The University of Nottingham seeks applications for a full-time Associate/Assistant Professor in Musculoskeletal Research to develop and lead a research programme complimentary to research strengths currently existing within the Division but primarily with regard to musculo- skeletal metabolism and physiology in health, ageing and disease; and to contribute to teaching on the BSc in Medical Therapeutics and Physiology Course and Graduate Entry Medicine course.

The successful applicant will already have a successful track record in musculo-skeletal research and will primarily be expected to develop a programme of research that dovetails with current translational research initiatives in the Clinical, Molecular and Metabolic Physiology and wider University strategic research structures (MRC/ARUK Centre for Musculoskeletal Ageing (which was recently successfully renewed), ARUK Centre for Sport, Exercise and Osteoarthritis, ARUK Pain Centre, Sir Peter Mansfield Imaging Centre and the Nottingham NIHR Biomedical Research Centre). They will work within the Division of Medical Sciences and Graduate Entry Medicine in Derby within the School of Medicine and will have access to excellent state of the art laboratories, for undertaking metabolic and physiology research; in addition the facility at Derby houses an internationally renowned stable isotope mass spectrometry facility, which is at the successful candidates disposal to pursue dynamic measures of metabolism, combined with access to powerful OMICS platforms e.g. both metabolomic proteomic approaches. Ideally the candidate will have proven expertise in the practicalities and application of tracer and mass spectrometric approaches to study metabolism. A full description of the Divisions' research program may be seen at http://www.nottingham.ac.uk/medicine/about/medscigem/

The role holder will be expected to have a significant interest and research track record in the field of muscle metabolism and the application of state of the art measurement of metabolism using a variety of mass spectrometric approaches in the context of nutrition, ageing exercise, health and the impact of chronic disease, and be able to identify opportunities for the development of new research projects and collaborations within the School and wider University research framework.

The role holder will initially have time to concentrate efforts into developing their research and securing funding, but eventually will take responsibility for the quality of the design of courses/modules to maintain the high teaching standards and contribute to the delivery and assessments in the BSc in Medical Therapeutics and Physiology and wider GEM course.

The role holder may have line management responsibilities including responsibility for the professional development of junior colleagues and PhD students and contribute to the overall administration of the School.

The University of Nottingham's support for Musculo-skeletal ageing research is clear and evidenced by their commitment, at the inception of the MRC-ARUK Centre, by providing one Chair and two Assistant Professor positions. This post is available through this commitment, following the departure of the Chair.

Main Responsibilities

% time per year

1.

To develop and sustain a national reputation as a researcher through publication of original research work in leading peer-reviewed national and international research journals, and present at national/international conferences in the field of metabolism and physiology in the context of nutrition, exercise, health, ageing and chronic disease.

To be the principal investigator and co-investigator on funding bids which develop and sustain research outputs and support in this field, in collaboration with Clinical Colleagues
To investigate and devise new research methods, generate new research approaches and contribute generally to an increase in knowledge, understanding, thought development and practice in this field, and apply this to research, and where appropriate, teaching practice in the School of Medicine.

45%

2.

Contribute to Teaching and Learning activities within the Division, in time developing and convening modules on MPT, with PBL sessions and contributions to GEM curriculum, where needed. In addition contribute research driven special study modules, research projects - supervising BSc and BMedSci students.

20%

3.

To provide academic and organisational leadership to those working within the School of Medicine and in particular metabolism and physiology research, by for example co-ordinating resources, line-managing the work of others to ensure the effective delivery of research projects, student practical classes and agree objectives and work plans with the team.

15%

4.

Contribute to the development of research strategies and initiatives to foster collaboration and generate income in the School of Medicine and wider University strategic research structures. To apply research results in public policy or commerce where there is a demonstrable benefit to the University and the School of Medicine.

10%

5.

Within an agreed time-frame, assist with duties in areas such as admissions, timetabling, examinations, student attendance and pastoral support. To contribute to student recruitment and secure student placements and provide appropriate advice to others involved in this activity.

In addition, be responsible for the safe conduct of work within work area and teaching responsibilities ensuring that the School's arrangements for compliance with the University Safety Policy and HTA are implemented.

