

# Hawthorne Fellow in Autism Innovation

School/Centre	Laboratory for Innovation in Autism		
Faculty	Humanities and Social Sciences		
Staff Category	Research	Reference No	104934
Reports To	Dr. Jonathan Delafield-Butt	Grade:	8
Salary Range:	£39,992 - £42,418	Contract Type:	3 Years Fixed Term
FTE:	1.0	Closing Date	Sunday, 4 February 2018

## Job Advert

We seek a motivated, experienced scientist for data analytics of human movement patterns for early assessment of childhood neuropsychiatric disorders, especially autism. This Hawthorne Fellowship is a generous 3-year senior post-doctoral post to achieve earlier diagnosis of neurodevelopmental disorders in very young children and infants using cutting-edge wearable and smart sensor technologies. You will be part of multidisciplinary Laboratory for Innovation in Autism, a cross-disciplinary research centre between Electronic and Electrical Engineering, Biomedical Engineering, Psychology, and Education with clinical application in Neuropsychiatry.

At Strathclyde we have particular expertise in movement analysis with spin-out companies that include Vicon and the Silent Herdsman. We have psychological expertise in the role of movement and embodiment in child development and developmental neuropsychology. Your work will accelerate the development of novel, smart movement-sensing technologies for the ecological analysis of children's motor patterns as a route to early assessment and diagnosis. You will work within an international network of clinical, educational, and academic partners to better characterise children's motor performance during ecological iPad gameplay or during real-world activities with wearable sensors.

As Hawthorne Fellow in Autism Innovation you will: (i) contribute improved iPad data analytics to assess children's motor patterns using wearable during gameplay (see <http://www.nature.com/articles/srep31107>) as part of a large EU H2020 diagnostic trial with the Gillberg Neuropsychiatry Centre and with a trial at the University of Southern California; (2) collaborate with autism leaders at Deakin and Melbourne Universities on analysis of whole-body movement of children; (3) and contribute your creativity and vision to build a lab that seeks innovative technological solutions to identification of risk for neurodevelopmental disorder at birth. To this end, we are currently engaged in plans for a whole-population birth cohort with the next generation of wearable IMUs.

This is an exciting opportunity to join our laboratory and to shape its development. We seek an experienced data or research scientist who has a track record and momentum, and who now seeks to consolidate this experience and accelerate their publication track record in this exciting new field of technological and clinical overlap where we are ahead of the curve. The analysis of movement data using light-weight wearable IMUs for neuropsychiatric purposes is an emerging field assisted by serious game frameworks for fun and ecological paradigms children enjoy. We work to define 'motor signatures' with computational precision in ecological contexts as important biomarkers for neurodevelopmental disorder. Such non-invasive, accessible, and accurate assessment holds great potential. This Hawthorne Fellowship will develop the computational approaches that contribute to early assessment from deep psychological perspective of embodiment in mental health and autism (<http://journal.frontiersin.org/article/10.3389/fnint.2013.00049/>).

We seek a highly-motivated data scientist or human movement scientists broadly considered (psychologist, biomedical engineer, neuroscientist) with expertise in data analytics and machine or deep learning, and inspired to develop early assessment technologies, analytics, and paradigms. A good honours degree and PhD (or, exceptionally, equivalent professional

experience) in any of Digital Health, Psychology, Neuroscience, Biomedical Engineering, Biomechanics, or Electrical and Electronic Engineering, plus relevant research experience to enable the delivery and dissemination of independent research. Candidates will have a body of published research in the field, in high quality publications and demonstrate previous research experience in a relevant discipline. Interest in neurodevelopmental disorders or wearables sensors in digital health is a significant benefit.

The postholder will become a team leader, supervising PhD students, junior post-docs, and lead on dissemination of research results and impact. The successful candidate will lead on sourcing research funding and grant application writing, as Principal Investigator and Co-Investigator. In this first instance, you will provide data analytics for ongoing projects supported by the EU H2020, EPSRC, Carnegie Trust, and Scottish Government. As the work develops, you will be expected to secure grants and develop the aims of the lab. The post is initially 3 years fixed term, with the possibility for extension on successful grant funding.

The Laboratory for Innovation in Autism is situated in the city centre of Glasgow next to the Technology and Innovation Centre at the University of Strathclyde.

## Job Description

### Brief Outline of Job:

We seek a talented, motivated scientist with specialist skills in data analytics and development of new computational algorithms of smart device and wearable sensor data to identify and characterise the autism motor signature in young children. Analytics can include expertise in kinematic data analysis, inertial movement unit sensor data analytics, or machine and deep learning.

