



STEVE BULLOCK

**CURRICULUM VITAE
JUNE 2021**

Personal information

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Present appointment

2018-date Senior Lecturer, Faculty of Engineering, University of Bristol

Previous appointments

2015-date Teaching Fellow/Lecturer, Faculty of Engineering, University of Bristol
2013-2015 Teaching Associate, Faculty of Engineering, University of Bristol
2010-2013 Hourly Paid Teacher, CAME School, University of Bristol
2010-2017 Research Postgraduate, Department of Aerospace Engineering
2009-2010 Head of Science and founding teacher, King Solomon Academy, London
2008-2009 Head of Physics, Wembley High Technology College
2006-2008 Science Teacher (Physics), Wembley High Technology College

Additional appointments

2014-2018 Warden, City Centre Old Town residences, University of Bristol
2012-2014 Deputy Warden, Clifton Hill House, University of Bristol

Academic qualifications

2019 Leading Academic Teams, University of Bristol
2018 Stepping into Leadership, University of Bristol
2017 PhD Dynamics and Control, University of Bristol
Cooperative Control for Automated Air-to-Air Refuelling
2007 Qualified Teacher Status, Teach First/Canterbury Christ Church University
2006 MEng (Hons) Aeronautical Engineering, University of Bristol 2:1
Masters thesis: Development of a Micro Unmanned Aerial Vehicle

Special awards, honours and distinctions

2021 Bristol Teaching Award nominee: Inspiring and Innovative Teaching
2018 Bristol Teaching Award nominee: Outstanding Teaching
2018 Bristol Teaching Award nominee: Outstanding Support
2018 EdTech top 50 award for Land Rover BAR *BT STEM Crew* online platform
2017 Bristol Teaching Award finalist: University Educational Initiative
2017 Merit pay award in recognition of Widening Participation work
2011-2018 Invited judge, annual Google Global Science Fair
2004 Nuffield bursary for summer research project

“Steve’s passion, commitment and experience are invaluable to the success of the scheme and he continuously looks at ways to improve the programme and how it could benefit more students” - Bristol Teaching Awards 2017 event programme

Teaching and related administration

Since returning to Bristol I have delivered on nine different units, establishing three from scratch and making significant change to four of them. Several are critical to supporting an increasingly diverse intake and linked to University-level Access Agreement performance measures. Highlights include introducing skills development throughout multiple years of the Aerospace programme, using my previous educational experience to ‘scaffold’ learning and create connections between different units, and having my video-aided ‘flipped learning’ approach showcased as a case study on the University’s [DEO website](#). On the administrative front, I am diligent in communicating with students, timely in publishing resources and meeting assessment deadlines, and take pride in modelling best practice in line with School- and University-wide frameworks. Additionally, I have impacted numerous other units through my work on bringing Dynamic Lab Manuals to the School, assessing student use of learning devices and online resources, and writing frameworks and processes to improve student learning and experience.

All undergraduate and taught postgraduate units contributed to in the past three years

AENGM0059 STEM Engagement and Communication	
Number of students: 178	Years delivered: 2019/20-date
Preparation hours for unit: 100h	Contact hours for unit: 30h
Level of responsibility: Unit Director	
Nature of teaching: lectures, guest lectures, facilitated group sessions.	
Assessments: Project including public-facing output.	
Teaching methods: Mixture of delivered and guest lectures, pivoted online due to COVID pandemic..	
Proportion of which my contribution: 100%. New unit driven by student desire to develop comms and outreach skills, and support Faculty/Institution drive for engagement.	
Impact of teaching: .	