10%

Knowledge, Skills, Qualifications & Experience

	Essential	Desirable
Qualifications/ Education	• PhD or equivalent in subject area relevant to metabolism and physiology in the context of nutrition, exercise, health and chronic disease.	• Higher Education teaching qualification or equivalent, or evidence of engagement with this process. • Membership of a professional body where appropriate.
Skills/Training	• Track record in research evidenced by first or senior author of original, peer reviewed publications. • Excellent oral and written communication skills, including the ability to communicate with clarity on complex and conceptual ideas to those with limited knowledge and understanding as well as to peers, using high level skills and a range of media. • Sufficient breadth or depth of specialist knowledge in human metabolism and physiology in the context of nutrition, exercise, health and chronic disease to develop research programmes and methodologies. • Ability to devise, advise on and manage learning and research programmes. • High level analytical capability to facilitate conceptual thinking, innovation and creativity. • Ability to build relationships and collaborate with others, internally and externally.	• Evidence of successful consultancy activities and/or delivery of specialist services to external customers/clients. • Some evidence of securing research grant income as an independent researcher. • Ideally evidence of expertise in mass spectrometry both practical and application. • Ability to manage resources and an understanding of management processes. • Skills in counselling, pastoral care and motivating students. • Emerging skills in managing and motivating staff.
Experience	• Evidence of research and teaching experience with a growing reputation in the field of human metabolism and physiology in the context of nutrition, exercise, health, ageing and chronic disease consistent with a national reputation. • Experience in developing and devising new research techniques and methods. • Experience and achievement in chosen field, reflected in growing and consistent national reputation. • Evidence of publication record of original research in peer reviewed journals.	• Evidence of the supervision and pastoral care of students at all levels. • Experience, achievement and growing reputation in the discipline, reflected in relevant national committee memberships, and/or involvement in national research events. • Experience of devising, advising on and managing learning and research programmes. • Experience and demonstrated success in delivering teaching within an agreed quality framework.
Other	• Willingness to adopt the Ethos and Principles of the School of Medicine.	

October 2017

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OVERVIEW OF ACADEMIC AND RESEARCH INTERESTS

Research Themes: I am part of the Musculoskeletal Sciences research group, and my primary responsibility is to lead an MRC funded project investigating the age-related the structural remodelling of motor units and its contribution to muscle loss in old age. Since beginning my PhD I have published several articles in high quality journals and communicated my research findings at a number of international physiology conferences. I contribute to undergraduate teaching and student supervision at all levels, and I currently supervise three PhD students and two MSc students.
I consider myself to be a hard working and enthusiastic individual who understands the importance of internal and external collaborations in research. I have a broad range of research interests of which I am continually willing to expand and improve upon.

EMPLOYMENT HISTORY

October 2015 - present	**Post Doctoral Research Associate**. Musculoskeletal Sciences, Manchester Metropolitan University. I play a lead role in a MRC funded study into the neuromuscular changes associated with older age. This has involved the development of a novel electromyography technique that allows a more detailed investigation of neuromuscular structure and function, and the changes to these systems during ageing, sarcopenia and frailty. I am an Associate Fellow of the Higher Education Academy and I contribute to teaching across all levels, co-supervise two PhD students and 2 MSc students, and advise on several other projects.
October 2012 to March 2015	**Associate Lecturer in Musculoskeletal Science.** Musculoskeletal Sciences, Manchester Metropolitan University. Throughout my PhD I contributed to teaching at levels 4 to 6, in Physiological Sciences and Biomedical Sciences. This included assisting in lab practical sessions with experimental design and report writing. I supervised several undergraduate students during their final year projects during data collection and advised on dissertation writing. I led a series of tutorials covering data use and statistical analysis, and several others as part of the Applied and Environmental Physiology unit.
September 2004 to August 2012	**Heating engineer. Self-employed.** As a self employed heating engineer my primary role was the daily management of the business, including securing new contracts and staff management. Throughout my undergraduate degree this role was performed on a part time basis.

QUALIFICATIONS

2016-present **Post-Graduate Certificate in Learning and Teaching in Higher Education Practice**. Manchester Metropolitan University. I have completed the Introduction to Learning, Teaching and Assessment unit and I am an Associate Fellow of the Higher Education Academy. I intend to complete the PGCLTHE before April 2018 to become a Fellow of the Higher Education Academy.

