BOFAS Research Grants – How have they been used and what method of accountability should be used in future?

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Background

BOFAS receives funding from industry and generates funds through membership and an annual scientific meeting. Part of this funding is used by BOFAS to fund projects which improve the knowledge of foot and ankle pathology and surgery. Other BOA specialist societies also award research grants although there is no universal guidance from the BOA as to how the societies should award or keep track of monies.

Between 2015 and 2018, £83,676.48 was paid out by BOFAS to 19 applicants. The value of grants ranged from £1000 to £15000.

There has to date been limited information fed back to BOFAS on how the money has been spent and whether money is unspent and lying dormant.

The purpose of this project is to:

(1) Gather information on grant money paid out;
(2) Identify the methods employed by other similar societies to ensure fiscal accountability;
(3) Agree a method to be employed by BOFAS for fiscal accountability.

Methods

Problem 1: How has grant money been spent?

To gather information on money paid out, a questionnaire was first composed to include all the relevant information required by the Scientific Committee. This asked for the following information:

- Title of project:
- Summary of research:
- Was the project completed?
- If so, time taken to complete project:
- Was the project published?
- Was the project presented?
- What was the money used for?
- Was any money not used?
- Were any other grants obtained for this project?

Grant money paid out between 2015 and 2018 was identified and this data was used to identify each application's principal investigator. The questionnaire was then emailed to all principal investigators in Q4 2018 and a three month window was left for replies to be sent assuming that the information on finances may need to be sought from finance directorates, or information on presentation/publication may need to be sought from co-collaborators which may be a lengthy process. Reminder emails were then sent to either the principal investigator or named collaborators for each project where information was not received.

Problem 2: What are the methods employed by other societies to ensure accountability?

Specialist societies affiliated with the British Orthopaedic Association were identified through a web based search. Each society's website (excluding BOFAS) was examined to identify if each society awarded research grants and whether each society publically displayed information on grant awards. Representatives from AOUK and each specialist society were then contacted via email to independently ascertain whether research grants were awarded and what processes were in place for updates for each grant.

Problem 3: What method of accountability will BOFAS employ?

This document will be delivered to all members of the BOFAS Scientific Committee. It is anticipated the options for future accountability for research grants will be agreed upon at the next meeting.

Results

Problem 1: How has grant money been spent?

There were 19 grants awards between March 2015 and July 2018. The total value awarded was £83,676.48 ranging from £1000 to £15000 (mean award £4404.03). Full information was received on 17 of 19 grants. Completed questionnaires are in Appendix I.

There are two grants where questionnaires have not yet been received (Grant numbers 9 and 12). The lead consultant involved in grant 9 has informed us that they are still awaiting information from their relevant finance department about unused funds. We have been unable to establish the outcome of grant award 12. The principal investigator has since left the trust where the study was supposed to be completed and nil information has been offered by the project collaborators. Further efforts are being made on this.

Where information was received, 10 projects were completed and 7 remain ongoing. Of those completed, 9 were presented nationally or internationally and 4 have been published in peer reviewed journals. It has not been established if any of these projects have led to widespread changes in practice or economic benefits.

Of those projects which were completed, it was established that £3715.01 was not used but only £327 was returned to BOFAS. It was stated by the project leads that in those projects where funds were left unused, the money would be used for extension of the projects. There is currently no guidance from BOFAS regarding unused funds.

Problem 2: What are the methods employed by other societies to ensure accountability?

Two societies displayed information on their public websites about research grant awards or active studies:

- BSSH
- AO

Five societies replied to our request for information on how they ensure accountability of research grant awards. Two of these stated they do not offer research grants; both instead fund clinical fellowships.

BSSH – The grant is withdrawn if planned research is not commenced within 6 months of the award. Progress reports are expected at 2 months and 6 months after the first transfer of funds and subsequently at 6 monthly intervals until the project is completed and published. Further information is available publically on the BSSH website about ongoing and completed projects at www.bssh.ac.uk/research_grant_reports.aspx

BOOS – The principal investigator of each research grant is expected to give a progress report at their AGM until the project reaches completion.

