Peter Ujhazy, MD, PhD, is originally from Czechoslovakia and credits his training in translational research for preparing him for his work with the Specialized Programs of Research Excellence (SPOREs) at NCI. Peter provides a historical perspective on the SPOREs and some notable milestones in cancer research during his time at NCI.

What led you to NCI, the SPORE Program, and ultimately the Translational Research Program?

I received my medical degree at Comenius University, and after receiving my doctoral degree at the Cancer Research Institute of the Slovak Academy of Sciences in Czechoslovakia, I remained there to begin a career in tumor immunology. With access to both research and clinical facilities, my primary focus was true translational research and development of diagnostics in blood malignancies. While studying leukemic cells and testing antibodies against differentiation markers, we helped clinicians provide diagnoses in the adjacent cancer center. At that time, the clinicians only had cytology available, so our antibodies provided better diagnostic information for them by distinguishing between the types of leukemic cells in patients.

I came to the U.S., and in 1991 I worked as a research scientist at Roswell Park Cancer Institute in Buffalo, NY, then had a short stay at a biotech company, and finally went to Tufts University for a few years to work in a physiology lab. I was happy to return to cancer research in 2001 when I accepted a position in the Organ Systems Branch in NCI’s Office of the Director, which managed the SPORE Program at that time. The SPORE Program moved to DCTD in 2008 as part of the newly created Translational Research Program (TRP).

What are some of the basic principles of the SPORE Program?

The whole program began because of the work of patient advocates, who are heroic people and passionate about their work. In 1991, patients demanded that Congress change cancer research funding, which focused largely on the basic sciences
at that time. This need was addressed when Congress urged NCI to develop a translational program to move discoveries to the clinic faster. The first SPORE grants were awarded in 1992 for breast, prostate, lung, and gastrointestinal cancers. Patient advocates continue to play important roles in the SPORE program today by helping clinical investigators with study design, participating in grant reviews, navigating discussions at scientific meetings, and educating patients about the benefits of clinical trials.

SPOREs were developed as, and continue to be, specialized center grants that support multi-project, interdisciplinary, often multi-institutional, translational research involving basic and applied scientists. The goal is to develop new approaches to prevent, detect, and treat human cancers. While there have been some changes since these grants were first introduced 26 years ago, the program still emphasizes the basic principle of bringing clinicians and scientists together to understand the state-of-the-science and resolve clinical problems. That was the foundation from the very beginning, and that culture remains today. We’ve got basic scientists, pathologists, epidemiologists, and molecular epidemiologists, working with clinicians (medical oncologists, surgeons, and radiation oncologists). This interaction is very important. Each main project within a SPORE grant must have at least one specific aim that deals with a human endpoint – usually a clinical trial, a population-based study, or use of human tissue or specimens to test biomarkers. Animal models were considered translational research when the SPOREs began, and while we still consider their use an important part of the translation, we’re moving more towards focusing on human studies.

What are some cancer research milestones that have resulted from SPORE grants within your portfolio in TRP?

I’ve worked with many SPORE grant investigators and cancer types over the last 17 years. I started out managing blood malignancy grants because that was my expertise, then I added lung cancer to my portfolio. I’ve worked with lung cancer the longest and am dedicated to this area, as it’s the major cancer killer. The lung cancer research community is fantastic, and there are many devoted researchers in the field. A breakthrough in 2004 involving the work of SPORE investigators at the Dana-Farber Cancer Institute changed the landscape of lung cancer treatment – this was the discovery of mutations in the epidermal growth factor receptor that are involved in the sensitivity and resistance to gefitinib and erlotinib. The study would not have been possible without the collaboration of medical oncologists, pathologists, epidemiologists, and geneticists working closely in this and other lung cancer SPOREs. Since then, SPORE investigators have significantly contributed to the dramatic expansion of therapies targeting other lung cancer mutations.

