UNIVERSITY OF ESSEX

POSTGRADUATE PLACES FOR COMMENCEMENT OCTOBER 2017

PROJECTS AVAILABLE IN THE DEPARTMENT OF PSYCHOLOGY

The Department of Psychology at Essex is keen to attract highly motivated and qualified candidates to apply for funded opportunities to pursue research leading to a PhD. The Department of Psychology at Essex has excellent facilities for research in neuroscience, cognitive neuropsychology, vision, cognitive, developmental and social and health psychology. In the Research Excellence Framework 2014 assessment, 90% of research in the department was graded as world leading or leading international. Further details about the department can be viewed at http://www.essex.ac.uk/psychology/. The following project areas are available for commencement October 2017. Interested candidates should read through the list of project outlines on the following pages and then:

1. Contact the named *first* supervisor directly by email stating that you saw the advert listed on this page. The supervisor will wish to review your c.v. current or expected degree results, previous research experience including volunteer research experience and will also arrange to interview you either in person or via Skype. The supervisor will discuss the project with you in more detail. Prior to emailing the supervisor you should consult her/his website page and read some of his/her published work.
2. If the supervisor agrees to support your application you must complete an application form online via http://www.essex.ac.uk/study/pg/apply.aspx. The University will contact you to inform you that you have a place confirmed.
3. After you have a confirmed place, you may formally apply for funding for the project. Applications for funding may be made to the ESRC SeNSS http://senss-dtp.ac.uk/apply-1 ,University of Essex Scholarships or the Silberrad fund. You may apply to all of these funding sources simultaneously. You will receive details of these funding sources when you receive the offer of a place. Your PhD supervisor will assist in preparing the application. Your application for funding will need to be completed by 16th January 2017 (including online references having been uploaded). We advise you to aim to complete your application for funding by 16th December 2016.
4. If you are unsuccessful in obtaining funding, you will not be obliged to take up your place nor be committed to pay any fees. You may self-fund your place if you wish.

PROJECTS IN COGNITIVE AND SENSORY NEUROSCIENCE

Title: Body in mind – exploring the cortical bases of typical and atypical body representations
First Supervisor: Dr Helge Gillmeister
Second Supervisor: tbc
Contact: helge@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=2423
Some individuals have atypical experiences and expectations regarding their own bodies (e.g. people with eating and body dysmorphic disorders, some athletes, dancers and body builders). A number of studies have suggested that structural and functional abnormalities in the higher-level visual system, which contributes to how we represent human bodies, underlie restrictive and purging types of eating disorders such as anorexia nervosa. However, there is much to be discovered. For example, not much is known about individuals with other types of body image disturbances and/or disordered eating (e.g. body builders, obese), about other perceptual systems involved in the experience of one's own body (tactile and haptic systems), and about how these atypical representations interact with self-related experiences, emotions and other behaviours. Applications are invited from keen individuals with an interest in the cortical basis of the bodily self.

Title: Perceptual incoherence as a marker of psychosis risk: EEG predictors and neuromodulation interventions.
First supervisor: Dr Francesca Ferri.
Second Supervisor: tbc
Contact: fferri@essex.ac.uk http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=4961
Sensory information processing is a complex, yet "perceptually coherent" experience. However sensory processing impairments can alter multisensory integration (MSI). MSI is defined as the ability to bind information from different sensory modalities. Alterations in MSI may cause "perceptual incoherence" leading to psychotic symptoms and self-disorders. Being often present long before the first psychotic episode, alterations in MSI and abnormal self-experiences have been proposed as markers of psychosis risk in the subclinical population.The aims of this project are: (i) test MSI abilities in healthy participants with high and low schizotypal personality traits using behavioural measures (ii) find neural predictors of individual MSI abilities using EEG (iii) apply individually-tailored TMS protocols that affect EEG connectivity between visual and somatosensory regions to change the individual's ability to bind multisensory information. Hence, the final aim is to develop neuromodulation strategies to improve multisensory integration abilities in the subclinical population with high schizotypy traits.

PROJECTS IN COGNITIVE AND SENSORY NEUROSCIENCE

Title: From pain to pleasure and back: a neural, behavioural and subjective investigation
First Supervisor: Dr Elia Valentini
Second Supervisor: Dr Helge Gilmeister
Contact: evalent@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=4600
Affective neuroscience aims to understand how affect (pleasure or displeasure) is created by brains. The project aims to study neural, behavioural and subjective correlates of the experience of pain and pleasure and their interaction. The project may address questions such as: Is there a neural marker of the transition between the experience of pain and pleasure? How different is the experience of pleasure and of pleasure from pain in individuals with masochistic sexual behaviour? How well do people mirror the affective experiences of others? Is a person who is perceived as untrustworthy also perceived as being less in pain when displaying a painful facial expression?
To address questions like these, electroencephalography, behavioural and subjective responses will be used. Findings originating from this PhD project will have repercussions not just for basic scientific understanding of these phenomena but for wider applications in, for instance, chronic pain and clinical care, human sexuality, and attachment.

