

## 46th Annual Report of the Council

The Institute has continued to serve the interests of its members through its established programmes in the areas of education, professional development, meetings and publications, and by providing representation in areas such as the Engineering Council, Standardisation and International Affairs.

The Trustees confirm that in the exercise of their powers as charity trustees they have had due regard to the published guidance from the Charities Commission on the operation of the public benefit requirements, and the aims of the charity are carried out for the public benefit.

The strategic aims confirmed by Council remained as:

1. Advise public policy with regard to the impact and nature of acoustics
2. Increase public awareness of good acoustic design
3. Increase understanding of acoustics by other professionals
4. Developing tomorrow's professionals
5. Providing better support for members
6. Increasing members' professional understanding.

To achieve these aims Council agreed the following objectives against which progress in 2019 is listed.

Objective	Progress in 2019
To advise policy makers on acoustics	<p>The Parliamentary Liaison Group (PLG) has been active in 2019 – continuing to raise the profile of acoustics in political circles, and seeking out ways to influence how decision makers take acoustics into account.</p> <p>The PLG engaged widely on Brexit and the implications, eventually establishing the route by which to best communicate briefings into the 8 departments of Government that include some aspects of noise. The idea is to offer assistance in areas of regulation that may include acoustics. This is an area to focus on through 2020. Also ongoing efforts to represent acoustics in the oldest of the All Parliamentary Group's that is the Parliamentary Scientific Committee resulted in an invitation to present to MP's , Peers and learned societies in February 2020 on "Sound, Noise &amp; Acoustics". The PLG were also invited to sit on the Parliamentary Affairs Committee, of which two meetings have been attended.</p>

<p>Increase public awareness of good acoustic design</p>	<p>The Institute continued to sponsor the John Connell Innovation Award.</p> <p>The Sustainable Design Award was awarded to National Grid for their approach in working in partnership with the local community</p>
<p>Create opportunities for other professionals to gain a better understanding of acoustics and its interaction with their specialist field</p>	<p>The Institute continues to be involved in the joint working group on 21<sup>st</sup> Century PEIs</p>
<p>To develop links with undergraduate students</p>	<p>A careers guide for students was published and distributed online linked to an advertising campaign. It appeared between 50,000-75,000 on online searches resulting in 1500 downloads of the Guide. A further 400 hard copies of the guide were distributed.</p>
<p>To support school children's understanding of acoustics</p>	<p>The Institute has continued to fund the Edinburgh Science Festival's outreach programme to schools using acoustics based science workshops.</p> <p>A project to trial an expansion of the programme to Sheffield has been investigated and is planned for 2020.</p>
<p>To improve the operational efficiency of the Institute</p>	<p>A 2 year project to produce teaching videos for the whole Diploma Course was commissioned with a number of videos produced during the year. The aim is to introduce the videos for the 2020 Course.</p>
<p>To develop mechanisms for supporting members' professional development</p>	<p>10% monitoring of members' CPD continued. A series of conferences and events was held during the year, including online events attended by groups across the UK.</p>

## **Standing Committees**

### **Education Committee**

The IOA Diploma and Certificate courses continue to provide education and training for both members and non-members and support the eventual recruitment of new corporate members.

The Diploma in Acoustics and Noise Control is now in its eleventh year since its revision in 2008. As a result of grades obtained in 2018/19, the Diploma was awarded to 98 students from four Universities (University of Derby, Leeds Beckett University, London South Bank University and Solent University) and four distance learning (DL) centres (Bristol, Dublin, Edinburgh and Milton Keynes).

Irene Sofia Rodriguez (DL Dublin) won both the prize for best overall performance on the Diploma and that for the best performance by an Irish student.

The Education Committee continued to monitor the effects of the changes in higher education funding on students and centres and is developing learning materials for electronic delivery through a blended learning project. The AV tutorial facilities at Milton Keynes are being used regularly with overseas and other tutored DL candidates participating online. IOA Classroom (Moodle) is used by Diploma DL Candidates for shared and sharing materials. Further aspects planned but not yet developed include self-evaluation tests, online assignment submission and online feedback.

Following successful delivery to 4 students in 2019, the Dubai Acoustic Research Laboratory is delivering the experiments and instruction required for the Diploma Laboratory Module again in 2020, this time to 7 students.

In 2019, the numbers taking and passing the Certificate Courses were as follows: Hand-Arm Vibration, 17 students, 17 passes; Environmental Noise, 196 students, 170 passes; Building Acoustics Measurement, 51 students, 50 passes (including alternate delivery for ATTMA but lack of candidates continues to preclude presentations in Ireland) Workplace Noise Risk Assessment; 24 students, 19 passes. The Certificate of Proficiency in Anti-Social Behaviour (Noise) continued to be run in Scotland by Bel Noise Courses, 7 students, 7 passes. Led by Alistair Somerville and John Grant, consideration is being given to the development of an advanced certificate in environmental noise impact and report assessment.

Since 2011, IOA members, Diploma candidates and holders have been able, for CPD or other reasons, to register for additional specialist modules. Two candidates took advantage of this opportunity in 2018-19. So far professional updating of members through registration for the Regulation and Assessment of Noise Module has not been taken up.

The Education and Learning Working Group created by Council in 2019 has proposed a strategy involving both informal and formal assessments. Proposals for formally assessed courses, to be investigated through a new membership survey, include revisions and additions to the current certificates portfolio to provide 1-, 3- and 5-day alternatives, higher

level certificated CPD and end point assessment of level 4 and 6 Technicians. The Committee is keen to support “formal” CPD, where there is a defined syllabus and assessment of learning outcomes. Topics for consideration include “soundscapes”, “sustainable acoustics”, new acoustic guidance (e.g. BS 4142:2014, BB93:2014, BS 8233:2014) and devolved guidance (e.g. Scottish and Northern Ireland Building Regulations).

The Committee continues to be indebted to the support of its members, course tutors and examiners, the work of the Education Manager Professor Keith Attenborough, supported by Education Administrator Edith Francis (was Borowicz) and other members of office staff.

### **Engineering Division Committee**

The Committee met three times during 2019 and held 11 Professional Review Interview (PRI) assessments. This resulted in the Committee hitting double figures for new registrants put forward to the Engineering Council. During these interviews new assessors trained in 2018 took an active part and we have had two new assessors start the training process in 2019 by observing the interviews this year. This leaves the Committee with a wide pool of volunteers to draw on with various areas of expertise.

The new office in Milton Keynes and the video-conferencing system has been used to conduct PRI assessments with overseas candidates and the Committee has also put in place a process to allow for two interviews to be conducted at once in adjacent rooms to deal with the increasing number of candidates looking to obtain registration with the Engineering Council.

At the end of the year, the internal audit of the Committee was conducted by Mike Swanwick and this was followed by the Engineering Council carrying out their license review, which happens every five years. The Committee is pleased to report that the Institute has been granted a further five year license and would like to thank the hard-work put in over the year by the volunteers and IOA Staff.

Moving forwards, new requirements from the Engineering Council require Institutes to put in place procedures to remove members who do not engage with CPD from the register. These come into place from January 2020 and the Committee will be working with the IOA’s Membership and CPD committees to comply with this. The Committee will also begin work on getting approval from Engineering Council to award EngTech registration to support the work being done on an Apprenticeship scheme.

### **Medals and Awards Committee**

The 2019 awards were made at various meetings during the year.

The Raleigh Medal was awarded to Prof Claus Elberling at the Danish Technical Audiological Society, DTAS 2019, Denmark

The A B Wood Medal 2019 was awarded to Julian Bonnel at the ASA Conference, December 2019

The R W B Stephens Award was presented to Raf Orłowski at Acoustics 2019 in Milton Keynes, as were the Peter Lord Awards to, Luxonic Lighting & Arup, the Sustainability Award to Woolley Shepherd, Services to the Institute awards to Paul Shields and David Lewis.

At Reproduced Sound 2019 the Peter Barnet Award was presented to Frances Rumsey and the Young Persons Innovation Award to Adam Hill.

The Professor D W Robinson Prize was awarded by ISVR, Southampton to Thomas Davis.

The Best Diploma and Irish Student was awarded to Irene Sofia Rodriguez

### **Meetings Committee.**

The Committee met 4 times during 2019

The membership of the Committee remained unchanged from last year's report. The Chair of the Committee remains as Hilary Notley, Chris Turner remains as secretary and Robin Woodward is the Young Members' representative ably assisted by Kial Jackson. Chris Skinner, Martin Lester and Bridget Shield continue to be valued members of the team, whilst Peter Rogers' input ensures the meetings programme is designed with the aims of the Sustainable Development Task Force in mind at all times, and we continue to benefit from his role in the Parliamentary Liaison Group.

