CCR Fellows & Young Investigators Newsletter

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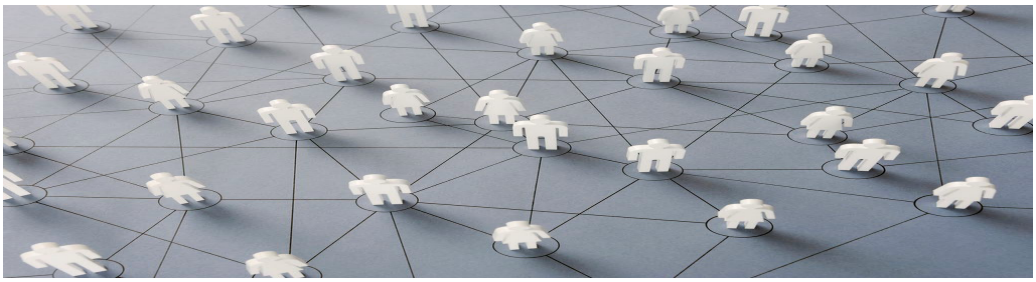

Special Edition: 25th CCR FYI Colloquium

Happy summer, CCR Fellows! We're happy to share with you this issue of the CCR-FYI newsletter that is all about the CCR-FYI Colloquium that was held in May. Over 300 fellows and staff from CCR came together for two amazing days where we shared our science with one another, with 135 fellows presenting their research to our community. We also attended career development panels and workshops and heard outstanding and eye-opening presentations from keynote speakers and fellows alike!

We encourage you to get involved in planning next year's Colloquium! In the meantime, I hope that the insights shared in the next few pages are useful and inspirational for you as you continue on at the NCI and beyond. Thank you to the team for their hard work in putting together this newsletter.

-Meghali Goswami, Editor-in-Chief

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The CCR-FYI Association is supported by the Center for Cancer Training (CCT) and CCR Office of the Director, National Cancer Institute.

Reflections from 2025 Colloquium Co-chairs

By Kristen Fousek, PhD, and Riley Metcalfe, PhD
2025 Colloquium Planning Chairs

Pictured left to right: James Gulley, Kristen Fousek, and Riley Metcalfe

In our time as fellows at the National Cancer Institute (NCI), the annual Center for Cancer Research Fellow's and Young Investigators (CCR-FYI) Colloquium events have always been one of the highlights of the year. It provides a wonderful opportunity for trainees of all levels and across all areas of cancer research to showcase their work, connect with other fellows, and learn from leaders who not only excel in the lab or the clinic but also in their mentorship of the next generation of scientists.

The theme chosen for this year's 25th annual event was "Celebrating 25 years of the CCR-FYI Colloquium: The Past, Present, and Future of Cancer Research". With this theme the planning committee aimed to highlight how far we have come in cancer research over the last 25 years as well as how bright the future is ahead with the numerous advancements that are made every day here at the NCI. Talks and posters throughout the two-day event highlighted the use of novel technologies and models as well as the importance of collaboration in advancing research projects. Fellows delivered excellent talks across each session, poster sessions were full of engaging conversations and networking, panels were full of compelling discussions between experts and trainees, and workshops provided interactive career growth and learning on a variety of topics. The 2025 Colloquium had a very well-rounded line up of speakers and events, which received excellent feedback from the fellows who participated.

For the entire year leading up to the 2025 Colloquium, the team of Colloquium Planning Committee members worked tirelessly to make the event possible. We are grateful to everyone who contributed to making it such a great success! It has been a true honor to lead this team of fellows in planning this event for all fellows of CCR. The team worked hard to identify speakers of interest, design workshops and career panels that are useful for trainees as they advance their careers, coordinate invitations to guests, judge abstracts, posters, and oral presentations, publicize the event, and handle the overall logistics of such a large event. It was a great experience both planning and attending the 2025 Colloquium, and I would encourage all fellows at CCR to get involved with the event in the future. We are always looking for volunteers who are willing to offer their ideas and any amount of their time to help to shape future events. For anyone who is interested in joining the planning team for next year's colloquium, please reach out to the CCR-FYI leadership, and in particular the two co-chairs for the 2026 Colloquium, Ashlie Santaliz Casiano (Bethesda, Ashlie.santalizcasiano@nih.gov) and Christine Muli (Frederick, Christine.muli@nih.gov).

Pictured left to right: Christine Muli, Riley Metcalfe, Kristen Fousek, and Ashlie Santaliz Casiano

We would also like to thank all those involved in organizing and running the 2025 Colloquium:

Colloquium Planning Chairs
- Kristen Fousek (Bethesda)
- Riley Metcalfe (Frederick)

Colloquium Planning Vice Chairs
- Ashlie Santaliz Casiano (Bethesda)
- Christine Muli (Frederick)

Steering Committee Chairs
- Katie Reed
- Gia Vitale

Planning Committee Members
- Nicolas Bertuol
- Christine Carney
- Rithik Castelino
- Lauren Cutmore
- Ennis Deihl
- Olga Drozdovitch
- Meg Goswami
- Jonelle Lee
- Shaoli Lin
- Payel Mondal
- Anna Newen
- Gisele Rodriguez

Center for Cancer Training (NCI)
- Oliver Bogler
- Chanelle Case Borden
- Lindsay Demblowski
- Maria Moten
- CCT Communications Team

Thank you to all of them, and I hope that you get involved next year!

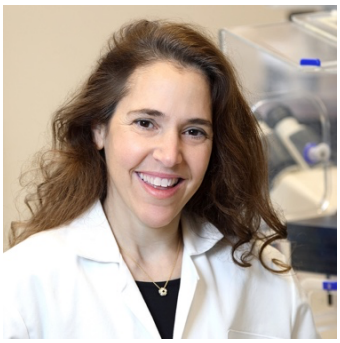
Pictured left to right: Kristen Fousek and Riley Metcalfe

Keynote I

Nature designed therapeutic strategies based on studies of the tumor microenvironment

"There is no better time to do science."

