

## JOB DESCRIPTION

**Job Title:** Professor of Sustainable Materials and Manufacturing

**Grade:** AC5

**Department:** School of Computing and Mathematical Sciences

**Responsible to:** CSEG Leadership

**Responsible for:** Leading role in developing CSEG and M<sup>3</sup>4Impact's R&KE initiatives. To develop and nurture a sustainable and diverse portfolio of research, knowledge exchange/enterprise and business innovation in order to achieve M<sup>3</sup>4Impact's strategic plan in ways that support our values.

**Key Contacts:** M<sup>3</sup>4Impact Management Team, Associate Dean RKE for FES, CMS Head, FES PVC, DVC RKE, Colleagues in M<sup>3</sup>4Impact, CMS and FES Colleagues, Greenwich Research and Innovation staff, Funding Agencies, Business and Research Partners

**Standard Occupational Classification (SoC code):** <<Please Insert>>

**Non-Contractual Nature of Role Profile:** This role profile is non-contractual and provided for guidance. It will be updated and amended from time to time in accordance with the changing needs of the University and the requirements of the job.

### PURPOSE OF ROLE

Our vision is to expand our world-leading Multi-Disciplinary and Multi-Scale Modelling expertise in both reach and ability, to tackle major societal challenges affecting the environment, quality of life, safety, security, and the economy. This will be achieved through the amalgamation and expansion of two existing award-winning teams: the Centre for Safety, Resilience and Protective Security (CSRPS) and the Computational Science and Engineering Group (CSEG), creating the Multi-scale, Multi-disciplinary Modelling for Impact (M<sup>3</sup>4Impact) expansion.

Both teams excel at developing and applying mathematical models, computational simulations, and bespoke software to create digital worlds that predict physically accurate outcomes addressing a wide range of societal challenges. M<sup>3</sup>4Impact links three cross-cutting research and knowledge exchange (R&KE) themes: **Safety and Security (S&S)**, covering disaster resilience, fire and evacuation dynamic coupling, urban-scale and building scale evacuation modelling, and protective security incorporating real-time interactivity through Virtual/Mixed Reality, from CSRPS; **Materials Science and Engineering (MSE)** focuses on the design and manufacture of sustainable, lighter, stronger materials with broad applications, in the transport, aerospace, energy and biomedical sectors. This encompasses

materials and process modelling targeting recyclability, low waste and energy efficiency; and **Digital Cities (DC)**, where interdisciplinary research will develop the evidence-base to protect UK cities/populations from pollution, pathogen dispersal, natural/anthropogenic disasters and to support policy decisions, jointly from CSRPS and CSEG.

This role primarily lies within the remit of MSE's involvement within M<sup>3</sup>4Impact. It is intended to strengthen and expand the scope of MSE's capacity to conduct high-quality research. The MSE theme covers Materials (with a focus on metals) Advanced Manufacturing, Energy storage, Sustainability, and Space research. This includes the development of novel multi-disciplinary methods such as the use of external fields or control of fluid flow during solidification to improve materials processing and related applications. Underpinning these novel techniques will be numerical simulations utilising High Performance Computing.

This senior role is intended to cut across all the research, enterprise and knowledge exchange activities of the MSE theme of the M<sup>3</sup>4Impact. A core purpose of the role is to lead and manage activities to identify and secure new external research/enterprise funding in support of M<sup>3</sup>4Impact objectives. Working closely with the CSEG Leads and the M<sup>3</sup>4Impact Business Development and Partnership Lead, the post holder will take a leading role in developing, implementing, and maintaining the research/enterprise strategy, including objectives and a framework for delivery. They will:

- (a) identify and secure new external research/enterprise funding,
- (b) support M<sup>3</sup>4Impact staff in identifying and securing new external research/enterprise funding
- (c) foster, develop, and support new research/enterprise themes consistent with the aims of M<sup>3</sup>4Impact,
- (d) maintain and develop productive relationships with existing external clients/partners and stakeholders, including
- (e) together with M<sup>3</sup>4Impact staff, horizon scan to identify and exploit new strategic opportunities for alternate income streams covering M<sup>3</sup>4Impact research, enterprise and knowledge exchange themes,
- (f) together with M<sup>3</sup>4Impact staff, identify and develop strategic alliances to create new funding opportunities,
- (g) assist in the development of M<sup>3</sup>4Impact knowledge exchange activities,

In addition to the significant income generation critical as an enabler for M<sup>3</sup>4Impact, the post holder will contribute to the objectives of M<sup>3</sup>4Impact more generally, in relation to research, enterprise and society engagement activities. They are expected to have; (i) a strong research background in Materials Science and Engineering related research themes, (ii) strong stakeholder relationships at regional, national, and international level, across enterprise and professional disciplines, (iii) a proven track record of applied research and enterprise work, including working with academic,

industry, professional bodies and government stakeholders, and (iv) strong leadership credentials to set standards of excellence.

## **KEY ACCOUNTABILITIES**

### **Team Specific:**

- Lead subject or professional research resulting in the publication and/or dissemination of original work of international excellence quality.
- Lead and win significant research/enterprise bids for funding in support of the five-year strategy for M<sup>3</sup>4Impact.
- Seeking funding opportunities proactively to generate new research/enterprise/knowledge exchange income for CSEG and M<sup>3</sup>4Impact.
- Take a leading role in the development of strategic bids
- Mentoring M<sup>3</sup>4Impact staff to proactively develop winning proposals for external funding.
- Lead interdisciplinary research collaboration and team-building, within CSEG, M<sup>3</sup>4Impact, the Faculty and beyond.
- Develop and lead research or innovation consortia with external partners including non-academic stakeholders.
- Develop and lead strategic alliances which build on existing collaborations and/or establish new partnerships to support new CSEG research/enterprise activities in the UK, Europe and internationally.
- Raising CSEG's profile and establishing strong relationships with targeted clients and partners resulting in increased business.
- Acquire and maintain a portfolio of research and enterprise projects and/or contribute to teaching/knowledge exchange to achieve full personal commissioning at Full Economic Cost according to the five-year M<sup>3</sup>4Impact strategy.
- Lead the supervision of research students at doctoral level.
- Make significant contributions to the development of novel MSc programmes and CPD courses, integrating CSEG research, enterprise and innovation, in support of teaching and knowledge exchange programmes developed as part of M<sup>3</sup>4Impact.
- Contribute to the development of the academic discipline.

### **Generic:**

- Maintain and develop their reputation as an authority and leading figure within the international academic or professional community in their specific subject.
- Maintain high professional standing in their discipline and develop their own scholarly profile, including a program of high-quality scholarship, disseminated primarily in professional refereed journals.

- Implement approved policies, guidelines, and standard operating procedures efficiently in relation to their own academic duties.
- Maintain an overview of the welfare, progression, examination, and assessment of allocated students.
- Keep abreast of development within the disciplines in their work area and seek continuous improvement of their own professional practice.
- Undertake other such duties as may from time to time be directed by the M34Impact Directors, PVC, Deputy Vice-Chancellor, Research and Enterprise

### **Managing Self:**

- Keep abreast of developments within the field and seek continuous improvement of own professional practice.
- Actively participate in established professional development framework activities.
- Behave in a manner that reflects the University values and creates a positive environment for work and study.

### **Core Requirements:**

- Adhere to the University's policies on Equality, Diversity and Inclusion and Information Security.
- Ensure compliance with Health & Safety, Data Protection and Equality Legislation.
- Adhere to the university's Sustainability policies, including the Carbon Management Plan, and carry out duties in a resource efficient way, reflecting the shared responsibility of minimising the university's negative environmental impacts wherever possible.
- Adhere to current legal requirements and best practice relating to digital content and accessibility, including Web Content Accessibility Guidelines when creating digital content.