The Committee presided over the organisation of 14 events during the year covering a wide variety of topics. Four of these events were organised with the UK Acoustics Network (UKAN). Special thanks are due, as always, to Linda Canty for her fantastic efforts in coordinating the organising committees resulting in events which were thoroughly enjoyed by delegates from across the acoustics spectrum. Acoustics 2019 in Milton Keynes was a notable event celebrating the relocation of the IOA offices to the town.

In addition to Acoustics 2019, there were 13 one-day events consisting of a mix of meetings and workshops.

Sadly, the meeting on Bio Acoustics had to be cancelled due to lack of registrations, a decision that was not taken lightly.

The feedback from the events' questionnaires in general continues to be very favourable and many of the proposals for future meeting topics are passed to the relevant specialist group. This questionnaire will be reviewed in 2020 to make sure that the information gathered is still relevant and of use to the meeting organisers.

The financial performance of meetings has continued to be closely monitored and we continue to review the accounts and learn from our experiences so that deficits may be minimised in the future and so that events overall continue to generate a moderate surplus. The surplus is often ploughed back into supporting more specialised events.

This year the Committee made a small surplus, although at the time of writing it is not possible to provide exact figures due to computer issues associated with a change of accounting software.

Additionally, the Committee made progress on its aims to develop the digital meetings strategy and increase communication between the centre, the specialist groups and the regional branches.

At the end of the year H Notley stepped down as Chair. The committee would like to thank Hilary for her years of service to the committee as Young Member, Secretary and, most recently, as Chair. C Turner has been appointed as Chair of the committee from January 2020 and K Jackson has assumed the role of secretary.

### **Membership Committee**

The Committee met 4 times during 2019

The committee is in its second year without a Young Member's representative.

The CPD Sub-committee continued its work through the year meeting twice to assess member's CPD and to provide constructive advice where needed. The committee are concerned at the lack of response from those selected to provide CPD evidence and are keen to have Council's guidance on what to do in these cases.

Further work was undertaken in support of the provision of maintenance of CPD guidance for members whose career position required them to maintain their current level of knowledge. The CPD Committee has done some excellent work (largely by Rachel Canham) to update the forms and guidance. CPD presentations were given at *The Art of Being a Consultant*.

The introduction of the two new roles Vice Chair Code of Conduct (Paul Freeborn) and Vice Chair Continuing Professional Development (Richard Coleman) has helped to share the workload.

There were five Code of Conduct (CoC) cases, three of which are ongoing.

We continued with a monthly conference call with Committee members involved with the CoC cases to help maintain momentum on CoC cases and resolve them as quickly as possible. These meetings only take place on the months we do not have a membership meeting.

During the year 241 membership applications were assessed by the Committee; less than the previous years (2018 309, 2017 304). Of these 186 were elected to membership of various grades, representing a significant decrease (2018 277) on the previous year's figures. Current membership of the Institute now stands at 3034 (2018 = just over 3,000) members (excludes Student members).

There appears to have been a considerable increase in challenges to the Committee's decisions which has taken up a considerable amount of time for IOA staff and the Membership Committee to address. This is not sustainable. To address this, we are and continue to produce guidance on process and lines to take with challenges.

Figures for last two years are included below:

<b>2018</b>	<b>FIOA</b>	<b>MIOA</b>	<b>AMIOA</b>	<b>Tech</b>	<b>Affil</b>	<b>Sponsor</b>	<b>Total</b>
<b>Applicants</b>	<b>6</b>	<b>117</b>	<b>149</b>	<b>23</b>	<b>9</b>	<b>5</b>	<b>309</b>
<b>Elected</b>	<b>4</b>	<b>100</b>	<b>135</b>	<b>18</b>	<b>9</b>	<b>4</b>	<b>270</b>
<b>New Members</b>	<b>3</b>	<b>33</b>	<b>130</b>	<b>17</b>	<b>6</b>	<b>3</b>	<b>192</b>
<b>Resigned</b>	<b>4</b>	<b>10</b>	<b>13</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>31</b>
<b>Deceased</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>

<b>2019</b>	<b>FIOA</b>	<b>MIOA</b>	<b>AMIOA</b>	<b>Tech</b>	<b>Affil</b>	<b>Sponsor</b>	<b>Total</b>
<b>Applicants</b>	<b>4</b>	<b>104</b>	<b>99</b>	<b>18</b>	<b>13</b>	<b>3</b>	<b>241</b>
<b>Elected</b>	<b>2</b>	<b>75</b>	<b>80</b>	<b>14</b>	<b>13</b>	<b>2</b>	<b>186</b>
<b>New Members</b>	<b>0</b>	<b>20</b>	<b>73</b>	<b>14</b>	<b>13</b>	<b>2</b>	<b>122</b>
<b>Resigned</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>11</b>
<b>Deceased</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>

The Committee would like to thank Emma Lilliman who has done an outstanding job at taking over the running of Membership and CPD.

Focus for 2020 will be on improving consistency of application reviewing and decision making and improving guidance for CPD and for membership applicants for all grades. We will continue to prepare for the new Acoustic Technician Apprenticeship.

### **Publications Committee**

Warners Group Publications has been publishing the Acoustics Bulletin since the end of 2017. It continues to be edited by Nicky Rogers, supported by an editorial review board of experts, Alex Shaida and is overseen by the IOA Publications Committee. The long-planned redesign is well underway and will start with the January/February 2020 issue, it will as closely as possible match all the revamped IOA communications style, tying in the website and newsletters etc.

The plans to produce additional supplements to the Acoustics Bulletin are working well, we published a 32 page careers supplement last summer and we are currently working on a 40 page innovations in acoustics supplement – to be published early 2020, to coincide with the International Year of Sound. Based on the success of these a further supplement is planned for later in the year.

During 2019, Alex Shaida, the IOA's marketing manager, led the development a number of videos and launched several digital advertising campaigns. There was a focus on online platforms such as Google AdWords and Facebook, as well as maintaining trade advertising and experimenting with some new forms of communications such as Instagram and setting up a Facebook buyers group. There was a full brand experience review that in 2020 is scheduled to roll out and help provide a new and consistent brand experience across all forms of IOA communications, overseen by an experienced creative director. A complete website revamp was commissioned in 2019, which is set to roll out in early 2020, and will help to extend the IOA's reach. Improvements were made to the monthly newsletter, Bulletin, trade ads, social media activity, and other forms of communication to IOA members and beyond. A dedicated campaign was activated from March to early September across both digital and traditional media channels to help promote the IOA Diploma, which has led to a marked increase in registered candidates for the 2019-20 cohort. More emphasis was also placed on metrics to measure reach and engagement, especially across the digital channels.

Dennis Baylis continues to ensure advertising space is sold in the Acoustics Bulletin and other publications. Overall, 2019 advertising revenue was midway between 2016 and 2017, and some 12% overall down on 2018, which was the best year by some margin. Job advertisements have been particularly hit – but not significantly in web postings (this is slightly down) but rather in the use of loose-leaf flyers (none this year). For 2020, most regular advertisers have rebooked and there are some other good leads for new and returning customers.

The Committee continues to review the Acoustics Bulletin, Acoustics Update, proceedings, style and format, library, and social media presence.

During the year the Committee has been joined by Cameron Salisbury and Reuben Peckham.

Thanks are due to all Committee members for volunteering their time and enthusiasm throughout the year and all those IOA members who are part of the Editorial Board for the Bulletin who review the technical contributions prior to publication.

Thanks are also due to IOA Office, Allan Chesney, Alex Shaida, Nicky Rogers and Dennis Baylis. Thanks to everyone who contributes to the Bulletin and other publications with meeting reports, technical contributions, letters, book reviews, blog posts and everything else.

### **Research Co-ordination Committee**

In 2019, meetings of the Research Coordination Committee (RCC) were held in June and December at the Defra offices in London. Professor Abigail Bristow is the Chair of the Committee, Professor Kirill Horoshenkov is the Secretary.

RCC continued to work with the EPSRC UK Acoustics Network led by Prof Kirill Horoshenkov and Prof Richard Craster. Over the last two years UKAN and RCC organised 60 joint meetings and workshops to bring together industry and academia working in acoustics. Together



(UKAN and RCC) completed the *Value of Acoustics* exercise according to which there are over 700 companies in the UK working in acoustics. Their apportioned revenue is £4.6bn which is approximately 0.6% of the UK's GDP. These companies employ 16,000 people working in acoustics. The report was published in March 2019. The RCC is working with UKAN to develop UKAN+, the proposal will be submitted to the EPSRC in February 2020. Input from the industrial members of the RCC is invaluable in this process.