By Nicole Toney, PhD



Rosandra Kaplan, M.D., Senior Investigator and Head of the Tumor Microenvironment Section in the Pediatric Oncology Branch, delivered a galvanizing opening keynote at the 2025 CCR-FYI Colloquium.

As an advocate for early career scientists, Dr. Kaplan opened with inspiring words of advice for us all, emphasizing the importance of bringing your daily curiosity to work with you and understanding that people doing science have power to make a real difference. She highlighted that science takes time and to follow your interest and focus on what excites you.

A fundamental component of Dr. Kaplan's talk is the reality that cancer affects the whole body, not just the local environment in which it grows. Dr. Kaplan has pioneered the concept of the pre-metastatic niche, where distant sites in the body change in response to the primary tumor, creating favorable environments for tumor cell metastasis. Much of her work builds upon the discovery that specialized bone marrow-derived cells circulate in the body, populate future sites of metastasis, and drive changes that promote the spread of cancer. Dr. Kaplan's work has furthered our understanding of the role of these bone marrow-derived cells in tumor progression, formation of new blood vessels, immune suppression/evasion, and gene regulation. She also described stepwise biological programs that lead to these conditioned microenvironments, driven by immunosuppression and fibrosis, together promoting metastatic reprogramming and plasticity. These insights have led to the development of novel therapies that target these

metastasis-promoting processes and are actively being translated into the clinic.

Hyaluronic acid is one of the most upregulated genes in the premetastatic niche across many cancers and is associated with poor patient outcomes. To target this pathway, Dr. Kaplan and her team developed novel engineered immune cells called GEMesys (Genetically Engineered Mesenchymal Cells). These GEMesys are designed to produce the hyaluronidase Spam1, which degrades hyaluronic acid. Spam1 GEMesys remodel the extracellular matrix, thereby enabling several anti-tumor mechanisms, including increased immune infiltration, improved delivery of therapies, and reduced hypoxia. In mouse studies of osteosarcoma, Spam1 GEMesys decreased tumor growth and improved anti-tumor effects of cisplatin and doxorubicin chemotherapies. Furthermore, within the osteosarcoma tumor microenvironment, which is densely populated with myeloid cells, Spam1 GEMesys promoted a shift in the immune infiltrate towards lymphocytes and away from immunosuppressive myeloid cells.

Similar to GEMesys (developed from mesenchymal cells), myeloid cells can also be genetically modified to reprogram the metastatic tumor microenvironment. Dr. Kaplan next introduced GEMys (Genetically Engineered Myeloid Cells), which are engineered to convert immunosuppressive myeloid cells into immune-activating myeloid cells that home to the tumor and metastatic sites. Her team further modified prototypical GEMys to also express interleukin -12 (IL-12), a pro-inflammatory cytokine that leads to activation of T and NK cells and increased interferon gamma expression, which in turn promotes MHC I expression on tumor cells. These events result in improved antigen presentation and reduce immune evasion in the tumor microenvironment.

These IL-12 GEMys were deployed in a mouse model of lung cancer, since there is a marked skewing towards myeloid infiltration in the lung that hinders anti-tumor immunity. Additionally, IL-12 is downregulated in the pre-metastatic niche. In these experiments, IL-12 GEMys restored lymphocyte populations in the lung, reversed immunosuppression, and produced endogenous T cell memory in mice, which protected them from tumor rechallenge. IL-12 GEMys produced robust anti-tumor responses in myeloid-dense mouse osteosarcoma as well, where IL-12 GEMys synergized with chemotherapies to effectively deplete suppressive myeloid cells while also enabling remaining myeloid cells to present antigen, together supporting strong anti-tumor immune responses.

Dr. Kaplan's work illuminates the power and potential of modulating the tumor microenvironment to improve patient outcomes. Clinical translation of human IL-12 GEMys is in the works, with plans for a phase I clinical trial conducted at the NCI for participants with relapsed tumors resistant to standard therapies. In closing, Dr. Kaplan's dynamic presentation was a source of inspiration to early-career investigators, demonstrated her novel work on the mechanisms involved in the pre-metastatic niche and the spread of cancer, and highlighted innovative and exciting therapies designed to combat these processes.

Pictured: Rosandra Kaplan

Keynote II

Collaborating across the intramural research program

By Daphne Knudsen-Palmer, PhD

Matthew Hall, PhD, Senior Scientist and Director of the Early Translation Branch of NCATS (National Center for Advancing Translational Sciences), opened his keynote talk with images of *Cradle to Grave,* an installation in the British Museum depicting the copious amounts of drugs an average person might consume throughout their lifetime. The photos are stunning; seeing the small pills aligned in neat rows across cases upon cases puts the scale of how much medicine we take into a new perspective. "Not everyone gets this," Dr. Hall said, breaking the illusion of excess.

The reality for people with rare diseases is that there may not even be drugs that exist for their condition. Since genomics and other new approaches have improved, there are now 7,000 characterized rare diseases with known molecular causes, but there are FDA-approved treatments for only about 500. The need for researching these rare diseases is clear, and Dr. Hall explains why NCATS is the perfect place for this research.

Dr. Hall described three main issues affecting translational science: (1) most diseases do not have treatments, (2) the number of drugs produced per dollar spent on research (inflation-adjusted) has been reducing greatly since the 1950's, and (3) the lack of replication and reproducibility makes it difficult to choose effective drugs for clinical trials. It can take decades to get from basic research to a drug approval, so NCATS acts as a bridge between the basic science and the treatment of patients.

NCATS collaborates with researchers by performing the high risk or unconventional experiments that are otherwise unrealistic in a research lab setting. For example, Dr. Hall highlighted their ability to use robots to perform high-throughput drug screening in a relatively short period of time. Some successful collaborations of NCATS include treatments for Duchenne muscular dystrophy (Amafolone), aromatic l-amino acid decarboxylase deficiency (Pustaka), and chronic yeast infections (Viejo).