The postholder will work to support a major H2020 diagnostic trial commissioned by start-up company Harimata (Kraków) and in collaboration with Professor Helen Minnis and Dr. Alex McConnachie (Glasgow), Professor Phil Wilson and Dr. Lucy Thompson (Aberdeen) and Professor Chis Gillberg (Gothenburg) to test the predictive accuracy of current algorithms for the autism motor signature.

The postholder will also develop and support analysis of a significant, established dataset of gait in children with developmental disorders ASD, ADHD, and DCD made in collaboration with Professor Nicole Rinehart (Deakin) and Professor Jenny McGinley (Melbourne) along goal-directed motor control principles.

Finally, this post will enhance two growing collaborations in the United States with Assoc. Professor Lisa Aziz-Zadeh (Southern California) to differentiate ASD from DCD patterns and with possibility for extension with Professor Alex Kolevzon and Daniel Posner (Mt. Sinai, New York).

Further, the post-holder will contribute to the development of the Laboratory for Innovation in Autism, lending his or her senior expertise lead and supervise writing of research reports and publications that arise from the projects above, to help build and supervise the junior post-doc and PhD student team, and lead or collaborate on grant writing to generate income.

### Main Activities/Responsibilities:

1.	Engage as an experienced, independent researcher, developing research objectives and methodology to carry out data analytics of smart device IMU and touch screen sensors (wearables, tablets, phones) for ecological motor assessment of children.
2.	Develop and carry out data analytics of full-body optical 3D motion capture of movement in children.
3.	Maintain and build our international research collaborations, especially in projects with Deakin University, the Gillberg Neuropsychiatry Centre, and University of Southern California.
4.	Support the major diagnostic trial in iPad assessment of autism across sites in Glasgow and Gothenburg.
5.	Manage a research team of research associates, assistants, and postgraduate students, providing direction, support and guidance.
6.	Lead on dissemination of research results and impact, through regular publications in high quality journals, research reports, and contribute to publications led by others.
7.	Lead on sourcing research funding and grant application writing, as Principal Investigator and Co-Investigator. .
8.	Attend meetings of the Laboratory and associated Schools as required.
9.	Engage in continuous professional development.

## Person Specification

### Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 Good honours degree and PhD (or, exceptionally, equivalent professional experience) in either Digital Health, Human Movement Science, Neuroscience, Psychology, Biomedical Engineering, Biomechanics, or Electrical and Electronic Engineering

### Experience

E2 Substantial previous research experience in a relevant discipline

E3 Experience of planning and organising workload, including the ability to supervise and delegate work

D1 Experience of multi/inter-disciplinary research

### Job Related Skills and Achievements

E4 A track record of publication excellence

E5 Ability to develop research proposals and to attract funding and research students, as appropriate to the discipline, including experience of contributing to grant applications

E6 Data analytics expertise

E7 Ability to establish and maintain successful working relationships with national and international collaborators

### Personal Attributes

E8 Excellent interpersonal and communication skills, with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences

### Other Relevant Factors

E9 Flexible approach with the ability to travel internationally for short periods if required

## Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted before interview without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

## Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforum>).

Informal enquiries about the post can be directed to Dr Jonathan Delafield-Butt, Reader in Autism and Child Development ([jonathan.delafield-butt@strath.ac.uk](mailto:jonathan.delafield-butt@strath.ac.uk), +44 (0)141 444 8053).

### Conditions of Employment

Conditions of employment relating to the Research staff category can be found at: [Conditions of Employment](#).

### PVG Check

This position may involve regulated work with children, making it a legislative requirement that the successful candidate becomes a member of the Protection of Vulnerable Groups Scheme. If appointed, the successful applicant will be precluded from working with protected groups until membership of the Scheme has been received.

### Pre-employment health screening

An offer of appointment will be subject to a medical assessment by Occupational Health. An individual who accepts an offer of employment must complete a confidential medical questionnaire and forward it to the Occupational Health Nurse within 5 days of receipt. If further information is required the individual may be contacted by the OHN or a Medical Advisor and a personal appointment with the individual may be arranged. An unconditional contract of employment will not be issued until Human Resources receives confirmation that applicant is fit to undertake the duties of the post.

### Probation

Where applicable, the successful applicant will be required to serve a 12 month probationary period.

### **Pension**

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

### **Relocation**

Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

### **Interviews**

Formal interviews for this post will be held on Friday, 16 February 2018.

### **Equality and Diversity**

We value diversity and welcome applications from all sections of the community.

The University currently holds a Bronze Athena SWAN award, recognising our commitment to advancing women's careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.



# Conditions of Employment

## Research Staff

### 1. GENERAL CONDITIONS

Members of staff are subject to the Charter and Statutes and the Ordinances and Regulations of the University, published in the Calendar, and to any amendments or additions thereto approved by the University Court and, in the case of the Charter and Statutes, the Privy Council. Staff are also expected to familiarise themselves with, and adhere to, general University policies and procedures, as published on University web pages.