I also work with a strong collaborative group of small cell lung cancer (SCLC) researchers who are members of the NCI-funded SCLC-Consortium headed by Dr. Charles Rudin at Memorial Sloan Kettering Cancer Center. This consortium wrote a selection of articles for the February 2018 edition of Translational Lung Cancer Research, entitled, “Small Cell Lung Cancer: New Models, Markers, and Beyond.” SCLC has historically been a difficult research area due to the inherently small number of surviving patients and the paucity of specimens. However, after 30 years of stagnation, this field is now moving very fast. Today, we have genetically modified mouse models, patient-derived xenograft models, and circulating tumor cell models, and the field is more optimistic about current research and possible FDA approval of new treatments.
Myeloma is another active research area within my grant portfolio. Important and very expeditious work involving myeloma SPORE investigators at the Dana-Farber Cancer Institute led to an FDA approval of combination therapy with lenalidomide and dexamethasone therapy, which improves patient survival. TRP is also assisting with a trans-NCI Funding Opportunity Announcement, which is an administrative supplement designed to explore ethnic disparities in myeloma.

Recently, a lung cancer SPORE investigator, Dr. Robert Doebele at the University of Colorado, developed an important cell line that was used to screen agents targeting TRK fusion genes. Larotrectinib, a tropomyosin kinase receptor inhibitor, was selected during this screening process and is currently used to treat tumors expressing TRK fusion genes. This agent received orphan drug status last year and was granted Priority Review by the FDA this year.

In my sarcoma portfolio, the Memorial Sloan Kettering Sarcoma SPORE contributed to the FDA approval of olaratumab, an antibody against platelet-derived growth factor receptor alpha, with doxorubicin to treat soft tissue sarcomas. These are just a few examples of SPORE advances and highlights from TRP’s research initiatives.

**What is the impact of the SPORE program on the field of translational cancer research?**

As is expected for grant programs, the SPOREs have been evaluated many times, and as a result, the program has evolved and improved over its 26-year lifespan. It is a challenge to summarize the impact of SPOREs on cancer research in a few sentences. We have recently assessed the productivity of the program by analyzing publications resulting from the SPOREs over time. We estimate that 1,200 papers per year are published on work resulting from SPORE funding. Though it is difficult to fully evaluate the breadth of the program’s impact on science, we know that the SPOREs have accomplished a great deal. SPORE investigators have proven that well-designed teamwork and collaborations pay off. I’m proud of this, and I hope the cancer research community sees the impact that NCI-funded, collaborative, translational science is having on cancer research and patients.
were the visionaries for the SPOREs. At the symposium, Peter Ujhazy, MD, PhD, TRP’s current Deputy Associate Director, presented Dr. Kimes with an award in appreciation of his role in the development of the SPORE Program.

With input from patient advocates, in 1991, the U.S. Congress urged NCI to establish the SPOREs with $20 million to “stimulate investigator-initiated research ideas across a broad range of basic and clinical solid tumor research.” The first SPORE grants were awarded in 1992, and in 2008, the SPORE Program moved to DCTD under the newly formed TRP.

Bill Nelson, MD, PhD, Johns Hopkins University, joined the celebration and talked about his decades of experience as a SPORE investigator. Dr. Nelson is the principal investigator of a prostate cancer SPORE that consists of five distinct research projects.

Igor Kuzmin, PhD, Program Director, TRP, described a recent analysis of SPORE grant productivity measured by number of SPORE investigator publications and citations.
While the SPOREs are now in their 27th year and some aspects of the program have changed, the basic principles have remained the same: SPOREs are specialized center grants to support multi-project, interdisciplinary, often multi-institutional, translational research involving both basic and applied scientists, that result in diverse new approaches to the prevention, early detection, diagnosis, and treatment of all human cancers. In addition, patient advocates remain an important part of the SPORE Program today by participating in grant peer review, clinical trial design, and scientific meetings. Jeanne Young is a patient advocate who attended TRP’s anniversary symposium and is involved with the SPOREs by participating in grant review panels.

Currently, TRP’s staff manage 50 SPOREs in 22 states studying 18 organ systems, plus hyperactive RAS tumors and neuroendocrine tumors.
Spotlight: News from the NCI Developmental Therapeutics Clinic

Staff in the NCI Developmental Therapeutics Clinic (DTC) work to develop new treatments for patients with advanced cancer through innovative early-phase clinical trials. Alice Chen, MD, is the head of the Early Clinical Trials Development Program in the clinic. The additional DTC staff include clinicians/investigators, research nurses, nurse practitioners, referral coordinators, social workers, and pharmacokinetic/pharmacodynamic specimen laboratory staff. Below are some recent newsworthy events from the clinic.

