

Department of Psychology: RES Supervisor List (Autumn Term 2019)

Email your application to Dr Rael Dawtry (rjdawt@essex.ac.uk, RES organiser). **Type “RES application” in the subject line of the email.**

Your email must include:

1. A one page CV in Word or PDF format attached to the email;
2. A list of any members of staff you would like to work with, in order of preference, with your most preferred choice at the start of the list (you can list as many of the staff as you like from the list below)
3. FOR EACH MEMBER OF STAFF ON YOUR LIST OF PREFERENCES, attach a separate short letter (in Word or PDF format) in which you explain (in 100-150 words) your interest in the research project and motivation for working with the researcher.

Please send your application as soon as possible and no later than **midday on Monday the 7th of October (Week 2)**.

Jonathan Rolison



Do you know how you would decide if faced with a real decision, such as whether to jump out of a plane on a skydive? An ability to anticipate how one would decide if faced with a decision is vital for planning our future decisions. Yet, the intention to decide (e.g., to jump from a plane on a first skydive) is hypothetical until one is faced with a consequential decision. A long tradition of behavioural research that uses self-report measures as a substitute for studying behavior directly rests on the assumption that people act as they say they would. In this project, you will help conduct a study to test whether people do as they say they will.

Rick O’Gorman



What is the role of disgust in social settings? Does it help us make moral decisions? Can we use pupil dilation to know when something is more significant in meaning for us? Do we care more about family or friends? Do people look more at men or women, older or younger (are older women ‘invisible’)? These are some of the questions that I will be looking to study with assistance from a Research Experience Student (or two or three!). My general research interest is in studying human behaviour as a functionally adaptive system; that is, evolutionary psychology--the study of human behaviour and cognition from an evolutionary perspective. Which project is worked on depends on what I need to prioritise, and from discussion with RES applicants.



Alex Sel

In the Social Embodiment Lab (SELab) we focus our work in understanding how sensory and motor signals coming from within and outside the body influence our social behaviours. We are particularly interested in how the human brain forms representations of affective states through bodily signals, and how it uses these representations to guide actions. Part of our work has been dedicated to understanding functional interactions between brain areas during sensorimotor processing and the anatomical connections that mediate such functional interactions. This research work has often used a variety of techniques including electroencephalographic (EEG) recordings, physiological measures such as electrocardiogram and skin conductance, behavioural measurements, as well as neurostimulation methods comprising transcranial magnetic stimulation (TMS), transcranial direct current stimulation (tDCS) and transcutaneous vagus nerve stimulation (tvNS). This RES opportunity is aimed for talented and motivated students with some research experience looking to further develop their research skills. Students that are willing to spend more than one term in the SELab are particularly welcome. The student will be involved in the day-to-day activities of the SELab including collection of brain and behavioural data.



Tom Foulsham

My research investigates how people perceive and pay attention to the things around them. In particular, I am interested in the neural, visual, cognitive and social processes that determine where people look and what people notice and remember when they look there. Current projects include investigating where people look in art, comics, movies and computer games.



Nicolas Geeraert

In a globalized world, people regularly have contact with other cultures. Intercultural contact is believed to have a diverse impact on such things as mental health, intergroup behaviour, cultural awareness, and personal development. These effects can be both positive and negative. Immigrants, expatriates and international students are all examples of groups experiencing prolonged intercultural contact which is called acculturation. Acculturation takes place within a wider context of families, friendship groups, neighbourhood communities, schools, the work place, and at the societal level. Specifically, in family context, comparing the levels of acculturation displayed by parents and their children, and the consequences of this differences are our current focus. We are looking for a number of students to work on two different projects. The successful RES students will be expected to 1) contribute to the data collection in a migrant family project (having some connection with migrant populations is a plus), or 2) work with me on literature searching and data coding for a meta-analysis project. Other projects may arise.