AOUK – Six monthly reports must be provided until the project reaches completion and a poster presentation is expected with interim and podium presentation when the project is complete. Publications in peer reviewed journals must acknowledge funding. A full report must be submitted at completion or 3 years whichever sooner and failure to complete any of these conditions imparts a ban from funding for 3 years. Furthermore, not all funds are necessarily paid up front but it depends on the size of the grant and the application (if it's for a piece of equipment then it might be reasonable to but if it for staff costs then the award can be split). A contract or memorandum of understanding in the least detailing what is expected for full payment is provided on. Large units are preferentially awarded grants since they tend not to fail to avoid not getting awards again.

BASK - Pump priming grants stopped being awarded in 2017 since they found this wasn't a good strategy and use of money so changed to awarding an annual grant to a training grade registrar to become a BASK fellow.

BHS – Industry funded grants for fellowships are available but nil for research.

Conclusions

Updates have been provided on all projects award money by BOFAS between March 2015 and July 2018 except for two. If we are to assume that pump priming grants continue, then there must be greater scrutiny for monies awarded especially since the maximum award has increased from £5000 to £15000. BSSH and AOUK provide the most comprehensive review of their grants and the Scientific Committee needs to decide on the best way forward. Options include:

- Return of money if projects are not commenced within 6 months of the award of the grant.

Read and agreed the T's & C's.

Grants can be approved in principle prior to ethics approval.

- Progress reports to be submitted at regular time intervals: 2 months and 6 months after the first transfer of funds and subsequently at 6 monthly intervals until the project completion and publication.

- Progress reports to be either be verbally at the BOFAS AGM or visually presented as part of the posters section of the Annual Scientific meeting. App.

Unused moneys should be returned.

- Publication on the BOFAS website of currently active and completed projects (defined as those where publication or presentation of the final results has not been disseminated) using a traffic light system (where red indicates significant delays are present to achieving project completion in a reasonable time frame, yellow indicates the project in on target to be completed at the expected time and green means the project is ahead of schedule).

A decision should be made by the Scientific Committee on which of the above is preferred.

Storage of agreements – emailed to Jo.

?approval of R&D director

Appendix I

Grant Number 6

Principal Investigator:	Paul Cooke
Hospital(s):	Nuffield Orthopaedic Centre, Oxford
Amount Awarded:	£5,000
Date Paid:	12th March 2015
Title of project:	Development of an Oxford RSA system for the Investigation of Outcome in Total Ankle Replacement
Summary of research:	Radiostereometric Analysis (RSA) on a prototype total ankle replacement (TAR) This pilot study suggests that model-based RSA is feasible for the investigation of a prototype Total Ankle Replacement and that mode-based RSA is appropriate for the study of any TAR in general. Reconstruction of the components is particularly sensitive to the position of the components within the RSA calibration cage. Reconstruction of the position and orientation of the tibial component is particularly sensitive to the pose of the component relative to the X-ray sources. When the component is positioned as, it would be if the patient stood with their foot parallel with the sides of the calibration cage the error was high. When the component was positioned, as it would be if the patient stood with their foot pointing at one of the X-ray tubes the error decreased dramatically.
Was the project completed?	Yes
If so, time taken to complete project:	36 months
Was the project published?	No
Was the project presented?	No
What was the money used for?	Conversion of component geometry for use with Model-based RSA software
Was any money not used?	All money was used
Were any other grants obtained for this project?	No