RCC continued to monitor the research grants in acoustics through <https://gtr.ukri.org/>. The results from this exercise are available on <https://acoustics.ac.uk/resources/>.

Shahram Taherzadeh (Open University) continues as the RCC representative on the Publications Committee.

New members of the RCC include: Professor Stephen Dance (London Southbank University) and Lisa Lavia (Noise Abatement Society)

Mike Swanwick (Rolls Royce) has decided to stand down from the RCC. Mike has made a great contribution to the RCC and will be missed. Thank you Mike.

## **Specialist Groups**

### **Building Acoustics Group (BAG) 2019**

The IoA's annual conference took place in the impressive MK Stadium in Milton Keynes in April 2019. The BAG session took place on Tuesday 14<sup>th</sup> April and was full of interesting, educational papers. As usual, the dinner and breaks allowed us all to re-establish old friendships and create some new ones.

BAG was also responsible for organizing a one-day meeting on Open Plan Offices in Birmingham on Thursday 5<sup>th</sup> December 2019. This was extremely well attended and allowed acoustic professionals to see the different approaches to Open Plan Office Design as well as discussing the imminent publication of ISO/DIS 22955. The successful day was concluded by a great fun meal at the excellent curry house Asha's.

We have continued our work to advise and comment on standards and guidance documents. These include:

- ISO/DIS 22955 Acoustic quality of open office spaces
- Draft ISO/DIS 10848-5 Acoustics — Laboratory and field measurement of the flanking transmission for airborne, impact and building service equipment sound between adjoining rooms — Part 5: Radiation efficiencies of building elements
- ISO 717-1: 2013 Acoustics – Rating of sound insulation in buildings and of building elements – Part 1: Airborne sound insulation
- Approved Document F - provides guidance on building ventilation, including building air quality and preventing condensation in a domestic or non-domestic structure
- Pro PG
- BS EN ISO 12354 parts 1, 2, 3, 4 & 5

We are well on the way to organising our sessions for the Annual Conference in Chester. Chester is a beautiful city and we are very much looking forward to learning new things and to having some fun.

### **Electroacoustics Group**

The main activity of the Electroacoustics Group during 2019 was the organisation of the 35<sup>th</sup> annual Reproduced Sound conference. This year, the conference was held in Bristol at the Bristol Hotel in November. This is the second consecutive year that this venue has been used for this conference as it proved very popular in 2018. The organisation of the conference was once again very much a team effort, with tasks evenly spread amongst the EAG committee members. The conference was well attended with around 100 registered delegates, considerably more than last year, and the committee agreed that it was a success overall. The Peter Barnett Memorial Award for 2019 was awarded at the conference to Francis Rumsey who followed with a fascinating talk on psychoacoustic quality evaluation. The conference dinner was again held on board the SS Great Britain, which proved to be a popular venue. To supplement the wide range of technical presentations, delegates were also treated to a demonstration and buffet on the Tuesday evening, organised by Funktion One Research, an after-dinner talk by Jim Griffiths on his experiences of sound management at concerts and festivals, and an off-site visit to Colston Hall in Bristol on the Thursday evening. The conference is planned to remain at the Bristol Hotel for 2020.

There have been a few changes to the EAG committee in 2019: Robin Cross retired after many years of service, including a stint as chairman; the Committee is extremely grateful to Robin for all his efforts. At the AGM in Bristol, the Committee was pleased to welcome two new members, Dan Pope and Ludo Ausiello. The Committee met on three other occasions during 2019: in January, we carried out a review of RS2018 and drafted the call for papers for RS2019, the abstracts were reviewed, and the programme mapped out in June, and the details of the conference were finalised in September.

### **Environmental Acoustics Group**

In October 2018 the World Health Organisation published its Environmental Noise Guidelines for the European Region. The guidelines in part replace the 1999 Community Noise Guidelines, and augment the Night Noise Guidelines 2009. A conference was held in January 2019 with invited speakers to provide insight into how the guidelines were developed and what they mean, followed by debate on the strength of the evidence base and their possible implications to the assessment and management of environmental noise in the UK in years to come. 140 delegates attended and the key points discussed were published in the IoA Bulletin in April.

The Environmental Noise Group held a well-attended session at the Annual Conference in Milton Keynes in May 2019. Over 100 members attended the Environment noise sessions which focused on the WHO Guidelines, tranquillity assessment, planning, aviation noise policy and low frequency noise.

At the Annual General Meeting Robert Miller left the Committee and we would like to thank Robert for his enthusiastic contribution as Young Members Representative. Robert is replaced by Toby Walton of RBA Acoustics.

### **Measurement and Instrumentation Group**

During 2019, the Group has organised one one-day meeting, and a one-day session at the Annual Conference.

The one-day meeting was held in London on 16<sup>th</sup> October, entitled “Sound Sensing in Smart Cities 2”, organised by Ben Piper and Paul McDonald. This was a follow-up for a meeting held in Salford some years ago on this emerging new technology field.

It was very well attended, and Paul’s presentation will be repackaged for inclusion in the Institute’s forthcoming Innovations Supplement.

The group also provided one day of papers and presentations at the Annual Conference in Milton Keynes on 13<sup>th</sup> May, organised by Simon Bull and Mark Dowie, based on our successful Instrumentation Corner series of articles for the Bulletin. This was well-received, and we anticipate repeating this format at the 2020 conference in Chester.

Work is in progress already for a one-day meeting in the Autumn covering ‘Acoustic Imaging’.

Over the past year, the Group’s Committee members have continued to contribute to Instrumentation Corner in the Bulletin, the latest being No 64 in this Jan/Feb 2020 issue, which has produced some interesting discussions and articles, and these are scheduled to continue for the forthcoming year.

All available articles have now been edited and made available on the Members’ Page of the Group on the IOA website.

The Committee also pooled their resources and knowledge to produce a 12-page supplement in the September/October 2019 issue of the Bulletin, entitled ‘A Guide to Sound Level Meters’. My thanks go to Sue Dowson, Richard Tyler, Ben Piper and Ian Campbell for their contributions.

The Committee is now working on a project which will entail laboratory testing selected low-cost sound level meters to the IEC61672-3:2013 standard, for report in a future Bulletin.

My thanks go, as ever, to all members of the Committee for the active roles they take in all aspects of the Group’s activities.

### **Musical Acoustics Group 2019 Report**

The Group has continued to make progress with October seeing the seventh consecutive annual meeting and AGM. This time the meeting was held at the beautiful Henry Wood Hall in Central London with the kind support of the UK Acoustics Network (UKAN). The meeting was the most successful yet on topics including room acoustics, measurement signals, noise control, sound exposure, computer simulation and cochlear implants. Earlier in the year the

Group also contributed to the IOA Spring Conference with a joint session with the Hearing and Speech Group. It was evident that the subjects discussed at the two meetings covered a diverse range of topics which were both presented and demonstrated through musical performances. To give a few examples refurbished halls were discussed, artificial reverberation systems, pitch drift amongst choral singers and pipe organ flutter. In July Musical Acoustics contributed to the special issue of the Acoustic Bulletin extolling the virtues and breadth of the subject. The Management Committee of the Group has been active with six regular meetings using internet conferencing facilities (phone, smartphone, tablet and computer), thereby avoiding any unnecessary travelling. The Group expects to be represented at *Acoustics 2020*, and have finalized a joint one day meeting with the Hearing Conservation Association on Music and Hearing at the Royal Academy of Engineering. The highlight of the year was a performance by pianist Anastasia Matkovskaia from the Royal Academy of Music who give a beautiful recital of Beethoven's Piano Sonata Op 7. Our thanks go, as ever, to all members of the Committee for the active roles they take in all aspects of the Group's activities.

### **Noise and Vibration Engineering Group**

Two full Committee meetings were held during 2019, plus a number of sub-group meetings to focus on planning for the two events that were organised.

The first event was participation in Acoustics 2019 in Milton Keynes, where an all-day session took place with talks on a wide variety of topics – testimony to the diverse interests of the members of NVEG. Topics included computational simulation, aero-acoustics, structurally radiated noise and vibration & vibration fatigue.

The second event was a one day meeting in London on the topic of low noise design, partnered with the Health and Safety Executive (HSE). The aims of the event were:

- 1 – Provide information on noise control practice to IOA members and industry
- 2 – Encourage IOA members to get more involved in industrial noise control
- 3 – Encourage industry to ask more about noise and think more about noise.