• Several new staff joined the DTC in 2018.

• In addition to the ongoing trials in the clinic, including many treating rare cancers, a few new trials have recently opened:
  - 5-aza-4’-Thio-2’Deoxycytidine (Aza-TdC) in people with advanced solid tumors
  - Copanlisib and nivolumab in patients with metastatic solid tumors or lymphoma
  - Recombinant interleukin-15 in combination with checkpoint inhibitors nivolumab and ipilimumab in subjects with refractory cancers

• DTC staff presented four posters on Monday, June 4 at the 2018 American Society of Clinical Oncology (ASCO) Annual Meeting in Chicago, IL.
• The clinic welcomed three interns to assist with research projects this summer. Each presented their work at the NIH Summer Research Poster Day on August 9, 2018.

Tiffany Hsia, Carnegie Mellon University
Jonathan Mendley, University of Chicago
Sheindel Meister, Baltimore High School
News about DCTD Programs and Activities

Program Updates

Chemical Biology Consortium (CBC) of the NCI Experimental Therapeutics (NExT) Program Organizes Inaugural Drug Discovery Symposium

The CBC in the NExT Program brings together chemical biologists and molecular oncologists from government, industry, and academia to address unmet therapeutic needs in oncology. The CBC operates as a collaborative network of 7 Dedicated and 15 Specialized Centers across the U.S. that support the advancement of NExT discovery projects, provide scientific leadership, and provide technologies to projects. The CBC Fall Symposium, sponsored by the NCI, will convene on November 16, 2018 at the University of California, San Francisco’s Mission Bay Campus in San Francisco, CA. Members of the CBC and the Bay Area scientific community will meet to discuss emerging concepts, novel technologies, and therapeutic strategies in drug discovery and development, with a particular emphasis on bridging the gaps between discoveries in academic settings and translation or advancement of those hypotheses into novel therapeutics.

Publications and Outreach

Peer-reviewed Publications


Positron emission tomography-based assessment of metabolic gradient and other prognostic features in sarcoma. 


**Blog Posts**

NCI Cancer Currents Blog and NCI Center for Biomedical Informatics & Information Technology Blog Series*

Liquid Biopsy Test May Help Predict Risk of Late Breast Cancer Relapse; Lyndsay Harris, MD, Cancer Diagnosis Program; August 15, 2018.

*Predictive Modeling for Pre-Clinical Drug Screening: Improving Models Derived from Observational Studies Using Machine Learning and Simulation; James Doroshow, MD, and Yvonne Evrard, PhD, FNLCR; August 8, 2018.

New Immunotherapy Option Approved for Cervical Cancer, Rare Lymphoma; Elise Kohn, MD, Cancer Therapy Evaluation Program; August 2, 2018.

Developing Biomarkers for Immunotherapy: A Conversation with Drs. Magdalena Thurin and Helen Chen; Magdalena Thurin, PhD, Cancer Diagnosis Program and Helen Chen, MD, Cancer Therapy Evaluation Program; July 27, 2018.


NExT: Advancing Promising Cancer Therapies from the Lab to Clinical Trials; James Doroshow, MD, and Barbara Mroczkowski, PhD, Office of the Director; June 29, 2018.

**Interviews, Press, and Social Media**

Cetuximab with Radiation Found to Be Inferior to Standard Treatment in HPV-Positive Oropharyngeal Cancer; NCI Press Release; August 14, 2018.

The Long-Term Effects of Cancer; Nita Seibel, MD, Cancer Therapy Evaluation Program; CancerToday; July 24, 2018.

Why Randomized Trials for Proton Therapy Are Difficult to Complete (And What We Can Do About It); Jeff Buchsbaum, MD, PhD, Radiation Research Program and Andrea Denicoff, MS, RN, Cancer Therapy Evaluation Program; Penn Medicine News; July 11, 2018.


ODU Researchers Are Using Electric Pulses to Kill Cancer Cells. And They Say It’s Working; Anthony Welch, PhD, Developmental Therapeutics Program; The Virginian Pilot; June 27, 2018.
NCI Facebook Live Event: Live from the NIH GIST Clinic; Fernanda Arnaldez, MD, Cancer Therapy Evaluation Program, Margaret von Mehren, MD, Fox Chase Cancer Center, and Becky Owens, GIST Support International; June 19, 2018.

