DOM Announces 2018 Outstanding Early Career Scholars

The University of Colorado Department of Medicine is pleased to announce the 2018 recipients for its Outstanding Early Career Scholar Program. This year we had an outstanding pool of early career applicants that have already achieved great success in their careers and have the promise to change their fields. The program has been very successful since inception, and current and prior scholars have excelled in their careers. Due to the program’s success, and because the Department wishes to help as many of these outstanding faculty as possible, we have for the first time made four awards this year: Joseph Frank, MD, MPH; Kristine Kuhn, MD, PhD; Traci Lyons, PhD, and Beth Tamburini, PhD. The RNA Bioscience Initiative will join the Department of Medicine in supporting Dr. Tamburini as the OECSP RBI Clinical Scholar, to support her RNA research. We thank the RNA Bioscience Initiative for its generous support.

Joseph Frank, MD, MPH
Joseph Frank, MD, MPH is an assistant professor of medicine in the Division of General Internal Medicine, a primary care physician at the VA Eastern Colorado Health Care System, and a Core Investigator with the Denver/Seattle Center of Innovation for Veteran-Centered and Value-Driven Care. He received his bachelor’s degree in Biochemistry from Indiana University, medical degree at Indiana University School of Medicine, and completed Primary Care-Internal Medicine residency and a chief residency year at Rhode Island Hospital and the Alpert Medical School of Brown University. He then completed a General Medicine fellowship at Brigham and Women's Hospital and received a Master of Public Health degree from the Harvard T.H. Chan School of Public Health. Dr. Frank came to Colorado and the Division of General Internal Medicine in 2013.

His research focuses on the safe, effective management of chronic pain in primary care settings with a focus on complex chronic pain and its overlap with substance use disorder diagnoses. His work has explored barriers and facilitators of tapering long-term opioid therapy, including a systematic review published in Annals of Internal Medicine in 2017. In 2016, he was awarded a five-year VA Health Services Research and Development Career Development Award to study Veterans’ views on tapering of long-term opioid therapy and to develop and pilot a team-based intervention to support tapering of long-term opioid therapy and engagement with non-opioid
pain care strategies. He is the site Principal Investigator on a five-year, nine-site comparative effectiveness trial funded by the Patient-Centered Outcomes Research Institute. He is the co-Principal Investigator of an implementation study funded by VA Quality Enhancement Research Initiative (QUERI) to expand primary care-based diagnosis and treatment of opioid use disorder. He is also a co-investigator on pragmatic trial funded by the National Center for Complementary and Integrative Health within the recently launched NIH-DoD-VA Pain Management Collaboratory. Dr. Frank will use the Outstanding Early Career Scholars Program award to grow his multidisciplinary research team and to expand patient engagement at all stages of his research agenda.

“I’m thrilled to learn that Joe has been selected for this award,” said Dr. Mark Earnest, head of the Division of General Internal Medicine. “Since joining our faculty, he has focused his efforts on finding effective strategies to manage opioid use disorder and pain in the primary care setting with great success. His efforts have already gained national attention, providing hope that workable, implementable solutions to the national crisis of opioid addiction are within reach and establishing his reputation as a national expert in this area. The resources available to him through this award will allow him to grow his research team and program – accelerating the momentum he has established in this important work.”

Kristine Kuhn, MD, PhD is an assistant professor of medicine in the Division of Rheumatology. She received her bachelor’s degree from the University of Kansas and then received her MD and PhD in Immunology through the Medical Scientist Training Program at the University of Colorado. She completed residency, a chief residency, and her rheumatology fellowship at Barnes-Jewish Hospital and Washington University. Her fellowship research on IL-6 mediated intestinal epithelial wound repair lead to Kristi’s receipt of the American College of Rheumatology’s Distinguished Fellow Award in 2013.

In 2013 Kristi returned to the University of Colorado as an Assistant Professor. Her research focuses upon the interactions of commensal microbes at the intestinal mucosal surface that modulate local adaptive immune responses and affect the development of autoimmune arthritis. Her work has been funded through an NIH K08, Global Probiotics Council Young Investigator’s Grant, an award through Advancing Science through Pfizer-Investigator Research Exchange (ASPIRE), and this past year, a Boettcher Foundation award. She is also a co-investigator on a multi-center U01 award. Kristi will use the Outstanding Early Career Scholars Program award to characterize and functionally interrogate bacteria-specific T cells that are expanded in murine models of inflammatory arthritis and human subjects with ankylosing spondylitis in an effort to identify biomarkers and therapeutic strategies in this disease.