Video of the event was captured which is available on YouTube and other channels. The event was reasonably attended, and the audience was primarily acoustic consultants. We were hoping for more industry representation, and are looking at ways to drive this for future events.

Planning for future events is also underway. The first commitment for a 2020 session for the spring conference. In addition we are considering potential themes for a one day event in 2020 or early 2021.

### **Physical Acoustics Group**

Following the revival of the PAG by Mike Swanwick in 2014, the now better established group, has contributed to the Institute's programme of events in 2019 in two ways: Firstly, by

holding a well-received session at *Acoustics 2019* in Milton Keynes, comprising of nine academic papers, hosted in the spectacular venue, the MK Stadium.

We shall continue our endeavour's to represent the PAG at *Acoustics 2020* with a similar, well-represented Physical Acoustics Session at the IOA's flagship conference.

The group also held a dedicated co-organised "tutorial-day" event *Physical Acoustics beyond Academia/Spin outs in Physical Acoustics*. Co-organised by the IoA Physical Acoustics Group and the IOP's Physical Acoustics Group.

The event presented an excellent opportunity of the inside world of how spin outs and start ups are born, based on research in physical acoustics. The journey of formation and growth of four companies (Carbon Air Ltd, Sonobex, Novosound and Stingray Geophysical) was presented from the people that developed the technology and took it to its commercialisation stage. Each company is currently at a different stage of maturity and the speakers were happy to share advice on "best practice" and "worst practice". It was particularly interesting to compare these tips from each company and find that many of them appear in more than one lists, reinforcing their value. Another noticeable common trend in all presentations was the enthusiasm with which the speakers presented their personal journey. This added to making them very approachable and led to further insightful post-talk conversations. On a relevant question, several members of the audience stated that they were planning their own steps towards science and technology based start ups and the event gave them the opportunity to talk to people who had first-hand experience in crossing the threshold beyond academia.

We shall continue to provide a representation for physical acoustics within the IOA as this has been recognised as being fundamental to the requirements of what is the foremost-learned society for acoustics in the UK. Albeit we remain to communicate with our sister PAG within the Institute of Physics to avoid duplication of effort, and are looking to develop this relationship further and co-organise more events in the future.

In addition to the above, we are continuing to look for new members to the Committee as we are always in need of people who can help with finding conference papers or speakers who would like to present their work during PAG sessions as part of future conferences. The group will also consider supporting ideas and requests for regional evening meetings, and collaboration with other specialist groups and institutes. Please contact the chair via the link on the PAG page of the IOA website.

### **Senior Members' Group**

The Senior Members' Group held only one Meeting this year which was on 30th April 2019 at the Civil Service Club, Great Scotland Yard, Westminster, London.

The day started with a Committee Meeting which discussed at length the possibilities for future meetings, venues and potential dates in 2020 to avoid the winter months and the peak summer months; and to reduce, as far as possible, the cost and duration of travel to potential

meeting venues, taking into account where SMG members reside (from postcode information).

There followed talk by David Ball, a retired Senior Environmental Health Officer. Having worked as an Environmental Health Officer for over forty years it is no wonder that he had many recollections of his work. During the talk David recounted his experience some of which are included in his recently published book of his written memoirs. He shared some of his most colourful entertaining stories that you are ever likely to encounter in a memoir. His subject matter included food hygiene, noise pollution, health and safety and housing standards in both the public and commercial sectors.

The meeting concluded with the Group AGM, with 12 members attending. Chairman and 2 committee members were re-elected. Communications with members, and the topics, locations and dates for meetings, were further discussed. There was agreement to focus on identifying speakers and venues for future meetings which would appeal to a wider range of SMG members than has previously been achieved; and to open future meetings to other IOA members. The Group would continue to support to the IOA CPD programme.

There have been no further meetings of the Senior Members' Group during 2019. The next AGM is planned for April/May 2020. The meeting will need to elect a new Secretary since Michael Forrest will be standing down, after having been the Secretary for the Group since it was first formed.

### **Speech & Hearing Group**

The Speech & Hearing Group hosted or co-hosted four events in 2019. The first was a session on "Speech, Hearing and Bio-Acoustics" at the Institute's "Acoustics 2020" Spring Conference in Milton Keynes. In June 2019, a talk entitled "The Problem of the Location of the Second Sound" was given immediately after the group's AGM by Professor Michael Akeroyd of the University of Nottingham and MRC Institute of Hearing Research. In October, a talk (jointly hosted by the London Branch) was given by Prof. Carl Hopkins of the University of Liverpool on "Assessing speech security for confidential discussions in meeting rooms". Finally, the group co-hosted an evening event organised by the North-Western Branch where Prof. Harvey Dillon and Dr. Michael Stone spoke on "Some things you might like to know about Hearing Loss" and on "Why improved SNR may not improve Intelligibility", respectively.

At the group's AGM, all Committee members who were due for re-election and wished to stand again were duly reappointed. During 2019, Dr. Rob Conetta chose to stand down from the Committee after some eight years of service, whilst Una Brown (WSP) was elected as an ordinary member and Dr. Amelia Gully (University of York) became Younger Members' Representative. There are vacancies for two further ordinary members of the Committee, and nominations are currently being sought for these posts.

The group has a session planned for the Institute's Conference in Chester, and hope to have a guest speaker (to be confirmed) to give a talk on the evening of the group's AGM in May or June 2020. Further events are being planned for later in 2020.

The Group Committee met three times (in January, June and October) during 2019. The Group continues to liaise with other professional bodies (such as the British Standards Institute, the UK Acoustics Network, the Royal College of Speech & Language Therapists and the British Society of Audiology) and also other specialist groups (including the Building Acoustics Group and Musical Acoustics Group) and local branches of the Institute regarding topics of mutual interest. Joint meetings in collaboration with some of these are being planned for the future. The Group's committee now has a questionnaire ready to circulate to members during 2020 in order to better discern what the membership would like and need from the group in terms of activities, events and services.

Finally, a suggestion to widen the remit of the group to include Bio-Acoustics, especially in relation to Hearing, Vocalisations and other Acoustic Communication in Animals and Birds, has been discussed both by the Committee and at the group's 2019 AGM. It is proposed to adopt this change at the 2020 group AGM provided that there is no objection from any other group of the Institute.

### **Underwater Acoustics Group**

Since the 2019 AGM, the Underwater Acoustics Group Committee has been undertaking the planning of the following conferences:

- ICUA2020.
- The bioacoustics conference in Loughborough was cancelled.

The AB Wood Medal was presented to Nathan Merchant at the UKUS Oxford conference. Several members of the Committee are on the ISO TC43 SC3 and are helping develop new ISO Standards. The 'Determination of source levels from deep water measurements' standard was recently published.

The IoA have suggested that the IoA Diploma is extended to include underwater acoustics. Some diploma candidates have asked for underwater acoustics as part of the Diploma and in particular the impact of underwater noise. Options for this include, a module on current diploma or endorsement of an external course. Council are happy for a workshop to be run with external stakeholders to discuss the options. The UAG agreed to lead this workshop with the relevant stakeholders.

An important issue that requires attention is trying to increase the interest in the AB Wood medal amongst European candidates.

### **Young Members' Group**

The Group Committee meets quarterly with three meetings by telecom and one meeting in person. In 2019, we held our face-to-face meeting in December simultaneously in London and Manchester, which was then followed by a social gathering in London.

To promote the benefits of IOA membership to students we gave presentations at the University of Southampton, the University of Salford, and Leeds Beckett University. A more

comprehensive presentation on the range of careers in acoustics was given to students at an acoustics careers fair at the University of Southampton.

We contributed significantly to the special edition of the IOA Bulletin: 'Careers in Acoustics', providing insight into why members chose to study acoustics, where a career in acoustics can lead, and interesting challenges faced as an acoustician.

After receiving feedback from a number of young members that they don't often hear about the social events being held, we had a drive to raise awareness on how to sign up to be a young member on the IOA website. To do this, we created a promotional poster which was shared on all IOA social media channels, emailed to all existing young members to spread the word, and taken along to numerous IOA events.

Several successful social events were held for young members including two competitive darts events at the Flight Club venues in London and Manchester, a South West Branch pub quiz, an Eastern Branch brewery tour, and early evening social drinks at the IOA Acoustics 2019 Conference.

Following much discussion, it was agreed to change our name to the Early Careers Group. We consider that the new name is more inclusive for those starting a career in acoustics later in life but still being in the early stages of their career and is more in line with other institutions and professional bodies. It is also considered a good opportunity to promote the group and increase numbers. From January 2020 we will be known as the IOA Early Careers Group.