AENG31300 Sensors Signals and Control, 20cp	
Number of students: 178	Years delivered: 2020/21
Preparation hours for unit: 100h	Contact hours for unit: 30h
Level of responsibility: sub-unit lead for Control Systems	
Nature of teaching: lectures, example classes, structured lab inductions, facilitated lab sessions.	
Assessments: Coursework.	
Teaching methods: Online due to COVID pandemic. Innovative student-centered approach, significant cohort cohesion and interaction work.	
Proportion of which my contribution: 50%. Preceding Unit Director left institution at start of COVID pandemic. Ramped up quickly and used combination of existing resources, online tools, and bespoke content. Fostered strong cohort cohesion and ‘in it together’ attitude during stopgap year, handed over high-quality resources to new UD for 21/22.	
Impact of teaching: <i>“Steve has been a brilliant source of support. His clear communication on exam organisation and other important topics has been very appreciated. Also particularly appreciated is how approachable he is when it comes to questions or concerns about exams, extenuating circumstances, or anything else students have had questions on. It is clear that Steve genuinely cares about helping you when you come to him with an issue.” – Bristol Teaching Awards nomination: Inspiring and Innovative Teaching.</i>	

AENG20002 Aerospace Vehicle Design and Systems Integration AVDASI 2, 20cp	
Number of students: 128	Years delivered: 2017/18 to date
Preparation hours for unit: 70h	Contact hours for unit: 168h
Level of responsibility: sub-unit lead for Actuation and Control	
Nature of teaching: lectures, example classes, structured lab inductions, facilitated lab sessions.	
Assessments: Comms group presentation and report, wing test performance, final report.	
Teaching methods: Group and individual design, group build, specialist group work towards structural, aerodynamic, and actuation and control requirements. Disciplinary lectures and seminars.	
Proportion of which my contribution: 25%. In 2017 I developed structured inductions for <i>rapid prototyping for actuation and control</i> , and <i>prototype to product</i> , enabling improved project outcomes. In 2018 I introduced group work and project management lectures that build upon year 1 study skills. I also transitioned the whole unit's Blackboard resources to the new CAME framework.	
Impact of teaching: <i>"I have used the Hackspace and student workshop for personal and academic projects a great deal over the past year and your sessions have helped me produce high-quality products". "The wing build has been the highlight of my course so far and designing a working control system has inspired me to do an IXP in this area"</i> – student email comments.	

AENG21200 Structures and Materials 2, 20cp	
Number of students: 141	Years delivered: 2012/13 to 2014/15
Preparation hours for unit: 100h	Contact hours for unit: 48h
Level of responsibility: Sub-unit lead - asymmetric bending of beams, torsion.	
Nature of teaching: Lectures and example classes	
Assessments: Lab reports, exam	
Teaching methods: <i>'Flipped classroom'</i> video lectures, interactive example classes.	
Proportion of which my contribution: 10%. I built upon Dr Farrow's existing high-quality resources, adding links to students' prior learning (year 1 and pre-entry) and designing and producing large-scale physical demonstration aids for use in lectures. In my second year on the unit I produced recorded lectures and, in consultation with the student cohort, introduced a flipped classroom teaching style that facilitated independent learning through structured online resources and enabled more interactivity in face-to-face sessions.	
Impact of teaching: <i>"Steve Bullock's new approach has been of great use". "The beams videos were a fantastic new tool"</i> – SAFE feedback. My flipped approach has been published as a case study on the university's DEO website and the videos are still being used by successive colleagues.	

AENG30003 Individual Exploratory Project IXP, 20cp	
Number of students: 2017/18 4, 2018/19 6	Years delivered: 2017/18 to date
Preparation hours for unit: 10h	Contact hours for unit: 144h
Level of responsibility: supervisor, technical communication panel assessor, report marker	
Nature of teaching: Supervision tutorials, skills seminars	
Assessments: Technical communication panel, final report	
Teaching methods: Supervision tutorials	
Proportion of which my contribution: 90% for supervised students. I am also working alongside unit director Prof Allen to integrate IXP skills seminars with year 1 and 2 study skills.	
Impact of teaching: In 2017/18 all supervised students attained first-class marks. One was awarded a Faculty-funded summer research internship to continue his work.	

AENGM0032 Final Year Project FYP, 40cp	
Number of students: 4	Years delivered: 2017/18 to date
Preparation hours for unit: 10h	Contact hours for unit: 96h

Level of responsibility: Project supervisor, viva assessor, report marker
Nature of teaching: Supervision tutorials, skills seminars
Assessments: Poster and viva, final report
Teaching methods: Supervision tutorials, skills seminars
Proportion of which my contribution: 90% for supervised students
Impact of teaching: Experiencing a large number of viva/poster presentations has fed into my work as Year Tutor and Programme Director, enabling me to advise student choices more effectively, and facilitated discussion with colleagues on their research fields.

