



*"The best prevention,  
is Early Detection"*

# EDRN Today

June/July 2019

CANCER BIOMARKERS RESEARCH GROUP

## Early Detection Research Network (EDRN)

by Felicia Evans Long, MBA

### **EDRN is on the MOVE!**

The Cancer Biomarkers Research Group (CBRG) has expertly led the extramural biomarker research. As the result of continuing proactive initiatives and discussions the group has taken several steps to involve key stakeholders in further developing the field of biomarkers in cancer risk assessment and early detection.

CBRG is increasing its social media presence! Tweets and updates will be sent out weekly to the NCI pages. NCI Blog updates will be sent on a monthly basis. Please forward all topics or ideas to Felicia Evans Long at [Felicia.EvansLong@nih.gov](mailto:Felicia.EvansLong@nih.gov)

Stay Connected with us on Twitter [@NCIprevention](https://twitter.com/NCIprevention).

### **Did You Know?**

The EDRN Mission encompasses the goals of bringing together dozens of institutions to help accelerate the translation of biomarker information into clinical applications and to evaluate new ways of testing cancer in its earliest stages and for cancer risk.

#### **EDRN Mission:**

- Development and validation of biomarkers to characterize precancerous lesions, to detect early stage cancers, and to determine risk of progression
- Development of new, high-throughput technologies or refinement of existing technologies to ascertain the biology and molecular circuitry of precancer lesions and to detect early stage cancers
- Development of imaging methods to characterize preneoplastic lesions and to detect early stage cancers
- Development of knowledge-based and informatics infrastructure to accelerate the development and validation of biomarkers



## Investigator Spotlight: Dr. Anirban Maitra

Anirban Maitra, M.D., is Professor of Pathology and Scientific Director of the Sheikh Ahmed Pancreatic Cancer Research Center at UT MD Anderson Cancer Center in Houston Texas. Dr. Maitra's relationship with the EDRN began during his postdoctoral fellowship in the laboratory of Dr. Adi Gazdar, where he learned his skills on molecular assessment of precursor lesions of lung and breast cancers. Since moving to Johns Hopkins University in 2001, he has been continuously engaged in pancreatic cancer research for over 18 years, including as part of their SPORE in GI Cancers, and this career focus has continued since his relocation to MD Anderson in 2013. He is currently a Principal Investigator of a Pancreatic Cancer Clinical Validation Center (CVC) through the EDRN, as well as multiple other NCI-funded initiatives, such as the Molecular Characterization Laboratories (MCL) consortium, which is focused on cancer overdiagnosis (a joint effort between the Divisions of Cancer Prevention and Cancer Biology), the Consortium for Pancreatitis, Diabetes and Pancreatic Cancer (CPDPC, a joint effort between NCI and NIDDK), and most recently as co-leader of the MD Anderson SPORE in GI Cancers. His research has focused on genomics and molecular pathology of pancreatic cancer, especially as it relates to precursor lesions (pancreatic intraepithelial neoplasia [PanINs] and intraductal papillary mucinous neoplasms [IPMNs]). He has also collaborated extensively with EDRN funded colleagues at Hopkins and MD Anderson on biomarker discovery projects relevant to early detection of pancreatic cancer, including genomics and proteomics based technologies. His cancer prevention efforts also include co-leading a multi-institutional Stand Up To Cancer team on pancreatic cancer interception, which will focus on enhancing cascade germline mutation testing in family members of pancreatic cancer patients who harbor germline mutations (the GENERATE study). As the incidence of pancreatic cancer nationally continues to rise, and is predicted to become the second most common cause of cancer related deaths within the next few years, Dr. Maitra is grateful for the opportunity to continue his research in biomarker discovery and validation, with the long term goal of reducing mortality from this recalcitrant disease through concerted early detection efforts.



## HUPO Appointment

Recently, Dr. Srivastava was selected on behalf of the Human Proteome Organization's Executive Committee to Chair a "HUPO External Development Initiative (HEDI)" and the associated committee. The HEDI committee will include members from both governmental and non-governmental funding agencies to support proteomic focused research studies and projects. As Chair of HEDI, Dr. Srivastava will work closely with Dr. Robert Mortiz (HUPO Vice President) to strategize and communicate plans and progress of the initiative. He will also be invited to attend designated HUPO Executive committee meetings and report on the progress of the initiative, discuss, and assist in planning initiative events.

