THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF BIOLOGY, MEDICINE & HEALTH

SCHOOL OF HEALTH SCIENCES

DIVISION OF PSYCHOLOGY, COMMUNICATION AND HUMAN NEUROSCIENCE

RESEARCH ASSOCIATE IN VISUAL SEARCH

VACANCY REF: BMH-027691

Salary:	Grade 6 £36,924 to £45,163 per annum, depending on relevant experience
Hours:	Full Time
Duration:	Fixed term for 9 months from 1 February 2025
Location:	Oxford Road, Manchester

Enquiries about the vacancy, shortlisting and interviews:
Name: Johan Hulleman
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Overall Purpose of the Job

This project is an international collaboration between Johan Hulleman (University of Manchester, Manchester, UK) and Jeremy Wolfe (Harvard University, Boston, USA).

This is an exciting opportunity to work on a world-leading project that aims to understand the fundamental processes of visual search and the role they play in the visual search tasks of daily life.

The post-holder will have good understanding of visual search field (essential). Prior experience with eye tracking (Eyelink) and online experimentation (JavaScript) would be an advantage. Candidates should have a PhD degree in a psychological, biological, or computational science.

The post-holder will have the primary responsibility for the day-to-day data collection and data analysis in the UK. They will help with the programming of experiments, the preparation of presentations and manuscripts. They will also have responsibility for the preparation of data for sharing. We are committed to capacity-building and supporting team members to further their careers, and the post-holder will be supported to further their career portfolio, including publishing

first-authored papers. Because this is an international collaboration a few one-week visits to the US will be involved.

Background

We have all had the experience of failing to notice something that is in plain view. Sometimes this can even be something that we are actively looking for, like typos in our writing or signs of cancer in a lung x-ray. The aim of our project is to understand the basic science of these "looked but failed to see" (LBFTS) errors and to investigate possible ways to reduce these potentially dangerous errors.

LBFTS errors are not like a disease caused by a single virus. There are a variety of different paths that lead someone to fail to report something that is clearly visible when pointed out. We will study three such paths. Some LBFTS errors can be thought of as a version of bad luck. You can't process everything, so some visual stimuli get processed adequately and some don't. But it is nothing about the stimulus per se. The first set of experiments investigates whether LBFTS errors are mainly due to these random errors or whether there is something about certain stimuli that makes them less likely to be found. The idea of "looking" but failing to see, requires that we define "looking". When you look at one point, there is a region around that point within which you could find your target, even if you don't. This is known as the functional visual field (FVF) or useful field of view (UFOV). In the second series of experiments, we study biases within the FVF. For example, if you are reading, while you are looking at one word, you are biased to the next words to the right (or to the left, e.g., for Arabic or Hebrew), rather than the words directly above or below where you are fixating. We are asking similar questions but about vision more generally. The two principal investigators on this project have different ideas about where the biases in the FVF come from and in this "adversarial collaboration" which we will seek to resolve our differences. Finally, the third series of experiments is devoted to LBFTS errors that occur when you are doing one task but when you might want to be keeping an eye out for other stimuli (e.g. when a doctor is examining a lung x-ray, it may show more than just the fractured rib about which the patient is complaining, such as a suspicious sign of cancer). Here we will try to develop ways to help observers to do their primary task whilst staying attuned to important but non-related events.

Key Responsibilities, Accountabilities or Duties

The range of duties may include:

- Conduct individual and collaborative research projects.
- Write up research work for publication.
- Continually update knowledge and understanding in field or specialism.
- Deal with routine communication using a range of media.
- Communicate complex information, orally, in writing and electronically.
- Prepare proposals and applications to external bodies, e.g. for funding and ethics purposes.
- Communicate material of a specialist or highly technical nature.
- Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
- Join external networks to share information and identify potential sources of funds.
- Manage own research and administrative activities, with guidance if required.
- Work with colleagues on joint projects, as required
- Attend and contribute to relevant meetings.
- Use new research techniques and methods.
- Use creativity to analyse and interpret research data and draw conclusions on the outcomes.

- Contribute to collaborative decision making with colleagues in areas of research.
- Use research resources, laboratories and workshops as appropriate.
- Plan and manage own research activity in collaboration with others.
- Be aware of the risks in the work environment and their potential impact on their own work and that of others.

Person Specification

Essential

- Have, or be about to obtain, a relevant PhD (or equivalent)
- Specialist knowledge in the area of visual search
- Excellent communication and interpersonal skills
- Excellent time management and organisational skills
- Ability to work independently and as part of a team
- Ability to liaise confidently and effectively with a range of individuals
- Flexible approach to dealing with research problems as they arise
- Willingness to learn and develop
- Ability to present in both written and oral publications
- Ability to meet deadlines
- The ability to evaluate complex data
- Ability to assess and organise resources
- Understand equal opportunity issues as they may impact on areas of research content.

Desirable

- Experience in running online experiments
- Experience in programming in Java Script
- Experience with eye tracking
- Strong journal publication record.
- Ability to contribute to broader management and administrative processes.