Transition Maths, non-credited, equiv 10cp	
Number of students: 12-40	Years delivered: 2014/15 to date
Preparation hours for unit: 80h	Contact hours for unit: 96h inc preessional
Level of responsibility: Unit director	
Nature of teaching: Front-led and student-directed seminars, online learning. HPT support from carefully-selected and highly-trained PG team.	
Assessments: Self- and peer-assisted formative diagnostics. Summative assessment via EMAT10100 Jan/summer exams.	
Teaching methods: Lectures, online, seminars, example classes.	
Proportion of which my contribution: 100%	
Impact of teaching: 2013/14 cohort (no TMat support): only 2 of 40 students (5%) progressed to yr2 at first attempt. Identified EMAT10100 and co-requiring units as barriers. 2014/15 cohort (with TMat) 12 of 40 students (30%) progressed at first attempt. 2015/16 cohort (admissions test introduced) 9 of 12 students (75%) progressed at first attempt. Reduction in absolute numbers being addressed via <i>Pathways to Engineering</i> . <i>"This programme eased so much of my anxiety about starting the course. I felt like I could be here regardless of my fears of not being smart enough". "We did a crash course in a week, the method of explaining things was invaluable"</i> – Transition Maths student comments, Pathways to Engineering recruitment brochure.	

Pathways to Engineering, pre-entry	
Number of students: 20 pre-entry students	Years delivered: 2018/19
Preparation hours for unit: 80h	Contact hours for unit: 42h
Level of responsibility: Programme director	
Nature of teaching: on-campus and college-based full-day sessions, online learning	
Assessments: Self- and peer-assisted formative diagnostics. Progression assessment via BTEC/Access entry route exam.	
Teaching methods: Lectures, seminars, example classes, online. HPT support from carefully-selected and highly-trained PG team.	
Proportion of which my contribution: 100%	
Impact of teaching: Currently recruiting first cohort. Aiming for all to progress to TMat in-year support strand.	

Study Skills for Engineers, non-credited	
Number of students: 141	Years delivered: 2013/14 to date
Preparation hours for unit: 36h	Contact hours for unit: 6h
Level of responsibility: Unit director	
Nature of teaching: interactive lectures, peer-assisted learning and support	
Assessments: N/A	
Teaching methods: Sessions throughout TB1&2, scheduled to provide 'JIT' delivery of concepts and approaches relevant to wider student work and experience. Links with AENG20002 AVDASI2, AENG30003 IXP.	

Proportion of which my contribution: 100%. I have developed a series of interactive lectures which begin with self-management of learning, time, and information, include research and writing skills to prepare students for individual projects, and extend through to external considerations such as CVs, online profiles, and use of social media.

Impact of teaching: Anecdotal feedback, and level of attendance to sessions clearly highlighted as 'optional' indicates strong positive impact. *"Thank you for your session on learning portfolios, I took work like my AVDASI2 and IXP reports to an assessment centre and think that this played a large part in them offering me an internship"* – student email.

Major teaching responsibilities in previous years

AENG11200 Structures and Materials 1, 20cp

Number of students: 136	Years delivered: 2010/11-2012/13
Preparation hours for unit: 192h	Contact hours for unit: 96h
Level of responsibility: Lab demonstrator	
Nature of teaching: Lectures, example classes, labs	
Assessments: N/A	
Teaching methods: Lectures, example classes, labs	
Proportion of which my contribution: 5%. I reviewed and improved lab notes and session content and structure, and led labs for year groups. New structure for in-lab support included protocol for intro and demos, probing questions and formative assessment opportunities for lab demonstrator to employ, increasing value added to student learning during in-lab time.	
Impact of teaching: Anecdotal feedback indicates students appreciated and felt that they benefited from new lab structure and resources. Experiences leading this led to introduction of School-wide DLM Dynamic Lab Manual resources.	