In 2020 we will kick off the year by promoting our new name and have plans underway to host inter-professional networking events in London and Bristol. Together with the UK Acoustics Network Early Careers Group, we will host an Early Careers Session at the IOA Acoustics 2020 Conference, with the aim being to encourage stronger connections between practitioners (i.e. consultants, industry) and those in academia. We would like to support IOA activities associated with the International Year of Sound 2020 and are also hoping to hold a number of social events throughout the year, details of which will be provided on the events page of the IOA website.

## **Branch Reports**

### **Central Branch**

The following meetings were held in 2019

1. *Amendments to BS4142:2014 Draft for comment*, Richard Collman, Acoustical Control Engineers & Consultants – Attendance 34, Leica Geosystems Ltd Milton Keynes (7.02.19)
2. *Vibration Isolation Theory & Practice*, Daniel Hall, Christie and Grey Ltd – Attendance 15 – IOA Milton Keynes (14.03.19)
3. *An Introduction To Sound Masking*, John Caton MInstSCE Biamp/Cambridge Sound – Attendance 10, BRE Watford (02.05.19)



4. Milton Keynes Theatre - Backstage Tour and Presentation From Raf Orłowski (Ramboll) Attendance 12 Milton Keynes Theatre and Gallery
5. *Residential cooling via Ventilation A Presentation by Chris Kemp Zehnder Group UK Limited* – Attendance 18 Leica Geosystems Ltd, Milton Keynes (24.09.19)
6. *Career Development - CEng and IEng Getting Professionally Registered, Blane Judd Engineering Manager IOA* - Attendance 16, IOA Milton Keynes (29.10.19)
7. *Consultation Workshop: The Future Homes Standard: changes to Part L and Part F of the Building Regulations for new dwellings*, Nick Conlan – Apex – Attendance 22 – BRE Watford (03.12.19)

A good mix of topics and venues. For 2019, the Central Branch has been mainly based at our traditional home of Milton Keynes with the fantastic facilities at Leica as well as BRE in Watford.

To achieve our objective of arranging visits to “laboratories and other establishments or places” a visit was arranged to Milton Keynes theatre which is both an establishment and a place. Attendance was lower than expected most likely to be due to the daytime rather than evening meeting. Our thanks to Raf for taking time out to visit the branch and talk about the Theatre.

Our meeting on Career Development with Blane Judd was the first Central Branch recorded at IOA HQ and uploaded and promoted (by others) onto Vimeo and publicized via the Acoustics Update newsletter. The recording system is exceptionally easy to use and could benefit all members further in the future.

Attendance was on a par for the central branch. Meetings with either BS4142 or Approved Document E will be very well attended as can be seen from above. Other more specialist topics less so.

Thanks to all involved. Expenses for 2019 events was £463.

Plans for next year are to continue as previous years and to co-operate more with other local professional institutions and organizations.

### **Eastern Branch**

The Branch had 2 more meetings than in 2018 and up 3 from 2017. Again we have tried to maintain a focus on technical talks rather than allow too many sales based meetings.

As always within our branch so much more can be done and we will be increasing communication through IOA HQ to encourage new, existing and budding members from this region to attend the meetings.

The CPD audit system should encourage members to come out and engage. Details of the meetings held are given below;

## Eastern Branch Meetings 2019

Title	Speaker	Date Held	No of Attendees
An Introduction to Sound Masking	John Caton	28/02/2019	19
WHO Guidelines 2018 and What They Could For the UK	Dani Fiumicelli	28/03/2019	24
Auditorium Acoustics	Rob Harris	25/04/2019	21
Base Isolated Buildings	James Talbot	23/05/2019	13
Uncertainty with Rail-Induced Vibration Assessments	Jorge De Avillez	23/05/2019	13
Acoustic Camera and Noise Source Definition	John Campbell	04/07/2019	20
Alternatives to ETSU-R-97	Andy McKenzie	26/09/2019	8
Envelope & Adaptive Acoustics and Sound Testing Software	Ze Nunes & Curtis Thompson	07/11/2019	20

Our average attendance is at 17 members per talk which is one down from 2018, but with more talks in the year, it remains positive. However for a region so densely populated by acousticians, it leaves significant room for expansion. We just don't seem to get the uptake we should have given the number of members in close proximity to the meeting venue most used last year which was Colchester United's stadium. We are always interested in taking the regional talks 'on the road' and would welcome any ideas for venues which would be strongly attended.

Our July meeting at the Greene King Brewery was a huge success and we got the chance to see an acoustic camera in action, while getting a brewery tour and the odd sample too. This shows that there is a strong social aspect to the branch if we can unlock it.

At the risk of sounding like a broken record a social event and day conference have been talked about for some time now and it is hoped that with a more involved Committee, that one or even both may come to fruition, possibly at the same time or on the same day. It's my intention to bounce ideas around with the Committee with suggestions always welcome from any other members or attendees of the branch. Then we shall hopefully commence planning and keep the branch members informed via IOA communication.

My thanks to all of our attendees over 2019 and I look forward to seeing you again in 2020 for the first meeting and AGM.

### **Irish Branch**

The Irish Branch held two events during the year. The first was held at the AWN Consulting Offices in Dublin on 13<sup>th</sup> February 2019, where the annual Gerry McCullagh Lecture was presented by Rupert Thornley-Taylor, who gave an enjoyable presentation titled *Lessons learned from 55 years in acoustics*. Acoustics has come a long way since 1964.

The second meeting was held at the same venue on 20<sup>th</sup> November 2019. In a presentation titled *Transport Infrastructure Ireland's Phase III Strategic Noise Mapping of Major Roads in Ireland - A Centralised Approach*, Stephen Byrne of the Environmental Policy and Compliance Section of Transport Infrastructure Ireland reviewed the history of END noise mapping in Ireland and how round 4 will be implemented, particularly with respect to the development of a centralised predictive model for use by local authorities. In the second half of his talk, Stephen described the incorporation of CNOSSUS-EU into the mapping process, and reviewed progress with the various predictive model suppliers. The talk was followed by an extended question and answer session.

It had initially been intended to hold the Irish Branch AGM on 20<sup>th</sup> November 2019. However, a decision was taken by the Committee to postpone the AGM until early 2020 to allow certain election matters to be resolved, chiefly in relation to the introduction of electronic voting for members.

### **London Branch**

It's been another busy and successful year for the London branch. We had 11 meetings in 2019 with just a short break over the summer period.

It feels like we were able to showcase a range of topics in 2019 including very research-based presentations to a mock planning inquiry and finishing off the year with a talk on the future of acoustics.

In January, we kicked off 2019 with the usual IoA diploma student project presentations, an annual slot that we are proud to support. We had presentations on overheating, impulse sound sources and sound insulation and auralisations in meeting rooms.

In February we had a sell-out presentation from Professor Jan Kang on *Designing Soundscape in Urban Open Public Spaces*. We heard about integrating soundscape design into the engineering process and how we may do this.

March was film night with the thought-provoking *In the Pursuit of Silence*. It was promoted as a meditative film about our relationship with silence and the impact of noise on our lives.

In April we held a mock planning inquiry which was organised by the Young Members group and saw some brave young members give evidence and be cross examined – well done to them!

Trevor Cox presented to us in May about his book 'Now You're Talking' which explores the human voice and recreates a 1920s mass psychoacoustics experiment, amongst other things.

We had a joint London Branch and Speech and Hearing Group meeting in June. Professor Michael Akeroyd presented on 'The Problem with the Location of the Second Sound'. Michael spoke to us about locating sounds in complex, acoustically cluttered environments.

July was the LSBU Masters student presentations. We heard from John Cane about cycling-induced hand arm vibration. Graeme Littleford presented on voice alarm systems and Jack Traveller on the accuracy of predicting the directivity index of acoustic louvres.

Another sell out presentation was in September which was by Rob Harris on Developments in Auditorium Acoustic Design.

We had a second joint London Branch and Speech and Hearing group meeting in October when Carl Hopkins joined us to talk about Speech Security in meeting Rooms. We had a first for the London branch in October where we had live streaming of Carl's presentation. I hope that as we become more familiar with the technology and the best set-up for live streaming, that we are able to share our evening meetings with more of the IoA membership, speaker approval permitting.

November was a talk from Will Minting about construction noise and vibration projects which he had worked on, including the well known Hiscox v Pinnacle case and other high profile cases.

We finished the year with a talk on the Future of Acoustics where we heard from three speakers which included a summary of the UKAN Sound Economy report, the IoA's STEM activities and the new Acoustics Apprenticeship. It was great to end the year by talking about the future of our industry.

A huge thank you to all of our 2019 speaker for their informative presentations and support of the London branch.

