Changes in Larval Trematode prevalences in the mud snail Hydrobia spp. as an indicator of seabird biodiversity at Hilbre Island, Wirral, UK

Mudanças na Prevalência de Trematodos Larvais no Caracol Hydrobia spp como Indicador da Biodiversidade de Aves marinhas na Ilha de Hilbre, Wirral, UK

Trematode parasites can be an important cause of disease in both humans and domestic livestock. However many other organisms harbour gastrointestinal trematode infections that cause relatively little pathology. Their existence in the intestine of these definitive hosts is dependent on complex life cycles involving several different hosts. The transmission dynamics between hosts can, therefore, be affected by host population density and various environmental factors and recently several studies have shown that trematode biodiversity can be used as an indicator of “ecosystem health”. The current project is based on evaluating trematode diversity in molluscan intermediate hosts (Hydrobia spp) which occur in intertidal areas around Hilbre Island, Wirral, UK. This site is also a Special Site of Scientific Interest (SSSI) in relation to migrating seabirds and considerable data exists on bird numbers and sightings, via Hilbre Bird Observatory. The parasites occurring in the snails as intermediate hosts are transmitted either directly or indirectly to the birds which subsequently release parasite eggs that infect the snails again. The project will focus on correlating seasonal bird population data with seasonal trematode diversity in snails to establish the usefulness of parasite diversity as an ecosystem biodiversity indicator. The study will involve both morphological identification of larval trematode species and the development of specific molecular probes for classification and prevalence studies. It is anticipated that this project will also result in the publication of high impact peer-reviewed scientific papers (Qualis A1 journals).

For further information contact: Prof Michael T. Rogan, PhD (Supervisor)
Email: m.t.rogan@salford.ac.uk
Telephone: +44-161-2954083
Website: http://www.seek.salford.ac.uk/profiles/ROGAN854.jsp

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology & geosciences
- Bio-prospecting and Biodiversity
- Marine Sciences
- Practical Technologies

Key Subject Words: Ecosystems; wildlife; infectious diseases; marine sciences; biotechnology; pollution;
Drug repurposing: A viable option for antimalarial drug discovery

Reaproveitamento de Drogas: Uma Opção Viaável para a Descoberta de Drogas Anti-Maláricas.

Drug repurposing or repositioning refers to the screening of existing drugs for new diseases. Traditional drug development pathways are both costly and time consuming. A significant proportion (90%) of the drug candidates investigated fail during drug development. The singular advantage of adopting a repositioning strategy which screens patent expired drug libraries, is that the compounds screened are already known to be bioactive and safe for use in humans. This significantly reduces the time and cost involved in drug development.

For diseases like malaria where widespread drug resistance has necessitated an urgent need for new drugs, repositioning may offer an accelerated route to discover potent antimalarials. Furthermore, leads from such screening initiatives could also offer synergistic partners to be used in combination with current frontline antimalarial drugs in a bid to delay the spread of resistance to these drugs. The proposed project will screen repositories like the Library of Pharmacologically Active Compounds (LOPAC) in vitro culture Plasmodium falciparum. Candidates showing potent antimalarial activity will be further investigated to enable the systematic and objective definition of IC_{50} dosages, pharmacokinetics, cytotoxicity and mechanism of action. A range of methodology including SYBR Green flow cytometry, fluorescent microtitre assays, proteomics and mass spectrometry will be employed to achieve stated objectives. The impact of the work and its potential contribution to a disease that continues to cause 1-3 million fatalities every year cannot be overemphasised. It is anticipated that this project will also result in the publication of at least four high impact peer-reviewed scientific papers (Qualis A1 journals).