AENG11301 Aeronautics and Mechanics, 20cp

Number of students: 132	Years delivered: 2011/12-2014/15
Preparation hours for unit: 192h	Contact hours for unit: 96h
Level of responsibility: Design/build/fly activity lead	
Nature of teaching: Lectures, group design/build, testing and fly-off sessions	
Assessments: Exam; low-stakes competitive project.	
Teaching methods: Lectures, example classes, design/build/fly activity.	
Proportion of which my contribution: 5%. I reviewed the design/build/fly activity, which was previously changed year-on-year, and selected and developed a round-the-pole challenge that could be repeated annually, and provided data that linked with wider units.	
Impact of teaching: The primary goal of the activity, which takes place in TB1 of year 1, was to provide tutor group and cohort bonding. I increased the success of this by improving the previously arbitrary nature of the activity, designing it so that the minimum success criteria were easily attainable but there was a great deal of scope for further initiative. I improved staff/student engagement by incentivising tutors to support and 'cheer on' their groups through the build and in the fly-off, and improved the relevance of the challenge by recording, benchmarking and sharing quantitative data that could be referred to in this and wider units. I have since adapted this project into an outreach activity that can be tailored to ages 11-18, which has been run over 30 times.	

AENG20002 Aerospace Vehicle Design and Systems Integration AVDASI 2, 20cp

Number of students: 128	Years delivered: 2012/13
Preparation hours for unit: 192h	Contact hours for unit: 96h
Level of responsibility: Wind tunnel testing lead	
Nature of teaching: lectures, example classes, structured lab inductions, facilitated lab sessions.	
Assessments: Comms group presentation and report, wing test performance, final report.	

Teaching methods: Group and individual design, group build, specialist group work towards structural, aerodynamic, and actuation and control requirements. Disciplinary lectures and seminars.

Proportion of which my contribution: 5%. I designed and built a new testing rig, measuring forces and moments at the root of the wing via load cells. I wrote and documented a LabView application to enable straightforward analysis and presentation of results, and export of data for student use. I ran test sessions including use of tuft and smoke visualisation techniques, ensuring that observations and reflections were linked to core lecture material.

Impact of teaching: the robust measurement and visualisation system helped students focus on core learning during the tests, and export of raw data allowed them to perform deeper analysis. The rig is still in use by successive demonstrators. *"I have been extremely fortunate to benefit from the support of Steve Bullock, as teaching associate, who has been helpful throughout and took on the lead to organise the wind-tunnel testing and data logging as well as the mounting system design."* – Unit Director, in an email to the Dean.

Innovatory teaching methods introduced

2013 'Flipped classroom' video lectures, AENG21200 Structures and Materials 2

I built upon already-existing strong teaching resources, scripting, recording, and editing a series of video lectures to deliver content for the asymmetric beam bending section of the unit. This freed up in-lecture time for a much more interactive approach that drew upon my previous secondary teaching experience.

Student comments:

"One of my highest grades this summer was in the structures and materials module, and I do believe this is almost entirely due to the change of lecture style that you delivered. It made revision a breeze, and made the whole unit much more enjoyable. I found I understood the concepts in greater detail, I think mainly because of the ability of being able to repeat a video as many times as you wish and learn at your own pace" – SAFE feedback.

I could not rate this type of learning highly enough and along with the example/question lectures you held, it meant I could achieve a solid grade" – SAFE feedback.

"Your video course received a mention at the Divisional Away Day for the Academic Registry as a student's favourite – the only course specifically mentioned!" – Unit Director

My flipped approach has been published as a case study on the university's [DEO website](#) and the videos are still being used by successive colleagues.

2014-2016 Dynamic Lab Manuals (DLMs) for Engineering, CAME School

I led the introduction of DLMs to the School, drawing upon prior work elsewhere in the University. I reviewed their reports and anecdotal feedback, and adapted the approach to fit the School's needs. I worked in collaboration with Programme and Unit Directors, sub-unit lecturers and lab teaching staff, the University's Digital Education Office, current and incoming students, and external developers *Learning Science*. This built upon prior experience and development of lab resources, aiming to reduce didactic teaching and increase time for interaction and formative feedback in lab sessions. Strong positive student feedback was received and further development and expansion is now taking place under the School's Academic Enhancement Manager.