It would be remiss of the branch to not mention the passing of Bob Peters last year. Bob was a member of the London Branch Committee for many years and we would like to recognise his contributions to the branch and the IoA.

At the start of 2019 Louise Beamish become chair of the London branch, a role that had previously been held by Jim Griffiths for many years. Jim's work for the London branch as chairman for the last 15+ years is something to be proud of. We intended to formally thank Jim for his contributions to the London branch at the start of 2019, but he seemed always to be travelling to glamorous places for work when we had a Committee meeting! However, he deserves a big thank you for everything he's done for the branch over the years.

As you may know, the London Branch committee members are all volunteers and make their contributions in their own (or work) time. I would like to thank them all for their support of the Committee.

Finally, London Southbank University also deserves a thank you for hosting three meetings last year for which we needed a larger room. We also have our March 2020 presentation at LSBU and thank them for their ongoing support.

We hope that the 2020 presentations will be as varied in topic and as successful as last year's. Looking ahead, our February talk will be from Geoff Leventhall on Infrasound Perception and Stephen Dance from LSBU will be delivering a presentation titled 'Face the Music; Hearing and the Sound of Performance' in March at LSBU.

### **Midlands Branch**

The Midlands Branch had another successful year in 2019, holding nine evening meetings with an average attendance of 26. Although the total number of meetings held was slightly down on past years, the level of attendance was very similar. We continued to provide a broad range of talks on environmental, musical acoustics and other general acoustics topics as well as a couple of more bespoke talks.

Our first meeting of the year in January attracted the highest attendance of 43 people. They all came to hear Dani Fiumicelli, Technical Director, Temple Group talk about the Good Practice Guide for the Assessment and Control of Noise from Places of Entertainment.

Equally popular were Dr Islah Ali-MacLachlan's (a Senior Lecturer and Course Director of Sound and Multimedia Technology at Birmingham City University) overview of the 'development of automated analysis tools for stylistic traits in ITM flute performances' and Dr Adam Hill; Senior Lecturer in Audio Engineering at the University of Derby talk on 'Acoustics and Sound Reinforcement with regards to Noise Exposure and Pollution for Outdoor Music Events'.

We continued to hold our traditional annual IOA Diploma presentation evening, featuring three of the best IOA Diploma projects from the 2018/2019 intake at the University of Derby. This year stars were Dr Islah Ali-MacLachlan, Nate Spencer & Ilaria Fichera.

In November we held a joint meeting with the Audio Engineering Society at Walsall Campus of University of Wolverhampton where Trevor Cox, Professor of Acoustic Engineering University of Salford University providing a fascinating talk on how human conversation has evolved from the Neanderthals to Artificial Intelligence.

We rounded off the year with a talk on 'Designing Soundscape in Urban Open Public Spaces by Professor Jian Kang. This was followed by our AGM in which the Committee remained close to its previous incarnation with Fiona Devine (Secretary), Heather Billin (CPD), Paul Shields and Young Youn being re-elected for another three years. We also co-opted Chris Biggs from Cundall for one year.

Meetings were held at five different venues predominately, with five in the West Midlands and four held in the East Midlands. The Branch Committee would like to thank the many speakers for their excellent technical contributions - Dani Fiumicelli, Technical Director, Temple Group; Mike Swanwick, Rolls Royce; Islah Ali-MacLachlan; Dr Adam Hill; Dr Charlotte

Clark of Arup; Christin Kirchhübel, Principal Speech Consultant; Nate Spencer & Ilaria Fichera; Professor Jian Kang and Professor Trevor Cox

Thank you also to the various venues that provided the meeting facilities and refreshments: WSP, AECOM, Derby University, Wolverhampton University (Walsall Campus) and new venue for this year Birmingham City University. Finally, thank you to the Branch members who have supported the Branch again this year.

The Committee continues to aim to appeal to the wide range of members' interests in the region and CPD certificates were provided at all meetings. Our aim in 2020 is to continue to provide a balance of meetings between West and East Midlands and ensure that meetings are accessible to all.

### **North West Branch**

The North West branch held five meetings/events over this last year, covering a range of subject matter, with good attendances at all meetings. Thank you to all meeting contributors and attendees in 2019.

Adam Thomas and Sam Peckham (Arup) started the year in May with their presentation on Heathrow Airport VR sound demonstrations, held at WSP's new Manchester offices. This was a unique talk with interactive demonstrations.

In June Prof. Trevor Cox (University of Salford) gave an interesting talk, also at WSP's Manchester offices, summarising his latest book "*Now You're Talking: Human conversation from the Neanderthals to Artificial Intelligence*". This talk gave an overview of the development of speech and conversation, including psychoacoustic research, regional accents and the potential future direction for voice synthesis.

Martin McNulty (Hoare Lea Vibration) and Adam Fox (Mason U.K) gave a good technical insight to the issues caused by impact noise within buildings; the legislation and guidance or lack thereof; the various theoretical considerations and approaches, and methods of mitigation. This meeting, held at the Royal Exchange Theatre, Manchester, in July, was extremely well attended and followed by a lively social gathering.

At the AGM in July Naomi Tansey was forced to step away from her role as North West branch secretary as she started a new job at Dyson. We thank her for the great work she has done for the northwest branch over the last few years. David Terry (AEC) steps into the role of branch secretary.

The Young Members Group and North West branch got together for a social night out in Manchester, in October. Mason U.K. helped with the organising of the event at 'Flight Club' and it was an enjoyable social and networking event.

Manchester University's Biomedical Research Centre, kindly hosted the last meeting of the year in December, with presentations by Professor Harvey Dillon and Dr Michael Stone, amongst the leaders in the field of hearing loss and hearing technologies. They

shared their insights into the understanding of types of hearing loss and the challenges with the processing of sound in hearing technologies.

In 2020, we look forward to the “Acoustics 2020” IOA Conference being held in the northwest, in Chester. The Committee continues to aim to appeal to the wide range of members’ interests in the region and CPD certificates were provided at all meetings. In 2020 we will aim to provide more meetings and a better balance of meetings across the region and generally ensure that meetings are accessible to all.

On a final note, we would like to thank Adam Thomas for his hard work as Chairman of the North West Branch Committee over the last three years. He steps down in 2020 and Mark Hinds (WSP) takes over the role.

### **Scottish Branch**

This year has once again been a busy one for the Branch, with a mixture of individual and collective activities taking place.

#### **1. Institute of Acoustics Meetings**

##### **5th April - Networking in Audio and Acoustics (Edinburgh)**

IoA Scottish Branch held a collaborative meeting with the Audio Engineering Society, Scottish Section (AES) and the Acoustics and Audio Group of Edinburgh University (EUAAG). This was a meeting about planning for the future in research, online networking opportunities in acoustics and the implementation of the IoA’s strategic planning process.

The trigger to organising this meeting was the setting up of SAAN, the recently formed *Scottish Audio & Acoustics Network*. The core founding organisations involved in this initiative are the IoA Scottish Branch, AES Scotland and EUAAG (Edinburgh University Audio & Acoustics Group). The IGDA (International Game Developers Association Scotland) have also been involved. It was set up to facilitate collaboration and networking within the very many professional disciplines involved in the audio and acoustics world and to provide a platform which encourages and facilitates networking across all acoustics related areas in Scotland.

The meeting was free and open to all IoA members, AES members and those signed up to receive information via SAAN, UKAN (UK Acoustics Network) and MusICA (*Music Informatics, Cognition and Acoustics* (Reid School of Music, University of Edinburgh)). The meeting was organised and Chaired by Alistair Somerville (Chair of IoA Scottish Branch) and included talks from Prof Kirill Horoshenkov (The University of Sheffield and Director of UKAN) and Stuart Gillan (AES & Soundscape). Prof Barry Gibbs concluded the meeting by presenting the output from the recent one day strategic planning meeting in Milton Keynes and then focusing on the strategic plan for 2019 and the next 5 yrs.

##### **8 November - WHO Environmental Noise Guidelines for the European Region 2018 - What could they mean for the UK? (Glasgow)**

This conference provided an insight into how the guidelines were developed and what they meant. The morning presentations were as follows:

Charlotte Clark, Arup - *Evidence base for the Guidelines: thoughts on the strength of the evidence for environmental noise effects on health*

Rupert Thornely-Taylor, Rupert Taylor - *What do the new guidelines mean for practitioners and decision makers?*

Ben Fenech, Public Health England - *Current assessment of health effects, and how this may change in light of the WHO Guidelines*

Ewan Scott and Simon Bonsall (Scottish Government) - *Scottish Government and the WHO Guidelines*

This was followed by an afternoon workshop session and debate led by President Elect, Stephen Turner, on 'How should these Guidelines be used? He reviewed the strength of the evidence base and their possible implications to the assessment and management of environmental noise in the UK in years to come. This meeting was extremely popular and oversubscribed, so apologies to those who were unable to book a place. The post meeting feedback was also extremely positive.