Pictured: Matthew Hall

Another crucial approach to quickening the research-to-patient pipeline is drug repurposing. In this case, drugs that are already FDA-approved are tested in a new disease setting that differs from their original approved indication. Dr. Hall explained this strategy accelerates drug development by bypassing the time-consuming approval step.

Dr. Hall also described a project he investigated in collaboration with Dr. Len Neckers, where they search for a lactate dehydrogenase (LDH) inhibitor. Inhibiting LDH may be a viable avenue for cancer treatment, given that tumors often exhibit the Warburg Effect, resulting in an increase of lactate production. Previous work had found inhibitors that seemed to work moderately well in cells but failed in animals and would not be suitable for clinical trials. Work at Genentech found a similarly moderate LDH inhibitor, but this also did not yield a compound promising for patients. Dr. Hall worked with a chemist at Chinook Therapeutics to create a hybrid model, between their compound and Genentech's compound. This new hybrid molecule was greatly effective in inhibiting LDH, but in animal models was required at toxic doses to be able to see an effect on tumor growth.

Not to be deterred, Dr. Hall asked whether this strong inhibitor of LDH could be used in other contexts. For treating the rare disease primary hyperoxaluria, the hybrid LDH inhibitor happened to be an excellent treatment. A very low dose of the drug taken orally was sufficient to show efficacy, since the drug needed to be trafficked to the liver, thus bypassing the toxicity issues at high doses. Due to the recent acquisition of Chinook Therapeutics by Novartis, the use of this LDH inhibitor for the treatment of primary hyperoxaluria has been paused, but Dr. Hall is taking steps to ensure that this treatment can make its way as quickly as possible to patients.

Finaly, Dr. Hall encourages everyone to consider NCATS for collaboration; they're there to help make sure you get your research from the bench to the patient.

Keynote III

Biomaterials for cancer immunotherapy and tumor tissue engineering

By Soumita De, PhD

Matthew T. Wolf, PhD is head of the Cancer Biomaterials Engineering Section, CCR. He delivered an intramural keynote address, "Biomaterials for Cancer Immunotherapy and Tumor Tissue Engineering," at the Center for Cancer Research Fellows and Young Investigators 25th (*CCR-FYI)* Colloquium. Dr. Matthew Wolf received his doctoral degree in Bioengineering from the University of Pittsburgh, Swanson School of Engineering. In his doctoral research, he developed biologic scaffolds for muscle tissue engineering. During his postdoctoral research at Johns Hopkins University within the Translational Tissue Engineering Center (TTEC) and the Bloomberg~Kimmel Institute for Cancer Immunotherapy, he studied the immunological determinants of biomaterial-tumor interactions. He was the recipient of the Hartwell Foundation Postdoctoral Fellowship (2016) and the Regenerative Medicine Workshop Young Investigator Postdoctoral Award (2019). He served as a Research Associate at Johns Hopkins Biomedical Engineering in 2019. Dr. Wolf moved to the National Cancer Institute as an Earl Stadtman Tenure-Track Investigator in August 2020. His laboratory is a combination of multidisciplinary research on biomaterials science, cancer immunology, and tissue engineering, focusing on immunomodulatory biomaterials for use in next-generation cancer immunotherapies.

Pictured: Matthew Wolf

During his talk, he provided a summary on types of bio-materials used, their biological and immunomodulatory significance, and application in cancer therapy. He then focused on the effort of his laboratory to engineer scaffolds with a therapeutic immune-microenvironment for cancer care.

He described how biomaterials have commonly been used as mechanical support or to repair in some cases of damaged sites. Specifically, when a tumor and surrounding healthy tissue are removed, it creates a deficit requiring restoration or reconstruction of shape and size. In such clinical conditions, biomaterials can mimic the cellular environment and be useful to restore form and provide mechanical support. Biomaterials are often termed as scaffolds and can be derived from various sources including i) synthetic polymers or ii) naturally derived extracellular matrix (ECM), termed as ECM scaffold. ECM can be of different types:

whole organ ECM, tissue layers, ECM particles, or ECM hydrogel. ECM has some advantages as it preserves some natural ligands, polysaccharides, and macromolecules, and retains bioactivity. ECM scaffold can retain the tissue-specific proteomic complexity of the original organ. In case of cancer therapy, when a scaffold is implanted after tumor resection, it can trigger an immune reaction that can interact with the residual disease and or can interact with post-surgery immunotherapy. ECM scaffolds raise a type II immune reaction characterized by an influx of CD206-positive macrophages and T helper 2 T cells that can help in healing.

As he entered to the deep immunological application of the scaffold, he divided his talk into three parts.

Part 1: Does pro-healing type II inflammation affect response to immunotherapy?

Cancer immunotherapy focuses on type I immune reaction associated with cytotoxic T cells, which kill individual cancer cells. Whereas type II immune reaction is associated with parasite infections, wound healing, and can even provide a pro-tumor, pro-metastatic immunity. However, recent articles are showing that type II immunity can also have a beneficial effect, through a collaborative effect of type I and II. Several approaches can be deployed to achieve this type I and II collaboration, e.g., administering a cancer vaccine with implanting an ECM scaffold, the ECM scaffold may act as a tumor antigen to promote a specific anti-tumor effect, or the ECM can act as a delivery system by slowly releasing adjuvant. In this regard, he highlighted their recent findings with injectable scaffold delivery to enhance the efficacy of cancer vaccine immunotherapy.