Grant Number 11

Principal Investigator:	Panagiotis Chatzistergos
Hospital(s):	Staffordshire University
Amount Awarded:	£5000
Date Paid:	14/11/2015
Title of project:	Development of a novel ultrasound based technique for the assessment of in vivo tendon biomechanics.
Summary of research:	Biomechanical analyses of tendons are dominated by the assumption of mechanical homogeneity. This is mainly due to the fact that no established method currently exists for the in-vivo identification and quantitative assessment of areas inside the tendon that exhibit altered mechanical behaviour (e.g. as a result of trauma). Preliminary results indicate that studying the 3D shape of the loaded tendon can help in this direction. In this context this project developed a new automated system for dynamic user-independent ultrasound scanning of tendons that can be used for the reconstruction of the tendon's 3D shape and the measurement of its deformations (axial and transverse) during isometric contractions of the in-series muscles.
Was the project completed?	Yes
If so, time taken to complete project:	23 months
Was the project published?	Yes
If so, give details of the publication:	Panagiotis Chatzistergos, Maganaris Constantinos, Nachiappan Chockalingam, Sensitivity of a numerical model to detect regional differences in mechanical properties of tendons, June 2016, Foot and Ankle Surgery 22(2):15, DOI: 10.1016/j.fas.2016.05.024
Did the publication acknowledge BOFAS?	Yes
Was the project presented?	Yes
If so, please list conference details.	International congress of the European Foot and Ankle Society (EFAS) in Berlin, 23rd-25th June 2016.
Did the presentation acknowledge BOFAS?	Yes
What was the money used for?	A total amount of £4673 was used to purchase some key components and pieces of software for the development of the scanning system.
Was any money not used?	£327 was not used
If so, was it returned or used for other projects?	Returned to BOFAS
Were any other grants obtained for this project?	Yes
If so, provide details:	Institute of Physics and Engineering in Medicine Research and Innovation Award – £15,000

Grant Number 18

Principal Investigator:	William Morley / Heath Taylor
Hospital(s):	Royal Bournemouth Hospital
Amount Awarded:	£3000
Date Paid:	Feb 2016
Title of project:	Anti-Gravity Simulated Weight Reduction: A Pilot Study to Assess Impact of Foot and Ankle Arthritis
Summary of research:	Gaining evidence for weight loss reducing symptoms in obese patients.
Was the project completed?	Yes. Completed October 2018, plan to extend/repeat.
Was the project published?	No
If so, give details of the publication:	Not yet – being written with aim to publish by Spring 2019
Did the publication acknowledge BOFAS?	N/A
Was the project presented?	Yes. BOFAS Edinburgh Nov 2018.
Did the presentation acknowledge BOFAS?	Yes
What was the money used for?	£682.80 for equipment to fit patients to treadmill
Was any money not used?	Remainder of grant (£2317.20)
If so, was it returned or used for other projects?	Remains with orthopaedic department. Plan for use on extension of project to repeat and add patients for knee/hip assessments.
Were any other grants obtained for this project?	No

Grant Number 15

Principal Investigator:	Andy Goldberg
Hospital(s):	RNOH
Amount Awarded:	£5000
Date Paid:	Jan 2016
Title of project:	Are specific aspects of bone matrix chemistry associated with ankle osteoarthritis?
Summary of research:	Introduction: Subchondral bone changes including altered levels of mineralisation and protein conformational change have been identified using raman spectroscopy in hip and knee osteoarthritis (OA) and may serve as predictors of disease onset. Ankle OA in contrast is less common and linked with a prior history of trauma. The aim of our study was to determine whether subchondral bone changes are also associated with ankle osteoarthritis. Methods: Subchondral bone specimens were obtained from the tibiae of 22 patients undergoing surgery for ankle osteoarthritis (varus and symmetrical wear patterns). Samples were analysed using raman spectroscopy. Age, sex and laterality matched non-OA cadaveric specimens served as controls. Chemical markers of subchondral bone (phosphate:amide I, carbonate: amide I and carbonate:phosphate ratios) were deduced and analysed for statistical difference using the Mann-Whitney U test. Principal component analysis (PCA) was also employed to detect inherent differences within the raman spectra. Results: Differences in the mean phosphate:amide I and carbonate:amide I ratios were detected within Varus OA (20.91 and 3.52 vs controls 22.19 and 3.69 $p<0.05$)) and symmetrically worn OA (19.99 and 3.40 vs controls 22.01 and 3.67 ($P<0.05$)). PCA also revealed significant differences in the structure of spectra from OA specimens. Discussion: Our results imply that subchondral bone is altered in patients with ankle osteoarthritis. This raises the possibility that individuals with certain bone chemistry may be at risk of developing ankle osteoarthritis and that the detection of such markers may predict the onset of disease in asymptomatic individuals
Was the project completed?	Yes
If so, time taken to complete project:	24 months

