

## PART 1 – TO BE COMPLETED FOR ALL ROLES –

The role description and person specification are key documents in the application pack and they should also be used for shortlisting and interviewing to ensure candidates match key criteria.

Postdoctoral Research Fellow	
<b>Role Description</b>	

<b>Grade &amp; Salary:</b>	Grade 5, 24 months
<b>Campus Location:</b>	Edinburgh Napier University, Sighthill Campus, Scotland and King Abdullah University for Science and Technology, Saudi Arabia
<b>Line Manager:</b>	Dr Karen Diele
<b>Line Management Responsibility for:</b>	none
<b>Organisational Structure:</b>	<input type="checkbox"/>
<b>Role Summary:</b>	<p>The successful candidate is to be employed by Edinburgh Napier University to work for as a Postdoctoral Research Fellow on the project '<i>Microlanding – The role of the bacterial symbiont at the gill-water(air) interface in the evolution towards terrestrialisation</i>'. The contribution of prokaryotes to terrestrialization and breathing of crabs is not yet explored. <i>Microlanding</i> will assess crab terrestrialization under the metaorganism perspective, focussing on the effects of the animal-associated microbiome on the change of lifestyle from water to land. We expect <i>Microlanding</i> to create a new frontier in evolutionary biology and ecology by providing a knowledge base to expand the terrestrialisation paradigm from the animal alone to the holobiome.</p> <p><i>Microlanding</i> takes a multifaceted approach to (i) identify, quantify and image the symbiotic bacterial colonizers on the gills at different developmental stages of crabs with different levels of terrestrialization; (ii) assess the mode(s) of symbiont transmission (horizontal and/or vertical) by studying different organs and developmental stages; and (iii) define the functional role of the gill symbionts. The postholder will support the delivery of work-package (WP) 2, focusing on symbiont transmission, in collaboration with Dr Karen Diele, Edinburgh Napier University and Prof. Daniele Daffonchio, King Abdullah University of Science and Technology, (KAUST) Saudi Arabia. The main objectives of this WP are (i) to develop a robust protocol to successfully cultivate freshly laboratory hatched larvae to benthic juvenile of aquatic and semiterrestrial crab species (at least 2 species) in large numbers; (ii) to identify and describe the number of larval stages, the stage when gills begin to develop, and the stage when gills are fully developed; (iii) to collaborate with Daffonchio's team to characterize the bacterial diversity associated with the different early life stages and (iv) to identify whether and how (in which body compartments) bacteria are transmitted from stage to stage.</p>

## Main Duties and Responsibilities

➤	To design and perform the field and laboratory work for Work Package 2 of the <i>Microlanding</i> project as outlined in the project proposal, and collaborate with the international partners at KAUST.
➤	To collect ovigerous crabs in coastal Red Sea environments on the KAUST Campus in Saudi Arabia, identify them to species level and maintain them in aquaria at the Coastal & Marine Resources Core Lab (CMOR) / KAUST, until larval release.
➤	To develop protocols for cultivating large numbers of larvae of at least 2 species to juvenile stage in aquaria
➤	To identify/describe the number of larval stages, the stage when gills begin to develop, and the stage when gills are fully developed
➤	To contribute to the characterization of the bacterial diversity associated with each early life stage
➤	To help identify whether and how (in which body compartments) bacteria are transmitted from mother to hatching zoea, from zoeae to megalopae, from megalopae to the benthic stage
➤	To produce, analyse and present data appropriately
➤	To comply with ethical and health & safety governance procedures
➤	To participate in research progress meetings
➤	To publish project results with collaborators in peer-reviewed scientific literature in the English Language
➤	To present findings internally and externally at national and international scientific meetings and conferences
➤	Potentially: To assist in the supervision and training of students in the laboratory and field
➤	To carry out other relevant duties as agreed with the Principal Investigator and KAUST collaborator



