



Newsletter of the Population Sciences Research Program at MSK

MSK Awards 2020 Transdisciplinary Population Science Grants

Funding to Support Collaborative Studies in Communication, End of Life, Genetics, and Pain Management

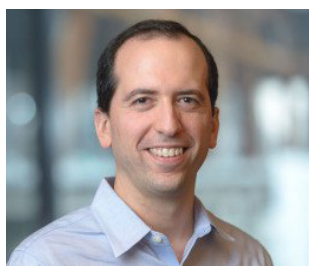
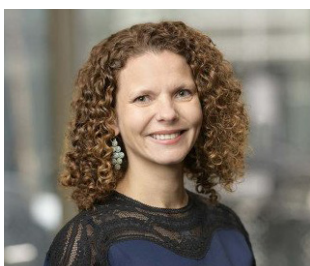
This year, four projects were awarded PSRP pilot grants. PSRP's Transdisciplinary grants are awarded to investigators involved with population science along with a specialist in a complimentary discipline. Please join us in congratulating our esteemed colleagues on their new funding!



▲ **Lisa Diamond** (Psychiatry and Behavioral Sciences) and **Peter Stetson** (Office of Physician in Chief) will improve MSK's patient portal communication system with their study *Improving Cancer Care Communication: The Development of an Automated Means for Identifying Patient Portal Secure Messages Not Authored by the Patient*. Drs. Diamond and Stetson will create a system that uses word recognitions tools to differentiate whether messages are sent by patients or their proxy caregivers. This system will allow clinical staff to track how many messages come from unregistered proxies who are not authorized to report outcomes on a patient's behalf. It will also allow the characterization of the patient population who is more likely to use unregistered proxies.

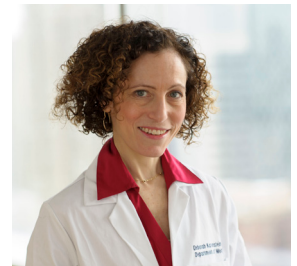


▲ **Kelly Trevino** (Psychiatry and Behavioral Sciences) and **Andrew Epstein** (Medicine) seek to improve end of life care with their proposal *Values and Options in Cancer Care 2.0 (VOICE 2.0): Building on Lessons Learned to Improve Communication and Illness Understanding in Advanced Cancer Patients and Their Caregivers*. After mixed results with the original VOICE program, designed to improve communication between physicians, patients and caregivers, Drs. Trevino and Epstein designed a more detailed and longer training plan and will test it on twelve trios of oncologists, patients and caregivers. Their goal is a refined VOICE 2.0 tool that is ready for a randomized trial.



▲ **Zsafia Stadler** (Medicine) and **Michael Berger**

(Pathology) seek to identify patients with undetected cancer in their pilot study *Detection of Tumor Derived Microsatellite Instability in Circulating Cell-free DNA as a Non-Invasive Cancer Screening Modality for Lynch Syndrome Patients*. The study will develop an assay to detect a particular genomic feature in cell free DNA that indicates susceptibility to cancer (Lynch syndrome). After validating the assay on patients with known Lynch status, the team will refine it to do a larger screening for Lynch Syndrome carriers.



▲ **Talya Salz** (Epidemiology and Biostatistics) and **Debbie Korenstein** (Medicine) were awarded for their study, *Pain Management for Complex Cancer Survivors*. Drs. Salz and Korenstein will study the benefits and harms of long-term use of opioids and cannabinoids on cancer survivors of head, neck and lung cancers. Their goal is to uncover the issues underlying the use and abuse of these drugs, a relatively un-explored area of cancer survivorship.

NCI Update Corner

NCI Budget Increases Again in 2020

On December 20, 2019, Congress and the President passed an appropriations bill providing the National Cancer Institute with a budget increase of \$297 million for fiscal year 2020. NCI Director, Dr. Ned Sharpless, reports NCI is extending pay lines in order to fund more competing awards and restore commitments to noncompeting grants back to 100% (from the prior 90%).

| Grant Mechanism | FY 2020 | FY 2019 |
|-----------------|-----------------------------|-----------------------------|
| R01 (ESI) | 15th perc | 14th perc |
| R01 (non-ESI) | 10th perc | 8th perc |
| R21 | 9th perc | 7th perc |
| R03 | scores up to & including 25 | scores up to & including 25 |

Sources: <https://deainfo.nci.nih.gov/grantspolicies/FinalFundLtr.htm>, <https://www.cancer.gov/grants-training/nci-bottom-line-blog/2020/fy-2020-budget-boost-for-nci>

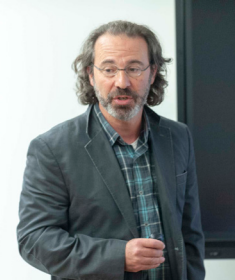
PSRP Seminar Highlights



Chin Hur, MD, MPH, Columbia University, School of Public Health, presented *Modeling to Inform Cancer Screening, Prevention, and Treatment: Experiences*

and *Musings from a Physician-Researcher* on September 10th.