“I am extraordinarily pleased that Dr. Kristi Kuhn has received an OECSP Award,” said Dr. Michael Holers, head of the Division of Rheumatology. “She is an outstanding scientist and academic citizen whose research is resulting in new insights into the roles of the mucosal immune system in the development of systemic autoimmune disease. Since arriving here from Washington University, Dr. Kuhn has established a highly successful independent research program and has also been a key collaborator for other scientists at AMC, allowing them to
accelerate their own research in new directions. This award, for which we are very grateful to the DOM, will provide key support for her research group to develop new experimental methodologies with broad scientific impact.”

**Traci Lyons, PhD** is an assistant professor of medicine in the Division of Medical Oncology. Dr. Lyons began her research career as an undergraduate at UC Boulder where she studied Molecular, Cellular, and Developmental Biology and worked as a student researcher in Dr. Michael Klymkowsky’s laboratory under an undergraduate HHMI research grant. There, she studied development using a *xenopus laevis* model. She continued as a researcher after graduation in the laboratory of Dr. David Barton at UC Denver, where she was inspired to pursue a PhD. During her PhD studies, Drs. Steven Anderson and Margaret Neville inspired in Dr. Lyons a love of mammary gland biology, which was further cultivated by Drs. Pepper Schedin and Virginia Borges during her postdoctoral studies where she studied the complex relationship between postpartum mammary gland biology and development of breast cancer. Dr. Lyons’s postdoctoral studies led to her current research interests in how normal mechanisms of development can be hijacked by tumor cells to promote tumor progression and metastasis.

Specifically, her laboratory focuses on mammary and lymphatic development, as well as on how a molecule known for its role in axon guidance, SEMA7A, promotes breast cancer metastasis in young women. “Each year far too many young women die of breast cancer, it is my ultimate goal to cut these numbers significantly. I hope that my research will provide young women with hope that their devastating diagnosis is both preventable and curable,” said Dr. Lyons.

“The Division of Medical Oncology is incredibly proud of Dr. Lyons, who joined our faculty in 2014 and quickly established herself as an outstanding basic/translational researcher in the field of breast cancer and lymphangiogenesis,” said Dr. Wells Messersmith, head of the Division of Medical Oncology. “Dr. Lyons has received funding from the CCTSI (KL2), American Cancer Society, and the NCI, and she has published in top journals such as *Nature Medicine* and *JCI*. She also has an outstanding track record of training and education. We could not be more proud of Dr. Lyons and we look forward to following her oncology scientific contributions in the years to come.”

**Beth Jirón Tamburini, PhD** is an assistant professor in the Department of Medicine, Division of Gastroenterology and Hepatology with a joint appointment in the Department of Immunology and Microbiology. Dr. Tamburini received her Bachelor of Arts degree in Molecular, Cellular and Developmental Biology from the University of Colorado in Boulder, CO in 2000. She continued her education to receive her Ph.D. degree in Molecular Biology at the University of Colorado Health Sciences Center in Aurora, CO in 2006. After graduating with her Ph.D. in 2006, Dr. Tamburini pursued post-doctoral training at the University of Colorado and National Jewish Health. As post-doctoral fellow, Dr. Tamburini received several awards and honors including 3 travel awards and 5 invited talks. Dr. Tamburini was appointed to her first faculty position as Instructor at the University of Colorado Anschutz Medical Campus in 2012. In 2012, Dr. Tamburini was awarded a patent for her discovery of the role of IL-6 in yeast-based
immunotherapy products and responses in collaboration with Dr. Donald Bellgrau. In 2015, Dr. Tamburini was promoted to Research Assistant Professor and awarded her first R01 titled “Cooperation between lymphatic stroma and hematopoietic cells shapes protective immunity” following the publication of a highly cited manuscript published in Nature Communications identifying lymphatic endothelial cells as a major source of persistent antigens that enhance protective immunity.