Sept 2012 to Oct 2015 **PhD in Neuromuscular Physiology.** Musculoskeletal Sciences, Manchester Metropolitan University. Thesis title: Motor unit characteristics in young and old skeletal muscle. I coordinated a large study to investigate the level of age-related motor neuron loss and subsequent motor unit remodeling in muscle groups susceptible to age-related atrophy. Measurements included novel intramuscular EMG assessments of motor unit form and function, blood marker analysis, nutritional intake, imaging including MRI and DXA, and assessments of physical performance and mobility**.** The study outcome highlighted the deterioration of motor neurons during otherwise healthy ageing.

Sept 2009 to July 2012 **BSc (Hons) Biomedical Science, First Class.** Healthcare Science, Manchester Metropolitan University. Dissertation title: Understanding the age related loss of skeletal muscle mass, and the development of a study to assess the benefits of amino acid interventions. Further modules studied included haemotology, microbiology and immunology. This included an introduction to several widely used laboratory techniques and procedures.

TEACHING EXPERIENCE

For the previous 4 years I have contributed to teaching at levels 4, 5 and 6 using a range of delivery techniques including lectures, tutorials and laboratory practical sessions. I have been responsible for developing and delivering the content for all tutorial sessions within the L5 Applied and Environmental Physiology unit, and for several lectures within the L4 Physical Activity and Health unit. I have supervised more than 10 undergraduate students during their final year projects and dissertations. Throughout all of this I have been able to ensure all content was informed by the latest research. Through academic supervision I also have experience of teaching at MSc and PhD level.

ACADEMIC SUPERVISION

PHD: The effects of a high fat diet and ageing on skeletal muscle. Co-supervisor.

MSc: Neuromuscular junction transmission stability in Bicep Brachii following intense eccentric contractions. Co-supervisor.

MSc: The acute effects of resistance exercise on motor unit function. Co-supervisor.

NATIONAL AND INTERNATIONAL COLLABORATIONS

Motor Unit Remodelling in older age	This project formed the majority of my PhD and ongoing post-doctoral work. It is funded by the Medical Research Council and involves colleagues from the University of Manchester, Central Manchester Hospitals NHS Trust, and the University of Waterloo in Canada. It has lead to several publications and a successful grant application.
Changes to bone mineral density in older age	This project is funded by the Medical Research Council and involves colleagues from the University of Bristol. It has resulted in MMU developing and maintaining a cohort of more than 300 Masters Athletes in Europe.
Nutritional supplementation in older age	This was part of a multi-centre trial funded by Nutritia Research (Danone). We assessed the efficacy of a nutritional supplement to maintain skeletal muscle function and mobility in older age. This lead to research income of £27k and a 4* publication in Clinical Nutrition.
Determinants of critical speed and power in elite athletics	This project is in collaboration with the English Institute of Sport the University of Loughborough. This project is independent of my supervisory team.

EXTERNAL ROLES

The Physiological Society	I have been a member of The Physiological Society since 2010, a learned society formed in 1880. In an open, competitive process during 2015 I was elected by peers to sit on Council as an Affiliate Member Representative. This involves regular attendance to meetings in London to discuss future strategy and promote the charitable objectives of The Society. I am a member of the Meetings Committee and have helped to organise major scientific meetings, including the Biomedical Basis of Elite Performance conference held in Nottingham in 2016, and Physiology 2016, the annual conference of The Physiological Society, held in Dublin in 2016. In 2017 I was invited to be a member of the Core Strategy working group, which comprises myself, a trustee, the Society's CEO, the deputy-president and the president of the Society. It is our responsibility to review and write the Society's future strategy. I have played a key role in the formation of the Society's first Affiliate Working Group, of which I currently Chair. We meet several times per year to implement feedback from Affiliate members of The Society, and we act as the organising committee for Early Career Researcher events.
International	I was the UK representative to the IUPS Early Career Committee. I am part of

Union of the Physiological Sciences (IUPS)	the organizing committee for the International Early Career Symposium, which was held in Rio, Brazil, in July-August 2017.
Invited speaker	In 2016 I was invited to deliver a lecture as part of the Musculoskeletal Ageing and Health MSc course at the University of Birmingham. I will repeat this lecture in 2017. In November 2017 I will be the invited speaker at the University of Manchester's seminar series, where I will talk about my recent research on the neuromuscular function of masters athletes.

ACADEMIC PRIZES

Human Physiology Workshop. I was awarded a prize for my oral presentation at the European Space Centre, Cologne, Germany. The title of the presentation was "Neuromuscular junction transmission variability in the vastus lateralis of master athletes compared with healthy young and older men".

