

Biographies for 2018/19 New Council Positions

Secretary (A)

MANDY BAILEY, B.Sc. (Open), Ph.D. (Keele), FRAS, MInstP. Associate Lecturer, Open University (2014-). Freelance Editorial Services (2013-). Projects Officer, National Schools' Observatory, LJMU (2013-2015). Supply teacher (2006-2009). Head of Accounts Dept., Muller Dairy (UK) (1991-1993). Various accounting positions (1979-1991). RAS Council (2011-2018): Councillor (2011-2013), Astronomy Secretary (2013-2018), Vice-Chair RAS200 Advisory Group (2013-). Publicity Officer, Society for Popular Astronomy (SPA) (2005-2015). Chair, Shropshire Astronomical Society (SAS) (2009-2014).

Special interests: The structure and dynamics of the Milky Way and Magellanic Clouds: mapping the tiny structures in the diffuse interstellar medium, using Diffuse Interstellar Bands (DIBs) to trace molecular material in the cold and diffuse interstellar medium.

I have served as the RAS Astronomy Secretary for the last five years where I have been responsible for organising the Astronomy Specialist Discussion meetings; the Public Lecture programme; assessing RAS grant, and Education and Outreach grant, applications; assessing the RAS Astronomy Award nominations; working with the Education and Outreach, Finance, and RAS200 committees; as well as assisting in policy development. In 2014, I also took on the role of organising the National Astronomy Meeting (2015) in Llandudno.

In the role of Astronomy Secretary, I have been able to put together a cutting-edge science programme for the RAS Astronomy Specialist Discussion meetings covering as wide a range of topics and disciplines. Meetings that bring together theorists, observers and instrumentalists, looking to how best we can contribute to missions and use future datasets such as LSST, JWST, the SKA precursors and E-ELT. Meetings that build collaborations both in the UK and internationally, engaging with early career researchers and providing a platform for the UK's work in astronomy to be presented and heard.

As Astronomy Secretary I have had an overarching view of the work the RAS does and as we head towards our bicentenary in 2020 we, as a society, need to work to ensure that we remain as essential in 2020 as we were in 1820. We need to ensure our sciences, and commitment to education and diversity continues to have a voice in the future.

I wish to build on the work I have done for the RAS over the last 7 years, using my experiences in the financial world, as a mature student and now Associate Lecturer and freelancer to continue to assist in policy development; particularly in the areas of education, outreach, and diversity and to help address the challenges we face in these testing times of Brexit, and those we face financially due to the increasing calls for Open Access publishing, and the increased demands on our Fellowship scheme and Grant programmes. I wish to continue to help the astronomy community show-case their achievements and build international collaborations through the Specialist Discussion Meetings, so the UK can continue to play a big part in European as well as worldwide science as the UK negotiates Brexit.

The RAS200 Outreach and Engagement scheme, which I have been involved in from the

beginning, shows the Society's commitment to bring our sciences to communities that would not otherwise have any involvement with astronomy or geophysics. I believe the RAS can learn from the projects in this scheme, learn how our partners reach out to a wider and more diverse audience and how the RAS might continue to improve its own work in this direction. Not only by giving people a second chance at education and a greater confidence in their own abilities but by using what we can learn from our partners to ensure our academic communities are open, welcoming places that recognise excellence wherever it is found regardless of gender or disability.

I look forward to continuing my work with RAS and I am committed to working towards all the above goals in the role of Astronomy Secretary.

Vice President (A)

STACEY HABERGHAM-MAWSON, MPhys Hons. (University of Liverpool), PhD (Liverpool John Moores University), PGCE, FRAS, MInstP, Manager of the National Schools' Observatory, LJMU. RAS Council (2014-2017), RAS Diversity Champion (2016-2017), RAS200 Steering Committee (2014-present), RAS CDAG member (2015-present) and chair (2016-present)

Special interests: Equality and Diversity, Education, Public Engagement and Outreach, Observational Astronomy, Robotic Telescopes, Core-Collapse Supernovae, Star-formation, Galaxies

I manage a national public engagement project from LJMU, having previously completed a Masters, PhD and post-doc in Astrophysics specialising in the host galaxies of core-collapse supernovae. Since moving into public engagement full time I have stayed involved in research to some level and enjoy transferring cutting-edge research into projects which can be used to inspire a new generation to pursue a career in STEM. I am involved in observing, mainly through the Liverpool Telescope and have a passion for observational astronomy and the potential of robotic telescopes in an era of detection-rich astronomy which will be brought around through facilities such as LSST.