For further information contact: Dr. Niroshini Nirmalan PhD (Supervisor)
Email: n.j.nirmalan@salford.ac.uk
Telephone: +44-161-2953889
Website: [http://www.salford.ac.uk/environment-life-sciences/els-academics/niroshini-nirmalan](http://www.salford.ac.uk/environment-life-sciences/els-academics/niroshini-nirmalan)

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology & geosciences
- Technologies for the Prevention and Mitigations of Natural Disasters
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Pharmaceuticals
- Practical Technologies

Key Subject Words: infectious diseases; human health; animal health; pharmaceuticals; biotechnology
Investigation of DNA sequence variation in genes involved in the innate immune response in natural populations of primates in Brazil

Investigaçãoda Variação na Sequência de DNA dos Genes Envolvidos na Resposta Imune Inata em Populações Naturais de Primatas no Brasil

Individual humans and animals have different responses to disease, with some being more susceptible to disease than others. Little is known about this inherent variability but is likely to be due to variability in genetic mechanisms within the human and animal immune system. Two lines of immune defence exist: the adaptive immune response and the innate immune response. The former is what we traditionally view as the generation of antibodies and cellular responses to specific pathogens such as viruses, bacteria and parasites. On the other hand, the innate immune response comprises a system that recognises generic types of molecules that are produced by potential pathogens but not by the host. The innate immune response is, therefore, the first line of defence to infection. Toll-like Receptors (TLRs) are key components of this response and recognise these pathogen specific molecules. The TLR genes are polymorphic and there is evidence to suggest that differences in TLR gene sequence between individuals can confer differences in susceptibility to disease. For example, studies have shown that polymorphisms in cattle TLR genes may be linked to susceptibility to tuberculosis. The TLR genes have been sequenced in many species – primarily economically important animals – but there are few studies on wild animals. Furthermore, fewer studies have looked at polymorphism within populations of wild animals, especially primates. The objectives of this innovative study will be to investigate TLR gene polymorphism in important Brazilian primates (eg Howler Monkeys, Uakaris etc) using high throughput DNA sequencing and bioinformatic analysis. The project will be nested within a well founded research group, at Salford University, who use molecular epidemiological tools for infectious disease analysis. It is anticipated that this project will result in the publication of at least four high impact peer-reviewed scientific papers (Qualis A1 journals).

For further information contact: Prof Geoff Hide, PhD and Dr Jean Boubli, PhD (Supervisors)
Email: g.hide@salford.ac.uk
Telephone: +44-161-2953371
Website: http://www.salford.ac.uk/environment-life-sciences/els-academics/geoff-hide
Website: http://www.salford.ac.uk/environment-life-sciences/els-academics/jean-boubli

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology& geosciences
- Technologies for the Prevention and Mitigations of Natural Disasters
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Bio-prospecting and Biodiversity
- Sustainable Agricultural Productions
- Practical Technologies

Key Subject Words: Ecosystems; wildlife; infectious diseases; human health; animal health; biotechnology;
Use of molecular epidemiological tools to investigate vertical transmission of the parasite 
*Toxoplasma gondii* in natural populations of hosts

**Utilização de ferramentas de epidemiologia molecular para investigar a transmissão vertical do parasita *Toxoplasma gondii* em populações naturais de hospedeiros**

*Toxoplasma gondii* is an important pathogen of humans and all warm blooded animals. In humans it is a cause of miscarriage and congenital defects. The parasite is zoonotic – interacting transmission cycles include both animal and humans - with three main transmission routes – infected oocysts from cats, eating undercooked infected meat and vertical transmission (mother to offspring). The importance of each of these routes of transmission is unclear and difficult to measure. Vertical transmission is thought to occur infrequently although the high prevalence of *Toxoplasma* in human and animal populations (often >30%) encourages us to revisit this. We have developed molecular diagnostic techniques to directly measure transmission of the parasite from sheep to lambs at birth finding high frequency of congenital transmission (69%). We have shown that *Toxoplasma* and abortion are linked in families of sheep, providing further evidence for vertical transmission. We have also been investigating the frequency of congenital transmission in humans using collaborations with hospitals in Libya and the UK. Preliminary results suggest high levels of congenital infection may also be found in humans. Further evidence for vertical transmission can be found in our studies in natural populations of rodents. The aims of this innovative project are to build on this work by using microsatellite genotyping of populations of rodent and other animal hosts to establish family structures or pedigrees to investigate whether the parasite can be detected being transmitted through generations of hosts. The project will be nested within a well founded research group, at Salford University, who use molecular epidemiological tools for infectious disease analysis. It is anticipated that this project will result in the publication of at least four high impact peer-reviewed scientific papers (Qualis A1 journals).