Was the project published?	Currently writing up
Was the project presented?	Yes
If so, please list conference details.	British Orthopaedic Research Society 2017
Did the presentation acknowledge BOFAS?	Yes
What was the money used for?	Consumables related to research
Was any money not used?	No
Were any other grants obtained for this project?	No

Grant number 19

Principal Investigator:	Andrew Miller (UHW and Cardiff University) and Emma Blain (Cardiff University)
Hospital(s):	University Hospital of Wales, Heath Park, Cardiff, CF14 4XW, UK And Arthritis Research UK Biomechanics and Bioengineering Centre, School of Biosciences, Cardiff University, Museum Avenue, Cardiff, UK
Amount Awarded:	£5000
Date Paid:	Sept 2016
Title of project:	Do the intrinsic properties of the chondrocytes account for the difference in prevalence of OA in the Hip, Knee and Ankle?
Summary of research:	Ankle cartilage is relatively spared of primary OA compared to knee cartilage. We investigated the difference in mRNA transcriptome between the two tissues to see if we could identify potential biomarkers or therapeutic targets for biological treatments of OA. So far 800 potential targets have been found and pathways interrogated using IPA software. Ongoing work is looking to validate these differences in mRNA expression by quantifying corresponding protein production.
Was the project completed?	Ongoing
Was the project published?	Not yet
Did the publication acknowledge BOFAS?	It will
Was the project presented?	Yes at BOFAS Summer meeting 2018 Winkelman Prize Awarded
Did the presentation acknowledge BOFAS?	Yes
What was the money used for?	NexGen Sequencing of mRNA to compare Ankle cartilage transcriptome with that of knee cartilage transcriptome
Was any money not used?	All money was used for sequencing
Were any other grants obtained for this project?	Yes, recently received an AO UK Trauma Grant (£10000) for extension of project

Grant Number 20

Principal Investigator:	James Calder
Hospital(s):	Fortius Clinic
Amount Awarded:	£5000
Date Paid:	Sep 2016
Title of project:	Investigating the rationale for combined inferior extensor retinaculum repair
Summary of research:	Histological analysis of the presence of nerve receptors in the extensor retinaculum. Sectioning the retinaculum had no effect on ankle stability as was hypothesised but the robot showed significant instability purely sectioning the ATFL inferior fibres
Was the project completed?	First biomechanical part has been completed and in process of submission to Am J Sp Med The second histology part is awaiting further immune-testing at Queens Sq because the first assays failed – further results hopefully out in May.
If so, time taken to complete project:	3 years
Was the project published?	No
Was the project presented?	No
What was the money used for?	Histology
Was any money not used?	No
If so, was it returned or used for other projects?	N/A
Were any other grants obtained for this project?	Yes
If so, provide details:	£7000 from Fortius Clinic Research Fund

Grant Number 23

Principal Investigator:	Lyndon Mason
Hospital(s):	Aintree University Hospital, Liverpool University
Amount Awarded:	£2650
Date Paid:	13th March 2017
Title of project:	What is the anatomy of the posterior inferior tibiofibular ligament insertion on the posterior aspect of the tibia?
Summary of research:	Not supplied
Was the project completed?	Yes
If so, time taken to complete project:	Completion of research June 2018
Was the project published?	No. Currently in writing stage
Did the publication acknowledge BOFAS?	N.A.
Was the project presented?	Yes
If so, please list conference details.	Mason LW, Jayatilaka MLT, Fisher A, Fisher L, Molloy A. *Posterior Inferior Tibiofibular Ligament and the Posterior Malleolar Fracture*. AOFAS, Boston, July 2018 (Poster) Jayatilaka MLT, Fisher A, Fisher L, Molloy A, Mason LW. *Posterior Inferior Tibiofibular Ligament and the Posterior Malleolar Fracture*. BOFAS, Edinburgh, November 2018 (Podium)
Did the presentation acknowledge BOFAS?	Yes
What was the money used for?	As detailed on grant application
Was any money not used?	All money was used
Were any other grants obtained for this project?	No

