, KR Mulholand, RJM Goss*
Current opinion in chemical biology, **2018** 43, 119-126

20. Discovery and utilisation of wildly different halogenases, powerful new tools for medicinal chemistry: patent application number GB1803491.8

21. Bromotryptophans and their incorporation in cyclic and bicyclic privileged peptides, **2018**, *Biopolymers, in press*

22. Short and Sweet: Pac13 is a Small, Monomeric Dehydratase that Mediates the Formation of the 3′-Deoxy Nucleoside of Pacidamycin Antibiotics.
Freideriki Michailidou, Chun-wa Chung, Murray Brown, Andrew Bent, William Leavens, Sean Lynn, James H. Naismith and Rebecca J. M. Goss* *Angewandte* **2017** DOI 10.1002/ange.201705639

23. Living GenoChemetics: Hyphenating Synthetic Biology and Synthetic Chemistry *in vivo*
Sunil V. Sharma,[1Σ§] Tong Xiaoxue, [1†§] Cristina Pubill-Ulldemolins,[1Σ] Christopher Cartmell,[1Σ§] Emma Bogosyan,[1†] Emma J. Rackham,[1†] Enrico Morelli,[1Σ] Refaat Hamed,[1] & Rebecca J. M. Goss[1,*]

Nature Communications, **2017** , 8, 229 doi:10.1038/s41467-017-00194-3

24. Palladium –Catalysed a-Arylation of Ketones in Aqueous Media
V. Snieckus, C. N. Garcia-Irizarry, Y. Renault, S. V. Sharma,[a] S. P. Nolan[b,c] E. Marelli and R. J. M. Goss, Synfacts, **2017**, 13, 7, 0689

25. A translational synthetic biology platform for rapid access to gram-scale quantities of novel drug-like molecules.
James Reed[1], Michael J. Stephenson[1], Karel Miettinen[2,3], Bastiaan Brouwer[1], Aymeric Leveau[1], Paul Brett[1], Rebecca J.M. Goss[4,5], Alain Goossens[2,3], Maria A. O'Connell[6] and Anne Osbourn[1]*
Metabolic Engineering, **2017**, 42, 185-193

26. Mild, aqueous α-arylation of ketones: toward new diversification tools for halogenated metabolites and drug molecules, Enrico Marelli*,[a] Yohann Renault,[a] Sunil V. Sharma,[a] Steven P. Nolan[b,c] and Rebecca J. M. Goss*[a] *Chemistry a European Journal,* **2017***,* DOI:10.1002/chem.201700680

27. An unusual flavin-dependent 5-hydroxytryptophan halogenase from the metagenome of the marine sponge *Theonella swinhoei,* Duncan R. M. Smith, Agustinus R. Uria, Daniela Milbredt, Karl-Heinz van Pée, Jörn Piel*, Rebecca J. M. Goss* *ACS Chemical Biology* **2017** 12, 1281-1287

28. Sonogashira diversification of unprotected halotryptophans, halotryptophan containing tripeptides and a new to nature bromometabolite in water
M. J. Corr,[a] S. Sharma, [a] C. Pubill-Ulldemolins, [a] R. T. Bown, [a] P. Poirrot, [b] D. R. M. Smith,[a] C. Cartmell, [a] T. Abou Fayad, [c] R. J. M. Goss[a*] *Chem. Sci.,* **2017**, DOI: 10.1039/C6SC04423A (Edge Article)

29. Contemprorary Catalysis: An introduction to biocatalysis (Book chapter for RSC Catalysis) , Ron Wever*, Rebecca J. M. Goss, Edward Spence, Xiaoxue Tong and A. F. Hartog, RSC publishing, **2017,** *in press*

30. The Generation of New to Nature Natural Products Through Synthesis and Biosynthesis: Blending Synthetic Biology with Synthetic Chemistry (Book chapter for Chemical biology of Natural Products, editors: David Newman and Gordon Cragg), Chris Bailey, Emily Abraham and Rebecca J. M. Goss*, CRC publishing, **2017** *in press*

31. Contemprorary Catalysis: Biocatalysis (Book chapter for RSC Catalysis) Ron Wever*, M. J. Corr, Rebecca J. M. Goss, Paul Kamer, RSC publishing, **2017,** *in press*

32. Bluegenics: bioactive natural products of medicinal relevance and approaches to their diversification, Joe Zarins Tutt, Emily Abraham and Rebecca J. M. Goss*, *Prog. Mol. Biol.,*Blue Biotechnology, **2017**, 55, 159-186.