For further information contact: **Prof Geoff Hide, PhD** (Supervisor)
Email: g.hide@salford.ac.uk
Telephone: +44-161-2953371
Website: [http://www.salford.ac.uk/environment-life-sciences/els-academics/geoff-hide](http://www.salford.ac.uk/environment-life-sciences/els-academics/geoff-hide)

**Brazilian Priority Research Areas**

- Physical Sciences: mathematics, physics, Chemistry, Biology& geosciences
- Technologies for the Prevention and Mitigations of Natural Disasters
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Bio-prospecting and Biodiversity
- Sustainable Agricultural Productions
- Practical Technologies

**Key Subject Words:** Ecosystems; wildlife; infectious diseases; human health; animal health; biotechnology;
Development of molecular epidemiological tools, based on mobile genetic elements, for tracking the spread of Trypanosomes and Leishmania

Desenvolvimento de ferramentas de epidemiologia molecular, baseados em elementos genéticos móveis, para rastrear a propagação de Trypanossomas e Leishmania

The Kinetoplastid parasites of the genera Trypanosoma and Leishmania are responsible for major human and animal disease globally. African sleeping sickness and South American Chagas disease are important human diseases caused by T. brucei and T. cruzi while other important animal diseases are caused by these and other Trypanosoma species. The genus Leishmania causes a wide range of human and animal diseases globally. Versatile and generic molecular tools are required for diagnosis and epidemiological tracking of these parasites. The genomes of representative Kinetoplastids are available and they offer the opportunity to be used to design generic molecular tools and approaches to parasite identification. In Salford, we have previously developed epidemiological tools based on mobile genetic elements which have been used to track strains of T. brucei. The aims of this project are to develop innovative bioinformatic approaches and molecular analyses to improve these tools and to develop similar tools for use in T. cruzi and Leishmania. The project will be nested within a well founded research group, at Salford University, who use molecular epidemiological tools for infectious disease analysis. It is anticipated that this project will result in the publication of at least four high impact peer-reviewed scientific papers (Qualis A1 journals).

For further information contact: Prof Geoff Hide, PhD (Supervisor)
Email: g.hide@salford.ac.uk
Telephone: +44-161-2953371
Website: http://www.salford.ac.uk/environment-life-sciences/els-academics/geoff-hide

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology& geosciences
- Technologies for the Prevention and Mitigations of Natural Disasters
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Bio-prospecting and Biodiversity
- Sustainable Agricultural Productions
- Practical Technologies

Key Subject Words: Ecosystems; wildlife; infectious diseases; human health; animal health; biotechnology;
Diversity and pathogenesis of the zoonotic parasite *Toxoplasma gondii*.

Diversidade e Patogênese do Paracita Zoonótico *Toxoplasma gondii*.

*Toxoplasma gondii* is one of the most common zoonotic pathogens worldwide. The parasite can cause serious congenital disease in humans and animals and is potentially fatal to individuals with HIV. Our laboratory has isolated parasite strains from domesticated animal species in Africa revealing that they are closely related to clonal strain types (II and III) which dominate across Europe and North America. We also discovered that recombination between these strains occurs in nature and further generated whole genome sequence for our recombinant isolate identifying over 74,000 Single Nucleotide Polymorphism's. Our analysis allowed us map regions with high levels of variation and loci under selection providing markers to investigate the diversity of strains in relation to disease phenotype. Based on these new tools we now wish to investigate the frequency of recombination and its impact on the disease virulence. Our aim is now to move from Africa to South America, where the parasite has high levels of variation and recombination. The project will isolate and characterise strains from rural and urban habitats using genetic analysis to detect recombination and in vitro culture to investigate virulence associated traits.

For further information contact: **Prof Judith Smith, PhD** (Supervisor)
Email: j.e.smith@salford.ac.uk
Telephone: +44-161-2955171
Website: [http://www.salford.ac.uk/environment-life-sciences/els-academics/judith-smith](http://www.salford.ac.uk/environment-life-sciences/els-academics/judith-smith)

**Brazilian Priority Research Areas**

- Physical Sciences: mathematics, physics, Chemistry, Biology & geosciences
- Technologies for the Prevention and Mitigations of Natural Disasters
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Bio-prospecting and Biodiversity
- Sustainable Agricultural Productions
- Practical Technologies

**Key Subject Words:** Ecosystems; wildlife; infectious diseases; human health; animal health; biotechnology;
Microsporidian parasites and host sex ratio distortion in tropical habitats.