Dr. Wolf's laboratory has tested different ECM scaffolds along with adjuvants to create cytotoxic immunity along with the type-II immunity that favors wound healing. His lab was able to generate a combination of type I and II immunity, activating STAT1 and STAT6 signaling. He cited a recently published research article where his research team demonstrated that decellularized porcine small intestinal submucosa ECM (SIS-ECM) scaffold combined with immune adjuvants was able to stimulate type-I immunity. CDA [the cyclic di-AMP analog 2'3'-c-di-AM(PS)2(Rp,Rp)], which activates the STING pathway when co-administered with scaffold-produced type I interferons, granulocyte-macrophage colony-stimulating factor (GM-CSF), with minimal disruption of the local SIS-ECM induced immune response. In his talk, he also elaborated that ECM scaffold delivery enhanced therapeutic vaccine efficacy in established E.G-7OVA lymphoma tumors in mice. SIS-ECM scaffold-assisted vaccination prolonged antigen exposure was able to generate long-term antigen-specific immune memory for at least 10 months post-vaccination. This ECM scaffold is a promising delivery vehicle to enhance cancer vaccine efficacy. Part 1 concluded that STING agonist CDA effectively induced cytotoxic T cell immunity in type II ECM microenvironment. It is possible to utilize an ECM scaffold to deliver cancer vaccine and increase the efficacy of cancer vaccine, promote cancer antigen retention, and generate memory T cells. ECM can act as a slow-release delivery system, ensuring long-term protection and effectiveness, able to generate co-existing type I and II immunity.

Pictured: Matthew Wolf

Part 2: Combining ECM scaffold with immunotherapy to prevent cancer recurrence

Dr. Wolf, in collaboration with the Centre for Advanced Preclinical Research, used a mouse melanoma allograft model, where surgical removal of melanoma does not cure the cancer, and the disease recurrence. In this model, post-surgery, he implanted Urinary Bladder Matrix (UBM) mesh infused with immunotherapy. UBM mesh scaffold is

an FDA approved medical device. In this case, UBM mesh was incorporated with CDA adjuvant, tumor antigen and infused with immunotherapy. PD1 antagonist in combination improved survivability 85% in this model. STING agonist delivery with mesh prevented recurrence 50%, suggesting that reconstruction and tissue repair with mesh, along with local immunotherapy, can be promising.

Part 3: Engineering 3D cell-ECM interaction *in vitro*

In vitro three-dimensional (3D) tumor models are emerging as essential tools to replicate the complexities of the tumor microenvironment (TME). The TME is a multifaceted and dynamic organization of cancer cells, with diverse stromal cell lineages. Recent 3D ECM organoid culture system uses tumor cells embedded within hydrogels and purified type I collagen. Although these models provide substantial insights, they do not reflect the complexity of native tissues or the stromal organization of *in vivo* system. Dr. Wolf introduced MatriSpheres as a novel 3D *in vitro* tumor model, which enables the enrichment of decellularized ECM to mimic the dense stroma observed within solid tumors. Sys ECM in liquid dispersion with tumor cells in low attachment condition initiate self-assembly process creating a tumor-like ECM stroma that induces phenotypic changes mimicking tumor heterogeneity. This system recapitulates the tissue specific transcriptome and secretome, e.g., SIS ECM recapitulated *in vivo* colorectal cancer tumor cell heterogeneity compared to cells alone spheroids. Matrispheres can be combined with diverse cell types in 3D including cancer cells, macrophages, fibroblasts. Overall, Matrispheres offer a tool to augment *in vitro* 3D disease models and improve preclinical drug evaluation for clinical translation.

Dr. Wolf's talk highlighted his research uncovering novel applications of biomaterial ECM scaffold to improve cancer immunotherapy. His talk also established the utility of scaffold in developing 3D in vitro organoid models that can reflect the complex tumor microenvironment and provided new opportunities in progressing cancer research and therapy.

Survivorship

Badge and bracelet – perspectives from a cancer researcher, caregiver and patient

By Arashdeep Singh, PhD

Oliver Bogler, PhD, a former cancer researcher and survivor of male breast cancer, delivered a deeply personal and moving talk on his experience with this rare condition and the broader meaning of survivorship. Educated in England and formerly at MD Anderson Cancer Center, Dr. Bogler worked alongside his wife, Irene, also a cancer researcher. Both were diagnosed with invasive ductal carcinoma at the same age, Irene first, and Oliver five years later. Dr. Bogler talked about their shared journey of survivorship shedding light on medical and personal challenges faced by the cancer survivors and discussed the strengths, limitations, and opportunities of current cancer care.

He began his talk by referencing Christopher Hitchens' memoir *Mortality*, describing the cancer diagnosis as a crossing into "the land of malady," a turning point after which life is no longer the same. Using this metaphor, he poignantly conveyed the disorienting aftermath of diagnosis, where one's life narrows to focus entirely on illness, and is overtaken by unfamiliar terms, clinical routines, and invasive procedures. For Dr. Bogler, the experience was further complicated by the rarity of breast cancer in men.

Borrowing another metaphor from Hitchens, he described cancer treatment as a negotiation to live for a few more years in exchange for enduring profound physical and psychological sufferings. Although treatment may prolong survival, it often comes at the cost of long-term side effects. Both Oliver and Irene underwent nearly identical

regimens including chemotherapy, mastectomy, radiation, and hormone therapy. Despite the shared hardship, Dr. Bogler met it with resilience and dry wit, jokingly referring to his Stage 3 disease as a "win" over Irene's Stage 2.

Dr. Bogler reflected on the strengths and complexities of the American healthcare system. He praised its encouragement of patient participation in decision-making. As researchers themselves, he and Irene were invited to help interpret clinical trial data when deciding on radiation therapy for her treatment. He also recalled managing post-surgical drains and collecting data with scientific precision post-surgery for himself which gave him a sense of active control over his own treatment. Later in the talk, he also acknowledged that such an engagement might create unnecessary confusion for most patients who may not have scientific backgrounds and simply want to know the best treatment for them on the table.

Pictured: Oliver Bogler

Dr. Bogler also highlighted a critical gap in the clinical trial designs. While trials determine

Pictured: Oliver Bogler

whether a treatment works, they often fail to inform how long it should be continued. Despite being disease-free, he remains on tamoxifen 12 years later, and Irene has continued aromatase inhibitor therapy for 16 years. This prolonged treatment reflects the uncertainty patients may face in the absence of long-term clinical data, particularly for diseases like cancer that can recur.

