



A NEW OUTLOOK FOR YOUR CAREER

Guidance Post Processing Scientist

Executive Level 1

JOB REFERENCE NUMBER	10403
CLASSIFICATION	EL 1 (Senior Professional Offer Grade C)
GROUP	Science & Innovation
PROGRAM	Research to Operations
LOCATION	All Capital Cities
STATUS	Ongoing/Non-ongoing specified task for 3 years
WORKING HOURS	Full time
SALARY RANGE	\$98,209 - \$110,623, plus an additional 15.4% superannuation
CLOSING DATE	11:30pm AEST/AEDT Thursday, 1 October 2020
APPLICANTS	Australian Citizenship – see Eligibility Requirements
CONTACT OFFICER	Gary Weymouth (03) 9669 4833 Gary.weymouth@bom.gov.au



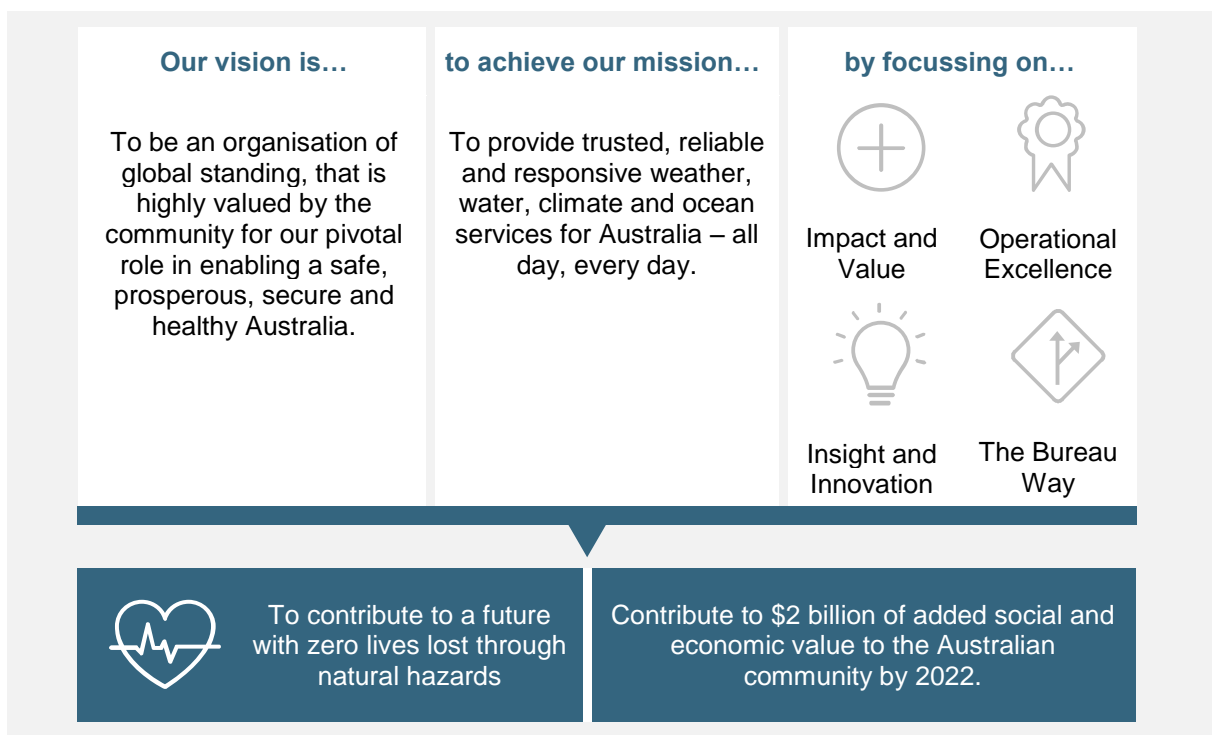
ABOUT US

The Bureau of Meteorology is one of the few organisations that touches the lives of all Australians and all Australia, every day. The Bureau works across Australia and remote islands, providing services from the Antarctic to beyond the equator, and from the Indian Ocean to the Pacific.