Grant Number 24

Principal Investigator:	Lyndon Mason
Hospital(s):	Aintree University Hospital, Liverpool University
Amount Awarded:	£2650
Date Paid:	13th march 2017
Title of project:	What is the anatomy of the plantar ligaments of the medial longitudinal arch, and is there a specific ligament distal to the spring ligament insertion?
Summary of research:	Not supplied
Was the project completed?	Yes
If so, time taken to complete project:	Completion of research January 2018
Was the project published?	Yes. Foot Ankle Int. 2019 Mar;40(3):352-355
Did the publication acknowledge BOFAS?	Yes
Was the project presented?	Yes
If so, please list conference details.	**Mason LW,** Swanton E, Fisher A, Fisher L, Molloy A. The Plantar Support of The Naviculo-Cuneiform Joint; a Major component of the Medial Longitudinal Arch. BOA, Birmingham, September 2018 Swanton E, Fisher A, Fisher L, Molloy A, **Mason L**. The Plantar Support of The Naviculo-Cuneiform Joint; a Major component of the Medial Longitudinal Arch. BOFAS, Sheffield 2017 **Mason LW,** Swanton E, Fisher A, Fisher L, Molloy A. The Plantar Support of The Naviculo-Cuneiform Joint; a Major component of the Medial Longitudinal Arch. AOFAS, Boston July 2018 (Poster)
Did the presentation acknowledge BOFAS?	Yes
What was the money used for?	As detailed on grant application
Was any money not used?	All money was used
Were any other grants obtained for this project?	No

Grant Number 25

Principal Investigator:	Lyndon Mason
Hospital(s):	Aintree University Hospital, Liverpool John Moores University
Amount Awarded:	£5000
Date Paid:	August 2017
Title of project:	Does night time positioning of the foot affects the tightness of the Gastrocnemius muscle?
Summary of research:	Not supplied
Was the project completed?	No – the project has been significantly delayed due to the creation of an equinometer has been dependent on an Orthotic company helping with the backbone of the device. It was finally delivered December 2018. Now we have the AFO we can start applying the technology to the device. The delay was due to the company (trulife) going through a takeover. I expect completion of this study in 2020 6 to 12 months behind schedule.
Was the project published?	NA
Was the project presented?	NA
Did the presentation acknowledge BOFAS?	NA
What was the money used for?	Currently an expense of £2001.39 (Delphi programming software for making smartphone app) has been the only outgoing for this project
Was any money not used?	Remaining money is still required for completion of the study
If so, was it returned or used for other projects?	As above
Were any other grants obtained for this project?	Yes
If so, provide details:	John Moores University has donated £5000 to this study along with the £5000 form BOFAS.