The University Court recognises Strathclyde Universities and College Union (SUCU) as the sole body with which it will negotiate and consult on all collective issues concerned with the terms and conditions of employment of Research Staff. Such terms and conditions may be varied by the University Court after negotiation and consultation with SUCU.

Each member of staff is responsible for the proper performance of allocated duties to the person or persons specified in the member of staff's letter of appointment and any accompanying papers.

The University is committed to ensuring that its business is conducted in an open and transparent manner and will take all appropriate steps to address risks of bribery or corruption. Members of staff are required at all times to act honestly and with integrity and to safeguard the resources for which they are responsible. The University has in place a robust Public Interest Disclosure (Whistleblowing) Policy to enable concerns to be brought to its attention. This is available at [www.strath.ac.uk/publicinterestdisclosure](http://www.strath.ac.uk/publicinterestdisclosure). Other relevant policies, e.g. Fraud Prevention and Conflicts of Interests, can also be found on the University's website.

Any member of staff may at any time be exposed to commercially sensitive information, information related to potentially valuable intellectual property or information which may otherwise be of a confidential nature. This information, which could be found anywhere in the University, may be written or disclosed orally, can include information of a commercial or technical nature, and may be owned by the University or by third parties. The University requires all employees to keep any such information confidential in the first instance and not disclose, publish or otherwise disseminate it without prior consent of the University. Such confidentiality obligations are commonplace and in the commercial interests of the University. When in doubt advice should always be sought from Research and Knowledge Exchange Services prior to disclosure.

The University operates probationary periods for new staff, the duration of which will be specified in individual letters of appointment. The normal probation period for posts in this staff category is 9 months for those at grades 6 and 7, and 12 months for grades 8 and above. Further guidance on probationary procedures is published at <http://www.strath.ac.uk/staff/policies/hr/>.

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Further information on the terms and conditions specified in this document and other staffing policies and procedures can also be found at [www.strath.ac.uk/hr](http://www.strath.ac.uk/hr).

### 2. SALARY

Appointments are made at an appropriate salary point on the University's grading structure, with initial placing determined according to qualifications and experience. Increments are paid to staff on the 12 month anniversary of their appointment. Where this is not the first of the month, the increment will be paid on the first of the month directly

after the 12 month anniversary. This allows 1 progression to the next point on the salary scale until the top guaranteed point of the scale is reached.

Salaries are paid directly to staff members nominated bank account, normally on the second last working day of the month.

### 3. HOURS OF WORK

Working time is that required to fulfil the duties of the post. The University Court recognises that research staff carry out these duties in a variety of ways appropriate to the nature of the research activity, but expects regular contact to take place between the research staff employee and the supervisor/granholder (where these positions are occupied by different individuals) during normal working hours on week days. There are exceptions to this pattern which may involve contact at other locations or in the evenings, or at weekends, but these arrangements will be made with the agreement of the member of staff concerned.

Duties may, by arrangement with Head of Department/School/Director, include some teaching associated with the post (up to a maximum of 40 hours per semester) for which no additional payment will be made.

Additional work which does not fall within the scope of that described above may by arrangement attract payment which must be authorised and processed through the payroll.

### 4. HOLIDAYS

Annual leave entitlement is 31 days per year to be taken by agreement with the line manager. For staff members working on a part-time basis, holidays will be calculated on a pro-rata basis.

In addition to annual leave there is an entitlement to eleven public holidays per year which should be taken on days that the University is closed for this purpose. The University presently closes for four additional days over the Christmas and New Year period. **These additional days count against the annual leave entitlement.**

For staff members working on a part-time basis, public holiday entitlement will be calculated on a pro-rata basis.

Annual leave and public holiday entitlements should be taken in the leave year to which they relate. Up to five days leave can be carried forward into the new leave year subject to line management agreement. In exceptional circumstances, Heads of Department/School/Director may approve carry forward of accrued annual leave in excess of five days.

The University's expectation is that staff take all accrued holidays prior to their termination date. If staff have exceeded their entitlement the University will deduct an equivalent number of days pay from final salary payments.

## 5. SICKNESS ABSENCE

During any period of absence through illness or injury provided the appropriate notification and certification procedures have been followed the University will pay a member of staff (having taken account of the aggregate of all periods of absence due to illness during the twelve months immediately preceding the first day of the current absence) as follows:

<b>Period of Continuous Employment at start of absence from work</b>	<b>Full Pay</b>	<b>Half Pay</b>
Less than 1 year	1 month	1 month
1 year but less than 2 years	2 months	2 months
2 years but less than 3 years	4 months	4 months
3 years but less than 5 years	5 months	5 months
5 years or more	6 months	6 months

In order to manage the University's sick pay scheme the University requires to maintain sickness absence records on individual members of staff. When making payments after the expiry of statutory sick pay the University will deduct an amount equivalent to any benefit normally payable by the Department of Work and Pensions. For full details on the general University policy in this area please refer to the Sickness Absence Management Policy at [www.strath.ac.uk/staff/policies/hr](http://www.strath.ac.uk/staff/policies/hr).