Being a scientist and patient, Dr. Bogler took up activism to create awareness and strengthen the cancer research programs. He participated in several clinical trials including those focused on preventing cancer recurrence using immunotherapy and managing chemotherapy-induced neuropathy by the use of videogames. He started a blog, *malebreastcancerblog.org* to create awareness and advocacy for the cause of breast cancer in men. He also featured in *The SCAR Project* to further the cause of male breast cancer which remains absent from public discourse.

Additionally, he mentored newly diagnosed patients and reflected deeply on the experience of caregiving, particularly during the years when Irene was ill and he was not. He spoke candidly about the fear, guilt, and helplessness that caregivers often endure, emphasizing that survivorship profoundly affects loved ones, not just patients. As a patient advocate, Dr. Bogler served on multiple review panels and contributed to the development of the first global male breast cancer registry. He called out the historical exclusion of men from breast cancer trials and the cultural inertia that perpetuated such gaps.

He concluded his talk thoughtfully reflecting on cancer diagnosis and survivorship. Long-term side effects, hormonal imbalances, discomfort and anxiety that come from routine scans, which became part of his "new normal". Yet his tone remained grounded in grace, humor, and gratitude for the care and compassion that he received through his survivorship journey

Dr. Bogler served as Director of the Center for Cancer Training at the National Cancer Institute, where he oversaw fellowships and supported early-career cancer researchers. His talk was both sobering and a call to action for more inclusive and patient-centered care, as well as created awareness for rare diseases which might go undiagnosed, such as men with breast cancer. As we reflect on his experiences, may we all strive to listen, support, and make a difference in the lives of those still navigating the "land of malady."

Outstanding Postdoctoral Fellow Enitome Bafor, PhD

Exploiting ovarian immune mechanisms: Implications for CD8+ T and double negative T cell modulation

By Daphne Knudsen-Palmer, PhD

Autoimmunity and cancer can be considered two sides of the same coin, with T cells in the middle, according to Enitome Bafor, PhD. A research fellow in the NCI Cancer Innovation Laboratory, Dr. Bafor is this year's recipient of the Outstanding Postdoctoral Fellow award. She investigates the delicate balance between tumor suppression by the immune system and the potential for autoimmunity. She uses the ovary, an organ with highly proliferative cells, as a model for her research.

Autoimmune targeting of the ovary can cause hormone imbalances, menstrual irregularities, and infertility, so it is paramount that the ovary is maintained as a site of immune tolerance. The corpus luteum acts as an immunological parallel to tumors, with massive cell proliferation cycles that resist immune targeting. Dr. Bafor investigates the relationship between the immune system and these proliferative cells by studying interferon-gamma (IFN-γ) mutant mice, which have a 162 nt substitution of the AU-rich element with random nucleotides ("ARE-/-" mutants for short). These mice show an increased amount of IFN-γ, coupled with CD8+ T cell targeting of the ovary and uterus, rendering them sterile. Even wildtype embryos that are implanted in ARE-/- mice are not viable.

Since Dr. Bafor observed an increase of CD8+ T cells in the inflamed ovaries and uteri of ARE-/- mice, she asked whether the CD8+ T cells were directly contributing to infertility. A transfer of wildtype CD8+ T cells into ARE-/- mutant mice was sufficient to restore fertility, suggesting that some component of the ARE-/- immune regulation and CD8+ T cells is indeed malfunctioning. ARE-/- ovaries also showed a significant decrease of Double-negative T (DNT) cells, resulting in a low DNT to CD8+. Healthy reproductive tissues maintain a high DNT to CD8+ T cell ratio. Further investigation of this apparent depletion of DNT cells suggests that in ARE-/- mice, DNTs are acting more similarly to mature T cells instead of to precursors.

This discovery begs the question: do DNTs play a role in fertility? Dr. Bafor found that transfer of wildtype DNTs to ARE-/- mice was sufficient to restore fertility. "We were like grandmothers in the mouse facility," Dr. Bafor said, recalling experiencing such a profound result. While experimental depletion of DNTs is difficult due to a lack of specific markers, Dr. Bafor examined the effects of adaptive T cells in Rag1-/- mice, which have little to no T cells. Taken together, it seems that while DNTs are not strictly required for fertility, they can buffer inflammatory outcomes.

Crosstalk between DNTs and CD8+ T cells could explain some of the observed effects on fertility. Dr.

Bafor observed that CD8+ T cell depletion also depletes DNTs in the ovary and uterus, and that DNTs upregulate the CD8 coreceptor *in vitro*. To examine this *in vivo,* she compared CD8 coreceptor levels in the ovaries of wild type and heterozygous ARE+/- mice. After two weeks, the CD8 coreceptor levels decreased in wild type mice, but they remained high in ARE+/- mice, providing one immunological difference between wild type and ARE mutant mice.

In the future, Dr. Bafor aims to investigate local antigen presentation, TCR engagement, and cytokine signatures surrounding the ovary. Researching epigenetic and transcriptional drivers of immune tolerance may also improve our understanding of the balance between immune resistance and targeting.
Ultimately, Dr. Bafor's work provides key insights that may improve approaches to combating infertility and autoimmunity alike.

Pictured: Enitome Bafor

OPF Finalists

By Natasha Vinod, PhD & Melanie Pernak, PhD

Editor's Note: This year's CCR-FYI Colloquium hosted a new session featuring talks from finalists for the Outstanding Postdoctoral Fellow (OPF) Award. During this session, we heard from three fellows, Dr. Sounak Sahu, Dr. Katie Hebron, and Dr. Kristen Fousek, as they described the impactful research they have performed at the CCR.