Grant Number 26

Principal Investigator:	Matt Solan
Hospital(s):	London South Bank University
Amount Awarded:	£4950
Date Paid:	31/05/2017
Title of project:	Can a novel Hallux orthotic customised to deliver high-frequency, low-intensity, wide-pulse electrical stimulation to an intrinsic foot muscle produce neuromuscular responses like those observed when using traditional laboratory-based technology?
Summary of research:	The work on this project will be structured in three consecutive stages. Stage 1 is to engineer a prototype battery-operated micro-controller that delivers NMES WPS, at constant current, to electrodes incorporated within the Hallux orthotic. Stage 2 will consist of an experimental study to validate the effects of this device (ORTH) against the traditional laboratory-based technology (LAB). Stage 3 will be dedicated to refine the prototype device with more sophisticated engineering. The study in Stage 2 will replicate the experimental protocol, which was successfully employed in the pilot project (funded by BOFAS).
Was the project completed?	Yes
If so, time taken to complete project:	Project finished September 2017. A mobile, battery-operated, blue-tooth compatible prototype device that delivers mono-phasic low-intensity electrical stimulation to abductor hallucis was developed. This is currently advertised on https://in-part.com/ awaiting commercial interest. However, a grant application is to be submitted in the next few days, at the time of writing, to GlaxoSmithKline in response to their recent call ('At home diagnostic technologies to enable self-care') for further development.
Was the project published?	Not yet. It will form the basis of an undergraduate project during academic year 2019-20 to increase the sample size.
Was the project presented?	Yes
If so, please list conference details.	Future Physiology – the Physiological Society, 2017, University of Leeds Presented by: Mr. Andrei L. Perez Olivera.
Did the presentation acknowledge BOFAS?	Yes
What was the money used for?	£3,879.11: Tri-Axial Force Transducer £248.07: Prototype development costs £22.80: Lab consumables £11.14: recruitment for participants £209.10: Conference attendance/travel

Was any money not used?	£1070.81
If so, was it returned or used for other projects?	We are in the process of preparing for a major grant application to extend our work to target Hallux Valgus deformity. The call is: 'Biomedical Catalyst: Developmental Pathway Funding Scheme'. We require the remaining funds to support this work, most notably to undertake Public, Patient Involvement (PPI).
Were any other grants obtained for this project?	Yes
If so, provide details:	The Physiological Society: Summer Internship funding: ~£1,000. School of Applied Sciences (LSBU) seed funding initiative: £6,100 (academic buyout). Research, Enterprise & Innovation Centre (LSBU): Summer Internship funding (x2): ~£4,000.

Grant Number 27

Principal Investigator:	Joel Humphrey
Hospital(s):	Cambridge University Hospitals NHS Foundation Trust, Addenbrooke's Hospital, Hills Road, Cambridge, CB2 0QQ.
Amount Awarded:	£1800
Date Paid:	November 2017.
Title of project:	The epidemiology and trends in the surgical management of calcaneal fractures in England between 2000 and 2017
Summary of research:	Our research documents the epidemiology of adults (aged >18 years) with a calcaneal fracture who have been admitted to hospital in England since 2000. Secondary aims were to document whether publication of the United Kingdom Heel Fracture Trial (UK HeFT) influenced the proportion of patients admitted with a calcaneal fracture who underwent surgical treatment, and whether there has been any recent change in the surgical technique used for these injuries. In England, the Hospital Episode Statistics (HES) data are recorded annually. Between 2000/01 and 2016/17, the number of adults admitted to an English NHS hospital with a calcaneal fracture and whether they underwent surgical treatment was determined. During this 17-year period, 62 858 patients were admitted to hospital with a calcaneal fracture. The male-to-female ratio was 2.66:1. The mean annual incidence was 10.5/100 000 for men and 3.8/100 000 for women. The results of the UK HeFT were published in July 2014. The percentage of patients admitted with a calcaneal fracture undergoing internal fixation was 7.31% (3792/51 859) before and 7.38% (534/7229) after its publication. This difference was not statistically significant ($p = 0.94$). Since 2015, there has been a significant increase in the percentage of calcaneal fractures treated by closed reduction and internal fixation, as opposed to open reduction and internal fixation, from 7.7% (292/3792) to 13.29% (71/534) ($p < 0.001$). This study documents the epidemiology and trends in surgical treatment of calcaneal fractures in England. We established that surgeons did not change their practice in terms of offering surgery to these patients in response to the results of the UK HeFT. There has been a significant increase in the number of calcaneal fractures being treated surgically using less invasive.
Was the project completed?	Yes
If so, time taken to complete project:	12 months
Was the project published?	Yes. The epidemiology and trends in the surgical management of calcaneal fractures in England between 2000 and 2017.