Dean Schillinger, MD, University of California, San Francisco, San Francisco General Hospital, presented *Employing Computational Linguistics to Measure Patients' Health Literacy and Linguistic Complexity: The ECLIPSE Study* on October 15th.



Francesca Dominici, PhD, Harvard T.H. Chan School of Public Health, Harvard University, presented *A Particulate Solution: Data Science in the Fight to Stop Air Pollution and Climate Change* on December 10th.

Maciej Goniewicz, PhD, PharmD, Division of Cancer Prevention and Population Sciences, Roswell Park Comprehensive Cancer Center presented *Public Health Consequences of E-Cigarettes: Balancing Risks and Opportunities* on January 14th.

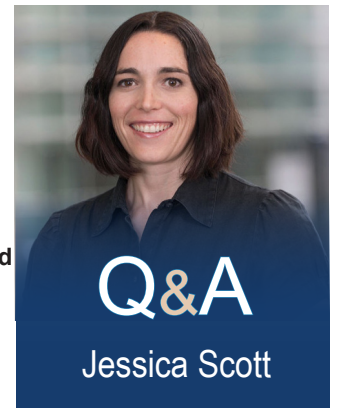


Lawrence T. Dauer, PhD, DABHP, FHPS, Department of Medical Physics and Department of Radiology, Memorial Sloan Kettering Cancer Center, presented *The Chernobyl Accident and Radiation Health Consequences* on February 4th.



An Interview with Jessica Scott

Jessica Scott is an Exercise Physiologist in the Department of Medicine



Q&A

Jessica Scott

Where does your interest in exercise physiology stem from?

I have always been an athlete and because of that I was interested in how the heart adapts to exercise. I received a PhD in cardiovascular exercise physiology from the University of British Columbia in Vancouver.

You have been at MSK for 2.5 years now. What brought you to MSK?

The a-ha moment for me was when I was speaking to a colleague at an exercise conference about the physiological changes astronauts experience and she mentioned very similar changes occur in cancer patients. However, in contrast to the countermeasures NASA used to protect the health of astronauts, a similar program wasn't available for cancer patients. I realized the 40 years of work NASA had done for astronauts could be directly applied to help millions of patients.

What has been the biggest change for you from working at NASA to now working at MSK?

I am no longer waking up at 2am to monitor acquisition of ultrasound images on the International Space Station since astronauts are on Greenwich standard time.

At NASA you had experience working with engineers. What type of expertise does your team at MSK require?

At NASA, we worked with engineers in developing new exercise devices. We had to figure out how to strap astronauts to a treadmill and how rowing works in microgravity. At MSK, our team consists of exercise physiologists (who make sure patients get the proper exercise prescription and dose), and research study assistants and research project coordinators (who manage data and our multiple studies).

What are the challenges you experience at MSK?

Exercise has been standard of care for astronauts since 1965, but NASA is still researching what the optimal exercise dose is for each astronaut. Exercise is not standard of care for cancer patients, but we are trying to take a similar approach to NASA in that 'one-size-of-exercise' may not fit all.

How are astronauts and cancer patients similar?

We recently published a paper in *Cell* (PMID: 31730844). We found that astronauts and cancer patients are subject to similar multisystem physiological toxicities driven by comparable pre-flight or pre-diagnosis risk factors and the direct and indirect consequences of spaceflight or anticancer treatment. There is an opportunity here to leverage space medicine to establish a program that prepares patients for recovery from a cancer diagnosis and treatment. Long-term cancer survivors experience a 20-50% increase in cardiovascular risk factors. An oncology countermeasures program would include exercise training administered pre, during and post cancer treatment.

Can you tell me how you are using Telehealth and what the pros/cons of telehealth are?

We started to deliver treadmills to patients' homes and supervise them remotely from our 'mission control' at MSK. This is much more patient centered where patients now don't have to travel to MSK 3 to 5 times per week to attend our exercise sessions.

How do you enjoy living in New York?

I live in Westchester with our 7- and 4-year-old boys where we enjoy outdoor activities like biking, running, triathlons, and skiing.