Manchester Metropolitan University. In 2016 I was nominated, and shortlisted to the final 5, for the Rising Star award as part of the annual Manchester Metropolitan University Staff Awards.

RESEARCH INCOME

MICRA Seedcorn Funding. Lead applicant. Understanding the pathogenesis of frailty by assessing relationships of agrin and glucose/inflammation with motor neuron number and muscle fibre reinnervation. **£5995. Unsuccessful January 2017.**

Health Research Accelerator Award. University of Manchester. Co-applicant. The relationship between anabolic hormones and neuromuscular health in old age and frailty. **£10,000. Awarded November 2016.**

PUBLICATIONS

Francis P, Lyons M, **Piasecki M**, McPhee JS, Hind K, Jakeman J. Measurement of muscle health in ageing. *Biogerontology* (2017). Doi.10.1007/s10522-017-9697-5.

Piasecki M, Ireland A, Coulson J, Stashuk DW, Hamilton-Wright A, Swiecicka A, Rutter MK, McPhee JS, Jones DA. (2016). Motor unit number estimates and neuromuscular transmission in the tibialis anterior of master athletes: evidence that athletic older people are not spared from age-related motor unit remodeling. *Physiol Rep* **4**. DOI: 10.14814/phy2.12987.

Leightley D, Yap MH, Coulson J, **Piasecki M**, Cameron J, Barnouin Y, Tobias J, McPhee JS (2016). Postural Stability During Standing Balance and Sit-to-Stand in Master Athlete Runners Compared With Non-Athletic Old and Young Adults. *Journal of Aging and Physical Activity,* 1-21.

Pannerec A, Springer M, Migliavacca E, Ireland A, **Piasecki M**, Karaz S, Jacot G, Metairon S, Danenberg E, Raymond F, Descombes P, McPhee JS, Feige JN. (2016). A robust neuromuscular system protects rat and human skeletal muscle from sarcopenia. *Aging (Albany NY)* **8,** 712-729.

Piasecki M, Ireland A, Jones DA, McPhee JS. (2015). Age-dependent motor unit remodelling in human limb muscles. *Biogerontology* **17,** 485-496.

Verlaan S, Aspray TJ, Bauer JM, Cederholm T, Hemsworth J, Hill TR, McPhee JS, **Piasecki M**, Seal C, Sieber CC, Ter Borg S, Wijers SL, Brandt K. (2015). Nutritional status, body composition, and quality of life in community-dwelling sarcopenic and non-sarcopenic older adults: A case-control study. *Clin Nutr*. DOI: 10.1016/j.clnu.2015.11.013.

Bagley L, Slevin M, Bradburn S, Liu D, Murgatroyd C, Morrissey G, Carroll M, **Piasecki M**, Gilmore WS, McPhee JS. (2015). Sex differences in the effects of 12 weeks sprint interval training on body fat mass and the rates of fatty acid oxidation and VO2max during exercise. *BMJ Open Sport & Exercise Medicine* **2**, 1.

Piasecki M, Ireland A, Stashuk D, Hamilton-Wright A, Jones DA, McPhee JS. (2015). Age-related neuromuscular changes affecting human vastus lateralis. *J Physiol* **594,** 4525-4536.

PUBLICATIONS UNDER REVIEW

Piasecki M, Ireland A, Coulson J, Stashuk DW, Swiecicka A, Rutter MK, Jones DA, McPhee JS. (2017). Failure to expand the motor unit size to compensate for declining motor unit numbers distinguishes sarcopenic from non-sarcopenic older men. *The Journals of Gerontology.*

Piasecki M, Ireland A, Coulson J, Stashuk DW, Swiecicka A, Rutter MK, McPhee JS, Jones DA (2017). The interpretation and reliability of methods to estimate the number and size of human motor units*. European Journal of Applied Physiology*

McPhee JS, Jones DA, **Piasecki M**, Maden-Wilkinson TM, Cameron, J. Degens H. (2017). Causes of muscle weakness in sarcopenia: cross-sectional and longitudinal measurements of muscle quantity, quality and control. *The Journals of Gerontology.*

Yeung S, McPhee JS, **Piasecki M**, Hogrel JY, Sipila S, Maier E. (2017). The association of sarcopenia with grip and knee extensor strength in a diverse population of elderly adults. *Journal of Cachexia, Sarcopenia and Muscle.*