Parasitas Microsporídeos e a Distorção da Razão Sexual de seus Hospediros em Habitats Tropicais.

Microsporidian parasites have major effects on invertebrate host populations. Our past research has shown that these parasites utilise both vertical and horizontal transmission and that the severity of infection varies according to this transmission strategy. In European populations of amphipod crustacea these organisms have been shown to cause sex ratio distortion (SRD) and can influence inter species competition, population growth and potentially the outcome of biological invasions. Evidence suggests that the parasite modifies sexual differentiation through disruption of the host endocrine system however the overriding influence of the parasite on host sex has to date mainly been described among amphipod species from Northern Europe which are known to exhibit environmental sex determination (ESD). It not known how widespread the SRD phenotype is or whether it is restricted to species from fluctuating temperate environments. The project will survey freshwater amphipod species from rivers and lakes in Brazil generating new data on the prevalence and diversity of microsporidian parasites. We will further monitor the disease phenotype in these species and test whether there is evidence host sex ratio distortion in constant tropical habitats.

For further information contact: Prof Judith Smith, PhD (Supervisor)
Email: j.e.smith@salford.ac.uk
Telephone: +44-161-2955171
Website: http://www.salford.ac.uk/environment-life-sciences/els-academics/judith-smith

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology& geosciences
- Technologies for the Prevention and Mitigations of Natural Disasters
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Bio-prospecting and Biodiversity
- Sustainable Agricultural Productions
- Practical Technologies

Key Subject Words: Ecosystems; wildlife; infectious diseases; human health; animal health; biotechnology;
Ecology of tick-borne infections.

Ecologia das Infecções Transmitidas por Carrapatos

Ticks are one of the most economically important arthropod vectors, transmitting bacteria, viruses and protozoa responsible for diseases such as Lyme Borreliosis, Anaplasmosis, tick-borne encephalitis and Babesiosis. As ticks have a complex life cycle, the epidemiology of tick-borne infections is typically difficult to unravel as individual ticks may take their blood meals from a variety of vertebrate host species. As such, before we can predict and manage the risks associated with these infections, it is essential that we have a detailed understanding of their ecology. In the United Kingdom the sheep tick (*Ixodes ricinus*) is the principal vector of infections of medical and veterinary interest, including *Borrelia burgdorferi*, the causative agent of Lyme borreliosis. For this project you will be taking part in a multidisciplinary study with scientists from the University of Salford who have considerable expertise in this field. You will undertake extensive field and laboratory work to increase our understanding of the ecology of both the tick vector and the infections that it transmits. In particular you will be addressing questions regarding the distribution and prevalence of tick-borne infections in the United Kingdom, as well as exploring their genetic diversity. You will gain experience in field ecology, microbiology and data handling and analysis that will help you develop as an independent researcher. It is expected that you will present your findings at international conferences and publish in high quality peer-reviewed publications.

For further information contact: Dr Kevin Bown, PhD
Email: k.bown@salford.ac.uk
Tel: +44 161 2952351
Website: [http://www.seek.salford.ac.uk/profiles/KBown.jsp](http://www.seek.salford.ac.uk/profiles/KBown.jsp)

For further information contact: Prof. Richard Birtles, PhD
Email: r.j.birtles@salford.ac.uk
Tel: +44 161 2955726
Website: [http://www.seek.salford.ac.uk/profiles/RBirtles.jsp](http://www.seek.salford.ac.uk/profiles/RBirtles.jsp)

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology & geosciences
- Technologies for the Prevention and Mitigations of Natural Disasters
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Bio-prospecting and Biodiversity
- Sustainable Agricultural Productions
- Practical Technologies

Key Subject Words: Ecosystems; wildlife; infectious diseases; human health; animal health; biotechnology;
Environmental epidemiology of *Legionella pneumophila*, the agent of Legionnaires Disease

Epidemiologia ambiental de *Legionella pneumophila*, o agente da Doença dos Legionários