NIH Grants

Congratulations to the following PSRP members who received NIH funding as Principal Investigators or Co-Principal Investigators in 2019 & 2020

| PI/Co-PI/MPI | Institute (Mechanism) | Project Title |
|------------------------------|-----------------------|--|
| Dr. Ting Bao | NCI (R13) | SIO 2019: Advancing the Art and Science of Integrative Oncology |
| Dr. Helena Furberg-Barnes | NCI (R01) | Body Composition and the Obesity Paradox in Clear Cell Renal Cell Carcinoma |
| Dr. Jonine Bernstein | NCI (R01) | Characterizing Germline and Somatic Alterations by Glioma Subtypes and Clinical Outcome |
| Dr. Jonine Bernstein | NCI (R21) | Radiotherapy-associated Breast Cancer: Machine Learning on Genotypes to Predict Individualized Risk |
| Dr. Sigrid Carlsson | NCI (K22) | Improving Shared Decision Making in Cancer Screening |
| Dr. Erin Gillespie | AHRQ (R18) | Interactive Contouring Simulation (iContour) to Improve Outcomes of Cancer Patients Treated with Radiation Therapy |
| Dr. Jada Hamilton | NCI (R01) | Peer Support for Young Adult Women with High Breast Cancer Risk |
| Dr. Neil Iyengar | NCI (R01) | Phase 1a/1b Trial of Exercise Treatment in Hormone Receptor-Positive Metastatic Breast Cancer |
| Dr. Allison Lipitz Snyderman | NCI (R21) | Linking Population-based Data Sources to Examine Health Disparities in Clinical Trial Participation and Outcomes |
| Dr. Jun Mao | NCI (R01) | Effect and Mechanism of Acupuncture for Cancer-related Cognitive Impairment (ENHANCE) |
| Dr. Stephen Sands | NCI | COG NCORP RESEARCH BASE |
| Dr. Jessica Scott | NCI (R37) | A Randomized Trial to Minimize Non-Response to Aerobic Training in Operable Breast Cancer |

External Grants

Congratulations to the following PSRP members leading internally and externally awarded grants in 2019 & 2020:

| PI/Co-PI/MPI | Institute (Mechanism) | Project Title |
|---|--|--|
| Dr. Maria Carlo | CDMRP (Department of Defense) | Impact of Germline Genetic Testing for Men with Prostate Cancer on Active Surveillance |
| Dr. Maria Carlo | Robert Wood Johnson Foundation | Identification of Novel Germline Variants Associated with Increased Risk of Renal Cell Carcinoma and Lymphoid Malignancies |
| Dr. Sigrid Carlsson | Patty Brisben Foundation for Women's Sexual Health | "It's Not Like We're a Car Engine": A Qualitative Interview Study to Improve Patient Reported Outcomes Questionnaires in Women's Health |
| Dr. Sigrid Carlsson | Projects in Patient & Family-Centered Care | Improving Patient Involvement in Care: A Pilot Study of a Comprehensive Pelvic Floor Muscle Exercise Program Before and After Radical Prostatectomy to Prevent Urinary Leakage |
| Dr. Danielle Friedman | ACS | Metabolic Risk and Adipose Function after Childhood Total Body Irradiation |
| Dr. Danielle Friedman | MSKCC Society | Therapy-related Clonal Hematopoiesis in Childhood Cancer Survivors: A Novel Predictor of Risk of Late Effects? |
| Dr. Francesca Gany | Frueauff Foundation, Inc., Charles A. | Immigrant Breast Health Access Program |
| Dr. Francesca Gany | Laura B Vogler Foundation | Food to Overcome Cancer Disparities - Vogler Fund |
| Dr. Francesca Gany | Pink Aid Long Island | Pink Aid Long Island FOOD Grant |
| Dr. Erin Gillespie & Dr. Allison Lipitz Snyderman | NCCN | Leveraging an Academic-Community Partnership Model to Improve the Quality of Radiation Treatment for Metastatic Breast Cancer Patients |
| Dr. Erin Gillespie | Radiological Society of North America | Improving Radiation Contour Quality at the Point of Care by Integrating 3D Image-based Contouring Guidelines, Radiographic Anatomy, and Feedback into the Clinical Workflow |
| Dr. Angela Green | Conquer Cancer Foundation (ASCO) | Utility of a Population-Based Data Source to Examine National Cancer Clinical Trial Participation |
| Dr. Neil Iyengar | ACS | Targeting the Dysregulated Microenvironment in Obesity and Breast Cancer |
| Dr. Lee Jones | Gateway for Cancer Research | Exercise Therapy as Preoperative Treatment for Solid Tumors: A Digitized Phase 1a/b |
| Dr. Lee Jones | Louis and Rachel Rudin Foundation | Precision Exercise in Cancer |
| Dr. Lee Jones | The Willow Foundation | Does Exercise Affect Prognosis After a Breast Cancer Diagnosis? |
| Dr. T Peter Kingham | Prevent Cancer Foundation | The Efficacy and Feasibility of Fecal Immunochemistry for Colorectal Cancer Screening in Nigeria |
| Dr. Beatriz Korc-Grodzicki | Dresner Foundation | Phase II Study of a Geriatric Vulnerability Based, Personalized Allogeneic Hematopoietic Transplantation Strategy for Older, Vulnerable Patients with Myelodysplastic Syndrome |
| Dr. Carl Landgren | Steven A. Greenberg Startup Grant | The Genomic Landscape and Chronological Reconstruction of Driver Events in Waldenstrom Macroglobulinemia |
| Dr. Wendy Lichtenthal | Cycle for Survival | Development and Evaluation of a Mobile-Responsive App to Reduce Fear of Recurrence in Rare Cancer Survivors |
| Dr. Jun Mao | PCORI | Sleeping Well After Cancer: Translating Patient-Centered Research Into Practice |
| Dr. Jun Mao | PCORI | Integrative Medicine for Pain in Patients with Advanced (IMPACT) |
| Dr. Mark Robson | Breast Cancer Research Foundation | Development of a TNBC Risk Score Incorporating Polygenic Risk and Radiomic Features Defined Through Digital Image-Coupled Machine Learning |
| Dr. Jessica Scott | Chanel Endowment to Fund Survivorship Research | The MSK Digital Health Cohort (MSK-DHC): A Pan-Cancer Survivorship Study |
| Dr. Sohrab Shah | MSKCC Society | Integration of Radiomic Analysis into the Multi-Modal Profiling of High-Grade Serous Ovarian Cancer |
| Dr. Sohrab Shah | Ovarian Cancer Research Fund | Profiling co-evolution of ovarian cancer and its immune microenvironment |
| Dr. Zsofia Stadler | Mark Foundation for Cancer Research | Non-Invasive Detection of Tumor Derived Cell-free DNA (cfDNA) as a Cancer Screening |
| Dr. Zsofia Stadler | Starr Cancer Consortium | Lynch Syndrome Colorectal Cancer Immunoprevention using Recurrent Neoantigen Peptide |
| Dr. Emily Tonorezos | MSKCC Society | Therapy-related clonal hematopoiesis in childhood cancer survivors: A novel predictor of risk of late effects? |
| Dr. Andrew Vickers | PCORI | Comparing "Just-in-Time" to conventional consent for randomized trials with usual care controls |
| Dr. Michael Walsh | Sohn Conference Foundation | Data-Driven Scientific Advances in Pediatric Cancer Research |
| Dr. Talia Zaider | ACS | Advancing Family-Centered Care Nursing Practices in Inpatient Oncology Care |

Research Training and Collaborative Education Awards

Congratulations to our members on their impressive NIH research training and collaborative educational efforts

| Lead(s) | Institute (Mechanism) | Title |
|--|-----------------------|--|
| Dr. Tim Ahles & Dr. Francesca Gany | NCI (U54) | 2/2 CCNY-MSKCC Partnership for Cancer Research, Education and Community Outreach |
| Dr. Jennifer Hay & Dr. Jamie Ostroff | NCI (T32) | Psychosocial Palliative and Community Research in Cancer |
| Dr. Beatriz Korc-Grodzicki & Dr. Patricia Parker | NCI (R25) | Geriatric Oncology: Cognition and Communication |

MSK Tobacco Treatment Program Weighs in on COVID-19

Program leaders Drs. Kotsen and Ostroff discuss strategies on combating global epidemic

On Friday, April 3rd, as part of the NCI Moonshot Cancer Centers Cessation Initiative (C3I), Drs. Jamie Ostroff and Chris Kotsen, leaders of MSK's Tobacco Treatment Program, participated in a national webinar addressing COVID-19 related challenges of supporting cancer patients struggling with tobacco dependence. The MSK Tobacco Treatment Program has very rapidly and successfully scaled their entire tobacco treatment program to both an individual and group telehealth platform in a matter of weeks allowing the continuation of critical tobacco treatment services to high-risk, vulnerable cancer patients during a pandemic with respiratory implications. During this webinar, they shared their clinical observations and programmatic strategies for managing patient fear and quitting motivation including acknowledgement of MSK's institutional support and robust infrastructure for rapidly ramping up telehealth care delivery. Kudos to Drs Ostroff, Kotsen and the entire MSK TTP!



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