The Department of Engineering Science and Mechanics (ESM) at Penn State invites applications for a faculty position at any rank in the cross-cutting area of additive manufacturing (AM)/3-D printing. Additive manufacturing is one of the strategic research thrusts of the Department, involving faculty with active interests in metal, polymer, biomaterial, and ceramic feedstock and all types of processes and machines. Faculty interests leverage Penn State's world-class Center for Innovative Materials Processing through Direct Digital Deposition (CIMP-3D). The Department is seeking outstanding candidates who have demonstrated research expertise in several of these topical areas:

Application in emerging fields – bio-additive (bioprinting of living tissues and bioabsorbable materials), micro-/nano-additive, ultrasonic additive manufacturing, electronics, energy and sustainability, and novel large-scale structures for defense application

Design that exploits unique characteristics of AM – net-shaping, complex hierarchical structures, cellular, functional gradient microstructures

Advanced characterization, including synthesis and characterization of powder feedstock, for developing interrelationships between processing/structure/performance

Process modeling and closed-loop machine control algorithms – integrating sensors within the build environment that provide feedback to adjust process control parameters based on established structure-performance relationships

Theoretical and computational modeling – basic physics and chemistry of multiple interacting physical phenomena and evolution of deposited materials to desired structures

Applicants with the ability to work across disciplines are especially encouraged to apply. The ESM Department was founded in 1906, and in 1956 introduced the Engineering Science undergraduate degree as the Honors Program for the College of Engineering. The ESM Department comprises 29 tenure and tenure-track faculty, 2 fixed-term graduate faculty, 18 affiliated graduate faculty (Applied Research Laboratory, Electro-Optics Center, Materials Research Laboratory, and other departments), and 15 staff. There are around 130 undergraduate and 130 graduate students in the department. The ESM Department is inherently interdisciplinary and transdisciplinary and has a highly research active faculty with annual research expenditures ranging from $9-16 million. All ESM faculty are members of the Materials Research Institute, several are affiliated with the Institute for Cyberscience, and approximately 50% are members of the Huck Institutes of the Life Sciences, the Penn State Institutes of Energy and the Environment, and have collaborations with the College of Medicine. Additional information about the department can be found at http://www.esm.psu.edu.

Required qualifications include a Ph.D. in an engineering related discipline, and evidence of excellent potential or accomplishments in research and teaching. The position begins August 2015. Screening of applicants will begin on October 15, 2014. Nominations and applications will be considered until the position is filled. Applicants should submit: (1) a cover letter, (2) curriculum vitae, (3) a statement of professional interests, (4) two relevant publications, and (5) names and addresses of four references. Please submit these five items in one pdf file. Apply to job 53711 at http://www.psu.jobs. Inquiries should be addressed to ESM_AM-Search@esm.psu.edu. Exceptional candidates should also submit a separate application to be considered for one of 6 Dean's Frontier Faculty positions, job 53460.

Employment will require successful completion of background check(s) in accordance with University policies.

CAMPUS SECURITY CRIME STATISTICS: For more about safety at Penn State, and to review the Annual Security Report which contains information about crime statistics and other safety and security matters, please go to http://www.police.psu.edu/clery/, which will also provide you with detail on how to request a hard copy of the Annual Security Report.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to minorities, women, veterans, disabled individuals, and other protected groups.