*Legionella pneumophila* is the causative agent of Legionnaires Disease (LD), a potentially fatal pneumonic syndrome of widely recognised public health importance. Outbreaks of LD are common and are associated with a common environmental infectious source. *L. pneumophila* is widely distributed in nature, and is specifically associated with aquatic environments such as water courses, soil and man-made structures such as cooling towers and air-conditioning units. In these environments the bacteria inhabit biofilms and are professional parasites of free-living protozoan species such as amoebae. The determinants of environmental persistent of legionellae are poorly understood and it is the overall aim of this project to identify and quantify some of these determinants. The project will address this aim by (i) monitoring the population dynamics of legionellae in natural and artificial (lab-based) niches to elucidate temporal and spatial trends, (ii) characterising the consortia of organisms within natural legionella-containing biofilms to identify other microorganisms that may facilitate the environmental persistence of legionella, and (iii) exploring the specificity of *L. pneumophila* for different free-living protozoan species and quantifying the dynamics/efficiency of parasitism of these species. The project will utilize a range of traditional and contemporary molecular microbiological techniques including next-generation sequencing technologies to address this aim, and will be based in laboratory with an active and rapidly increasing interest in exploring inter-species interactions within polymicrobial biofilms in a variety of ecological settings. The outcomes of the project will not only further our understanding of the fundamental biology of biofilms but also enhance control of *L. pneumophila* and other pathogens that exploit biofilms as niches for their environmental persistence.

For further information contact: Prof. Richard Birtles, PhD
Email: r.j.birtles@salford.ac.uk
Tel: +44 161 2955726
Website: [http://www.seek.salford.ac.uk/profiles/RBirtles.jsp](http://www.seek.salford.ac.uk/profiles/RBirtles.jsp)

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology& geosciences
- Technologies for the Prevention and Mitigations of Natural Disasters
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Bio-prospecting and Biodiversity
- Sustainable Agricultural Productions
- Practical Technologies

Key Subject Words: Ecosystems; wildlife; infectious diseases; human health; animal health; biotechnology;
The oral cavity supports a complex and finely balanced consortia of >700 microbial species; many of which co-operate within highly structured biofilms on tooth surfaces and gingival crevices. Changes in oral biofilm species dynamics are associated with the development of periodontal diseases. These chronic oral conditions are characterized by inflamed, bleeding gums that can lead to re-adsorption of bone and tooth loss.

Multiple species of oral Streptococci and Veillonella are considered primary colonizers of the oral cavity and support the later colonization of several Gram-negative anaerobic species that are more associated with disease. Three species in particular, Treponema denticola, Porphyromonas gingivalis, and Tannarella forsythia (the red group) have been consistently associated with adult periodontitis. Oral biofilms have been well characterized and several inter-species interactions have been described. However, most studies have focused on well characterized strains and been limited to just a few interacting proteins.

This project takes a global approach to understanding how bacterial species co-operate in polymicrobial biofilms. You will use a range of traditional and contemporary molecular microbiological techniques including next-generation sequencing technologies. You will be based in a laboratory with an active and rapidly increasing interest in exploring inter-species interactions within polymicrobial biofilms.

This project will not only further our understanding of the fundamental biology of biofilms, but will also inform new treatment strategies to maintain a healthy balance of microbial consortia in the mouth. Anticipated outputs from this project include presentation at national and international conferences; and publication of several high impact peer-reviewed scientific papers (Qualis A1 journals).

For further information contact: Dr Chloe E James, PhD (Supervisor)
Email: c.james@salford.ac.uk
Telephone: +44-161-2952171
Website: http://www.seek.salford.ac.uk/profiles/CJames.jsp

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology & geosciences
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Pharmaceuticals
- Practical Technologies

Key Subject Words: infectious diseases; human health; animal health; pharmaceuticals; biotechnology
Developing a sensitive assay to detect *Porphyromonas gingivalis* species as a mean to safeguard our mouth health

Desenvolvendo um ensaio sensível para detectar-se espécies de *Porphyromonas gingivalis* como uma maneira de salvaguardar a nossa saúde bucal

*Porphyromonas gingivalis* is a major aetiologic agent of periodontitis, a chronic oral disease, characterized by inflamed, bleeding gums, bone re-adsorption and tooth loss. This anaerobic bacterium uses fimbriae to adhere to oral surfaces and other oral bacteria; aiding assimilation into polymicrobial biofilms. Fimbrillin (FimA) is the major fimbrial subunit and is regulated in response to environmental conditions. Detection of FimA on the bacterial surface during biofilm development will determine the key conditions required for *P. gingivalis* binding. This may provide clues for novel strategies to prevent colonization by this periodontal pathogen.

