Over $400,000 NIH Grant Awarded to CSU Researcher Funds Investigation of the Impact of Disease Causing Mutations

Dr. Komar's research is focused on the investigation of the expression of genetic information on the level of protein synthesis.

The flow of genetic information is from DNA to RNA to proteins. The information encoded in the DNA is transcribed into RNA and then translated into protein. The sequence of three nucleotide bases in mRNA (termed codons) specifies the sequence of amino acids that make up the protein. The genetic code is degenerate in that 18 out of 20 standard amino acids are represented by more than codon. Such codons are called synonymous. Mutations of both nonsynonymous and synonymous codons have been shown to affect the expression of genetic information and change the phenotype of the organism.

A key to personalized medicine is to understand how genetic variability among individuals contributes to development and progression of the disease. This relationship is only partially understood and consequences of mutations causing a disease are often unknown. To date, little attention has been paid to synonymous mutations and molecular mechanisms underlying their effects on protein function (since they do not change the amino acid sequence of the encoded protein).

The goal of Dr. Komar's NIH funded project is to understand and compare the underlying molecular mechanisms behind several disease-causing mutations (synonymous or otherwise) in the F9 gene (encoding blood coagulation factor FIX), which lead to Hemophilia B. Hemophilia B is the second most common type of all hemophilias. It is an X-linked recessive trait mostly affecting males (1 in ~25,000 males is affected at birth). Genetic counseling and prenatal testing for individuals at risk are considered to be important Hemophilia B management approaches. In
this regard, knowledge of underlying molecular mechanisms behind disease-causing mutations and the opportunity to assess their risks are becoming extremely important. This knowledge requires comprehensive understanding of the FIX structure/function relationship, which is a subject of Dr. Komar's research.

Dr. Komar is the Director of Cleveland State University's Center for Gene Regulation in Health and Disease (GRHD) and a Professor in the Department of Biological, Geological, and Environmental Sciences in the College of Sciences and Health Professions. Dr. Komar is an expert in the translational control of gene expression.

Celebrating 50 Years of Significant Accomplishments in Research and Scholarship

The Office of Research is pleased to announce a new timeline featuring some of CSU's significant research and scholarly accomplishments as part of CSU's 50th Anniversary celebration. The highlighted accomplishments include examples of how CSU researchers and scholars have influenced science, engineering, law, public policy, and the political system, as well as examples of highly influential research papers and books, major grants, interesting and important findings, successful innovations, and more. Indeed, the timeline represents only a small proportion of CSU's significant research and scholarly accomplishments. There are many more examples of significant - and impressive - research and scholarly accomplishments throughout CSU's 50-year history.

Call for Participation - Workshop on the Logistics of Proposal Development

The Office of Research offered an eight-week Proposal Development Workshop during the summer of 2014, and plans to continue offering this workshop in future summers, including the summer of 2015. Participants in the summer workshop develop competitive proposals that are ready for submission to a federal agency in response to a solicitation/RFP. Although the summer workshop is limited to a select group of new junior faculty, the Office of Research is pleased to offer a new workshop, Logistics of Proposal Development, on Friday, November 7, 2014 from 1:00-4:00pm (location to be determined), which is open to all tenured and tenure-track faculty interested in developing proposals for external research funding.

For more information, including how to register by the deadline of 5:00pm on Thursday, October 23, 2014, please read the complete Call for Participation.
Best Poster Prizes Awarded to Undergraduate Researchers

Best poster prizes were awarded to undergraduate student researchers presenting their work at the 2014 Undergraduate Research Poster Session on September 4, 2014. Students and faculty discussed their research funded with a 2014 Undergraduate Summer Research Award.

Seol "Casey" Kim (pictured on the right) earned the First Place Prize ($200 gift card) for her poster Pharmacological and Pre-Clinical Testing of 5-NIdR as a New Therapeutic Agent Against Brain Cancer in which she presented her research with Drs. Choi and Berdis.

According to Dr. Berdis, "Casey's research focuses on an important area in oncology, specifically toward developing new therapeutic treatments against brain cancer."