# Person Specification

Attributes	❖ Essential Selection Criteria	Desirable Selection Criteria
<b>Education/Qualifications</b>	PhD in Marine Biology, Marine Ecology or related discipline	Training in Molecular Ecology
<b>Experience</b>	<p>Developmental Biology of marine invertebrates</p> <p>Cultivation of marine invertebrate larvae</p>	<p>Relevant publication(s) in peer-reviewed journal(s)</p> <p>Experience / expertise in:</p> <ul style="list-style-type: none"> <li>- Marine invertebrate ecology, including crabs</li> <li>- Experience in experimental marine ecology</li> <li>- working in an interdisciplinary and multinational/ cultural team</li> <li>- presenting at national and international conferences</li> </ul>
<b>Skills/Personal Requirements</b>	<ul style="list-style-type: none"> <li>- Ample experience in cultivation of marine invertebrate larvae and their food sources (other invertebrates, algae), including the set-up and running of relevant aquarium systems</li> <li>- Excellent numerical/statistical skills (uni- and multivariate)</li> <li>- Capability to collect crabs in mangrove forests</li> <li>- Project and time management skills</li> <li>- Fluency in Written and Spoken English</li> <li>- Academic writing and presentation skills</li> </ul>	<ul style="list-style-type: none"> <li>- Molecular analyses of (larval) tissue: DNA extraction, quantification and sequencing</li> <li>- Microscopy (light, confocal, TEM, SEM)</li> <li>- Field experience in intertidal ecosystems</li> <li>- Experience in student supervision</li> </ul>

	-Willingness to be based at the KAUST Campus in Saudi Arabia during the reproductive season of the study species (two 6 month stays, approximately November/December to March/ April in 2019/20 and 2020/21)	
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- ❖ *Essential Selection Criteria* are mandatory requirements for a post-holder. If a potential candidate does not evidence all of these requirements in their application form they do not meet the essential criteria of the role and, therefore, will not be short-listed for interview.

<b>Oral</b> - Does the role holder receive, understand and convey:	
1. Straightforward information in a clear and accurate manner?	<b>Yes</b>
2. information which needs careful explanation or interpretation to help others understand, taking into account what to communicate and how best to convey the information to others?	<b>Yes</b>
3. complex conceptual ideas or complex information which may be highly detailed, technical or specialist?	<b>Yes</b>
<b>Written</b> - Does the role holder receive, understand and convey:	
4. Straightforward information in a clear and accurate manner?	<b>Yes</b>
5. information which needs careful explanation or interpretation to help others understand, taking into account what to communicate and how best to convey the information to others?	<b>Yes</b>
6. complex conceptual ideas or complex information which may be highly detailed, technical or specialist?	<b>Yes</b>

<b>Teamwork and Motivation:</b>	
Is the role holder required to:	
7. participate in and deliver your contribution to a team?	Participate Yes, deliver my contribution: No
8. be supportive and encouraging of others in a team; help to build co-operation by setting an example and showing a flexible approach to delivering team results; contribute to building team morale as an active participant in the team?	Yes
9. clarify the requirements; agree clear task objectives; organise and delegate work fairly according to individual abilities; help the team focus their efforts on the task in hand and motivate individual team members?	Yes
10. form and communicate a clear vision of what is to be achieved overall by a team; encourage individuals to contribute to this common goal to the best of their ability; create a sense of unity and common purpose?	Yes (when working with collaborators in Saudi Arabia)
11. understand and manage the inter-relationship between different teams and their impact on the overall aims of the institution; help to break down barriers between teams; build beneficial working relationships across the teams?	No

<b>Liaison and Networking:</b>	
Is the role holder required to:	
12. carry out standard day to day liaison using existing procedures?	Yes
13. participate in networks within the institution or externally?	Yes (with KAUST project collaborators)
14. initiate, build or lead internal networks; maintain relationships over time; establish Communication channels for self or others to use?	Yes (with KAUST project collaborators)
15. initiate, develop or lead networks which are external to the institution?	Yes (with KAUST project collaborators)