33. Rapid enzyme regeneration results in the striking catalytic longevity of an engineered, single species, biocatalytic biofilm. Xiaoxue Tong[a,b], Tania Triscari Barberi[a,b], Catherine H. Botting[b], Sunil V. Sharma[a,b], Mark J. H. Simmons[c], Tim W. Overton[c] and Rebecca J. M. Goss[a,b *] *Microbial Cell Factories,* **2016**, *15,* aritcle 180

34. One-pot access to l-5,6-dihalotryptophans and l-alknyltryptophans using tryptophan synthase, Michael Corr, Duncan Smith, Rebecca J. M. Goss**Tetrahedron,* **2016**, *72,* 7306-7310.

35. Prospecting for new bacterial metabolites: a glossary of approaches for inducing, activating and upregulating the biosynthesis of bacterial cryptic or silent natural products.
J. Zarins Tutt, T. Triscari Barberi, H. Gao, A. Mearns-Spragg, L. Zhang, D. J. Newman and R. J. M. Goss*
Nat. Prod. Rep., **2016**, *33,* 54-72

36. Promiscuous indolyl vinyl isonitrile synthases in the biogenesis of hapalindole-type alkaloids
Kuljira Ittiamornkul, Qin Zhu, Duncan Smith, Danai Gkotsi, Matthew L. Hillwig[a] Nicole Nightingale, Rebecca J. M. Goss and Xinyu Li[a,] *Chem. Sci*., 2015, 6, 6836-6840

37. A One-Pot Synthesis of Symmetrical and Unsymmetrical Dipeptide Ureas
Fayad, D. Day and R. J. M. Goss,* *EJOC,* **2015**, *25*, 5603-5609

38. Suzuki–Miyaura Diversification of Amino Acids and Dipeptides in Aqueous Media
Tom Willemse, Karolien Van Imp, Rebecca J. M. Goss, Herman W. T. Van Vlijmen, Wim Schepens, Bert U. W. Maes* and Steven Ballet* *Chem Cat Chem,* **2015,** 7, 2055-2070(back cover)

39. Simple and scalable access to L-7-halotryptophans and other L-halotryptophans through an improved one-pot biotransformation
Tom Willemse, Duncan R. M. Smith, Danai S. Gkotsi, Wim Schepens, Bert U. W. Maes, Steven Ballet, and Rebecca J. M. Goss *J. Peptide Science 2014, s143-s144*

40. Filipins: the first antifungal "weed killers" identified from bacteria isolated from the trap-ant, H. Gao, S. Gruschow, M. Hutchings, D. Yu, and R. J. M. Goss* *RSC Adv.*, **2014**, 4, 57267 – 57270

41. A radical finding *Nature Chemical Biology News&Views* ,
R. J. M. Goss,* and S. Gruschow, *Nature Chemical Biology News&Views,* **2014**, 10, 878–9.

42. Mechanism of Action of the Uridyl Peptide Antibiotics: An Unexpected Link to a Protein-Protein Interaction Site in Translocase MraY
Rodolis M. T., Mihalyi A., Ducho C., Gust B., Goss R. J. M., Van Lanen S., and Bugg T. D. H*, *Chem. Comm.* **2014**, *50,* 13023-5.

43. Science of Synthesis, Halogenases (book chapter)
Gruschow S, Smith D, Gkotski D., Goss R. J. M. Goss,* Science of Synthesis, **2014**, 313-360

44. Simple and scale-able access to 7-halotryptophans, including L-7-iodotryptophan, through a one-pot biotransformation
D. Smith, S. Ballet, B. U. Maes, T. Willemse and R. J. M. Goss,* *Orglett.* **2014,** 16, 10, 2622-2625

45. Access to High Value Natural and Unnatural Products through Hyphenating Chemical Synthesis and Biosynthesis
D. Smith, E. Bogosyan, K. Mahoney and R. J. M. Goss,* *Synthesis,* **2014**, 46, 2122-2132.

