

# UNSW@ADFA

CANBERRA • AUSTRALIA

## POSITION DESCRIPTION

<b>Date:</b>	April 2011
<b>Position:</b>	Research Associate
<b>Faculty/School:</b>	Physical Environmental and Mathematical Sciences The Sino-Australian Research Centre for Coastal Management
<b>Position Number:</b>	RA-PEMS (FML)
<b>ADFA Level:</b>	A
<b>Reports To:</b>	Dr Xiao Hua Wang, SARCCM Director
<b>Staff Supervised Directly:</b>	0
<b>Staff Reporting Indirectly:</b>	0

---

## JOB PURPOSE

The Sino-Australian Research Centre for Coastal Management (SARCCM, <http://pems.unsw.adfa.edu.au/SARCCM/index.html>) in conjunction with the School of Physical, Environmental and Mathematical Sciences at the University of New South Wales at Australian Defence Force Academy (UNSW@ADFA), Canberra invites applicants for a postdoctoral research associate role in support of research activities at the newly established interdisciplinary/multidisciplinary Centre.

## STATEMENT OF DUTIES

The applicant will be responsible for design and implementation a field campaign to observe fluid mud layers in Darwin Harbour, Australia, and Shanghai Port, China, and development of predictive models to investigate these layers. The project involves an investigation of (1) what is the governing mechanism controlling the fluid mud layer formation and its evolution; (2) how does the development of a fluid mud layer change the circulation, sediment transport and strata formation. Specific duties include 1) collecting the historic data and establishing the marine and meteorological database; 2) designing and conducting the field programs; 3) analyzing the data; 4) developing and implementing fluid mud dynamics model; 5) conducting model data comparison; 6) validating/calibrating the model; presenting preliminary results in conferences and publishing final results in international journals. Opportunities exist to work with economists, port managers and planners to evaluate the potential socio-economic benefits by developing adaptive tools to solve water quality and siltation problems in muddy ports and harbours in Australia and China. You will also be involved in limited teaching activities both at undergraduate and postgraduate levels at UNSW@ADFA.

## **REPORTING RELATIONSHIPS**

The position reports to Dr Xiao Hua Wang, Director of SARCCM.

## **PRINCIPAL ACCOUNTABILITIES**

1. Create and maintain effective working relationships with all stakeholders and demonstrate exemplary professionalism at all times.
2. Demonstrate a clear understanding of the balances and interconnections between doing the best for the projects and the best for oneself.
3. Openly demonstrate values of: trust, integrity, honesty, fairness, and reliability, conveying a strong work ethic and a clear commitment to a harmonious work environment.
4. Cooperate with the employer and comply with all relevant legislation and University College health and safety policies, procedures and instructions.
5. Maintain confidentiality of data, information, knowledge generated.
6. Work and act safely and take all reasonable care to protect personal health and safety and the health and safety of others.

## **SELECTION CRITERIA**

### ***Essential***

1. A PhD or equivalent in physical oceanography, sediment transport dynamics or ocean modelling, or related field.
2. Demonstrated experience in conducting excellent research in sediment transport dynamics in estuaries and coastal oceans.
3. Demonstrated experience in running various configurations of ocean models for understanding mechanisms/processes, and in using data for model validation/verification.
4. Demonstrated ability to work flexibly and independently as well as part of a team and to form and maintain effective working relationships with a range of colleagues and collaborators.
5. Demonstrated excellent written and verbal communication skills including the ability to document results and communicate effectively with colleagues and clients in order to meet project goals and timelines.

### ***Desirable***

1. Demonstrated experience and skill in ocean observation and field works.
2. Demonstrated experience using data visualisation software and web design (e.g., Matlab, html).
3. Demonstrated experience in undergraduate and postgraduate teaching.