2014 Blackboard course review and consistency requirements, CAME School

Student and staff consultation leading to development of draft Blackboard template to improve consistency of student experience and access to information. Detailed plan suggesting timeline,

staff communication and support, and additional considerations. Taken on by School Academic Enhancement Manager who adapted and rolled out in 2018.

2013 LearningIT: review of student device usage for learning, CAME School

Student consultation, surveys, and device trial to gain insight into student PC, laptop, tablet, etc. usage in order to make recommendations for future resources and development. Key findings included desire for 'BYOD' (bring your own device) over provision of e.g. tablets for students, and significant feedback on usability and consistency of Blackboard courses that fed into subsequent consistency recommendations.

Contribution to Life-long Learning and continuing professional development courses

2014-date Informal peer observation and mentoring, Dept of Aerospace Engineering

Drawing upon valuable experiences of frequent formative feedback during secondary teacher training and practice, I have established a group of early-career colleagues who regularly give and receive peer observations and mentor one another across different pathways. This is proving incredibly valuable in improving practice and establishing strong cohesion among colleagues.

2016-2017 Formal peer observation and mentoring

Thanks again to prior experience, I was asked by a Head of Department in SCEEM to observe and mentor a member of staff who was receiving poor student feedback. I undertook a series of observations, agreeing with the lecturer on a focus for each, and worked with them to develop an action plan for resource and practice improvement. Unit feedback scores improved in that and subsequent years.

2018 panel member, Academic Career Pathways forum

I was invited to sit on a panel for Pathway 2 colleagues across the University, advising on possible progression routes from research positions. Subsequent emails and 'coffee chats' with attendees indicate that my reflections on my journey in and out of academia, my focus on teaching, and my perspective on Pathway 3 being a 'very good place to be' in the University at the moment (colleagues were not aware of BILT or TEF-related opportunities) was valuable. I was the only non-Professorial member of the panel.

2014 Subject Tutor, Teach First Programme, Grad School of Education

The existing Subject Tutor for Science was unable to deliver the programme one summer. I stepped in and taught a cohort of 20 trainee secondary teachers in subject delivery and teaching practice. I was subsequently employed to observe and mentor two participants who were struggling in their schools.

2014 CAME Masterclasses 'Making Lectures More Engaging' and 'Flipped Learning'

I delivered masterclasses to colleagues on interactive lecturing techniques and flipped learning. Both were attended to capacity and colleagues have subsequently implemented ideas and requested ideas and feedback on their teaching.

Collaborative teaching projects

2018 CAME First Year Review

I am presently working with the three other Programme Directors in CAME to determine opportunities and recommendations to leverage commonalities between our programmes. We are meeting frequently as an executive group and I have been nominated to report at board meetings. We are consulting with other internal and external Schools who have undertaken similar transitions, and will deliver strategies for assessment, delivery model, and teaching themes this academic year before moving into the implementation phase.

2014-date Transition Maths

Detailed in teaching responsibilities above, the Transition Maths support programme was established to address identified mathematical barriers that students on BTEC and Access entry routes were facing. The unit was developed in collaboration with the EMAT10100 team and consultation with level 3 maths teachers.

2014 Aerodynamics chapter for FutureLearn 'Cracking Mechanics' MOOC

I was asked to write a chapter and activities for the Faculty's headline MOOC targeted at sixth-form students. I have also used this resource as pre-learning for Transition Maths students.

Postgraduate advising

I have not yet been formal advisor to any postgraduates, and am applying for Faculty funding for my first PhD student for the 2019/20 academic year.

I have mentored a large number of PGs on their lab and seminar teaching, and have conducted extensive training and observations for the Transition Maths team.

Major achievements in teaching administration

2018 Programme Director, Aerospace Engineering

It was a privilege to be invited to lead our undergraduate programmes at this stage in my academic career. When I was appointed, I was the most junior Programme Director in the Faculty, with all others being SL/Reader. So far, I have worked with the Head of Department to conduct unit reviews across the programme, inputting into School EAP process. We are planning fairly significant changes to programme structure in years 2-4 to improve student workload and experience. I am ramping up as we head into the programme and unit change process and am finding my past teaching experience invaluable. Alongside other CAME Programme Directors I am on the executive group for the ongoing First Year Review.