The Human Proteome Organizations' Executive Committee (HUPO) seeks to establish ongoing communication with worldwide funding institutions to better understand their research strategies and priorities in the field of proteomics. They will also provide information as to the status and opportunities in proteomic research and offer support in promoting their mission through participation of interested investigators. HUPO was established on February 9, 2001 with the mission statement "to define and promote proteomics through international cooperation and collaborations by fostering the development of new technologies, techniques and training to better understand human disease." HUPO's main objectives include:

- Foster global collaboration in major proteomics projects by gathering leading international laboratories in life sciences, bioinformatics, mass spectrometry, systems biology, pathology, and medicine;
- Become the point of contact for proteomics research and commercialization activities worldwide;
- Support large-scale proteomics projects that are aimed at:
  - A mechanistic understanding of fundamental biological processes (often using model organisms and non human species);
  - Directly studying human disease through proteomics techniques and technologies;
- Coordinate and enable the fostering of communication among funding agencies and industry partners with the proteomics community and coordinate the activities of groups and organizations interested in HUPO's Scientific Initiatives
- Coordinate the development of standard operating procedures related to:
  - Sample preparation, analysis, and repetitions;
  - Data collection, analysis, storage, and sharing;
- Play a leading role in:
  - Defining the location and functions of proteins in human health and disease by supporting the definition of common and specific standards for peptide and protein characterization from human and model organism specimen selection and phenotypic evaluation to data collection, storage and analysis allowing free and rapid exchange of data;
  - The creation of country-based ethical and legal policy surrounding the handling, banking, and use of human tissue specimens for large-scale proteomics projects.

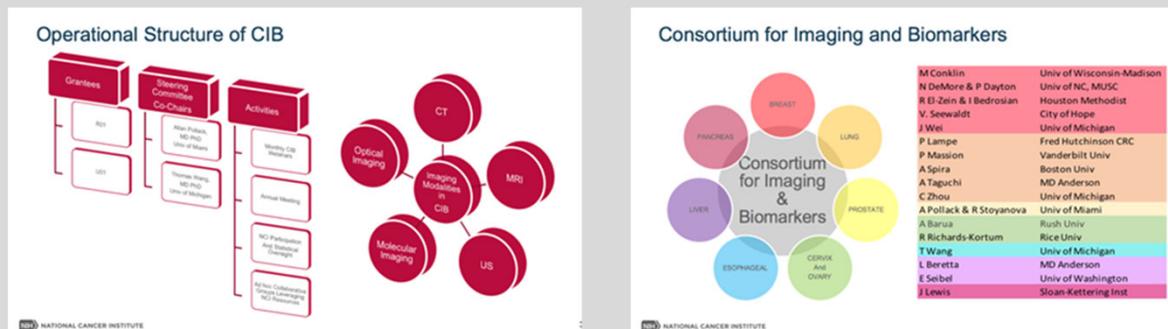
More information about HUPO can be found on their website, [here](#).



translating  
the code of life

## CIB

The goal of the [Consortium for Imaging and Biomarkers \(CIB\)](#) is to improve cancer screening, early detection of aggressive cancer, and assessment of cancer risk by integrating imaging strategies with biomarkers into complementary approaches. Overdiagnosis and false positives present significant clinical problems in the prevention, detection and treatment of cancer. Therefore, there is an unmet clinical need to more accurately identify early-stage aggressive cancers and distinguish lesions that are life threatening from those that are not.



The original Funding Opportunity Announcement (FOA), PAR-13-189 and its related PARs, produced a series of grants for integrating imaging and biomarkers. Subsequently, those funded grants (R01) were converted to a collaborative mechanism (U01) and the FOA reissued as a single U01 to initiate the formation of a consortia. Emphasis within the network was placed on ensuring the development of appropriate statistical methods for analysis and subsequent validation. This was accomplished by support from the Division of Cancer Prevention (DCP) Biometry Group's expertise to the PI's as the scope and diversity of new grant applications increased in complexity.

The funding announcement encourages and supports the integration and collaborative interactions of the imaging and biomarker research communities. Specifically, improving current approaches for the earliest possible detection of organ confined aggressive cancer as well as identifying precancerous lesions that will subsequently demonstrate an aggressive phenotype. By stimulating the generation of co-registered/cross correlated multiplexed biomarker results with multimodality imaging results the consortia attempts to address diagnostic uncertainty.

In the latest reissuance, [PAR 19-264](#), the scope of the FOA was expanded to include imageable biomarkers with established reference standards to maintain scientific reproducibility, quality assurance metrics, multicenter verification and subsequent clinical validation. To meet the objectives, research integrating the following topics are being encouraged: imaging, biomarkers, imageable biomarkers and proteogenomic tumor signatures thereby aligning with the recommendations of the Cancer Moonshot BRP (Blue Ribbon Panel), goals of the PreCancer Atlas (PCA) initiative, [CA-17-035](#), and research already begun by current investigators in the CIB.

## Brain Break

Can you solve this months riddle? Answers will be given out in next months newsletter. Good Luck!

Albert and Bernard just become friends with Cheryl, and they want to know when her birthday is. Cheryl gives them a list of 10 possible dates.

◀ May 15      May 16      May 19  
June 17      June 18  
July 14      July 16  
August 14    August 15    August 17

Cheryl then tells Albert and Bernard separately the month and the day of her birthday respectively.

Albert: I don't know when Cheryl's birthday is, but I know that Bernard does not know too.

Bernard: At first I don't know when Cheryl's birthday is, but I know now.

Albert: Then I also know when Cheryl's birthday is.

So when is Cheryl's birthday?

## Last Month Brain Break Answer

**The correct answer was:** on its side, the number 8 look like an infinity symbol. Cut in half, the number 8 becomes two zeros.