I am the only person in my family to have been to university and have a passion for encouraging people from diverse backgrounds to consider both STEM as a degree and career option, but also university more generally. I have been involved in outreach for around 15 years working with various groups from Boys Brigades to adult learners. I am an active member of the RAS200 Sky and Earth steering groups and have engaged with several of the funded projects. For almost 5 years I have coordinated the outreach carried out at my department and have led a local outreach programme working with schools in and around the Liverpool city region. Since taking the role as National Schools' Observatory manager I have co-created a new strategy, website and evaluation framework for the project and am experienced in managing both projects and people including having line management responsibilities. I also sit on the STFC Public Engagement SPARK and Legacy awards panels.

I also have a passion for diversity and equality, not just through engaging with more young

people, but by improving the current field. I have driven this agenda, both at my University through the IoP Juno Project, and at the RAS in my time on council and the Committee for Diversity in Astronomy and Geophysics (CDAG). I have been involved in the creation and adoption of the RAS Code of Conduct, the celebration of 100 years of women being elected to the RAS, and through many diversity events carried out by the RAS Equality and Diversity officer.

Since having a more involved role in the RAS I have driven an agenda of transparency within the management structure of the RAS and led the first open call to members to join the CDAG committee. I ensured that the adoption of the RAS Code of Conduct is a requirement of awards granted by the society and have led the advertisement of this throughout the membership. I have also engaged with the society in completing the Science Council Progression Framework. I have also led a bullying and harassment survey which will soon be sent to fellows.

If I am elected into the position of VP (A) I will continue to be a voice for diversity and equality and drive the agenda within council, building on the progress made over the last 5 years, especially implementing recommendations from the Science Council Progression Framework. I will also be a voice for early career researchers, and those within the society with less traditional careers. I believe in being a fair voice and do not bring an agenda to the role other than having the best interest of the society, and it's members at heart and pride myself on being honest, displaying integrity and listening to all sides before drawing conclusions. I hope to have the chance to continue the work I have started in my active role within the society.

Vice President (G)

ANTON ZIOLKOWSKI (G) MA PhD MSc(Econ) FEng FRSE FRAS Professor of Petroleum Geoscience, University of Edinburgh. <http://www.geos.ed.ac.uk/homes/amz>. President of Scottish Oil Club; Chairman of the Awards Committee of the European Association of Geoscientists and Engineers (EAGE); Member of Scientific Committee of BGS National Geophysical Survey.

Special interests: I am currently working on two main problems: geothermal energy and explosive seismic sources. The UK consumes over 50% of its primary energy for heating. We keep warm by circulating hot water in our buildings. The UK's only geothermal power station, in Southampton, uses hot saline water from a 2 km deep underground sandstone reservoir. We should identify similar resources, using electromagnetic methods to find the electrically conducting brine, and not be constrained to areas of high heat flow. The second problem is determination of explosive source time functions directly from seismic data; this has applications to evaluation of yields of underground nuclear tests, and to improving resolution of Earth's internal structure.

I have worked in academia and industry and have started a company. My research has included both land and marine exploration. In 2001 I co-invented the multi-transient electromagnetic (MTEM) exploration method and in 2004 co-founded MTEM Limited, a service company to the petroleum industry, providing onshore and offshore MTEM surveys

to detect hydrocarbons, and was Technical Director. MTEM was the largest-ever spinout from a Scottish University. In 2007 MTEM was bought by Petroleum Geo-Services, a Norwegian multi-national oil-services company, and I became Chief Scientist, Geosciences and Engineering, at PGS, until 2010, when I returned to my chair in Edinburgh.

I fully support the five key objectives of the RAS policy on Diversity, Equality and Inclusion. Throughout my career I have made every effort to apply these same principles and will continue to do so. I also strive to see that these same principles are applied by every organisation with which I am associated.

I am a member of EAGE, American Geophysical Union, Institute of Electrical and Electronic Engineers, Seismological Society of America, and Honorary Member of the Society of Exploration Geophysicists. In 2016 I received EAGE's highest award, the Desiderius Erasmus Award. In 2017 I was elected a Fellow of the Royal Academy of Engineering.

If elected, I would apply my experiences of academic leadership and commercial management to Council's oversight of RAS operations. We need solid Earth geophysics to understand the Earth and its resources, but this is not widely appreciated outside the geophysical community. We need to promote geophysics to the wider community. I can play my part here with my connections in the Royal Academy of Engineering. There is an overlap of ideas and techniques used by exploration geoscientists and the more academic community; this could be greater and would be of benefit to both communities. I would work to encourage closer cooperation and mutual understanding between the RAS and EAGE and SEG.

Councillors (A)

LORRAINE HANLON, BSc, MSc, PhD, FRAS, MInstP, CPhys. University College Dublin: Full Professor of Astronomy (since 2014). Head, UCD School of Physics (2008-2011). Programme co-chair BSc 'Physics with Astronomy & Space Science' (2006-2017). Appointed lecturer in 1996. European Space Agency: Research Fellow (1991-1995). Scientific Advisor to the Irish delegation at ESA SPC (since 2011). Member, Royal Irish Academy Astronomy & Space Sciences committee (2009 – 2013).