2016-date Widening Participation Officer, Faculty of Engineering

I was appointed Faculty WP Officer following my earlier work on Transition Maths support, and am the only one in the University currently allocated specific time in my workload for the role. Over the past two years I have iterated and improved upon the TMat programme, working alongside departmental ATs, FARO, and other stakeholders. This year I am introducing the Pathways to Engineering entry route, partnering with colleges to further support applicants and entry. Both of these initiatives have involved significant work alongside academic and professional services colleagues in order to bring them to fruition.

Teaching responsibilities atypical of academic pathway

Academic Advisor for student competition teams

2016	UK Drone Show universities challenge	won Engineering Prize
2017	UWE MAAXX Europe	won Engineering Prize
2018	UWE MAAXX Europe	

Significant comms and student recruitment activity

2018	Interviewed for Engineers Without Borders 'Engenius' podcast
2018	UK Recruitment Roadshows in London, Newcastle, Manchester Over 500 potential Engineering applicants reached, largely WP. Delivered lecture in prestigious Royal Institute lecture theatre. Participant feedback: 100% agreed/strongly agreed Engineering session was interesting and engaging (66/68/82% for other subjects), 70% agreed/strongly

agreed it was useful (matches proportion of participants interested in Engineering over other STEM subjects). Increased intent to apply to Bristol from 41 to 63%, and perception that students will fit in from 57 to 82%.

- 2017-date International Recruitment Roadshows in SE Asia, China, Middle East
Over 1,800 potential Engineering applicants reached, strong conversion stats
Student feedback particularly strong for Engineering stream
- 2015-date Re-established and led Best of Bristol Lectures
- 2015 Interview on BBC Radio Bristol about outreach activity
- 2014-date 'Engineers make things happen' intro to Engineering and taster lecture
Delivered to over 2,500 students locally, nationally, and internationally.
- 2010-date Wide range of internal and external comms and outreach opportunities, social media visibility. Featured in over 100 Twitter and LinkedIn posts by @BristolUni, @UoB_Engineering, and other UoB accounts.

Extracurricular student support

- 2018 Academic adviser, Engineer2Engineer peer-to-peer learning platform
Awarded grants from RED NEC competition and CAME Educational Enhancement Fund.
- 2016-date Academic Lead for UoB/Airbus Drone Dash 1, 2 and 3 competitions
Over 100 students participated, first large-scale use of new Hackspace facility
3-minute video produced, featured on UoB home page and in Airbus comms
- 2017-2018 Academic Lead, Gromit Unleashed 2
Aardman/Bristol Children's Hospital fundraising trail
Mentored/led student activity producing pair of connected Gromit sculptures that communicate with one another, will be retained by University and installed to connect Clifton and TQEC campuses.
- 2012-date Student society support – Aerosoc, DroneSoc, EWB, Women in Engineering etc
Various talks delivered on outreach, widening participation, professional development; supported student-led academic and cohort-bonding events

Education research and related administration

- 2017/18 Founding member of inaugural Faculty Learning Community
- 2018 Founding and Core Group member of Engineering Education Research Group
- 2016-date Evaluation and reporting of Faculty outreach and WP activities
- 2013 LearningIT study – detailed above

Publications

Journal publications

- Thomas, P. R., **Bullock, S. (30%)**, Bhandari, U., & Richardson, T. S. S. (2015). Fixed-wing approach techniques for complex environments. *The Aeronautical Journal*, 119(1218), 999–1016. <http://doi.org/10.1017/S0001924000004292>
- Thomas, P. R., **Bullock, S. (70%)**, Richardson, T. S., & Whidborne, J. F. (2015). Collaborative Control in a Flying-Boom Aerial Refueling Simulation. *Journal of Guidance, Control, and Dynamics*, 38(7), 1274–1289. <http://doi.org/10.2514/1.G000486>

Thomas, P. R., Bhandari, U., **Bullock, S. (25%)**, Richardson, T. S., & du Bois, J. L. (2014). Advances in air to air refuelling. *Progress in Aerospace Sciences*, 71, 14–35.
<http://doi.org/10.1016/j.paerosci.2014.07.001>