We are Australia's national weather, climate and water agency, in the Agriculture, Water and Environment portfolio of the Australian Government, operating under the authority of the Meteorology Act 1955 and the Water Act 2007. We provide data, information, knowledge, insight and wisdom to help Australians prepare and respond to the realities of their natural environment, including droughts, floods, fires, storms, tsunamis and tropical cyclones.

Our products and services include observations, forecasts, analysis and advice covering Australia's atmosphere, water, oceans and space environments. We undertake focussed scientific research in support of our operations and services. Through regular forecasts, warnings, monitoring and advice, we provide one of Australia's most fundamental and widely used public services.

We have strong relationships with our customers, partners and stakeholders in Australia, including the Australian Community and the emergency services sectors, all-levels of Government, and focus sectors including aviation, agriculture, energy and resources, national security and water.





WORKING AT THE BUREAU

The Bureau represents a dynamic and exciting opportunity. A role with the Bureau involves:

OUR WORK	OUR PEOPLE	OUR ENVIROMENT	OUR EXPIERENCE
Purpose-driven impactful work that brings real benefit to the Australian Community, businesses and industry.	A deeply passionate and highly skilled workforce that continuously challenges the status quo to achieve greater impact and experiences for our colleagues and customers.	A world class organisation with excellent workplaces in great locations, access to cutting-edge technology and a safe and inclusive environment for everyone.	A commitment to professional development and growth, backed by clear career pathways and training opportunities, and complimented by a competitive remuneration package.

POSITION OVERVIEW

The Research Program of the Bureau of Meteorology is seeking a scientist with a data / computational science background and physical sciences focus to be a key member of an innovative multi-disciplinary team which improves weather forecast guidance for operational forecast staff. The focus of this work is on collaborative development, testing and documentation of weather model Ensemble Post Processing (EPP), including machine learning science, software and systems. Tasks include contributing to development of new best guess and probabilistic high-impact weather forecast algorithms, science and guidance, utilising guidance from many state-of-the-art numerical weather prediction models. This includes identification and application of predictors and measures of model error to optimally calibrate and add detail to model outputs, including calibration of probabilities of weather events derived from the values and spread of model outputs. The position will also contribute to EPP science testing (verification and evaluation) through the specification and development of verification libraries. Processing of large datasets will be required. Work will include collaboration with the UK Met Office on post-processing. Modern tools and practises such as git, automated testing and deployment and code reviews are used. Professional development opportunities relevant to the work will be available.

The software used for EPP is written predominantly in Python and shell scripts utilising 3rd party scientific and data-handling libraries, and is run on Linux platforms. Much of the verification and display software is written in Python. Development of EPP products will support greater automation of routine weather forecast production and communication of forecast uncertainty to users.

Core competencies include a physical sciences background, and data or computational science knowledge. Effective programming ability on science problems including those involving large datasets, ability to work with complex applications and develop complex algorithms suitable for operational use. Ability to visualise and interpret gridded scientific fields. A background in meteorology or related fields is desirable. Experience in applying statistical processes to correct errors would be a strong advantage and machine learning knowledge and experience may be an advantage. A keen interest in applied scientific research and systems development is desirable. The level of position offered to the successful applicant will depend upon the depth of capability demonstrated against all selection criteria, including as noted below. This is a great opportunity to work on meaningful scientific software applications for the public good, in a research environment with a commitment to innovation and quality.



ROLE RESPONSIBILITIES

The responsibilities of the role include but are not limited to:

1. Undertake research into, and design, develop and support, forecast guidance that is novel, complex and/or critical in nature, with an emphasis on gridded forecasts, within the Science and Innovation Group.
2. Cultivate and maintain effective working relationships with project stakeholders, programme managers, senior staff and team members.
3. Prepare scientific papers, technical reports and documentation as required.
4. Provide scientific and technical advice to Research to Operations and other branches in the area of objective forecast guidance.
5. Complying with all Bureau work, health and safety policies and procedures, and taking reasonable care for your own health and safety and that of employees, contractors and visitors who may be affected by your conduct.

SELECTION CRITERIA

The Bureau encourages applications from all suitably qualified candidates. Applications will be considered based on alignment with selection criteria, which have been matched to the APSC Work Level Standard and Integrated Leadership Systems for [EL1] positions.