Special interests: Gamma-ray Bursts, Multi-messenger astronomy, Robotic telescopes, Space instrumentation, Cubesats.

Irish astronomy has a long and notable history, with close ties to the RAS. The astronomical community in Ireland has experienced significant development in recent years. Negotiations to secure the long-held strategic goal of ESO membership are underway, while an Irish node of the LOFAR array became operational in 2017. All universities now have astronomy embedded in their undergraduate curricula. Specialised MSc degrees (e.g. Space Science & Technology, Astronomical Instrumentation) are being offered, reflecting the expertise in these areas nationally. Our PhD graduates go on to successful careers, both in research and industry. We also benefit from a vibrant science communication community. These outcomes tangibly demonstrate the impacts and societal benefits of astronomy education, research and

outreach activities. However, the low level of basic research funding remains a concern. Sustained advocacy is needed to coherently voice the concerns of the community and effect change. This is an opportune moment to explore how the Irish astronomical community and the RAS could create a working relationship that would support our mutual goals, reinforcing the importance of all-Ireland and UK collaboration in the wake of Brexit. If elected to council, I will work to achieve stronger links between the RAS and the Ireland-based astronomy community, many of whom are RAS fellows.

Championing Equality, Diversity and Inclusion is a core value of the RAS, clearly evident in, for example, the remarkable RAS200 projects currently being supported. If elected, I will advocate to ensure diversity in speaker line-ups, committees and panel memberships in RAS-organised events, in line with Key objective 2 'Promoting equality of opportunity' of the EDI policy.

KEVIN J KILBURN FRAS; retired plastics technologist.

Special interests: Solar and lunar studies and the history of astronomy.

A life-long amateur astronomer, at least since the solar eclipse of 30 June 1954, aged four. I joined Manchester Astronomical Society in 1969 and have been a council member since 1970, serving as president on three separate occasions. I am currently vice-president and Honorary Life Member responsible for inviting guest speakers to its public lecture season that first began c1903.

I was the first secretary (1993-2003) of the North-West Group of Astronomical Societies that continues to promote inter-society communications and observations, society management and public outreach at all levels and diversity.

For twenty years I taught astronomy to adult evening classes at schools in east Cheshire. I was elected FRAS in 2000, following nomination by (Sir) Patrick Moore.

In 2002 I was a founder member of the Society for the History of Astronomy and was a council member until 2015, initially serving as its Hon. Secretary and later Vice-chairman.

Retiring from full-time work in 2013, for three years I wrote a weekly column for a local newspaper, encouraging astronomy as a hobby to readers in north Staffordshire and have recently supported two schools in the formation of astronomy groups and latterly a local heritage group to commemorate one of the first women to be elected FRAS in 1916, selenographer, Mary A Blagg. For over thirty years I have given more than 250 talks to astronomical and local history societies across the north of central England. I have long been an advocate for dark skies, liaising with local businesses and community groups, encouraging the use of well-designed and proportionate lighting, as well as promoting awards for considerate lighting.

Research interests: Since 1997 and co-discovering a copy in Manchester, I have been researching, writing and lecturing about Dr. John Bevis's un-published star atlas, *Uranographia Britannica* [c1750], aka *Atlas Celeste* [1786] with Prof Jay M. Pasachoff.

Only about 30 are currently known, making Bevis's forgotten star atlas probably the rarest example of classical astronomical cartography. In 2011 I identified a Bevis atlas in the Devonshire collection at Chatsworth as being one of only three *Uranographia Britannica* known to have been auctioned in 1785 and in 2013 I was consulted by London Science Museum and identified a mis-catalogued set of star charts as being unfinished pre-prints of Bevis's charts, ca 1748, missing for over a century.

If elected, I would encourage RAS to promote a wider appreciation of astronomical and archeo-astronomical heritage in as many ways as possible. In addition, I feel that it is vital to ensure the continued interest in the RAS, both at fundamental scientific and political levels, but particularly at grassroots level. My commitment as a public speaker and educator, at all levels of audience knowledge and background positions me to make a serious contribution to the Society.