Refereed conference publications

Bhandari, U., Thomas, P. R., **Bullock, S. (10%)**, & Richardson, T. S. (2013). Bow Wave Effect in Probe and Drogue Aerial Refuelling. In *AIAA Guidance, Navigation, and Control (GNC) Conference* (pp. 1–21). Reston, Virginia: American Institute of Aeronautics and Astronautics.
<http://doi.org/10.2514/6.2013-4695>

du Bois, J., Thomas, P., **Bullock, S. (10%)**, Bhandari, U., & Richardson, T. (2012). Control Methodologies for Relative Motion Reproduction in a Robotic Hybrid Test Simulation of Aerial Refuelling. In *AIAA Guidance, Navigation, and Control Conference*. Reston, Virginia: American Institute of Aeronautics and Astronautics. <http://doi.org/10.2514/6.2012-4676>

du Bois, J. L., Newell, P., **Bullock, S. (10%)**, Thomas, P. R., & Richardson, T. S. (2012). Vision Based Closed-Loop Control System for Satellite Rendezvous With Model-in-the-Loop Validation and Testing. In *23rd International Symposium on Space Flight Dynamics* (pp. 1–16).

Bullock, S. (80%), Thomas, P., Bhandari, U., & Richardson, T. (2012). Collaborative Control Methods for Automated Air-to-Air Refuelling. In *AIAA Guidance, Navigation, and Control Conference*. Reston, Virginia: American Institute of Aeronautics and Astronautics.
<http://doi.org/10.2514/6.2012-4767>

Richardson, T., du Bois, J. L., **Bullock, S. (15%)**, & Bhandari, U. (2011). Implementation of a Relative Motion Robotic Rig for Hardware in the Loop Simulation of Automated Air-to-Air Refuelling. In *26th Bristol International International UAV Systems Conference*. Bristol, UK: University of Bristol.

Academic leadership and citizenship

I have taken on a wide range of leadership roles from early on in my higher education career, thanks in part to the useful perspective that my previous experience has given me. I have found that this, combined with the diversity of the work that I've taken on across the University, has enabled me to create and leverage connections, provide cross-divisional insight, and add value in numerous ways. In particular, being invited to sit on critical University working groups such as for the IFP expansion and the Digital Workspace implementation, and being asked to mentor colleagues in formal and informal capacities, has been a privilege in permitting me to have significant impact, and invaluable to my own professional development.

Academic leadership in the discipline

2018	Facilitator, 'Reversing the educational inequality crisis in Bristol', City Hall
2010-date	Various workshops and panels, Teach First public and internal events

Academic leadership in the University

School, Faculty and University roles

2018-date	Programme Director, Aerospace Engineering
2018-date	CAME School Education Committee
2017	CAME Conference group facilitator
2017-date	International Foundation Programme Expansion Working Group, member
2016-date	Digital Workspace Implementation Advisory Group
2016-2017	New Teaching Lab working group
2016	New Hackspace consultation

2015-date	Senate representative
2015-date	Widening Participation Officer
2015-date	Faculty Equality and Diversity Committee
2015-date	Staff interview panels for Residences, Academic Staff Development
2013	CAME School NSS Action Plan: three actions to lead on including teaching masterclasses, study skills, and LearningIT study

Initiatives I have established

2018-date	Faculty of Engineering Senate Reps Network
2016-date	Scoping work on introduction of Engineering with Preliminary Year programmes
2017-date	Widening Participation Officers Network
2015-date	Lead Academic, Best of Bristol Lectures (re-established after hiatus)
2014-date	Widening entry routes for Access/BTEC applicants via Transition Maths and Pathways to Engineering programmes

“The number of people who have noticed the series is extraordinary. I hope you realise how much you're doing to make the university an intellectual community and not just the 'machine' that universities have been labelled since the sixties”

“I also wanted to let you know how honoured I felt to do the talk, not to mention the pleasure it gave to my family and friends who came along to support... I have been invited to be interviewed on two podcasts and was randomly asked for my autograph by one elderly gentleman (?!).” – Best of Bristol lecturers

Other 'extracurricular' leadership within the University

2013-date	'Social Engineering' staff bonding initiatives across Faculty
2014-2017	Lead Academic, Pint of Science annual STEM communication festival

Residential roles

2015-2018	Warden, City Centre Old Town residences
2013-2015	Deputy Warden, Clifton Hill House

Actively involved in consultation to develop new wellbeing model. Established new city centre residence cluster, including recruitment and appointment of 24-strong team, management of £62k p.a. social and educational enhancement budget, pastoral and residential academic responsibility for 760 UG & PG students.