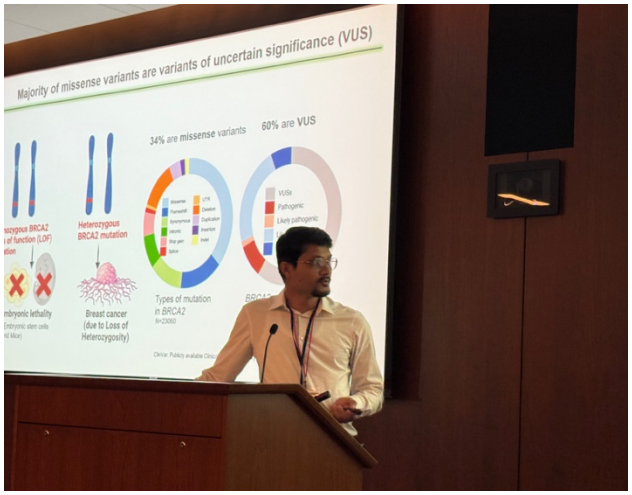
Functional analysis of genetic variants using CRISPR-based saturation genome editing

Sounak Sahu, PhD, postdoctoral fellow at NCI-Frederick and member of the Mouse Cancer Genetics Program (MCGP), opened this session with a presentation on a novel method to clinically classify BRCA2 genetic variants.

BRCA2 is a tumor suppressor gene and essential for normal cell survival. The gene repairs DNA double-strand breaks, and mutations in it lead to increased risk of breast and ovarian cancers. A homozygous loss of function mutation in BRCA2 results in embryonic stem cell lethality; in contrast, an inherited missense mutation, or loss of heterozygosity, can lead to breast cancer. According to the publicly available ClinVar clinical database, 34% of mutations found in BRCA2 breast cancer patients have been reported to be missense mutations at a single nucleotide position. Among these missense variants, half of them have been shown to be either pathogenic or benign, and half of these variants have unknown clinical significance due to lack of sufficient epidemiological data.

To accurately identify pathogenicity of a particular *BCRA2* variant, Dr. Sahu and his team developed a humanized mouse embryonic stem cell line (mESC) that lacked both copies of the mouse *Brca2* gene and instead contained a single copy of human *BRCA2*. In this system, a deleterious nucleotide change in the transgene would lead to the inability of the mESC to grow. To increase the scale at which variants could be studied, Dr. Sahu generated libraries of all possible Single Nucleotide Variants (SNVs) in the *BCRA2* gene using CRISPR-Cas9 technology, which were then inserted into humanized mESC sporting a single copy of human *BRCA2* to determine how they impacted cell viability, an approach termed saturation genome editing. Next generation sequencing (NGS) is then used to measure SNV frequency in mESC cells, and a functional score for each unique SNV calculated based on whether it was enriched or lost in cells.

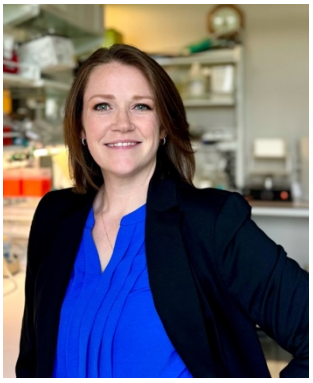
Dr. Sahu applied this approach to variants in the ClinVar database, where high concordance between lower functional score with nonfunctional *BRCA2* coding region, allowing for the identification of pathogenic SNVs. In total, Dr. Sahu was able to functionally classify more than 6000 missense SNVs within the C-terminal DNA binding domain of *BRCA2*. As there are still thousands of novel SNVs that have been predicted but not yet identified in the general population, Dr. Sahu's novel saturation genome editing approach serves as a very efficient and promising tool to understand pathogenicity of *BRCA2* mutations and risk of developing breast cancer.



Pictured: Sounak Sahu

Decoding the primary site-specific regulation of rhabdosarcoma metastasis

The next OPF Finalist to speak was Katie Hebron, PhD. Dr. Hebron studies pediatric rhabdomyosarcoma (RMS), a rare cancer in children that is often diagnosed in the metastatic stage. Despite several treatment options, metastatic RMS portends poor overall survival.



RMS originates from partially differentiated mesenchymal cells that have failed to fully differentiate into skeletal myocytes. Dr. Hebron's approach to treating a particular subtype of RMS, fusion-negative RMS (FN-RMS) focuses on inducing myogenic differentiation - a.k.a. differentiation therapy. Dr. Hebron's work has demonstrated that dual targeting of the RAS/MAPK pathway as well as an upstream receptor tyrosine kinase can induce tumor regression in multiple xenograft FN-RMS models and delay development of resistance. She has also identified upregulation in YAP1/TAZ, transcriptional activators of genes that regulate cell differentiation and may contribute to cellular plasticity, relapse, and progression in RMS.

Dr. Hebron has developed several novel models in which to test effects of YAP1/TAZ activity on invasion and metastasis. Using an *in vitro* spheroid model embedded in an extracellular matrix, she was able to characterize cellular invasiveness based on differential YAP1/TAZ expression in RMS cell lines. She also developed a novel orthotopic xenograft model of RMS that recapitulates the invasive and metastatic tumor microenvironment. In this model, primary tumors with metastatic potential upregulated YAP1/TAZ, and metastatic cells from lymph nodes of these mice generated highly aggressive tumors with increased metastatic burden relative to the primary tumor site-derived cells.

She concluded her talk by proposing the hypothesis: "FN-RMS dissemination is facilitated by the dynamic regulation of YAP1/TAZ activity that allows tumor cells to undergo differentiation during local invasion but dedifferentiate upon dissemination."

Dr. Hebron is a K99/R00 Transition to Independence award recipient, which will enable her to establish her independent laboratory this fall. The focus of her lab will be to understand how developmental programs are exploited by tumor cells to promote plasticity and metastasis. For updates on her onward journey, you can connect with her through her social media accounts at X (@DocHebron), Bluesky (@dochebron.bsky.social), and LinkedIn (www.linkedin.com/in/kehebron).