Getting Personal: Breast Cancer Treatment; Larissa Korde, MD, Cancer Therapy Evaluation Program; Axios; June 7, 2018.

NCI-MATCH Precision Medicine Clinical Trial Releases New Findings, Strengthens Path Forward for Targeted Cancer Therapies; NCI Press Release; June 4, 2018.

Finding Better and More Personalized Ways to Diagnose Cancer at NIH; Janet Eary, MD, Cancer Imaging Program; NIH Medline Plus; Spring 2018.

TAILORx Coverage from ASCO 2018


Safely Skipping Chemotherapy; Larissa Korde, MD, Cancer Therapy Evaluation Program; Canadian TV News; June 4, 2018.

Rethinking Chemotherapy in Some Breast Cancer Cases; Jeff Abrams, MD, Cancer Therapy Evaluation Program; NPR’s 1A; June 5, 2018.

Jeff Abrams, MD speaks about TAILORx results on the live broadcast of NPR’s 1A.


Conferences and Meetings

The Translational Research Program convened a Breast Cancer SPORE Workshop on July 9, 2018. Investigators from the five Breast Cancer SPOREs, NCI staff, and patient advocates participated in the meeting to identify preclinical, translational research challenges, highlight advances, define resources and technologies, and foster collaborations.

On June 7-8, 2018, NCI convened, “At the Crossroads of Social Media and Clinical Trials: A Workshop on the Future of Clinician, Patient, and Community Engagement.” The workshop’s goal was to explore social media strategies that may engage diverse stakeholders in cancer clinical trial communities. Nearly 40 speakers and the workshop’s attendees discussed approaches to engage and educate the public and health care providers about cancer clinical trials using evidence-based social media strategies.

Several DCTD staff presented at ASCO 2018 (June 1-5, 2018; Chicago, IL), including oral, poster, and meet-the-expert presentations. See the full schedule of DCTD presentations and links to abstracts.
The following DCTD staff from the Biorepositories and Biospecimen Research Branch, Cancer Diagnosis Program, presented at the International Society for Biological and Environmental Repositories (ISBER) 2018 Annual Meeting (May 20-24, 2018; Dallas, TX):

- **Veena Gopalakrishnan, PhD**: “Strategies to Overcome Disparities in Biobanking Participation”
- **Ping Guan, PhD**: “Developing a Public Data Resource for the NCI’s BPV program”
- **Lori Campbell, PhD**: “A Comparison of Biospecimen Handling Practices Across Biobanks using the National Cancer Institute’s Biospecimen Research Database” and “ISBER Best Practices: Recommendations for Repositories 4th Edition Update”

- **Emi Casas-Silva, PhD**: “The Newly Expanded NCI-BBRB Patient Corner Website; A Community Resource for Biospecimen Information and Education”


**Staff Awards and Recognition**

**Pushpa Tandon, PhD**, Cancer Imaging Program, was admitted into the U.S. Embassy Science Fellows Program. Established in 2001, the program gives U.S. embassies around the globe the opportunity to host a U.S. government scientist who can provide expertise, advice, and assistance with science, technology, or health-related issues in other nations. Fellows in the program recommend projects that will make a positive impact on the host country, and the U.S. Fellowship work has resulted in policy development and collaboration with the host country governments, universities, and other organizations. Dr. Tandon began her two-month fellowship on July 2, 2018 at the U.S. Embassy in New Delhi, India. She envisions this work experience as an opportunity to establish an Indo-U.S. program for Indian traditional medicine and cancer.

**C. Norman Coleman, MD**, Associate Director, Radiation Research Program, was named one of the two 2018 recipients of the National Coalition for Cancer Survivorship (NCCS) Ellen L. Stovall Award for Innovation in Patient-Centered Cancer Care. Named for longtime CEO of NCCS and three-time cancer survivor Ellen Stovall, who died in 2016, the award aims to honor her memory and advocacy by annually recognizing individuals, organizations, or other entities that are innovators in improving cancer care.

**Staff Retirement**

**Jeff Abrams, MD**, Associate Director, Cancer Therapy Evaluation Program, announced that he will retire in late 2018. Look for Dr. Abrams’ staff highlight in the November 2018 newsletter.