Professional activities outside the University

2018	Invited delegate, ESA Space Rocks science and culture event
2017	Delivered 'The Apollo 11 Camper Van' production at Blue Dot Festival
2014-date	Presenter, 'The Cosmic Shed' podcast “Science fact, science fiction, and everything in-between”. Guests include Tim Peake, Benedict Cumberbatch, NASA engineers and astronauts, commercial space CEOs, BBC producers and many Bristol academics.
2013-date	Activity lead, Future Brunels programme, SS Great Britain
2006-date	Educational consultancy including for Google, EDF, BP, Land Rover BAR (including teaching a science lesson to the Duchess of Cambridge), RNLI LRBAR work awarded 2018 UK EdTech Top 50

Contributions to society

2017-date Bristol Learning City ambassador
2014-date STEM Learning ambassador
2008-date Teach First ambassador
2006-2010 Teach First teacher

Entrepreneurship, enterprise and partnerships

2016-2018 IXP and FYP projects on 'Solar Tree Optimisation' with local artist John Packer
2010-2017 PhD work in collaboration with Cobham plc

Good citizenship

I consider myself an exceptional citizen of the Department, School, Faculty and University. In addition to a wide range of 'over and above' activities detailed previously, I:

- Attend all Department meetings, CAME and Faculty assemblies unless on leave or working away, regularly contributing to discussion
- Am a diligent Personal Tutor, using the CAME and Bristol Skills frameworks as a base and building upon them with tailored activities and guidance
- Am recognised as an approachable and helpful Year Tutor
- Frequently and consistently solicit and act upon constructive feedback from individuals and groups of students
- Meet all assessment deadlines
- Engage enthusiastically and frequently with Open Days, Post-Offer Visit Days, and other opportunities to represent the University
- Facilitate student peer support and bonding via various Faculty societies
- Lead and participate in a wide range of communication and outreach activities, as detailed in previous sections – always taking opportunities to promote the institution
- Maintain and share a positive perspective and continued enthusiasm and pride in the University in the face of challenges including change in residential wellbeing strategy (resulting in redundancy from that part of my role), and recent pensions and employment developments.

Future Plans

My goals for impact in the University and the sector are threefold and interlinked:

- **Teaching and learning:** develop, enable, and share sector-leading teaching and learning in my Department, School and Faculty.
- **Diversity and access:** Foster increased diversity in the Faculty and the sector through specific interventions, core programme and systemic change, and raising awareness of opportunities.
- **Engagement and communication:** Share the exciting work that myself and colleagues undertake with a wide range of audiences, at local, national, and international levels.

Additionally, I aim to further the research side of my interests by enabling and communicating the research of my UG students and supervising my first PhD student in the near future.

2018-19 Push for sector-leading outcomes in planning stage of CAME First Year Review
Embed Transition Maths and Pathways to Engineering programmes, secure funding for Engineering Transition Fellow in order to create time for strategic analysis and

planning

Support the Engineering Education Research Group's progression from an emerging to an established group and publish early outputs

Propose partnership with Mountain Rescue for IXP/FYP Drone-Assisted Search and Rescue (DASAR) work

2019-20

Establish STEM Engagement and Communications unit, ideally at UNIV level for inter-Faculty delivery. Leverage student outputs for WP and comms.

Take on EERG leadership role (has been agreed that these will be on a rolling basis)

Decide whether to consolidate my Departmental and Faculty roles and hand over some responsibilities, or continue with diverse (and complementary) remit with appropriate additional support.

Leverage external opportunities and networks (e.g. Bristol Learning City, Teach First) to increase access for local students and address educational equality in Bristol.

Obtain funding for my first PhD student in one of my two research projects.