# Postdoctoral Fellowship – CSOF4

Role summary for potential applicants

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| Advertised Job Title**:** | CSIRO Postdoctoral Fellowship in Biomaterials: Bioinspired Membranes-*in vitro* Modelling of the Human Eye |
| Reference Number**:** | 58743 |
| Classification**:** | CSOF4 |
| Salary Range: | AU $82k to AU $93k plus up to 15.4% superannuation |
| Location**:** | Clayton, Victoria |
| Tenure: | Specified Term of up to 3 years (or part time equivalent) |
| Relocation assistance**:** | Will be provided to the successful candidate if required |
| Applications are open to: | Australian Citizens Only  Australian/New Zealand Citizens and Australian Permanent Residents Only   * All Candidates |
| Functional Area**:** | Research Scientist / Engineer - Postdoc |
| % Client Focus - Internal: | 70% |
| % Client Focus - External: | 30% |
| Reports to the: | Research Team Leader, Cell Material Interactions |
| Number of Direct Reports: | 0 |

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| **Role Overview:** |
| This research projects aims to develop a novel defined and biocompatible material that can functionally interface with the complex multiple cell layers of the human retina. The Postdoctoral Fellow will explore novel polymers and biopolymers as candidate materials for fabricating a mimic for the retinal Bruch’s membrane. A critical step in mimicking a natural membrane will require an understanding of the key biological interactions with retinal cells and the underlying blood supply, and identifying key molecules required to engage specifically and functionally with these components. This will form a targeted approach in bioengineering a membrane with, not only the appropriate physical and chemical properties, but with the molecular complexities required to integrate with its biological environment. This position will require the development of novel tissue engineering strategies to enable a complex and biologically functional *in vitro* model that is representative of the human retina and compatible with platform therapeutic discovery applications.  The Postdoctoral Fellow will join a multidisciplinary team at CSIRO including polymer scientists, biomaterials engineers and cell biologists within CSIRO’s Biomedical Manufacturing and Advanced Fibres & Chemical Industries [led by Veronica Glattauer (Primary supervisor), Yen Truong and Carmel O’Brien]. The project will also be undertaken in collaboration with eye disease and tissue engineering researchers at the Centre for Eye Research, University of Melbourne (Alice Pebay), Queensland University of Technology and Queensland Eye Institute (Damian Harkin).  **Postdoctoral Fellowships** at CSIRO provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant postdoctoral work experience. These fellowships will help launch their careers, provide experience that will enhance their career prospects, and facilitate the recruitment and development of potential leaders for CSIRO.  Postdoctoral Fellows **are appointed for up to three years or part time equivalent** and will work closely with a leading Research Scientist or Engineer in their respective field. They carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes. They present the findings in appropriate publications and at conferences. |

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| **Duties and Key Result Areas:** |
| * Under the direction of senior research scientists, carry out innovative, impactful research of strategic importance to CSIRO and collaborating research organisations that will, where possible, lead to novel and important scientific outcomes. * Create an understanding of known and yet to be defined biological compositions and key interactions of the Bruch’s membrane for incorporation into a fabricated membrane. * Explore molecular libraries (proteins, peptides and mimetics) to support the viable culture of specialised human vascular and retinal cell types. * Investigate material options, through the fabrication of biocompatible membranes or hydrogels from a selection of starting natural and synthetic polymers. These will be researched using a combination of different fabrication techniques. * Evaluate the mechanical, physical and biological attributes of the fabricated membrane for properties akin to the *in-vivo* Bruch's interface. * Undertake regular reviews of relevant literature and patents. * Produce high quality scientific and/or engineering papers suitable for publication in quality journals, for client reports and granting of patents. * Prepare appropriate conference papers and present those at conferences as agreed with your supervisor. * Contribute to the development of innovative concepts and ideas for further research. * Make a contribution to the effective functioning of the research team and help deliver CSIRO’s organisational objectives and plans. * Work collaboratively with colleagues within your team, the business unit and across CSIRO. * Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation. * Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals. * Undertake an appropriate training and development program developed by CSIRO. * Other duties as directed.   **CSIRO’s postdoctoral training program**is developed between the Postdoctoral Fellow and a CSIRO scientist or engineer. The program will focus on enhancing the Fellows’ capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:   * Discipline-specific techniques and protocols * Professional growth * Project management * Communication and influencing skills * Working and collaborating with others   <http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships> |

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| **Selection Criteria:** |
| *Under CSIRO policy only those who meet all essential criteria can be appointed*  ***Pre-Requisites:***   1. **Education/Qualifications:** A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as biomaterials or polymer sciences, tissue engineering*.*   ***Please note:*** *To be eligible for this role you must have* ***no more than 3 years (or part time equivalent)*** *of relevant postdoctoral experience.*   1. **Communication: High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including at national and international conferences.** 2. **Publications: A record of publications in quality, peer reviewed journals.** 3. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.   ***Essential Criteria:***   1. Experience in polymer chemistry, surface modification and materials characterisation. 2. Demonstrated ability to fabricate biomaterials from synthetic and/or natural polymers. 3. Experience in mammalian cell culture and aseptic handling techniques. 4. **The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.** 5. A record of science innovation and creativity, plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.   **Desirable Criteria:**   1. Experience in different biomaterials fabrication techniques (for e.g. electrospinning, 3D printing, spray coating, layer-layer dip coating). 2. Experience in tissue engineering using novel biomaterials. 3. Experience in human stem cell differentiation. 4. Understanding of human eye biology.   **As Australia’s Innovation Catalyst, CSIRO has strategic actions underpinned by behaviours aligned to**:   * Excellent science * Inclusion, trust & respect * Health, safety & environment * Delivery on commitments.   **In your application and at interview you will need to demonstrate alignment with these behaviours.**  To be appointed as a Postdoctoral Fellow within CSIRO, candidates are required to have **submitted** their PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4-1 (AU$82,450).Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.  ***Special requirements:***  Appointment to this role may be subject to conditions including security/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents may be required to undergo additional security clearance processes; which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <http://www.ielts.org/default.aspx> |

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| **Other Information:** |
| **How to Apply**  Please apply for this position online at <https://jobs.csiro.au/> and enter requisition number **58743**. Internal applicants please apply via ‘Jobs Central’ in SAP (click ‘Recruitment’)  Please load your CV (Maximum 2MB). You may also be required to respond to some screening questions.  If you experience difficulties applying online call 1300 984 220 for assistance. Outside Australian business hours please email: [csiro-careers@csiro.au](mailto:csiro-careers@csiro.au).  **Referees**: Please provide contact details of two previous supervisor or academic/professional referees in your resume/CV. We will ask your permission before making contact.  **Contact:** If after reading the position details above you require more information please contact:  **Veronica Glattauer**via email: Veronica.Glattauer@csiro.au or phone: **+61 3 9545 8125**  Please do not email your application directly to Ms. Glattauer. Applications received via this method may not be considered by the selection panel.  **About CSIRO**  Australia is founding its future on science and innovation. Its national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation.  Find out more! [www.csiro.au](http://www.csiro.au).  We work flexibly at CSIRO, offering a range of options for how, when and where you work. Talk to us about how this role could be flexible for you.  Find out more! [CSIRO Balance](https://www.csiro.au/en/careers/the-csiro-experience/balance)  **CSIRO Manufacturing**  CSIRO Manufacturing is developing cleaner advanced materials and technologies to enable manufacturers to secure a competitive and sustainable future which contributes strongly to national productivity, economic growth and societal wellbeing.  In particular, Manufacturing seeks to support the metals, chemicals, carbon fibre, cotton, biomedical and biotechnology industries. |