PROJECTS IN SOCIAL, HEALTH AND CULTURAL PSYCHOLOGY

Title: Failure to communicate: Exploring social connection in times of trouble
First Supervisor: Dr Gillian Sandstrom
Second Supervisor: Dr Sheina Orbell
Contact: gsands@essex.ac.uk (http://privatewww.essex.ac.uk/~gsands/)
People need to feel connected to, and understood by, others in order to thrive. This need to belong is often satisfied by close friends/family, but my research finds that even conversations with strangers can temporarily increase feelings of happiness and belonging. Although people see the benefits of talking to strangers, they harbour a variety of fears that hold them back. The current research project examines how these same fears might apply to interactions with non-strangers, specifically interactions with people who experience life-changing events (e.g., diagnosed with cancer, lose a spouse). What does the person who has experienced the life change wish that others would say/would not say? Is it better to say nothing at all than to say something wrong? The goal of this work is to understand the fears and needs of both parties in order to work towards improving the provision of social support when people need it most.

PROJECTS IN SOCIAL, HEALTH AND CULTURAL PSYCHOLOGY

Title: Age differences in risky decision making across adulthood
First Supervisor: Dr Jonathan Rolison
Second Supervisor: tbc
Contact: jrolison@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=4960
Young adults are often viewed as risk takers who fail to fully consider the consequences of their actions. Elderly people, on the other hand, are often views as being preoccupied by thoughts about the consequences of their actions, hampering their spontaneity and limiting their opportunities. Is there any truth behind these stereotypic views of younger and older adults? The topic of how risk taking behaviors and decision making changes across adulthood has recently received a surge of academic and non-academic interest from psychologists, economists, and health care professionals. We live in an ageing society that increasingly appreciates the need to investigate how risk taking and decision making changes as people grow older. This PhD project provides an exciting opportunity to explore an emerging topic in psychology that has the potential for eventual impact on society.

Title: Acculturation
First Supervisor: Dr Nicolas Geeraert
Second Supervisor: tbc
Contact: geeraert@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=2422
In today's global village, we are frequently exposed to different cultures. This is especially pertinent for the 'cultural travellers' who study, work, or live abroad as international students, expatriates, or migrants. Navigating different cultural environments can be challenging at best, requiring cultural travellers to cope with many cultural stressors and the need to maintain and cognitively organize their identities and behaviours associated with both their heritage and settlement cultures. This acculturation process has been known to impact on well-being, personal development and intergroup behaviour. Importantly, acculturation is not a process that happens within a single individual. Instead, it takes place within families, friendship groups, neighbourhood communities, schools, the work place, and at the societal level. By examining acculturation as process within a wider context we can learn about the impact and outcomes of intercultural contact and uncover which factors enhance the positive outcomes and reduce the negative.

PROJECTS IN SOCIAL, HEALTH AND CULTURAL PSYCHOLOGY

Title: **Illness Cognition and Self-regulation**
First Supervisor: Professor Sheina Orbell
Second Supervisor: tbc
Contact: sorbell@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=2433
The ability to 'know' when something is not right about the way our body is functioning is fundamental to our ability to regulate our wellbeing. It is thought that much of this process is automatic in nature and governed by the activation in memory of 'illness schema'. For example, after feeling a tickle in the throat you might almost instantly realise that you have a cold. The operation of illness schema is not well understood. This project addresses a number of important questions; how do illness schema develop and change; are they activated by social cues, or threatening images; how do they guide our self-regulatory behaviour; do individual differences in self regulation such as peoples' time perspective explain why people succeed or fail in reaching health goals. The goal of this project is to use novel experimental approaches to elucidate some of these mechanisms.

PROJECTS IN COGNITIVE AND DEVELOPMENTAL PSYCHOLOGY

Title: How do people manage the cognitive costs of face-to-face dialogue?
First supervisor: Dr Dominique Knutsen
Second supervisor: Prof Silke Paulmann
Contact email address: dknutsen@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=4598
Verbal communication is a fundamental aspect of daily-life; yet, the psychological mechanisms underlying human interactions remain to be further specified. In this context, the study of dialogue, i.e. a conversation by two or more people, poses a particular challenge to language researchers. How do dialogue partners reach mutual comprehension? How are the cognitive costs incurred by the interaction collaboratively managed? Which factors can influence dialogues? The purpose of the project is to systematically investigate the processes associated with human dialogue. This unique project will shed further light on previously underspecified processes and will bring together and extend findings from the fields of language production and comprehension. Specifically, spontaneous interactions between pairs or small groups of participants will be investigated. The work undertaken will have important theoretical and practical implications, as it will lead to a better understanding of how human beings manage to understand each other on a daily basis.