1. **Data / computational science with focus on statistics, mathematics or physical sciences. Demonstrated ability**
 - in data / computational science knowledge and experience with large datasets, complex algorithm development, and working with large and complex numerical applications.
 - Multi-variate statistical analysis and interpretation of gridded and point numerical data in time and space or physical modelling. Demonstrated knowledge and experience of handling training data errors and accuracy metrics. Demonstrated ability in investigation and statistical correction of prediction errors, and understanding of probability distributions in a science domain.
 - Experience utilising job and workflow schedulers would be an advantage.
 - to produce in-depth evaluation/analysis, visualisation and presentation of results.
 - to work independently and in collaboration with multidisciplinary team members to efficiently develop scientific algorithms and scientific and data processing software.
 - Experience working in applied research in a physical science field. Understanding of meteorology / climatology or hydrology and some understanding of the capabilities of numerical meteorological prediction would be significant advantages, as would utilisation of this understanding in specification and implementation of software applications.



2. Software development. Demonstrated

- sound capability in software development with experience in Python, including use of 3rd party / open source scientific and general libraries. Experience developing in Linux systems and shell scripting. Commitment to developing and applying new software engineering skills.
- experience with modern collaborative software development practices including automated testing and deployment, version control and code reviews
- Development of robust and documented code of a suitable standard for deployment on operational 24*7 systems.

3. Planning, ability to work to deadlines and problem solving. Demonstrated ability to

- develop workable software and science requirements to meet occasionally incomplete and conflicting goals.
- proactively plan and manage cost, scope and quality to achieve deadlines with effective solutions.
- efficiently diagnose problems in, test and maintain complex software applications and systems.

4. Communication skills and teamwork.

- Demonstrated ability to communicate clearly through both verbal and written means, including in relation to scientific concepts and results with some report and / or journal publications.
- Demonstrated ability to develop, elicit and communicate knowledge and requirements in collaboration with other domain experts, to inform development of algorithms, science and applications.
- Proven ability to collaborate and to contribute to team leadership, including when specifying, writing and reviewing software code.

5. Understanding of the [Bureau's diversity and inclusion statement of commitment](#) and [APS Values and Code of Conduct](#)

Mandatory qualifications:

A degree or diploma of an Australian educational institution, or a comparable overseas qualification, which is appropriate to the duties; OR other comparable qualifications, which are appropriate to the duties.

MERIT POOL

The selection process will establish a merit pool that may be used to fill similar positions within 12 months.



HOW TO APPLY

Applications can be lodged through [BOMCareers](#).

Your application will consist of resume, contact details for two referees and responses to the selection criteria should be limited to a maximum of 400 words per criterion that considers:

- position overview
- job responsibilities
- selection criteria
- relevant sections of the [Integrated Leadership System \(ILS\)](#) and [APS work level standards](#).

The Bureau is an equal opportunities employer. We will support applicants with disability through our [RecruitAbility Program](#) and will provide reasonable adjustments such as access, equipment and other practical support at relevant stages of the recruitment process.

We recognise the need for our workforce to reflect the community we serve and provide an inclusive environment that respects and values diversity and is described in our [Diversity and Inclusion Statement of Commitment](#). We strongly encourage qualified applicants from diverse backgrounds to apply.

The Bureau offers flexible working options, reasonable workplace adjustments and an Employee Assistance Program (EAP). Should you have any questions or experience any difficulties with applying online, please contact the Recruitment Team on jobs@bom.gov.au or phone 03 9669 4401.

COVID-19 RESTRICTIONS

We understand there are unique and evolving challenges due to the current COVID-19 pandemic. The Bureau is responsive and making changes to ensure the safety of all candidates and our team.

Under the relevant legislation and guidance of the National Chief Medical Officer:

- Currently all interviews will be held via audio/video conference (across a range of platforms to accommodate personal requirements) unless otherwise advised.
- The successful candidate may be required to carry out the duties remotely for either a period or until otherwise advised.

ADDITIONAL INFORMATION

To find out more about the employment conditions at the Bureau, please refer to the Bureau of Meteorology [Enterprise Agreement 2018](#).