<b>Service Delivery:</b>	
Is the role holder required to:	
16 deal with internal or external contact who ask for service or require information? Create a positive image of the institution by being responsive and prompt in responding to requests and referring the user to the right person if necessary? Is contact usually initiated by the customer and does it typically involve routine tasks with set standards or procedures?	No
17. deal with internal or external contact where the service is usually initiated by you, working within the institution's overall procedures or policies; <i>And or</i> understand and explore customers needs; adapt the service accordingly to ensure the usefulness or appropriateness and quality of service (content, time, accuracy, level of information, cost)?	No
18. set the overall standards for service across a function or area of the institution; monitor service levels; pre-empt changes in customer needs and anticipate future requirements; maintain overall quality balancing different demands; ensure others have the support they need to provide quality service and fulfil their role?	No

**Decision Making Processes and Outcomes:**

Is the role holder required to:

19. take independent decisions?	No
20. be party to some collaborative decision; work with others to reach an optimal conclusion?	Yes
21. provide advice or input to contribute to the decision making of others?	Yes

**Planning and Organising Resources:**

Is the role holder required to:

22. complete tasks to a given plan, with allocated resources?	Yes
23. plan, prioritise and organise your own work or resources to achieve agreed objectives?	Yes (according to the work outlined in the respective work package of the research proposal)
24. plan, prioritise and organise the work or resources of self and others within own area on a daily, weekly or monthly basis; plan and manage small projects, ensuring the effective use of resources; receive information from and provide information to others to complete your planning; monitor progress against the plan?	Yes
25. take responsibility for the operational planning and organisation of larger projects or an area of work; co-ordinate a number of teams or projects on a monthly, quarterly or annual basis; set performance standards and establish monitoring procedures to keep track of progress across these different aspects of work; provide input to longer term planning?	No
26. carry out planning on a long-term or strategic basis that will affect large parts of the institution and possibly national or international activities? Does your planning and organisation typically cover a period of at least three to five years?	No

<b>Initiative and Problem Solving:</b>	
Is the role holder required to:	
27. solve standard day to day problems as they arise; choose between a limited number of options which have clear consequences, by following guidelines or referring to what has been done before; recognise when a problem should be referred to others?	Yes
28. use initiative and creativity to resolve problems where the optimal solution may not be immediately apparent but has to be assessed by a process of reasoning, weighing up the pros and cons of different approaches; identify and assess practical options; break the problem down into component parts?	No
29. resolve problems where there is a mass of information or diverse, partial and conflicting data, with a range of potential options available; apply creativity to devise varied solutions, approaching the problem from different perspectives?	No
30. resolve problems where there is a lack of precedent which calls for innovation and creative thought to develop appropriate options; anticipate problems and make projections; initiate solutions which take into account strategic implications for the institution and which do not limit future choices?	No

<b>Analysis and Research:</b>	
Is the role holder required to:	
31.establish the basic facts in situations which require further investigation and inform others if necessary?	Yes
32.analyse routine data or information using predetermined procedures and gathering the information from standard sources; need to work accurately to complete the task precisely as specified?	Yes
33.identify an appropriate existing method of analysis or investigation according to the data and objectives; recognise and interpret trends or patterns in data; identify or source additional information which could potentially help the investigation as the analysis progresses?	Yes
34.analyse or research complex ideas, concepts or extensive data from different perspectives; work out how bet to apply existing methodologies according to the overall context, objectives and expectations; identify the relationship between complex, interdependent factors?	Yes
35.identify the research question within a specific context; generate original ideas to build on existing concepts; generate new concepts and methodologies; develop new avenues of research?	Yes

<b>Sensory and Physical Demands:</b>	
Is the role holder required to:	
A. Carry out highly specialist or very complex tasks requiring either mastery of a wide range of complex sensory or physical techniques or involving unusually intense physical effort?	No
B. Carry out tasks which require either mastery of a range of sensory or physical techniques, concentration to co-ordinate different sensory or precision in applying these sensory skills, or involve considerable physical effort?	Yes
C. Carry out tasks at a level which would require either learning certain methods or routines or involve moderate physical effort?	Yes
D. Complete basic tasks which either would require either a minimum of instruction or light, if any, physical effort?	Yes