PROJECTS IN COGNITIVE AND DEVELOPMENTAL PSYCHOLOGY

Title: Bridging the Metacognitive Gap in Schematic Map Usability
First Supervisor: Dr Max Roberts
Second Supervisor: Professor Geoff Ward
Contact: mjr@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=2437

Network maps of transit systems, such as the London Underground diagram, continue to play an important role in guiding users. However, worldwide, these vary in their design rules and priorities, and studies have demonstrated considerable usability differences between them (e.g., Roberts *et al.*, 2013; 2016). However, studies also show a zero correlation between objective measures and subjective ratings of usability: people choose maps that they find hard to use, and reject maps that they find easy to use. The objective of this research is to understand the relationships between (1) peoples expectations and preferences concerning map design; (2) their awareness of performance cues while using maps; and (3) the different methods of measuring usability. The goal will be more effective methods of evaluating design, knowledge about how to maximise user-acceptance of novel versions, and a greater understanding of metacognition in general via intensive study of robust applied psychology phenomena.

Title: Perception of self in virtual reality.
First Supervisor: Dr. Loes van Dam
Second Supervisor: tbc
Contact:lvandam@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=4959

Our perception of our own body is adaptable and can be influenced by both visual and behavioral cues. Either of these can be easily manipulated in virtual reality settings that may vary in complexity: from simple cursors of our hand in 2D worlds on a standard computer screen to full-blown 3D environments. This project will focus on the interactions between the available visual information within a virtual environment and our own behavior and vice versa. To measure the effect of vision the visual complexity in such environments can be varied along several different dimensions. The results will elucidate how vision informs the perception of the used avatar or cursor and provide important insights into the perception of the bodily self. For this project experience in or the willingness to learn computer programming (e.g. Psychtoolbox in Matlab) is highly desirable.

PROJECTS IN COGNITIVE AND DEVELOPMENTAL PSYCHOLOGY

Title: Levels of Attention in a Social Environment
First Supervsior: Dr Tom Foulsham
Second Supervisor: tbc
Contact: foulsham@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=2420
Human cognition has evolved to function in an environment which is highly social, meaning that our attention and perception is shaped by the presence of other people. For example, we look at the most influential people in our surroundings (Foulsham et al., 2010), and we send social signals by making and breaking eye contact during conversation (Ho, Foulsham & Kingstone, 2015). This research project investigates how observers attend to other people in their environment, by using controlled experiments and eyetracking in images and video. We will also ask whether such experiments reflect the social interaction between real people by comparing the results to innovative experiments involving real-world eyetracking and video capture. Additional research questions may involve the influence of individual differences and culture, the communicative function of gaze, and the role of covert attention in everyday life.

Title: Visual search and selection in a three dimensional world
First Supervisor: Dr Kevin Dent
Second Supervisor: tbc
Contact: kdent@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=2893
Most of our understanding of visual selective attention is grounded in research that uses flat 2-D displays. However, we occupy a 3-D world, and models of visual selective attention need to take this into account. Exactly how human visual selective attention operates in and responds to 3-D displays remains poorly understood. Whilst some researchers argue for an automatic influence of 3-D structure on selective attention (e.g. He & Nakayama, 1995, see also Dent, Humphreys, He, & Braithwaite, 2014), others argue against this idea (e.g. Finlayson, Remington, Retell, & Grove, 2013). At a theoretical level how models of selective attention should incorporate 3-D information, is also controversial, with most models simply side stepping this issue. This project will use behavioural experiments to explore how visual selective attention is deployed in 3-D space. The results will be used to extend current models of visual selective attention to incorporate 3-D information.

PROJECTS IN COGNITIVE AND DEVELOPMENTAL PSYCHOLOGY

Title: Working memory across the lifespan
First Supervisor: Dr Vanessa M. Loaiza
Second Supervisor: Prof Geoff Ward
Contact: v.loaiza@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=4597
Working memory (WM) is the memory system that allows us to maintain, manipulate, and update information from moment-to-moment. WM has been a core construct in cognitive ageing, in part due to the extensive literature indicating that WM ability is correlated with other higher-order cognition, such as fluid intelligence and long-term episodic memory, across the lifespan. The goals of this project are to investigate the processes and mechanisms that underlie WM, how these aspects of WM may change with increasing age and their impact for other higher-order cognition across the lifespan. To investigate these questions, we use a combination of methodological and statistical techniques, such as experimental and individual differences designs as well as computational modelling. Thus, the prospective student will gain extensive training regarding the theoretical background of cognitive aging and WM as the "hub of cognition," as well as important methodological skills that are increasingly used across experimental psychology.

Title: Perceptual grouping
First supervisor: Dr Keith May
Second supervisor: Dr Tom Foulsham
Contact: keith.may@essex.ac.uk
http://www.essex.ac.uk/psychology/staff/profile.aspx?ID=5146
Since the Gestalt Psychology movement of the early 20th century, it has been recognised that the brain groups the separate parts of the visual world into meaningful wholes. For example, a dashed line appears perceptually integrated into a single contour, even though we can see the gaps between the dashes. Despite the long history of research into perceptual grouping, we don't really know how the brain achieves it. The need for good models of perceptual grouping is made more pressing by recent developments in augmented reality systems that present information superimposed on the user's field of view, so that users have to perceptually group this information separately from the visual scene. This project will aim to enhance our knowledge of perceptual grouping through psychophysics and/or computational modelling. Depending on the interests of the candidate, the project could also explore practical applications of models of perceptual grouping.