Megan Klabunde

I am a developmental neuroscientist who examines typical neurodevelopment and the development of psychopathology in children and adolescents. My research examines the how one senses their body cues (interoception) and its role in emotion processing, empathy and the development of psychiatric symptoms. Additionally, I study early life social interactions -specifically parent-child empathetic interactions - and their influence on interoceptive and psychopathology development. To conduct my research, I use functional Near Infrared Spectroscopy (fNIRS), functional and structural Magnetic Resonance Imaging (fMRI and sMRI), physiological monitoring equipment, eye tracking and behavioural tasks. Currently my projects examine 1) empathy accuracy, 2) empathy during fNIRS hyperscanning and 3) interoception in children and adolescents with behavioural and physiological measures. We are also piloting new methods for examining interoception in adults, prior to implementing them in children. ***Because of the sensitive nature of the data obtained for my studies, students who want to work in my lab must commit to working with me for at least a year. You also have to complete a DBS check prior to working with me.

Silke Paulmann



My research focuses on how tone of voice is used to communicate meaning beyond the use of words (e.g., you can say "that's really interesting" in an enthusiastic way suggesting that you love the idea - or, you could say it in a bored voice suggesting that you might not really think what you are saying). I believe that tone of voice, or prosody, is a frequently overlooked part of social communication which deserves more attention. For instance, how do listeners feel when listening to supportive as opposed to pressuring sounding voices? How can tone of voice affect well-being? What behaviours can we encourage (or discourage) using the "right" tone of voice? Does it matter if you hear criticism conveyed in a constructive as opposed to destructive voice? Is it possible to use voice cues to predict behaviour (e.g., some evidence suggests that voice cues alone can predict outcome of marriage counselling!)? These and other questions form part of my current research program. I look at voice cues, behavioural data, as well as (electro)-physiological data. I am keen on working together with students who share my interest in exploring how powerful our voice really is.



Steven Samuel

One of the most interesting aspects of our cognition is the ability to represent in our minds what is going on in other people's. There is clear evidence that we can take other people's visual and mental perspectives; we can imagine what a visual scene looks like from somewhere other than where we are, and we can take into account what we know about other people when we make judgments about what we think they think. What is less well understood is how we do this, when we do this, and what the scope and limitations of these abilities are. As an RES student, you would collaborate with me on a behavioural study to investigate aspects of our ability to take other visual and/or mental perspectives.



Motonori Yamaguchi

My research is concerned with the regulation of automatic behaviours in different domains of cognitive psychology. I am currently looking for students who can help me carry out projects asking the following questions:

1. Can we change our preference by training?
2. Does prior task experience change the perceptions of others?
3. Does explicit categorization affect implicit associations?
4. How do we collaborate with others in a task?
5. How does a bias in attention affect action and cognition?
6. How is “perceiving” different from “remembering”?



Eva Gutierrez

Reading becomes very challenging when the reader has never heard the sounds of the words printed in the paper, because they struggle to connect the printed letters to the rich meanings already stored for spoken words. This might be one of the reasons why people born deaf find reading an extremely difficult task. Notice that despite deafness not being a learning difficulty, most deaf adults only achieve a reading level equivalent to that of a 10-year-old. This low reading attainment often impacts negatively their academic achievement as well as their social and emotional well-being. However, there might be compensatory mechanisms and alternative routes that allow people born deaf to achieve a good reading ability. Using EEG and behavioural measures, my research aims to identify the variables that contribute to reading proficiency in people born deaf. Working in this line of research would allow you to gain insight into the psychological processes underlying reading, one of the most important activities in modern life. Current projects involve examining the electrophysiological activity of deaf people and hearing controls while they are reading sentences or short stories.



Bettina Zengel

My research explores the effects of motivation and emotion on what we remember. I am particularly interested in how our emotions connected to specific events change over time, nostalgia, and memory for self-threatening feedback.

Some of my current research projects include the question how accurate nostalgic (compared to ordinary) memories are, if loneliness influences our affect for memories and what people think who are reading self-threatening feedback.

RES students could be involved at projects at various stages (planning, data collection, coding/analysis). What specific project is chosen depends on the student's preference as well as what project I currently prioritise.



Keith May

I am looking for students to collect data on two experiments: one looking at the effect of cosmetics on face recognition, and the other on how our visual system adapts to blur.

Face recognition:

If someone is wearing cosmetics, does that make them easier or harder to recognise later? What about if we first see them with cosmetics, and later see them without (or vice-versa)? These questions will be addressed in this experiment.