## 6. PENSIONS

New members of staff, aged under 75, will be admitted automatically to membership of the Universities Superannuation Scheme (USS) on taking up appointment. If you are already in receipt of a USS pension you will join USS in accordance with pension auto-enrolment regulations. USS requires a contribution from the member, currently 8 per cent of pensionable salary. A contribution, currently 18 per cent of pensionable salary, is paid by the University. From 1 April 2016 all members are part of the career revalued benefits scheme called the USS Retirement Income Builder. From 1 October 2016 a threshold, initially of £55,000 a year, will apply to the maximum salary that counts towards the USS Retirement Income Builder. From the same date a new defined contribution section of the scheme called USS Investment Builder will open and any contributions above the threshold will be invested in this section. The exception to automatic membership of the pension scheme applies if your post is located out with the UK in an EU member state. If this is the case membership of USS is not available to you.

New members of staff may opt out of USS within three months of taking up appointment and will then be treated as if they had never been a member of the scheme. After three months members of staff who wish to withdraw from USS during their employment will be required to give a minimum of 28 days' notice in writing to the University. Any member of staff who wishes to opt out should contact the Pensions Section, Finance, in the first instance ([pensions@strath.ac.uk](mailto:pensions@strath.ac.uk)). Please note that if you are a member of Pensions Plus and withdraw from USS with less than two years of membership, or cease employment with the University and have less than two years of USS membership, the option of a refund of pension contributions will not be available to you. Instead, USS must provide you with a pension benefit that is payable from your retirement date.

The University reserves the right to alter or withdraw Pensions Plus as it sees fit or as required to comply with legislative changes. Withdrawal or amendment of Pensions Plus will not affect your membership of USS. If you do not wish to participate in Pensions Plus but wish to remain in the pension scheme please contact the Pensions Team who will provide you with a non-participation form.

Information regarding pension scheme membership can be found on the Pensions pages of the University's website. Full information regarding USS can be found on the USS website – [www.uss.co.uk](http://www.uss.co.uk)

## 7. PLACE OF WORK AND RESIDENCE

Members of staff will be based on the John Anderson Campus, unless otherwise stated in the letter of appointment. The Department/School in which the post is initially placed will be specified in the letter of

appointment although there will be an expectation to work at such other places as required in the course of employment.

If the need arises for members of staff to work outside the UK for a period (or periods) of more than one month then such arrangements will be subject to mutual agreement. Members of staff would then be provided with a statement in advance setting out the terms covering such periods of employment.

The University does not normally place specific restrictions upon the place of residence of members of staff. All staff are, however, expected to reside in a location which is compatible with the satisfactory fulfilment of all the duties associated with their appointment.

## 8. CONSULTANCY/FURTHER ACTIVITIES

To support the strategic objectives of the University and to facilitate individual professional development, the University encourages staff to engage in professional activities with outside bodies related to their field of work. In many cases, such activity will be approved on the basis that it represents University knowledge exchange activity and should therefore be treated as part of the individual's overall workload and managed through the University's systems. It is also recognised that there will be some cases where an activity is entirely separate from the University and should thus be notified/approved as a personal business activity. For further information please refer to the "University Procedure in relation to Work for Outside Bodies including Consultancies", which forms part of the employment contract and can be accessed at [www.strath.ac.uk/hr](http://www.strath.ac.uk/hr)

## 9. DISCIPLINARY AND GRIEVANCE PROCEDURES

Further information on the University's disciplinary and grievance procedure can also be found at [www.strath.ac.uk/policies/hr](http://www.strath.ac.uk/policies/hr) or on request from Human Resources.

## 10. NOTICE AND TERMINATION

Members of staff are employed on the conditions indicated in individual letters of appointment and any accompanying papers. The University is not obliged to give notice of termination or continue any employment beyond the end of that period. Where the period of the contract of employment is for one year or less it may be terminated short of the fixed term period by one months notice on either side. Where the period of the contract of employment is for more than one year, or where there have been a further contract or series of contracts immediately consecutive, the employment may be terminated short of the fixed term period by three months' notice on either side, except during the probationary period when the notice period is one month.

If the appointment is for a fixed term it will expire at the end of the period without the necessity for notice.

Revised April 2016