### **Additional Requirements:**

Any other duties commensurate with the post and grade as agreed with the M<sup>3</sup>4Impact Directors, PVC of the Faculty and the Deputy Vice-Chancellor

### **Freedom of speech and academic freedom:**

In any matter falling under this job description, the university will have particular regard to, and place significant weight on, the importance of freedom of speech within the law, academic freedom and tolerance for controversial views in an educational context or environment. The University's commitments to freedom of speech and academic freedom are set out in the [Freedom of Speech Code of Practice](#). In the event of any conflict between this job description and the Freedom of Speech Code of Practice, the Freedom of Speech Code of Practice will take precedence.

**KEY PERFORMANCE INDICATORS:**

Performance Indicators will be established in consultation with the DVC (Research & Enterprise) and M<sup>3</sup>4Impact Directors, as part of the post holder's annual Appraisal and Professional Development Review, and with due regard to the University's KPIs.

**KEY RELATIONSHIPS (Internal & External):**

- Faculty Management Team
- M<sup>3</sup>4Impact Management Team
- M<sup>3</sup>4Impact Staff
- External funders and External Partners

## **PERSON SPECIFICATION**

### **EXPERIENCE:**

#### **Essential Criteria**

- Proven sustained track record of generating substantial research or enterprise income from commercial and government/public sector sources.
- Leadership of significant enterprise and research projects with a range of stakeholders, including commercial, government and public sector.
- Proven track record of applied research and enterprise work.
- Proven track record of delivering a significant and sustained body of impacts or outcomes with demonstrable benefits to businesses, the public sector, or society in general, at the highest levels of international excellence in terms of reach and significance.
- Publishing outputs or reports in media appropriate for the subject or profession, which demonstrate international levels of excellence.
- Proven track record of leading research or professional teams.
- Proven track record of developing and implementing research or enterprise strategies and policies.
- Proven track record of working with and managing complex, diverse public and private sector stakeholder relationships at international, national and regional levels.
- Extensive experience of strategic planning and managerial leadership.
- Evidence of strong stakeholder relationships at regional, national, and international level, across enterprise and professional disciplines,
- Proven track record in effective financial management.
- Experience of influencing researchers and partners.
- Experience of advanced modelling, experimental and industry applications in an areas relevant to M<sup>3</sup>4Impact
- Experience of teaching in HE

#### **Desirable Criteria**

- Understanding of HE in the UK and in a business enterprise role.
- Extensive knowledge of key policies at national and sector wide level
- Successful supervision of PhD students
- Working knowledge of academic standards.
- Experience of model development in an area relevant to M<sup>3</sup>4Impact.

## **SKILLS**

### **Essential Criteria**

- Outstanding knowledge of the mechanisms for funding streams appropriate to M<sup>3</sup>4Impact.
- Well-developed organisational and management skills.
- Ability to develop and implement staff training.
- Well-developed interpersonal skills and ability to motivate others.
- Excellent written and oral communication skills.
- Commitment to the promotion of high standards and excellence.
- Ability to think strategically and conceptually.
- Capacity to listen and consult, good negotiation skills.
- Capacity to make informed decisions.
- Ability to work effectively and deliver under pressure.
- Able to use IT effectively.
- Well-developed project management skills.

### **Desirable Criteria**

- N/A

## **QUALIFICATIONS**

### **Essential Criteria**

- PhD degree in a relevant subject
- Professional qualification appropriate for the subject
- Minimum of Associate Fellow of HEA or significant teaching experience.

### **Desirable Criteria**

- Postgraduate teaching qualification

## **PERSONAL ATTRIBUTES**

### **Essential Criteria**

- We are looking for people who can help us deliver the [values](#) of the University of Greenwich: Inclusive, Collaborative and Impactful.

### **Desirable Criteria**

- N/A