	Humphrey JA, Woods A, Robinson AHN. Bone Joint J. 2019 Feb;101-B(2):140-146
Did the publication acknowledge BOFAS?	Yes
Was the project presented?	Yes
If so, please list conference details.	Calcaneal Fracture epidemiology and fixation trends in England 2000 to 2017. BOFAS Annual Meeting, Edinburgh 2018 (Poster)
Did the presentation acknowledge BOFAS?	Yes
What was the money used for?	The money was used to pay NHS digital for the data tabulation on details of all admitted calcaneal fractures to NHS hospitals between 2000 to 2017.
Was any money not used?	No. The money was paid directly from BOFAS to NHS Digital.
Were any other grants obtained for this project?	No.

Grant Number 29

Principal Investigator:	Mr R Kakwani
Hospital(s):	Northumbria Healthcare NHS Foundation Trust
Amount Awarded:	£1046
Date Paid:	16th April 2017
Title of project:	Comparing open and minimally invasive osteotomy for the surgical correction of bunions - a feasibility study
Summary of research:	To assess the feasibility of recruitment to a randomised control trial comparing the patient outcomes of minimally invasive and open hallux valgus correction.
Was the project completed?	Study is currently ongoing and recruiting patients
Was the project published?	N/A- study not yet completed
Was the project presented?	N/A
What was the money used for?	The money has been used to cover costs for printing, postage, telephone calls and Patient refreshment
Was any money not used?	No
If so, was it returned or used for other projects?	N/A
Were any other grants obtained for this project?	No

Grant Number 30

Principal Investigator:	Daniel Winson
Hospital(s):	University Hospital of Wales
Amount Awarded:	£3600
Date Paid:	September 2017
Title of project:	Does rugby boot design affect the ground reaction forces in the fifth metatarsal?
Summary of research:	Biomechanical study comparing contact pressures in the foot in 2 different designs of rugby boot. Comparing boots with a rounded stud and a bladed stud. 24 rugby players from clubs in Cardiff were recruited. They were asked to complete a course of cones in both designs of rugby boot while wearing the Fscan in shoe pressure monitoring equipment. Results suggest that there are increased contact pressure under the fifth metatarsal in a bladed boot compared to a studded boot. This may predispose certain players to stress fracture.
Was the project completed?	Yes
If so, time taken to complete project:	6 months
Was the project published?	No
If so, give details of the publication:	Write up in final stages. Aim to submit in next 1-2 months
Did the publication acknowledge BOFAS?	N.A. (But will)
Was the project presented?	Yes
If so, please list conference details.	BOA 2018, BOFAS 2018
Did the presentation acknowledge BOFAS?	Yes
What was the money used for?	Purchasing of rugby boots, purchasing of F-scan in shoe pressure monitoring equipment and software. Travel expenses.
Was any money not used?	No
Were any other grants obtained for this project?	No

Grant Number 32

Principal Investigator:	Rebecca Critchley
Hospital(s):	Northumbria (North Tyneside, Wansbeck and Hexham)
Amount Awarded:	£4, 980.48
Date Paid:	December 2017
Title of project:	Longitudinal psycho-social profiles study of pain perception in forefoot surgical patients
Summary of research:	The overall aim of the main study is to assess whether pain catastrophizing (PC) influences surgical outcome in patients who receive surgery for hallux valgus and hallux rigidus. Alongside the main study we aim to understand in-depth the psycho-social profiles of patients including a personal exploration of how life events and personality profiles impact on the pain experience of individuals. The views of HCPs (surgeons/podiatrists) will also be explored to gain an understanding of the decision making process for fore-foot surgery.
Was the project completed?	On going
Was the project published?	On going
Was the project presented?	Yes
If so, please list conference details.	European health psychology conference
Did the presentation acknowledge BOFAS?	Not stated
What was the money used for?	Transcription fees, audio Dictaphone, travel expenses, printing, postage
Was any money not used?	Yes
If so, was it returned or used for other projects?	There is still money to use for this study
Were any other grants obtained for this project?	None