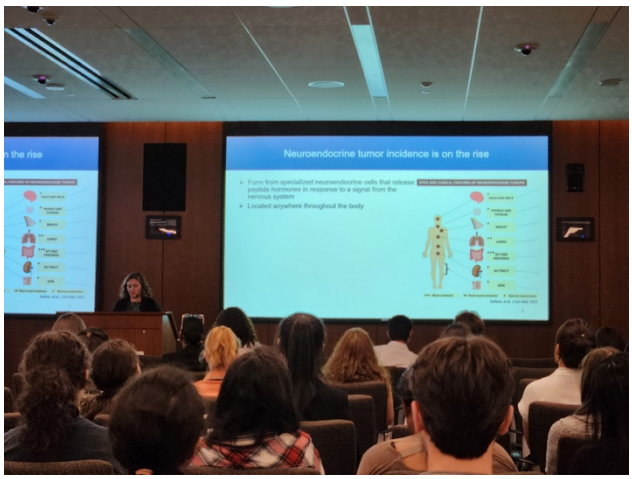
Evaluating the efficacy of memory cytokine enriched NK cells against neuroendocrine tumors

Kristen Fousek,PhD, research fellow in Dr. Claudia Palena's group at the Center for Immuno-Oncology (CIO) at the NCI, ended this session by sharing her work on the potential of N-803, an interleukin-15 superagonist in enhancing the activity of NK cells against small cell lung cancer (SCLC), the majority of which are neuroendocrine in etiology.

IL-15 is a key NK and cytotoxic T cell-activating cytokine, but unlike other cytokines, IL-15 is not secreted in a soluble format but rather is presented to NK and T cells bound to its receptor on presenting immune cells in a process known as transpresentation. N-803 closely models this physiological process by comprising an IL-15 receptor binding domain bound non-covalently to a mutant IL-15 molecule with improved binding affinity to the IL-15 receptor on the responding NK and T cells. N-803 also consists of an Fc portion of IgG1 for improved stability and bioavailability.

NK cell-based strategies are particularly compelling in SCLC because most SCLC subtypes lack MHC-I expression, rendering them insensitive to T cell-based therapies which requires antigen presentation by MHC-I molecules. On the other hand, NK cells can kill tumor cells deficient in MHC-I.

Dr. Fousek has shown that in both *in vitro* and *in vivo* systems, N-803 treatment leads to enhanced activation and cytotoxicity of NK cells, which collectively lead to improved control of tumor progression in murine SCLC models. However, as treating NK cells with N-803 alone is unlikely sufficient as a therapeutic, Dr. Fousek has explored alternate NK cell-based approaches that could be expanded to neuroendocrine tumors beyond SCLC.



Pictured: Kristen Fousek

This quest brought Dr. Fousek to m-ceNKs, or memory-cytokine enriched NK cells. Working in collaboration with ImmunityBio, an NCI CRADA partner, Dr. Fousek has shown that m-ceNKs can target neuroendocrine and non-neuroendocrine cell lines of various origins. These m-ceNK cells are produced by exposing human NK cells to a cocktail of cytokines (including IL-12, IL-18, and N-803), that induce a memory-like phenotype. Dr. Fousek has shown that m-ceNKs are highly activated and long-lived, with enhanced cytokine production and enhanced cytotoxicity. Additionally, she showed that m-ceNKs demonstrated significantly higher tumor suppression in SCLC xenograft models, highlighting the potential of m-ceNKs to benefit patients with immunologically cold tumors that lack MHC-I expression.

Based on this exciting and promising preclinical work, m-ceNKS are currently being evaluated for safety and preliminary efficacy in patients with locally advanced or metastatic solid tumors in an ongoing Phase 1 clinical trial at the NCI. In closing, Dr. Fousek touched on some of the challenges behind translating NK cell therapies to the clinic and discussed some promising proof of concept work she has done utilizing additional immunotherapeutic agents to combat some of the barriers and enhance immune recognition of immunologically cold tumors.

Panel

Career Paths into the future

By Aaliyah Battle

Fellowships at the NIH serve to train and prepare us to take on the next steps in our career, whether that be attaining acceptance into graduate or medical school, starting your career as a staff scientist, or even launching your own laboratory. During any point in history, this would prove to be a difficult task due to how competitive these assignments are, and the tenaciousness required to complete them. Yet in these unprecedented times, we face even greater obstacles caused by today's political climate, and the funding challenges that have resulted from it. That is why this year's panel at the CCR-colloquium titled: "Paths into the future" focused on how trainees can better place themselves into positions of employment or matriculation amid funding cuts and declining job prospects.

Panelist profiles:

Mala Dutta, PhD, Technology Development Coordinator at the National Eye Institute (NEI)

Brunhilde Gril, PhD, Program Director of the Tumor Metastasis Branch within the Division of Cancer Biology at the National Cancer Institute (NCI)

Margaret Pruitt, MD, PhD, Medical Oncology Fellow at the National Cancer Institute (NCI)

Craig Thomas, PhD, Senior Scientist in Precision Therapeutics and Translational Technologies at the National Center for Advancing Translational Sciences (NCATS).

How can fellows situate themselves into positions of matriculation or employment amidst funding challenges?

In response to the slashing in NIH funding, including those that support extramural research, some universities have resorted to decreasing, pausing, or even rescinding admission offers into biomedical science graduate programs (Molteni). One of the first questions posed to the panel was concerned with what fellows interested in graduate school can do in the interim to become more competitive amidst decreasing admission class sizes. All the panelists emphasized that we should take this time to focus on our development as scientists as that time and the work to come out of it will make us more well-rounded applicants.

Dr. Thomas recommends continuing or taking on an internship, as doing so will allow us more time to let the politics settle down. While not ideal, this opportunity would also allow for more opportunities of growth, such as attaining more research skills or even getting accredited in a paper. Dr. Pruitt advises us not to go about our gap

years ticking off boxes on a checklist, but rather to focus on gaining skills and experience that will make your time in graduate school a bit easier. This can look like taking on the role of a scribe or CNA to obtain more patient interactions or working in an animal core to learn about the advantages of different animal models in research. Dr. Gril proposed that we use this time for introspection so that we may learn what we want out of life and our careers. These goals can be hard to pinpoint, but knowing and being able to communicate them will put you in better positioning with admissions committees.

