Andrea J. Berman, PhD, assistant professor of biological sciences, Dietrich School of Arts and Sciences, will deliver the next lecture in the 2017 Senior Vice Chancellor’s Research Seminar series on Friday, July 7, from noon–1 p.m. in Lecture Room 6, Scaife Hall [Add to Calendar]. The title of Berman’s presentation is “LARP1: The Warden of Ribosome Biogenesis and a Significant Player in Epithelial Cancers.” This seminar series is open to all interested University of Pittsburgh and Carnegie Mellon University faculty, students, and staff. Arthur S. Levine, MD, senior vice chancellor for the health sciences and John and Gertrude Petersen Dean of Medicine, will introduce Berman and lead the discussion following her lecture.

**Topic Overview:**
An intricate choreography of RNA binding proteins regulates cellular function and homeostasis. These proteins perform numerous and varied roles in messenger RNA (mRNA) transcription, turnover, subcellular localization, and translation. The Berman Lab integrates molecular, biochemical, and structural techniques to understand how the formation and remodeling of specific ribonucleoprotein complexes affect these central molecular processes—and how their dysfunction leads to oncogenesis.

One such RNA binding protein, La-related protein 1 (LARP1), has been linked to several epithelial cancers, including that of the ovary, cervix, colon, and liver. LARP1 interacts with the untranslated regions (UTRs) of mRNAs to direct them into pathways for translational repression or activation. LARP1 contains three RNA binding domains, the La- and RNA recognition motifs, which are predicted to form a structural module, and a highly conserved C-terminal region, named the DM15 motif. Only recently was LARP1 discovered as the critical node in signaling by the growth-responsive mTOR kinase for regulating ribosome biogenesis. Berman and colleagues previously demonstrated that LARP1 directly associates with the 5' UTRs of mRNAs encoding ribosomal proteins and translation-associated factors. LARP1 also interacts with poly-A binding protein (PABP), a component essential for mRNA stability and efficient translation.

Berman and colleagues used X-ray crystallography and biochemistry to determine the molecular basis for the interactions between the DM15 motif of human LARP1 and RNA. Their data reveal that LARP1 uses an unanticipated mechanism to silence ribosome biogenesis and stabilize these messages. This interaction is unique to LARP1 among all intermolecular interactions in the cell and, therefore, represents a rare opportunity for destabilizing the messages required for all cell growth and proliferation.

**CME Information:**
The Center for Continuing Education in the Health Sciences will designate the Senior Vice Chancellor's Research Seminar as a continuing medical education activity eligible for a maximum of one hour of Category 1 credit toward the AMA Physician’s Recognition Award. Nurses and other health professionals are awarded 0.1 Continuing Education Units (CEUs).

For information on future lectures in this series, which highlights the growing body of important research being accomplished by young investigators in the University of Pittsburgh’s Schools of the Health Sciences, please visit our website at [http://www.svc-seminar.pitt.edu/](http://www.svc-seminar.pitt.edu/) or call the Office of Academic Affairs at 412-383-7382.

**Target Audience:**
Faculty and students from the University of Pittsburgh Schools of the Health Sciences, and other schools, departments, and units across campus, and Carnegie Mellon University faculty and students from the Department of Biological Sciences.

The University of Pittsburgh School of Medicine, as part of the Consortium for Academic Continuing Medical Education, is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Center for Continuing Education in the Health Sciences designates this continuing medical education activity for a maximum of one hour of Category 1 credit towards the AMA Physician’s Recognition Award. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

Nurses and other health care professionals are awarded 0.1 Continuing Education Units (CEUs).

**Disclosure Statement:**
In accordance with Accreditation Council for Continuing Medical Education requirements on disclosure, information about relationships of presenters with commercial interests (if any) will be included in materials that will be distributed at the time of the conference.

We encourage participation by all individuals. If you have a disability, advance notification of any special needs will help us serve you better. Please notify us of your needs at least two weeks in advance of the program.

**Disclaimer Statement:**

“The information presented at this CME program represents the views and opinions of the individual presenters and does not constitute the opinion or endorsement of, or promotion by, the UPMC Center for Continuing Education in the Health Sciences, University of Pittsburgh Medical Center (UPMC) or Affiliates and University of Pittsburgh School of Medicine. Reasonable efforts have been taken intending for education subject matter to be presented in a balanced, unbiased fashion and in compliance with regulatory requirements. However, each program attendee must always use his/her own personal and professional judgment in considering further application of this information, particularly as it may relate to patient diagnostic or treatment decisions including, without limitation, FDA-approved uses and any off-label uses.”

Follow Pitt Health Sciences (@PittHealthSci) on Twitter for the latest updates.