Grant Number 33

Principal Investigator:	Kar Teoh, Tosan Okoro, Hiro Tanaka
Hospital(s):	Royal Gwent Hospital
Amount Awarded:	£3000
Date Paid:	March 19. Paid into trust R&D dept
Title of project:	Is there increased strength to failure, in a sawbone model, with a tibia-pro-fibula construct when compared with standard locking plate fixation used in treating unstable osteoporotic bimalleolar ankle fractures?
Summary of research:	In osteoporotic bone, there is reported to be unsatisfactory fixation strength with unicortical cancellous fixation for distal fibula fractures which can lead to loss of fixation as well as delayed or non-union. Tibia-pro-fibula fixation is a known technique prior to the advent of locking plates and enhances stablility by tri or tetracortical fixation. This technique adds little operative time, is inexpensive, and is a technically straightforward method to increase the stability of the construct. With locking plates, this fixation construct can be further enhanced by using locking screws instead of previously described 4mm non locking cancellous screws. There is a lack of evidence currently on the merits of tibia-pro-fibula augmented fixation in this group of patients in comparison to standard locking plates. Test 1 (External rotation force to distal fibula): normal locking fixation vs protibial fixation. The following parameters were assessed for biomechanical stability of the constructs with simulation of a supination external rotation injury on the electromagnetic test frame: 1. Torque at 30 degrees external rotation 2. Failure torque 3. External rotation angle at failure 4. Energy absorbed before failure Test 2 (**Cyclical loading at 1200N**, rubber to simulate cartilage and provide lateral force on fibula, ankle to be in neutral to simulate being in walking polymer cast or aircast walker): normal locking fixation vs protibial fixation vs normal non locking screws vs locking fixation but non locking syndesmosis screws.
Was the project completed?	Ongoing. Final cyclical loading tests are being completed.
If so, time taken to complete project:	Not yet completed
Was the project published?	N/A
Was the project presented?	N/A

What was the money used for?	Purchase plates, screws, sawbone and pay for lab time.
Was any money not used?	Final accounts awaiting. Money is with R&D dept of hospital. All invoice through them for transparency.
If so, was it returned or used for other projects?	N/A
Were any other grants obtained for this project?	AOUK
If so, provide details:	Amount not stated.

Grant Number 34

Principal Investigator:	Andy Goldberg / Matt Welck
Hospital(s):	Royal National Orthopaedic Hospital
Amount Awarded:	£5000
Date Paid:	February 2018
Title of project:	STAAR Trial (Stem Cell Treatment in Adult Ankle Arthritis).
Summary of research:	Funding awarded for pilot study into assessing benefits of stem cells in ankle joint osteoarthritis.
Was the project completed?	No – Ongoing
If so, time taken to complete project:	
Was the project published?	No - Ongoing
If so, give details of the publication:	
Did the publication acknowledge BOFAS?	N.A.
Was the project presented?	No - Ongoing
If so, please list conference details.	
Did the presentation acknowledge BOFAS?	N.A.
What was the money used for?	None of the £5000 has been spent as yet. It is deposited in the RNOH Research Account at present
Was any money not used?	At present none has been used.
If so, was it returned or used for other projects?	NA
Were any other grants obtained for this project?	No
If so, provide details:	The funding was awarded to conduct a feasibility study at the RNOH and hold a meeting of interested institutions who wanted to participate in the actual RCT. We have surveyed all BOFAS members and have collected initial screening data on interested units and suggestions for refining protocols. A research meeting was planned for the 30th August 2019, In London, to further discuss the project with interested units.

Grant Number 41

Principal Investigator:	David Langton
Hospital(s):	North Tyneside Hospital and Northern Retrieval Registry
Amount Awarded:	£15000
Date Paid:	August 2018
Title of project:	Analysis of explanted ankle prostheses and correlation with clinical data
Summary of research:	Not supplied
Was the project completed?	Not yet. Currently slowed down by R&D department. Data collection estimated at one year.
Was the project published?	NA
Was the project presented?	NA
What was the money used for?	Purchase of analytical equipment
Was any money not used?	All used
If so, was it returned or used for other projects?	NA
Were any other grants obtained for this project?	No