<b>Work Environment:</b>	
Is the role holder required to:	
37. work in an environment which is relatively stable and has little impact on you or the way in which work is completed?	No
38. understand how the work environment could impact on your own work or that of colleagues; take standard actions, within health and safety guidelines where applicable, to adapt to the environment	Yes
39. understand variability in your working environment and its potential negative impact on the work process or the health and safety of yourself or colleagues; determine the level of risk and appropriate response?	Yes

<b>Pastoral Care and Welfare:</b>	
Is the role holder required to:	
40. show sensitivity to those who may need help or, in extreme cases, are showing signs of obvious distress; initiate appropriate action by involving relevant people?	Yes
41. give advice on commonly occurring welfare issues or queries; follow standard welfare procedures for the institution; recognise when and individual should be referred elsewhere for professional help; respect confidentiality?	Yes
42. give support, guidance or pastoral care where standard procedures do not always exist; maintain confidentiality and build trust; judge when to listen, when to give advice or guidance and when to refer the individual for professional help; be fully aware of support networks for both yourself and the individual?	Yes

<b>Team Development:</b>	
Is the role holder required to:	
43. advise or guide new starters working in the same role or unit on standard information or procedures?	No
44. train or guide others on specific tasks, issues or activities; give advice, guidance and feedback on the basis of your own knowledge or experience; deliver training?	Yes
45. carry out training or development activity according to the needs of the individual or group; identify current capabilities and future needs; define the performance standards required; identify appropriate developmental activity; assess the application of learning; give feedback and guidance on overall performance?	No

<b>Teaching and Learning Support:</b>	
Is the role holder required to:	
46.introduce students or others who are new to the area to standard information or procedures?	No
47.teach or train students or others on specific tasks, issues or activities; assess performance and provide feedback during the event?	Yes
48.teach, train or facilitate development activities for individuals or groups on certain aspects or subjects within a particular academic discipline or specialism; monitor performance giving feedback and guidance; act as catalyst for further development or learning?	No
49.deliver a range of teaching or development activity within a particular academic discipline or specialism, teaching across the breadth or depth of the subject; challenge thinking and fosters debate; encourage the development of intellectual reasoning and rigour?	No
Do you:	
Provide standard information or delivers teaching or training?	No
Design content or learning materials within existing frameworks; make appropriate modifications to existing materials on the basis of the knowledge or experience of the learner(s)?	No
Develop innovative approaches to the learning experience and the curriculum; originate content and methodology?	No

<b>Knowledge &amp; Experience:</b>	
Is the role holder required to:	
A. be a leading authority in their subject or profession with widespread professional or public recognition?	No
B. be recognised as an authority in your field or specialism within the institution or amongst external peers, based on demonstrated expertise; shape and influence developments within the institution through your own contribution to your area of expertise?	No
C. apply a breadth or depth of experience showing full working knowledge and proficiency of your own area of expertise; act as a point of reference to others; demonstrate continuous specialist development, acquiring and refining skills and expertise in new or related areas through undertaking and encouraging internal or external development activity?	No
D. apply working knowledge of theory and practice, sharing this knowledge with others as appropriate; demonstrate continuous specialist development by acquiring relevant skills and competencies?	Yes
E. have sufficient knowledge or expertise to work on day to day issues in your own area without direct or continuous reference to others?	Yes
F. be aware of basic principles and practices; have an understanding of the systems and procedures which directly impact on your own work and be supervised or work closely with colleagues you can turn to for support?	Yes

<b>Please confirm:</b> The above represents a true and accurate picture of the current requirements of the role.	
Completed by: Karen Diele	Date: 04/06/2019
	
Signed: _____	