46. Analysis and Optimisation of the Physiology of Engineered Biofilms for Biotransformations
J. T. Leech, I. Vizcaino-Caston, T. Barberi, R. J. M. Goss, M. Simmons, T. W. Overton
New Biotechnology, **2014***, 31,* S86

47. Edited Book: Natural Products: Discourse, Diversity and Design
E. Osbourn, G. Carter, and R. J. M. Goss,
Wiley-Blackwell, **2014,** ISBN: 978-1-118-29806-0

48. Optimisation of engineered Escherichia coli biofilms for enzymatic biosynthesis of L-halotryptophans
S. Perni, L. Hackett, R. J. M. Goss, M. J. Simmons and T. W. Overton*
AMB Express, **2013**, doi: 10.1016/j.cbpa.2013.01.018.

49. Scope and potential of halogenases in biosynthetic applications
D. R. Smith, S. Gruschow, R. J. M. Goss
Curr. Opin. Chem., Biol., **2013**, 17, 276-283

50. Glycosyltransferases from oat (Avena) implicated in the acylation of avenacins.

Owatworakit, B. Townsend, T. Louveau, H Jenner, M. Rejzek, R. K. Hughes, G. Saalbach, X Qi, S Bakht, A. DebRoy, S. T. Mugford, R. J. M. Goss, R. A. Field, A. Osbourn
J. Biol. Chem., **2013**, 288, 3696-3704.

51. Isolating antifungals from fungus-growing ant symbionts using genome guided chemistry
Ryan F. Sepke, S. Gruschow, R. J. M. Goss, and M. I. Hutchings*
Meth. Enzymol., **2012**, 517, 47-70

52. Crystallization and preliminary X-ray analysis of Pac17 from the pacidamycin biosynthetic cluster of *Streptomyces coeruleorubidus*
Daniel R. Tromans, Clare E. M. Stevenson, Rebecca J. M. Goss and David M. Lawson*
Acta Crystallographica Section F., **2012**, 68, 971-974

53. The Generation of "unNatural" Products, Combined Synthetic and Biosynthetic Approaches to Making Natural Product Analogues: Synthetic Biology Meets Synthetic Chemistry
R. J. M. Goss,* S. Shankar, and A. Abou Fayad,
Nat. Prod. Rep., **2012**, 29, 870-889

54. Engineered Biofilms: a new Generation of Immobilised Biocatalysts
M. Winn, J. M. Foulkes, S. Peroni, M. H. Simmons,* T. W. Overton,* and R. J. M. Goss* *Catal. Sci. and Technol.*, 2012, 2, 1544–1547,

55. Characterisation of Spin Coated Engineered Escherichia coli Biofilms using Atomic Force Microscopy A.N. Tsoligkas, J. Bowen, M. Winn, R. J. M. Goss, T. W. Overton, M. J. H. Simmons***,**
Colloids Surf. B: Biointerfaces, **2012**, *89*:152-60.

56. Biogenesis of the Unique Nucleoside of the Uridyl Peptide Antibiotics: Pacidamycin
E. Ragab, S. Grüschow, R. J. M. Goss,*
J. Am. Chem. Soc., **2011**, *133*, 15288-91.

57. Diversity in natural product families is governed by more than enzyme promiscuity alone: establishing control of the pacidamycin portfolio
S. Grüschow, E. Rackham, R. J. M. Goss,*
Chem. Sci. **2011**, *2*, 2182-2186
Highlighted in Chemistry World http://www.rsc.org/chemistryworld/News/2011/August/11081101.asp
Highlight in C&EN News 89(34), August 22, 2011
RSC selected highlight of "cutting edge edge chemistry in 2011
http://www.rsc.org/chemistryworld/News/2011/December/chemistry-articles-most-exciting-events-2011.asp

58. A single *Streptomyces* mutualist makes multiple antifungals: a weedkiller cocktail used by the fungus farming ant *Acromyrmex octospinosus* ,
R. F. Seipke, J. Barke, C. Brearley, L. Hill, D. W. Yu, R. J. M. Goss, M. I. Hutchings*
PLoS ONE, **2011**, 8, e22028

59. Pacidamycin, Cluster Identification and Heterologous Expression
E. Rackham, S. Gruschow, R. J. M. Goss*
Bioeng. Bugs, **2011***, 2*, 218-21.