In 2016, Dr. Tamburini was recruited to the University of Colorado Department of Medicine through the GI and Liver Innate Immune Programs as a tenure track assistant professor where she studies the contribution of lymphatic expansion to chronic liver disease. In 2017, Dr. Tamburini co-founded and currently directs the Colorado Lymphatic Research Group (COLRG) with Dr. Traci Lyons, an interdisciplinary and multi-departmental program aimed at identifying the role of the lymphatic endothelia in disease pathogenesis and manipulating immune function. Dr. Tamburini was also awarded a Cancer League of Colorado Award in 2017 with Dr. Lyons to understand how lymphatics can manipulate anti-tumor immunity.

Dr. Tamburini will use the Department of Medicine Outstanding Early Career Scholar Award to focus on using a multidisciplinary approach to understand the mechanisms behind how lymphatic endothelial cells orchestrate immune homeostasis and how their inability to perform their required function can lead to multiple different diseases. With this in mind, Dr. Tamburini strives to understand the divergent functions of lymphatic endothelial cells. She aims to understand 1) the function of lymphatic recruitment and programming of immune cells in fibrotic liver disease; 2) the influence of PD-L1 expression and antigen retention by lymph node lymphatic endothelial cells following infection on the immune response; and 3) the expression of PD-L1 by lymphatic endothelial cells in the tumor microenvironment and the resulting immune consequences. Understanding these basic mechanisms of how the lymphatic endothelium influence tissue homeostasis and immunity will address far-reaching questions about the impact lymphatics have on regulating the balance between effective anti-pathogen responses and pathological responses as we see in infection compared to chronic disease. Her long-term goal is to manipulate lymphatic endothelial cell biology to impact both normal and pathological immune responses leading to potential therapeutics.

“Beth is the ideal choice for this award,” said Dr. Sean Colgan, Professor of Medicine in the Division of Gastroenterology and Hepatology. “Her innovative work in understanding the role of lymphatics in a number of disease settings has placed her at the forefront of field at a young age. This award will allow her the latitude to pursue some high risk-high yield endeavors. We are most grateful to the Department of Medicine and the RNA Biosciences Initiative for their generous support and recognition of Beth as a 2018 Early Career and RBI Clinical Scholar.”

The Outstanding Early Career Scholars Program aims to accelerate the careers of promising researchers in the Department of Medicine. The Program was launched in 2012 to invest in talented researchers early in their careers, helping accelerate their career development and allow these promising individuals to embark on new lines of exploration and to elevate and expand the scope of their research enterprise. It was designed to enable these promising individuals to devote 75% of their effort to research or other scholarly activities. Each Scholar
receives $75,000 annually (including funds from the Department of Medicine and the Scholar’s division) to support their research or other forms of career development and expansion. The award term for this program has been shortened to four years for 2018.

A total of 16 Outstanding Early Career Scholars have been supported by the program since inception:

2018: Joseph Frank, MD; Kristine Kuhn, MD, PhD; Traci Lyons, PhD; Beth Tamburini, PhD
2017: Kristine Erlandson, MD; Kunhua Song, PhD
2016: Catherine Lozupone, PhD
2015: Steven Bradley, MD; Daniel Pollyea, MD
2014: Brian Graham, MD; Sachin Wani, MD
2013: Dan Matlock, MD; Eric Schmidt, MD; Rachel Zemans, MD
2012: Larry Allen, MD; Mario Santiago, PhD

Applications are reviewed and ranked by an unbiased, NIH-style study section composed of senior faculty largely outside of the Department of Medicine, as well as current OECSP Scholars. Applications for this program are accepted each year in January.

The Department of Medicine thanks the review committee for the 2018 OECSP selection process:

**Peter Henson**, MD, PhD, Department of Biomedical Research, National Jewish Health
**Cara Mack**, MD, Children’s Hospital Colorado, University of Colorado School of Medicine
**Dan Matlock**, MD, Department of Medicine, University of Colorado School of Medicine
**Roberta Pelanda**, PhD, Department of Immunology and Microbiology, University of Colorado School of Medicine
**Jane Reusch**, MD, Department of Medicine, University of Colorado School of Medicine
**Eric Schmidt**, MD, Department of Medicine, University of Colorado School of Medicine
**Jennifer Stevens-Lapsley**, MPT, PhD, Physical Therapy Program, University of Colorado School of Medicine
**Linda Van Dyk**, PhD, Department of Immunology and Microbiology, University of Colorado School of Medicine

**Selection Committee Co-Chair: Craig Jordan**, PhD, Department of Medicine, University of Colorado School of Medicine
**Selection Committee Co-Chair: Marc Moss**, MD, Department of Medicine, University of Colorado School of Medicine