Councillors (G)

BILL CHAPLIN, BSc, PhD, PGCert, FRAS. Professor of Astrophysics (Birmingham); Core Member STFC Science Board (2017 –), Chair, UK Space Agency Solar Orbiter Programme Management Board (2017 –), Member, ERC Universe Sciences Grant Panel (2016 –), Chair, UK Space Agency Solar Post Launch Support Committee (2013 –)

Special interests: Helioseismology & asteroseismology; the solar interior, solar cycle; solar and stellar evolution; characterisation of exoplanet systems; interdisciplinary engagement between scientists and artists

My research is focused on using observations of the natural oscillations of the Sun (helioseismology) and other Sun-like stars (asteroseismology) to further our understanding of solar/stellar evolution theory, the solar cycle and stellar variability more generally. I am also interested in characterising newly discovered exoplanet systems through precise and accurate determination of the properties of the host stars.

I chair two UK Space Agency committees covering solar/STP missions, and recently served on two ad hoc committees that reviewed programmatic requirements in the solar (STFC Solar Physics Facilities Review Panel, 2017) and wider astrophysics domains (UK Space Agency Operations Review Panel 2015 – 2016). I have also just joined the core membership of STFC Science Board. My group continues to operate the Birmingham Solar-Oscillations Network (BiSON); I also hold international leadership positions associated with the NASA Kepler/K2 Missions, and the NASA TESS Mission.

Whilst I am seeking election under the "G" heading, the fact that my research extends beyond the solar community means I believe I am well placed to help flag and promote new opportunities involving the wider RAS community. My interest in opportunities associated with interdisciplinary interactions and collaboration extends to the outreach and public engagement domains, where for several years now I have initiated and been involved in projects involving artists. This art-science thread has provided novel opportunities to use art to "draw in" audiences to engage with science. I believe there are opportunities for the RAS to use such engagements – e.g. for the upcoming "RAS 200" anniversary – as a means to reach new audiences, such as members of the general public who are interested in art but

would not usually have an interest in, or think about, science.

My commitment to helping RAS improve diversity, equality and inclusion would focus on two of the five key RAS objectives – promoting equality of opportunity; and welcoming applications from all backgrounds – in particular engaging with underprivileged communities in disadvantaged areas, including schoolchildren.

CLAIRE FOULLON, PhD (St Andrews), Senior Lecturer and RAS point of contact in the Maths Department at the University of Exeter, STFC Advanced Fellow (2012-2017), Member of RAS Finance Committee (2012-2015), main organizer of 2017 IAU Symposium 335 on Space Weather of the Heliosphere and 2018 STFC Introductory Solar System Plasmas Summer School.

Special interests: My interests encompass solar system, geo-, astro- and space plasma physics. My research areas cover a wide spectrum of the Sun-Earth system and heliophysics, combining theory, observations and data analysis. I am International Space Weather Initiative (ISWI) UK coordinator, member of ESA's Solar System and Exploration Working Group (SSWEG) and the UK Space Agency's Science Programme Advisory Committee (SPAC).

I am motivated to take on an active role on the RAS Council and to provide the ability to serve our inter-connected interests, to represent the views of our scientific communities to the best of my knowledge and to safeguard our commitments with our international partners.

Since I became FRAS more than a decade ago, I have appreciated in many ways the commitment of fellows, including councilors of all background, who have served and looked so well after what I consider is an essential organisation for the advancement of all members' (professional and amateur) vocations. I have gained much insight through serving on the RAS Finance Committee or even engaging in its consultations as point of contact for my Department. I regard the RAS as an eminent and inspiring organization, which represents and provides a source of continuity and scientific community support and a distinctive interdisciplinary platform in an ever-changing political landscape. I stand to help maintain its character and standing, not only to represent the interests of members close to my fields, mainly in the solar system (UKSP and MIST) communities, but also to defend and represent the efforts from the various RAS communities that contribute to enrich our global scientific understanding of the Earth and the Universe and our outlook in engaging in public and political spheres.

My approach is thoroughly in line with the policy of the RAS for improving diversity, equality and inclusion. Since 2015, I took an active part in data gathering, analysis, reporting and contributed to the strategic development of procedures supporting equality and diversity in an Athena-SWAN Working Group for my Department. In recognition for the Athena-SWAN Silver award then achieved (2016), I received an 'Above & Beyond Award'. Evidence of my commitment in this area can also be observed through the scientific and parallel education programs during the IAU Symposium I organized last year at the University of Exeter. Thanks to IAU and 14 cosponsors that I actively solicited, the registration fee was affordable, all activities were inclusive and nearly 50 scientists from around the world were supported to attend and present their work. Particular noteworthy was the relatively high

proportion of women attendees (36.8% of 185 participants), one of the highest ever encountered at a major international meeting in our field. Participants were also given the opportunity to engage about space weather with local young people (schools), teachers and the general public (~300 people) in an active 3-day parallel education/public outreach program. Thus, if elected, I will advocate similar principles to improve areas of concern and realize the aims of the Society. I welcome any opinion you may have and I hope you would be prepared to vote for me, so that I can be your voice on this Council.