60. Engineering Biofilms for Biocatalysis
A.N. Tsoligkas, M. Winn, J. Bowen, T. W. Overton, M. J. H. Simmons*, R. J. M. Goss*
ChemBioChem, **2011**, *12,* 1391-1395

61. Highlights from the 46th EUCHEM Conference on Stereochemistry, Burgenstock, Switzerland, May 2011
E. Tate and R. J. M. Goss

Commissioned review for *Chem. Commun.,* **2011**, *47*, 10869-73

62. Saponins, Biogenesis and Medicinal Properties
A. E. Osbourn*, R. A. Field, M. O'Connell, R. J. M. Goss,
Nat. Prod. Rep., **2011** *, 28*, 1261-8.

63. The total synthesis of chloptosin: A potent inducer of apoptosis in human pancreatic adenocarcinoma cell lines
A. J. Oelke, F. Antonietti, L. Bertone, D. J. France, R. J. M. Goss, T. Hofmann, S. Knauer, S. J. Moss, P. C. Skelton, R. M. Turner, G. Wuitschik, and S. V. Ley*
Chemistry - A European Journal , **2011**, *17*, 4183-94.

64. Gene expression enabling synthetic diversification of unnatural products:chemogenetic generation pacidamycin analogs
Deb Roy, S. Grüschow, N. Cairns, R. J. M. Goss*,
J. Am. Chem. Soc., **2010**, *134*, 1224-12245.
Highlighted in C.&EN. News, August 23rd, 2010.

65. Pacidamycin biosynthesis: Identification and heterologous expression of the first uridyl peptide antibiotic gene cluster
E. J. Rackham, S. Grüschow, A.E. Ragab, S. Dickens, and R. J. M. Goss*
ChemBioChem., **2010**, *11*, 1700-1709
Submitted in February 2010 and published online in July 2010, ahead of a manuscript confirming our results, contributed on August 3rd to PNAS by Professor Christopher Walsh (Harvard)

66. Direct evidence for the use of multiple antifungals by a leaf-cutting ant.
J. Barke, R. F. Seipke, S. Grüschow, M. J. Bibb, R. J. M. Goss, D. W. Yu, and M. I. Hutchings*
BMC Biol., **2010,** *8*, 109
Labelled "Highly Accessed" http://www.biomedcentral.com/1741-7007/8/109
5400 downloads in the first month

67. New pacidamycins biosynthetically: probing N and C terminal substrate specificity of an unusual NRPS
A. E. Ragab, S Grüschow, E. J. Rackham, R. J. M. Goss,*
Org. Biomol. Chem., **2010**, *8,* 3128-3129

68. Fluororapamycins generated through the exploitation of biosynthesis,
R. J. M. Goss,* S. Lanceron, A. D. Roy, S. Spague, Nur-e-Alam, D. L. Hughes, B. Wilkinson, S. J. Moss
ChemBioChem., **2010**, 11, 1439-4227

69. Antimicrobial nucleoside antibiotics targeting cell wall assembly: Recent advances in structure–function studies and nucleoside biosynthesis
M. Winn, R. J. M. Goss, K. Kimura and T. D. H. Bugg,*
Nat. Prod. Rep., **2010,** 27, 279-304.