Coulson J, Ireland A, **Piasecki M**, Cameron J, McPhee J.S, Degens H (2016). The adaptations of weight-bearing bones are not attenuated in amenorrheic elite long-distance runners. *Scandinavian Journal of Medicine and Science in Sports*

CONFERENCE PAPERS

SSY Yeung, EM Reijnierse, MC Trappenburg, J-Y Hogrel, JS Mcphee, **M Piasecki**, S Sipila, A Salpakoski, CGM Meskers, AB Maier. Agreement of Handgrip Strength and Quadriceps Strength Dependent on Age and Health Status. 1st September 2017. Clinical Nutrition. 36, S29

Piasecki M, Ireland M, Stashuk D, Hamilton-Wright A, Jones D, McPhee JS. Neuromuscular junction transmission variability in the vastus lateralis of master athletes compared with healthy young and older men. *Human Physiology Workshop*, 11 December 2016, DLR, Cologne, Germany. Proc Physiol Soc 35, C13. (Oral presentation) – Awarded conference prize.

Piasecki M, Ireland M, Stashuk D, Hamilton-Wright A, Jones D, McPhee JS. Age associated motor unit loss is not attenuated by high levels of lifelong exercise. *The Biomedical Basis of Elite Performance 2016*, 6-8 March 2016, Nottingham, UK. Proc Physiol Soc 35, C13. (Oral presentation)

McPhee JS, **Piasecki M**, Ireland M, Jones D. Motor unit recruitment during sustained fatiguing contractions with blood flow occlusion. *The Biomedical Basis of Elite Performance 2016*, 6-8 March 2016, Nottingham, UK. Proc Physiol Soc 35, C15. (Oral presentation)

Piasecki, M., Ireland, A., Coulson, J., Stashuk, D.W., Jones, D.A. & McPhee, J.S. Motor unit characteristics in the vastus lateralis: Do masters athletes also lose their nerve? *British Society for Research on Ageing 2015: Basic Biology of Ageing*, 1-2 July 2015: London, UK. (Oral presentation)

Ireland, A., **Piasecki, M**., Stashuk, D.W., Jones, D.A. & McPhee, J.S. Age-related loss of motor units and evidence of remodelling in the vastus lateralis in humans. *International Society for Musculoskeletal and Neuronal Interactions*, 21-23 April 2015; Bad Liebenzell, Germany. (Oral presentation)

Piasecki, M., Ireland, A., Stashuk, D.W., Jones, D.A. & McPhee, J.S. Age-associated motor unit remodelling in the vastus lateralis. *The Physiological Society Topic Meeting: Ageing and Degeneration: A Physiological Perspective*, 9-11 April 2015; Edinburgh, UK. (Poster presentation)

Ireland, A., **Piasecki, M**., Stashuk, D.W., Jones, D.A. & McPhee, J.S. Age-related loss of motor units in the vastus lateralis. *The Physiological Society Topic Meeting: Ageing and Degeneration: A Physiological Perspective*, 9-11 April 2015; Edinburgh, UK. (Poster presentation)

Piasecki, M., Ireland, A., Hodson-Tole, E., Jones, D.A. & McPhee, J.S. *Motor Unit Number Index in the Biceps Brachii: Effects of Recording Location*. The XX Congress of the International Society of Electrophysiology and Kinesiology, 15-18 July 2014; Rome, Italy. (Poster presentation)

Piasecki, M., Ireland, A., Hodson-Tole, E., Cornfield, T., Jones, D.A. & McPhee, J.S. Effect of Recording Location on MUNIX Values in the Biceps Bracchi of Humans. *British Society for Research on Ageing Annual Scientific Meeting*, 7–9 July 2014; Liverpool, UK. (Poster presentation)

Piasecki, M., Ireland, A., Hodson-Tole, E., Cornfield, T., Jones, D.A. & McPhee, J.S. Effect of Recording Location on MUNIX Values in the Biceps Bracchi of Humans. *The Physiological Society Main Meeting*,

30 June-2 July 2014; London, UK. (Poster presentation)

Bagley, L, Slevin, M., Al-Shanti, N., **Piasecki, M**., Morrissey, G., Foulkes, H., Carroll, M., Murgatroyd, C., Liu, D., Gilmore, W.S. & McPhee, J.S. Changes in body composition and rates of fat oxidation following 12 weeks high intensity exercise. *37th International Congress of Physiological Sciences. International Union of Physiological Sciences*. 2013 Jul 21-26, Birmingham, UK. (Poster presentation)