

**NSF BIOGRAPHICAL SKETCH**

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**IDENTIFYING INFORMATION:**

NAME: Regueiro, Richard

ORCID: 0000-0002-1669-1753

POSITION TITLE: Professor

**ORGANIZATION AND LOCATION:** University of Colorado Boulder, Boulder, CO, USA**Professional Preparation:**

ORGANIZATION AND LOCATION	DEGREE (if applicable)	DATE RECEIVED	FIELD OF STUDY
Stanford University, Stanford, CA, USA	PHD	1998	Civil and Environmental Engineering
Massachusetts Institute of Technology, Cambridge, MA, USA	MS	1993	Aeronautics and Astronautics
University of Pennsylvania, Philadelphia, PA, USA	BENG	1991	Civil Engineering Systems

**Appointments and Positions**

2019 - present Professor, University of Colorado Boulder, Boulder, CO, USA

2018 - present Intermittent Mechanical Engineer, US Army Research Laboratory, Aberdeen, MD, USA

2022 - 2022 Interim Chair, Department of Civil, Environmental, and Architectural Engineering, University of Colorado Boulder, Boulder, CO, USA

2014 - 2014 Academic Visitor, University of Oxford, Engineering Science Department, Oxford, Not Applicable, N/A, United Kingdom

2014 - 2014 UPS Foundation Visiting Associate Professor, Stanford University, Stanford, CA, USA

2012 - 2019 Associate Professor, University of Colorado Boulder, Boulder, CO, USA

2005 - 2012 Assistant Professor, University of Colorado Boulder, Boulder, CO, USA

2004 - 2005 Principal Member of Technical Staff, Sandia National Laboratories, Livermore, CA, USA

2002 - 2003 Lecturer, Stanford University, Structural Engineering & Geomechanics Division, Stanford, CA, USA

1998 - 2004 Senior Member of Technical Staff, Sandia National Laboratories, Livermore, CA, USA

1993 - 1998 Graduate Research and Teaching Assistant, Stanford University, Stanford, CA, USA

1992 - 1993 Draper Fellow, Charles Stark Draper Laboratory, Cambridge, MA, USA  
1991 - 1991 Graduate Teaching Assistant, Massachusetts Institute of Technology, Cambridge, MA, USA

## **Products**

### *Products Most Closely Related to the Proposed Project*

1. Miller N, Regueiro R, Shahabi F, Bishop J. A micromorphic filter for determining stress and deformation measures from direct numerical simulations of lower length scale behavior. *International Journal for Numerical Methods in Engineering*. 2022 May 15; 123(17):3879-3921. Available from: <https://onlinelibrary.wiley.com/doi/10.1002/nme.6991> DOI: 10.1002/nme.6991
2. Bennett K, Regueiro R, Luscher D. Anisotropic finite hyper-elastoplasticity of geomaterials with Drucker–Prager/Cap type constitutive model formulation. *International Journal of Plasticity*. 2019 December; 123:224-250. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0749641918303917> DOI: 10.1016/j.iijplas.2018.11.010
3. Yan B, Regueiro R. Three-dimensional discrete element method parallel computation of Cauchy stress distribution over granular materials. *International Journal for Numerical and Analytical Methods in Geomechanics*. 2019 April 10; 43(5):974-1004. Available from: <http://doi.wiley.com/10.1002/nag.2917> DOI: 10.1002/nag.2917
4. Yan B, Regueiro R. Definition and symmetry of averaged stress tensor in granular media and its 3D DEM inspection under static and dynamic conditions. *International Journal of Solids and Structures*. 2019 April; 161:243-266. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0020768318304748> DOI: 10.1016/j.ijsolstr.2018.11.021
5. Zhang B, Regueiro R. On large deformation granular strain measures for generating stress–strain relations based upon three-dimensional discrete element simulations. *International Journal of Solids and Structures*. 2015 August; 66:151-170. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0020768315001675> DOI: 10.1016/j.ijsolstr.2015.04.012

### *Other Significant Products, Whether or Not Related to the Proposed Project*

1. Amirrahmat S, Alshibli K, Jarrar M, Zhang B, Regueiro R. Equivalent continuum strain calculations based on 3D particle kinematic measurements of sand. *International Journal for Numerical and Analytical Methods in Geomechanics*. 2018 June 10; 42(8):999-1015. Available from: <http://doi.wiley.com/10.1002/nag.2779> DOI: 10.1002/nag.2779
2. Fankell D, Regueiro R, Kramer E, Ferguson V, Rentschler M. A Small Deformation Thermoporoelastic Finite Element Model and Its Application to Arterial Tissue Fusion. *Journal of Biomechanical Engineering*. 2018 March 01; 140(3):- . Available from: <https://asmedigitalcollection.asme.org/biomechanical/article/doi/10.1115/1.4037950/474252/A-Small-Deformation-Thermoporoelastic-Finite> DOI: 10.1115/1.4037950
3. Zhang B., Regueiro R., Druckrey A., Alshibli K.. Construction of poly-ellipsoidal grain shapes from SMT imaging on sand, and the development of a new DEM contact detection algorithm. *Engineering Computations (Swansea, Wales)*. 2018; 35(2):733-771. Available from: <http://www.scopus.com/inward/record.url?eid=2-s2.0-85046347152&partnerID=MN8TOARS>

DOI: 10.1108/EC-01-2017-0026

4. Bennett K, Regueiro R, Borja R. Finite strain elastoplasticity considering the Eshelby stress for materials undergoing plastic volume change. *International Journal of Plasticity*. 2016 February; 77:214-245. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0749641915001825> DOI: 10.1016/j.ijplas.2015.10.007
5. Regueiro R, Ebrahimi D. Implicit dynamic three-dimensional finite element analysis of an inelastic biphasic mixture at finite strain. *Computer Methods in Applied Mechanics and Engineering*. 2010; 199(29-32):2024-2049. Available from: <https://linkinghub.elsevier.com/retrieve/pii/S0045782510000794> DOI: 10.1016/j.cma.2010.03.003

### **Synergistic Activities**

1. Service to the scientific and engineering community outside of immediate organization – *International Journal for Numerical and Analytical Methods in Geomechanics*

### **Certification:**

When the individual signs the certification on behalf of themselves, they are certifying that the information is current, accurate, and complete. This includes, but is not limited to, information related to domestic and foreign appointments and positions. Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§ 287, 1001, 1031 and 31 U.S.C. §§ 3729-3733 and 3802.

Certified by Regueiro, Richard in SciENcv on 2023-02-06 17:36:04