This project aims to develop a rapid and highly sensitive aptamer to detect FimA in dental biofilms over a time course of development and *Porphyromonas gingivalis* in human saliva samples. This would help us to understand the role of FimA in colonisation of the oral cavity. To do this you will develop a new recognition tool. Aptamers are a novel and particularly interesting targeting modality, with a unique ability to bind to a variety of targets including proteins, peptides, enzymes, antibodies and various cell surface receptors.

To test our hypothesis, you will:

- Develop aptamers against FimA.
- Characterise the interactions between selected aptamers and FimA *in vitro*.
- Characterise the interactions between selected aptamers and FimA in dental biofilms.
- Characterise the interactions between selected aptamers and FimA in saliva samples.

It is anticipated that this project will also result in the publication of at three four high impact peer-reviewed scientific papers (Qualis A1 journals).

For further information contact: Dr Patricia A Ragazzon, PhD and Dr Chloe E James (Supervisors)

Email: p.a.ragazzon@salford.ac.uk / c.james@salford.ac.uk

Telephone: +44-161-2955978 / +44-161-2952171

Website: [https://www.seek.salford.ac.uk/profiles/PRagazzon.jsp](https://www.seek.salford.ac.uk/profiles/PRagazzon.jsp)
[https://www.seek.salford.ac.uk/profiles/CJames.jsp](https://www.seek.salford.ac.uk/profiles/CJames.jsp)

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology & geosciences
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Pharmaceuticals
- Practical Technologies

Key Subject Words: infectious diseases; human health; cancer biology; pharmaceuticals; biotechnology
Development of new anti-trypanosome agents based on natural products

Desenvolvimento de novos agentes anti-trypanosoma baseado em produtos naturais

Chagas disease, caused by Trypanosoma cruzi, affects 10 million people in Latin America and is responsible of 20,000 deaths/year. Telomeres are non-coding DNA regions located at the end of chromosomes, protecting them from erosion, fusion and assisting during replication. These structures are present in diverse organisms such as trypanosomes and humans, the sequences vary depending to the organism and in vitro, they form G-quadruplex structures. Telomerase is an enzyme that adds DNA sequence repeats to the telomere region. Every time a cell divides, the telomere shortens and after 60-70 rounds of replication, the cell enters apoptosis. In around 85% of cancers this enzyme is activated and it has been found to be activated in trypanosomes as well, as telomerase is inactive in normal most somatic cells, attacking the telomere/telomerase interaction is an innovative and attractive target for treating parasitic diseases.

Our aim is to develop a new family of anti-parasitic agents, as a PhD student you will synthesise compounds based on natural products and test their efficacy in several strains of microbiological relevance. You will also characterise the telomere-drug interactions using biophysical techniques producing structure activity related studies (SARS) data that will help you to design new molecules. The results of this PhD project have the potential of validating G-quadruplex DNA structures as in vivo targets for the treatment of parasitic diseases, and the production of a new generation of anti-trypanosome agents. It is anticipated that this project will also result in the publication of high impact peer-reviewed scientific papers (Qualis A1 journals).

For further information contact: Dr Patricia A Ragazzon, PhD (Supervisor)
Email: p.a.ragazzon@salford.ac.uk
Telephone: +44-161-2955978
Website: https://www.seek.salford.ac.uk/profiles/PRagazzon.jsp

Brazilian Priority Research Areas

- Physical Sciences: mathematics, physics, Chemistry, Biology& geosciences
- Clinical, Preclinical and Health Sciences
- Biotechnology
- Pharmaceuticals
- Practical Technologies

Key Subject Words: infectious diseases; human health; animal health; cancer biology; pharmaceuticals; biotechnology