Katie Fry, Rachel Daley, and Kyle Riordan (pictured on the left) earned the Second Place Prize ($150 gift card) for their poster The History and Archaeology of Cleveland's Historic Central Market District - and their impressive display of artifacts that accompanied their poster - in which they presented their research with Dr. Wanyerka.

Dale Lewis (pictured on the right) earned the Third Place Prize ($40 gift card) for his poster Is Steering Practice Task Dependent? in which he presented research with Dr. Jenkins and her graduate student, Amirhossein Hosseini.

The Office of Research congratulates these students, as well as their graduate student, post-doc, and faculty colleagues and mentors. Furthermore, in addition to these three posters, there were several other high quality posters representing impressive research and successful faculty-student collaborations. The Office of Research encourages undergraduate and graduate students to be actively engaged in research.

Photos courtesy of Vern Morrison, Digital Production Unit Assistant. For more photos of the 2014 Undergraduate Research Poster Session on September 4, 2014, click here.
Featured Researcher Video Series

Professor Brain Ray's research is the focus of the latest installment of the Featured Researcher Video series. Professor Ray is an Associate Professor at Cleveland State University's Cleveland-Marshall College of Law. His research focuses on comparative and international law with an emphasis on comparative constitutional law and social rights. We encourage you to learn about Professor Ray's work, and to take a look at our previous Featured Researcher Videos.

CSU Scholar News

Dr. Anette M. Karlsson, Dean of the Washkewicz College of Engineering and Professor of Mechanical Engineering, and her colleagues at the University of Central Florida, Argonne National Laboratory, and the German Aerospace Institute, recently published an article in the prestigious journal Nature Communications. This work highlights a major breakthrough from the longtime and ongoing collaboration between the four research groups on establishing the durability of high temperature material systems used in aircraft engines. "The recent published work is a critically important step forward in understanding these interesting systems," said Dr. Karlsson.

Before moving to United States, Dr. Karlsson worked for Saab Aerospace and earned a B.S. and M.S. at the University of Linkoping, Sweden, in Mechanical and Aerospace Engineering. She received her Ph.D. at Rutgers University, and after completing a post-doctoral appointment at Princeton University, she joined the University of Delaware as an Assistant Professor. After being promoted through the ranks, and serving as the Chair for the Department of Mechanical Engineering, she joined CSU in 2012 as the Dean of the Washkewicz College of Engineering.

Please share with us important news or updates on your research, scholarly, or creative activities. Updates may be related to a paper that has been accepted for publication in a high-impact journal, a book you've just published, your work that will be exhibited at a prominent institution, or other updates you wish to share with our office. Send details to j.yard@csuohio.edu and c.mclennan@csuohio.edu.

Revised Conflict of Interest Form

As communicated in the August issue of the Office of Research Newsletter, Public Health Services (PHS) has revised their Financial Conflict of Interest Policy (FCOI). Consequently, SPRS has modified the Conflict of Interest Form (COI) to ensure that CSU is compliant with the new FCOI policy. The new COI form can be found here. Effective immediately the new COI form
should be used with all proposal submissions. Please contact Teri Kocevar, Director of Sponsored Programs and Research Services, at m.kocevar@csuohio.edu with any questions regarding the new form.

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**News from the Technology Transfer Office**

The Center for Public History + Digital Humanities (CPHDH) commercializes research with well over 30 software licenses worldwide, generating revenue for the University, department, and investigators. Led by Associate Professor in History and Director Mark Souther, CPHDH has become a go-to resource for organizations interested in digitally curating and publishing historical content using a state-of-the-art location-based platform and process. Building upon its award-winning Cleveland Historical website and app, CPHDH developed Curatescape, a low-cost, user-friendly mobile platform for publishing location-based humanities content.

CPHDH has worked with numerous universities, K-12 educators and students, libraries, museums, and other organizations including the Smithsonian Institution, the Ohio Historical Society, and the Virginia Foundation for the Humanities, among many others. To date, CPHDH has licensed well over 30 software installations worldwide to use the Curatescape framework. In addition, Souther and Associate Professor of History Meshack Owino were awarded an NEH Office of Digital Humanities grant to partner with Maseno University to adapt a Curatescape project in Kisumu, Kenya. For more information on the many innovative projects of CPHDH, click here.

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**The Office of Research**

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