## **2. Scottish Audio and Acoustics Network (SAAN) notified Meetings**

Scottish Branch members benefitted from being notified of the following events meetings / training opportunities.

### **14 March - A Guide to Office Acoustics** (sponsored by Friends of Wilson)

This covered: the physical principles of sound, how it is measured and how it travels; how sound can be controlled by through absorption, insulation and diffusion how to design the finishes within an environment; and the effect they will have on reverberation. This was followed by light refreshments.

### **23 May - Networked Music Performance (Glasgow Caledonian University)**

There were two presentations:

Miriam Iorwerth: *Musicians' communication in informal Networked Music Performance*

Ben Redman: *The use of low-latency audio-visual streaming (LoLa) in instrumental music lessons*

### **19 June - Unlocking our Sound Heritage (Moving Image Archive - Kelvin Hall, Glasgow)**

The Unlocking Our Sound Heritage project is a collaborative project funded by the National Lottery Heritage Fund, led by the British Library with 10 hub partners across the UK. The National Library of Scotland is the Scottish partner for the project. Over 3 years the project will digitise, catalogue and assess rights for at least 5,000 at-risk sound recordings from 17 organisations across Scotland and run a programme of engagement and learning activities for new audiences.

### **6 & 7 June - Fun with Sine Waves: A Workshop on Synthesising Bass, Leads and Beats from Scratch (Reid School of Music, Acoustics & Audio Group, Edinburgh University)**

This was an exciting 2 day workshop on synths with a former Edinburgh University student, Fabian Esqueda.



### **1 October - Sound Exposure and Hearing Loss (City of Glasgow College)**

This was a SAAN organised event targeted at audio and acoustic engineers and musicians and addressed the questions: *How can we protect our hearing what are the exposure limits before damage occurs?*

There were presentations by:

Professor Dance (Director of the Acoustics Group at London South Bank University), and Jono (background in the entertainment industry and formally a professional musician for 15 years, a Director of ACS Custom and the Musicians' Health Advisory Board for Help Musicians UK; the AFEM Health Working Group advisor for The British Tinnitus Association's Plug'em campaign).

### **3. Members STEM activities**

Once again it was possible to promote Acoustics and the IoA through STEM outreach work. This was possible through our Institute's continued financial support of *Edinburgh Science (formerly the EISF - Edinburgh International Science Festival)* and the ongoing support of our Scottish Branch Members who volunteer to 'man' the IoA activity at the week long *Career Hive* event. *Generation Science* interactive sound and vibration shows were also provided free to primary schools to inspire, educate and enthuse the next generation in STEM.

### **25 February to 1 March - Career Hive (National Museum of Scotland, Edinburgh)**

2019 marks the fourth year of this interactive STEM careers event. It is a free immersive careers education event designed by the Edinburgh Science to give Secondary School students (S1-S3) a new way to think about their futures and highlights the opportunities available to those who study STEM subjects, as well as the cross-disciplinary skills and subjects that can support and enhance STEM careers. Students are provided with an exciting and memorable experience, and inspired to think about what is possible with their careers. Scotland's young people are now informed about the range of Acoustics careers as part of an amazing array of future opportunities in science, technology and engineering.

With the assistance of the IoA and Scottish Branch Members, we engaged 2,810 pupils from 36 schools with the potential opportunities in a huge variety of STEM careers. We are not alone. There were 150 volunteers from 17 different STEM industries across 49 different companies who also saw fit to promote their disciplines. Over the past 3 years acoustics is now included in this event which showcases the breadth of pathways into some of our most innovative and dynamic workplaces.

Careers Hive is also designed to increase the knowledge of teachers so they are familiar with a range of STEM employment pathways and potential industries to better advise their students about the opportunities available to them.

### **28th January to 24th May - Generation Science**

2019 saw the 28th iteration of Generation Science, a unique and inspiring programme of highly interactive shows and hands-on workshops designed to support the teaching of the curriculum through improving the provision of STEM education in Scottish primary schools.

Enthusiastic teams of highly skilled science communicators travelled round the country, reaching some of the most remote villages, ensuring no child is excluded from opportunities to learn about STEM. This year, Generation Science visited all 32 local authorities, delivering over 1,400 performances and reaching over 54,000 pupils, inspiring the problem solvers of the future and helping teachers deliver their curriculum requirements.

Teachers choose from 15 available workshops, which now includes the IoA sponsored '*Ellas Wobble*'. In this immersive workshop, children explore how sound travels through the air and why some sounds are high pitched and some are low. Pupils also get to create their own instruments and become an integral part of the show. Two trained Science Communicators deliver the show to much laughter and participation.

The IoA sponsored 15 performances across Scotland reaching 815 children.

#### **5 April - The Edinburgh Medal Presentation and Address 2019 (Signet Library, Edinburgh) Awarded to Christiana Figueres**

The Edinburgh medal is a prestigious award given each year to men and women of science and technology who are judged to have made a significant contribution to the understanding and wellbeing of humanity. This years award went to Christiana Figueres for her work as a recognised world leader on global climate change and her efforts in bringing nations together to jointly deliver an unprecedented climate change agreement.

The IoA received VIP invitations to the Medal Presentation in recognition of the Institutes support of STEM work in Scotland. The IoA was represented by our President, Prof Barry Gibbs, Prof Robert Craik and Chair of IoA Scottish Branch, Alistair Somerville.

#### **4. Scottish Forum for Workplace Health Consultants (Noise & Vibration)**

March to December - This is an HSE Initiative to address the issue of poor standards in workplace noise & vibration consultancy reports. It is led by Chris Steel, HM Inspector of Health & Safety (Noise & Vibration Specialist).

The date of the inaugural meeting was 7 March in Dunfermline City Chambers and was attended by representatives from the IoA, ANC, REHIS, BOHS and IOSH.

This has resulted in the development of a buyer's guide to consultancy services and centres around how consultants can be better recognised as competent by duty holders and how consultants can build competency through training and experience.

The HSE have now formally signed-off on their support for this buyers guide.

#### **Southern Branch**

The Committee has had another strong and active year with a busy programme of engaging events.

The Southern Branch kicked off 2019 at Southampton Solent with February's joint event with the Audio Engineering Society's Southern Region [AES] entitled 'Developments in Auditorium

Acoustic Design' and presented by Rob Harris whose wealth of hands on experience in the musicals made this an even more informative and engaging event.

In March, our guest speaker, Ms. Ling Zhang, Senior Lecturer at the Engineering Research Centre of Railway Environment Vibration and Noise (East China Jiaotong University) visited Southern Branch in Winchester to offer our members 'A brief introduction to the development and current status of China's high-speed rail'. It was quite amazing to consider the rate at which the system was growing having only commenced in the last 10 years.

Early May at Basingstoke's Council Chambers saw Dani Fiumicelli steer Southern Branch members through the new Environmental Noise Guidelines 2018 and provide a discussion forum for the gathered audience to air views and opinions six months on from its publication and to consider how might this guidance best be used.

In September, we returned to Southampton Solent to hear about the fascinating work being led by Dr. Aglaia Foteinou from University of Wolverhampton, in the Acoustic Measurements of Heritage Sites. Her research and measurement techniques allowing the audience to experience these environments acoustically through auralization.

Finally, in October, we were pleased to welcome Chris Kemp from Zehnder UK to present on Overheating in homes, and provision of ventilation and cooling strategies. This was a useful precursor to the imminent publication of the ANC Acoustics, Ventilation and Overheating Guide and gave members with a valuable insight into what to expect from incorporating these tools into future assessments of residential scheme.

We have strived to move meetings around the region, and feel confident that we have provided members interesting, varied and high quality offerings.

As Chair of a great Committee, we can feel very proud of our achievements in the last year which have widened the benefits of the Branch meeting for all members.

I offer my sincere thanks to all the Committee members who have worked so hard this year and to all the presenters who have given up their time for the benefit of the membership. In particular, special thanks is due to David Yates, who has served in the role of Acting Secretary to cover a period of maternity leave.

We are developing a programme of events for 2020 which we hope will emulate the high standard of events held in 2019.