Blur adaptation:

If you wear glasses and you take them off, everything looks blurred. After a while, things look less blurred. This is because your brain has adapted to the blur of the retinal image. This project aims to understand how this happens. In the experiments, participants look at images and have to make judgements about how blurred they look.

You would run the face recognition experiment first, because the blur adaptation experiment will not be ready until around the end of October. Then you will switch to the blur adaptation experiment. The face recognition experiment involves recruiting 31 participants (3 female, 28 male) and testing each one in a single, short session. The blur adaptation experiment involves recruiting a very small number of participants and testing each one over many sessions; you can also be the participant in the blur adaptation experiment yourself.



Miro Sirota

You can participate in one of the two projects: 1/ When people solve problems such as “In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half the lake?” do they come up with the correct answers immediately or do they think for a long time about the answer? We will try to answer this question by using thinking aloud protocols, where people share their thoughts as they are solving the problems. 2/ If people are instructed to answer this kind of problems as quickly as possible do they perform much worse than those people who are instructed to take as much time as they need? Do the same individual differences measures predict the number of correctly answered problems? We will try to answer this question by using two-response paradigm and by using measures of working memory and g-factor.



Alasdair Clarke

My research interests lie at the intersection of perception, attention, and decision. Most of the projects involve eye movements, but some involve tasks like throwing beanbags at targets or carrying buckets down a corridor as a way of understanding how efficiently and consistently people resolve the little, repeated dilemmas of daily life. If you would like to discuss any of the projects

below further, please email me: a.clarke@abdn.ac.uk. There are multiple possible projects associated with each of the general topic areas below. Searching. How do we go about looking for things? Why are some people more efficient searchers than others? In what ways does experience with a visual context change how we look for things in it? How much of our eye movement behaviour is purposeful and directed versus random and habit-driven?

Example paper: Nowakowska, A., Clarke, A.D.F. & Hunt, A.R. (2017). Human visual search is far from ideal. *Proceedings of the Royal Society B: Biological Science*, 284, 2016.2676

Efficiency (or lack thereof) in human decisions. We've observed striking failures to make rational decisions about how best to allocate cognitive resources under even quite simple constraints (see paper below). We're interested in understanding why exactly this breakdown occurs. Projects in this area could examine various potential mediating factors such as reinforcement learning, operant variability, individual differences, and motivation.

Example paper: Clarke, A.D.F. & Hunt, A.R. (2016). Failure of intuition when choosing whether to invest in a single goal or split resources between two goals. *Psychological Science*, 27, 64–74.



Riccardo Russo

I am currently working on two projects that students may choose from.

Project 1 (1 placement)

Research question: What is the efficacy of mindfulness meditation compared to transcranial electrical stimulation methods in enhancing cognitive performance and/or subjective well-being in adults? A systematic review and analysis comparing the effect sizes of meditation outcomes vs tES outcomes in studies conducted from 1988 until 2018. Students will be given the opportunity to learn how to use EndNote, how to systematically search and categorise the literature and populate a database with details of each study. Students would also have the opportunity to do some data analyses. This project would suit any student interested in pursuing research-based post-graduate studies in Psychology such as MRes or PhD. The skills students will learn would be highly transferable because they will learn valuable skills related to available search tools, search methods, database and referencing tools as well as data entry and analysis.

Project 2 (2 placements)

Research question: Is it possible to enhance cognitive task performance of young and older adults through the exogenous entrainment of the theta frequency with transcranial alternative current stimulation? Students will have the opportunity to learn how EEG and transcranial electrical stimulation methods work. They will also gain experience in participant screening, testing, data entry and data analysis. This project would suit students looking to gain experience in neurostimulation and EEG methods as well as general experience in research tasks such as data collection and analysis.



Gethin Hughes

Ongoing projects in my lab include investigating multisensory integration, time perception, sense of agency (the feeling of being in control of your actions and their outcomes), action understanding, and interoception (the perception of internal bodily states). Some experiments will include electroencephalography (EEG) data collection, while others will involve a combination of behavioural and physiological measures (electrocardiogram and skin conductance). I am looking for volunteers to help collect data for these studies.
