



29.01.14

Dear Dr Jackson,

I am e-mailing to confirm that Joseph Kenworthy is currently a PhD student at the University of St Andrews. The funding requested is to enable Joe to attend an international conference (ASLO) which would provide him with the opportunity to present his current research and network with experts in the marine ecology and biodiversity/ecosystem functioning. The conference will also enable Joe to improve his dissemination skills and provide access to career development opportunities through networking and mentoring events. Joe has applied for funding from University bursaries and other society grants, however given the nature of the conference the costs are high. As such he is seeking further funds to make up the shortfall.

Yours sincerely,

A handwritten signature in black ink that reads "R. Aspden".

Dr Rebecca Aspden

Curriculum Vitae  
Joseph Kenworthy  
Sediment Ecology Research Group, University of St Andrews  
Scottish Oceans Institute, East Sands  
St Andrews, Fife,  
KY16 8LU

### **Academic Background**

Joint PhD, University of St Andrews, UK, and Macquarie University, Australia 2011-present

- Supervisors: David M. Paterson, Melanie Bishop, Leanne Armand
- Funding: NERC and the international Macquarie University Research Excellence Scholarship (iMQRES)
- Submission date 2015

PhD Training:

- Darwin Summer School on Biogeosciences (Utrecht, July 2011)
- Introduction to Statistical Modelling (CREEM, St Andrews, January 2012)
- Statistical analysis using R (multiple workshops, St Andrews January – April 2013)
- Analysis of Multivariate Data from Ecology and Environmental Science using PRIMER (November 2013)

Conferences attended

- MASTS annual science meeting, Edinburgh, poster presented (August 2011)
- Macquarie University postgraduate conference, Oral presentation (November 2012)
- St Andrews University biology postgraduate conference, poster presentation (March 2013)
- ECSA 53 symposium, Shanghai, China, oral presentation (October 2013)
- St Andrews University biology postgraduate conference, oral presentation (January 2014)

Undergraduate/Master's degree

- Master of Marine Biology (M. Mar. Biol.) University of Wales, Bangor (2006 – 2010) 1<sup>st</sup> class honours
- Publication: TW Davies, SR Jenkins, R Kingham, J Kenworthy, SJ Hawkins, JG Hiddink.(2011) Dominance, Biomass and Extinction Resistance Determine the Consequences of Biodiversity Loss for Multiple Coastal Ecosystem Processes. PLoS ONE 6 (12)

### **Awards received:**

- Macquarie University Postgraduate Research fund (PGRF) for attendance at ECSA 53: Estuaries and coastal areas in times of intense change – conference in Shanghai, China – AUD\$3000
- Centre for Academic, Professional and Organisational Development (CAPOD) training grant from St Andrews for attendance to Multivariate statistics course using PRIMER in Plymouth - £150

## **Research outline**

This PhD project is jointly funded through NERC and the Macquarie University postgraduate research fund. It is part of a joint project collaborating with the University of St Andrews in Scotland and Macquarie University in Australia. The rationale behind the project is to compare estuarine intertidal sediment ecosystem functioning in Scotland and Australia.

Present research compares the response of estuarine systems in both Scotland and Australia to environmental change. Both systems are under threat through climate change and coastal development. Estuarine mudflats support high rates of primary productivity, ameliorate pollutants and provide coastal protection through localised sediment stabilisation. They are, however, increasingly under threat from nutrient enrichment, associated with coastal development, and from physical disturbance, associated with increasingly frequent and intense storms. Experiments have been designed to manipulate these stressors through field experiments, examining how both systems react to the disturbances. Results could be used to infer the resilience of these systems to environmental change. Multiple response variables have been measured through this project, focusing on how these stressors affect the benthic ecosystem and the stability of these cohesive sediments, these include examining the macrofauna, diatoms, chlorophyll concentration, organic matter, and directly measuring sediment stability.

The aim of this project is to study estuaries in different parts of the world to provide insight into the functional consequences of ecosystem variation, relating to the nature and resilience of these systems under evolving climates. Australian and Scottish estuaries are very different environments. The Australian estuaries examined in this project range from temperate to subtropical and inferences could be made as to how Scottish systems may change due to changing climate. Many Australian estuaries are also managed through practices that have been designed on European estuaries. Given their differences, little comparative research has been done comparing both European and Australian systems. Through comparisons such as those being utilised in this project, it could aid in potential understanding and application for future management practices used in Australian systems.

This application is for partial funding to be able to attend the Ocean Sciences Meeting, 2014 in Honolulu, Hawaii, for which an abstract for a poster presentation has been accepted. This follows the completion of research on the Scottish component of this project which is to be the focus of the presentation. This research is relevant to various research themes associated with the conference, including sessions focussing on multiple stressors, estuarine and coastal ecology and associated ecosystem function. As such, it is expected this poster will attract a wide audience potentially leading to networking opportunities, future collaborations and dissemination of results to a wide international audience, expanding knowledge of intertidal sediment processes.

To aid in networking, this meeting offers a mentoring scheme, where the organisers match students with experienced researchers who have agreed to provide support, help and advice to

the student on how to effectively network and aid them in extending their professional network. This will be really important for me, having had limited previous networking experience, not only offering the chance to learn valuable networking skills, but also to have the opportunity to implement them under the guidance of a mentor. Other workshops available at this conference include those on fellowship and grant writing skills, which will be invaluable as a student looking to continue a career in academia. Not only will attendance at this meeting offer the opportunity to learn and develop skills essential for an early career researcher, but it will be amongst a community of fellow ocean scientists, allowing these workshops to be tailored to a specific audience, guiding me on my chosen career path and also opening up the opportunity for future collaborations and strengthening existing knowledge.

**Budget:**

| <b>Item</b>    | <b>Cost</b>            |
|----------------|------------------------|
| Conference fee | US\$340 (~£200)        |
| Flights        | £1000                  |
| Accommodation  | US\$250 (~£150)        |
| Subsistence    | £200 (£25/day, 8 days) |
| <b>Total</b>   | <b>£1600</b>           |

I am requesting £300 through the BSRG. Funding has been sought and approved through Macquarie University travel grants amounting to £800. This means there will be a shortfall of £800. Other sources of funding have been sought to aid in covering these costs.