### **Welsh Branch**

9<sup>th</sup> January 2019: Branch meeting was held with a presentation from Matthew Cand of Hoare Lea on BS4142 Tonality Assessment. The presentation explained the various methods of assessing tonality in BS 4142, focusing in detail on software methods to undertake the narrow band 'reference method' assessment. Example sources were played to the meeting, giving delegates the chance to compare their subjective assessments of sources, against the third octave 'objective' and narrow band reference methods.

Following the presentation there was a discussion with the meeting attendees, focussing on the impulsivity method and on the scope of BS 4142 for assessing very low frequency noise. It was noted that NANR and ECMA4 standard are the appropriate standards for assessing low frequency tones but there was no clear consensus in the room on how to assess low frequency tonal noise. Masking noise at low frequencies was highlighted as a potential problem for very low frequency tones.

Matthew explained that non-stationary tones can be assessed by analysing in short periods and energy averaging. The risk with this method is that with shorter time periods, frequency spectra can be messier. For wind farms Hoare Lea's approach is to identify the tone which is most dominant and then analyse tonality in 400 ms chunks, adding up to the total averaging time.

AGM : The Welsh Branch Annual General Meeting was held after the discussion. Dave Hunter Chaired the meeting and thanked everyone for attending the meeting and for supporting the Welsh Branch over the past year. Dave noted that no financial issues needed to be discussed as there have been no financial transactions for the branch over the past 12 months.

12<sup>th</sup> September 2019:

An all-day meeting was held with Welsh EHO's and Planners with 2 presentations from Dani Fiumicelli of Temple Group. Dani worked as an EHO for 16 years before moving on to work as a consultant in the private sector in 2002.

Morning Session

Dani has given presentations at Institute of Acoustics and Association of Noise Consultants conferences on potential implications of the WHO 2018 Environmental Noise Guidelines, which formed the basis for the morning session. The conclusion was that strict adherence to WHO guidelines was likely to result in impractical/uneconomic planning conditions, and that a more pragmatic scale aimed at protecting the majority of the population should be considered.

Afternoon Session

Dani also chaired the working party that wrote ProPG Planning & Noise that superseded PPG24 in England in 2017. PPG24 was virtually identical to TAN 11 which is still used in Wales (TAN 11 is currently under review by Welsh Government). Dani is therefore in a unique position to explain the thinking behind the potential weaknesses of PPG24/TAN 11, and the reasoning behind ProPG guidance in England, which formed the basis for the afternoon session.

## Yorkshire and North East branch

### Meetings in 2019

Date	Subject	Speaker	Attendance
10 June 2019	Noise Reports for Regulators: Noise Reports for Regulators: What we want from consultants	Julija Smyrnowa, Tony Clayton	21
18 September 2019	QUANTIFYING TRANQUILLITY IN NEW ZEALAND	Greg Watts	13
21 October 2019	What Could An Alternative To ETSU-R-97 Look Like	Andy McKenzie	17
27 November 2019	Auralisation and Virtual Reality (VR) - PhD students presentations	Bogdan Bacila, Tomasz Rudzki and Yang Fu	17

In 2019 we had four branch meetings with average attendance of 17 people. Three meetings were hosted by the University of Sheffield and one by Arup`s office in Leeds. The Sheffield meetings were all organised in collaboration with the UK Acoustics Network.

At the AGM Committee Meeting in July, Donald Angir of Noise Survey Limited and Owen Downey of Blue Tree Acoustics were at the end of their 3 year term. Donald Angir stood down from his position of the branch chair and was replaced by Julija Smyrnowa of the Environment Agency, while Owen Downey was re-elected. The role of Young Members` Representative is still carried out by Nathan Green of AECOME.

Our Committee members also include Donald Angir and Kirill Horoshenkov (both former branch chairs) and Charlotte Swain – a manager of the UK Acoustics Network.

This year talks covered various topics of acoustics. The first talk reviewed quality of the noise impact assessment reports being submitted to the Environment Agencies by the acoustic consultants on behalf of the operators of the sites requiring the EA permits. At the second presentation, Greg Watts discussed developing a management tool that would be of use in improving the natural soundscapes in National Parks of New Zealand that are being degraded by the intrusive noise from tourist helicopter flights and jet boats operating at high speeds. At the third talk, Andy McKenzie reviewed what other methods apart from those described in ETSU-R-97 could be possibly applied to assess noise impact from the wind farms. The last talk of the year was dedicated to research projects being conducted by three PhD students, two from the University of York and one from the University of Huddersfield. All presentations were related in this or other way to auralisation and virtual reality. After the meeting one of the presenters (Tomasz Rudzki) also offered a live demonstration of the auralisation tool they had developed at the University of York.

This year we also published an article in the IOA Acoustic Bulletin, November/December issue. It presented an overview of the talk that Gregg Watts delivered to the branch in September.

We have also established collaboration with Tina Conroy – Regional Organiser for the Yorkshire and East Midlands Branch of the British Occupational Hygiene Society. We have made plans to arrange a joint IOA&BOHS meeting in the nearest future.

### **Plans for next year**

2020 year is again going to be busy for the Branch.

Our primary goal is to hold meetings in different cities - the branch covers quite a large geographical area and for some members it may take over two hours to attend a meeting (happening on the other side of the area). AECOM has kindly offered their Newcastle and Leeds offices to the branch meetings and we also have support from Arup`s Leeds office in this matter. We still have good relationship with the UK Acoustic Network, through their ongoing support we will be able to organise the branch meetings at the University of Sheffield.

We have already agreed with three presenters to deliver us the following talks:

- Open plan offices: advances in acoustic design by Jack Havier-Clark from Apex Acoustics to take place in the AECOM office in Newcastle on 13 January 2020
- Designing soundscape in urban open public spaces by prof. Jian Kang from the UCL Bartlett (University of Sheffield, 3rd February 2020)
- Overheating in homes – Ventilation & Cooling Strategies by Mark Syddall from Zehnder Group UK Limited (AECOM office in Leeds, 23<sup>rd</sup> March 2020).

We have been also discussing with Anne Budd - a Board Member of the ANC - a possibility of delivering us a talk on ANC`s Good practice guide on BS4142 (to be published later 2020), and with prof. Tim South regarding presentations from graduates of the IoA Diploma course from the Leeds Beckett University.

We have also established collaboration with HEAD Acoustics UK Ltd regarding organising a possible soundwalk for the Branch members.

## **Statistic and Information Tables**

**TABLE 1: Membership**

<b>Grade</b>	<b>2019</b>	<b>2018</b>
Hon Fellow	34	34
Fellow	156	160
Member	1854	1852
Associate Member	791	813
Affiliate	70	69
Technician Member	129	135
Student	340	420
Totals	3374	3483
Founding Key Sponsor	2	2
Key Sponsor	1	1
Sponsor	49	48

**TABLE 2: Group membership**

<b>Group</b>	<b>2019</b>	<b>2018</b>
Building Acoustics	1276	1699
Electroacoustics	525	521
Environmental Noise	1942	1960
Measurement &	866	868
Musical Acoustics	588	572
Noise and Vibration	1367	1375

Physical Acoustics	408	401
Senior Members	120	126
Speech & Hearing	384	368
Underwater Acoustics	324	319
Young Members	412	355

**TABLE 3: Branch membership**

<b>Branch</b>	<b>2019</b>	<b>2018</b>
Central	278	279
Eastern	285	291
Irish	136	144
London	990	990
Midlands	467	486
North West	481	492
Overseas	309	311
Scottish	196	208
South West	337	335
Southern	566	580
Welsh	84	85
Yorks and North East	265	274

**TABLE 4 Details of employment (interests)**

<b>Employment Category</b>	<b>2019</b>	<b>2018</b>
Architectural Practice	463	448
Consultancy	2127	2163
Education	747	517
Industry/Commerce	697	706
Public Authority	394	422
Research & Development	769	783
Retired	102	104
Other	224	225

<b>Table 5: EVENTS AND ATTENDANCE IN 2019</b>	
<b>Topics, date and Venue</b>	<b>Attendance</b>



UKAN Anniversary Conference 7 January Sheffield	115
WHO Environmental Noise Guidelines 16 January London	141
The Art of Being a Consultant 12 February Salford	54
New Methods for Predicting Noise and Vibration 1 May Cambridge	41
ACOUSTICS 2019 13-14 May Milton Keynes	220
Soundscapes workshop 25 June London	143
Low Noise Design 18 September London	39
Music Recording and Performance 9 October London	35
Sound Sensing in Smart Cities 2 16 October London	41
UKAN 2 <sup>nd</sup> Anniversary Workshop 1 November London	93
WHO Environmental Noise Guidelines 8 November Glasgow	46
Reproduced Sound 2019 19-21 November Bristol	102
Open Plan Office Acoustics 5 December Birmingham	66