70. A serine carboxypeptidase-like acyltransferase is required for synthesis of antimicrobial compounds and disease resistance in oats
S. T. Mugford, X. Qi, S. Bakht, L. Hill, E. Wegel, R. K. Hughes, K. Papadopoulou, R. Melton, R. J. M. Goss, and A. E. Osbourn*
Plant Cell, **2009**, 21, 2473-2484

71. New pacidamycin antibiotics through precursor-directed biosynthesis,
S. Grüschow, E. J. Rackham, B. Elkins, P. L. A. Newill, L. Hill, and R. J. M. Goss*
ChemBioChem., **2009**, 10, 355-360

72. Pd mediated cross-coupling of unprotected halotryptophans in water,
Deb Roy, M. Winn, G. Wagner, and R. J. M. Goss,*
Chem. Commun., **2008,** 39, 4831-4833

73. A convenient one-step synthesis of aminotryptophans and improved synthesis of halotryptophans,
M. Winn, A. Deb Roy, R. S. Parameswaran, and R. J. M. Goss*
Bioorg. Med. Chem. Let., **2008**, *18*, 4508-4510.

74. Rapamycin: requirement for hydroxylation of the cyclohexane ring of starter acids prior to incorporation,
R. J. M. Goss,* S. E. Lanceron, N. J. Wise, and S. J. Moss
Org. Biomol. Chem., **2006**, 22, 4071-4073.

75. A convenient and environmentally friendly synthesis of L-halotryptophans,
R. J. M. Goss,* and P. L. A. Newill
Chem. Commun., **2006,** 47, 4924-4925.

76. A novel fluorinated erythromycin antibiotic
R. J. M. Goss,* and H. Hong,
Chem. Commun., **2005**, 31, 3983-3985.

---

77. Elucidating and harnessing biosynthesis in order to extend the portfolio of fluorinated "natural" products
R. J. M. Goss*
ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY Volume: **243**
Meeting Abstract: **16-Fluo** Published: **March 25th 2012**

78. Elucidating and exploiting biosynthesis
R. J. M. Goss*
ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY Volume: **242**
Meeting Abstract: **87-Biol** Published: **AUG 28 2011**

79. New unnatural products by harnessing biosynthesis
R. J. M. Goss*
ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY Volume: **240**
Meeting Abstract: **518-ORGN** Published: **AUG 22 2010**

80. FLUO 13-Novel halogenated natural products from actinomycetes
R. J. M. Goss*
ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY Volume: **236** Meeting Abstract: **13-FLUO** Published: **AUG 17 2008**

Papers From Postdoctoral training (2001-2003) and PhD (1997-2000)

81. Evidence that a Novel Thioesterase is Responsible for Polyketide Chain Release during Biosynthesis of the Polyether Ionophore Monensin
M. Harvey,M. A. Jones, Z. A. Hughes-Thomas, R. J. M. Goss, V. M. Bolanos-Garcia, W. Kroutil, J. Staunton, P. F. Leadlay, and J. B. Spencer*
Chembiochem., **2006**, 7, 1435-1442.

82. Catalytically active tetra modular 6-deoxyethronolide B synthase fusion proteins.

C. M. Squire, R. J. M. Goss, H. Hong, P. F. Leadlay and J. Staunton,
Chembiochem., **2003**, 4, 1225-1228.

83. An assay for the enantiomeric analysis of [$^2H_1$]-fluoroacetic acid: An insight into the stereochemical course of fluorination during fluorometabolite biosynthesis in *Streptomyces cattleya*.
D. O'Hagan , R. J. M. Goss, A. Meddour, and J. Courtieu,
J. Am. Chem. Soc, **2003**, 125, 379-387.

84. Extreme enantiomeric discrimination of fluoroalkanes using deuterium NMR in liquid crystalline media.
M. Tavasli, J. Courtieu, R. J. M. Goss, A. Meddour, D. O'Hagan,
Chem. Commun., **2002**, 8, 844-.

85. Biosynthesis of longianone from *Xylaria longiana*: a metabolite with a biosynthetic relationship to patulin.
R. J. M. Goss, J. Fuchser, and D. O'Hagan,
Chem. Commun., **1999**, 22, 2255-2256.

Referees:

Professor Helen Hailes
Christopher Ingold Laboratories
University College London
h.c.hailes@ucl.ac.uk

Professor David Amabilino
Research Professor
Materials Science Institute of Barcelona
amabilino@icmab.es

Dr Nigel Mouncey
Director of the Joint Genome Institute
1 Cyclotron Road
Berkeley
nmouncey@lbl.gov