With the increasing uncertainty surrounding government funding of biomedical research, some may look to pivot into industry positions for more guaranteed work. The next question raised wanted to know of any NIH specific resources that could be utilized by fellows to streamline job prospects in the pharmaceutical and industry related fields. The NIH hosts many fairs, conferences, and events at which industry representatives are present. Dr. Pruitt recommends chatting with these vendors as they can give you insights into any positions available within their company; especially those from which you regularly purchase. She also highlighted the NCI's Transition to Industry fellowship which provides industry-focused research training and support as well as the NIH industry day, a conference that facilitates connections between private organizations and the NIH.

Pictured left to right: Mala Dutta, Brunhilde Gril, Margaret Pruitt, and Craig Thomas

Dr. Thomas emphasized talking with your PI as they are your biggest asset in helping you advance your career. All fellows, but especially those who are early on in their training, should meet with their PI to discuss where you want to end up, how you can get there, and what kind of training they can provide you to achieve your goals. PI's are also well connected and can tap into their networks to help you further advance. However, Dr. Dutta cautioned that working in industry has its own issues, namely the company lay-offs that can occur regularly. To that end, she recommends taking ownership of the projects you work on, to showcase the work you produce and that you're its primary driver. Doing so makes you a more attractive hire for employers. You should also maintain your relations with collaborators and establish a relationship with your institute's training director office so that they can aid you in your job search process.

In an increasingly uncertain scientific landscape shaped by these funding challenges and evolving career expectations, the insights shared by this year's CCR Colloquium panel serve as a valuable guide for NIH fellows navigating the next phase of their professional journeys. Regardless of career trajectory, proactive skill-building, strategic networking, and intentional self-reflection are key to career advancement. Despite today's obstacles, fellows can still forge meaningful, successful paths by leveraging the resources available at the NIH and taking initiative in their development. As the panelists emphasized, this moment, while difficult, can also be one of growth, positioning trainees not just to survive the current climate, but to thrive beyond it.

Panel

Scientific collaborations: How to start, promote, and fulfill them

By Aaliyah Battle

Scientific collaborations are one of the most impactful things you will perform throughout your career as a researcher. They constitute a major pillar within the science community by driving impactful research and facilitating faster, and more novel discoveries. This provides a positive benefit to the community and the world at large through the sharing of knowledge and creation of meaningful relationships amongst its collaborators.

Research conducted today is increasingly interdisciplinary, reflecting not only the complexity of the problems which we are studying, but also the ingenuity and innovation required to solve them. Take for example, recently awarded Nobel prize winners Demis Hassabis, John M. Jumper and David Baker. The three used their expertise within the fields of computer science, chemistry, and biology, respectively, to create an AI model that can predict the 3-dimensional shape of proteins from just their amino acid sequence alone (Press Release). Such work highlights the endless possibilities of integrating different fields and concepts into a collaborative project.

Yet these endeavors demand a great deal of effort, resources, and determination from start to finish. Certain pitfalls can arise during and even before these projects have begun. To better illuminate this process, this year's CCR-FYI Colloquium hosted a panel titled: How to Start, Promote, and Fulfill Scientific Collaborations. The panelists included scientists and directors of various institutes within the NIH campus, whose profiles are highlighted below.

Panelist profiles:

Renee Donahue, PhD, Staff Scientist, Center for Immuno-Oncology, Center for Cancer Research

Ravi Madan, MD, Acting Deputy Chief, Genitourinary Malignancies Branch, Center for Cancer Research

Stephen Lockett, PhD, Director, Optical Microscopy and Analysis Laboratory

Lisa Ann Ridnour, PhD, Staff Scientist, Cancer Innovation Laboratory, Center for Cancer Research

Scott Durum, PhD, Senior Investigator, Cancer Innovation Laboratory, Center for Cancer Research

The hardest thing to do for any task is to start it, and this goes for scientific projects as well. The first few questions posed to our panel were concerned with how research fellows early on in their careers, such as post baccalaureates and doctorates, can make meaningful contributions to and/or start a collaborative project with another lab. All responses encouraged those seeking to work on these kinds of projects to do just so, as reflected by Dr. Durum's resounding answer of "Just do it". They also emphasized that your seniority level does not limit what you can contribute to the team, but rather the amount of work you are willing to put into it.

Dr. Lockett acknowledged how daunting it may seem to initiate a collaboration but also cautioned against letting your fears of inferiority stop you from doing so. He also shed a bit of wisdom by stating that "the only bad ideas are those that you don't talk to anyone about."

As for the logistics of initiating a collaboration, these kinds of introductions can range from a coffee chat to an arranged meeting with another principal investigator (PI). Dr. Durum highlighted a current collaboration he has been on that started from a gab of mutual interest with another scientist, and that has now culminated into a 15 yearlong project. Dr. Madan explained that lab meetings and panels, such as these, are prime locations for sparking interest in other scientists to collaborate. He also stressed that in these introductory meetings you should not demand or merely ask for information that you find relevant, but rather

discuss your interests, find commonalities between each other's works, and to seek input and advice. Within that same vein, Dr. Ridnour encouraged that you present your data as often as possible so that you can get others interested in your work and to develop networks. These efforts will naturally result in a project naturally due to the strength and advantageousness of these relationships.

The panel also shed light on what they look for when determining whether to pursue a new collaboration with someone they're not familiar with. Dr. Durum highlighted that it depends on the extent of commitment they're looking for. Something as simple as advice is easy enough to provide. However, when anything requires more time and effort, he looks for someone who is very knowledgeable about the topic or interest at hand. Dr. Madan advises that you bring something to the table, whether it's novelty, tangential work between the two parties, or depth of knowledge of the other party's work. He recommends that when reaching out, especially if it's not in person, you keep your message brief. This could look like an executive summary at the top of an email with a concise and descriptive subject. However, in-person introductions are the best and can look like discussing the other party's work, then pivoting to your own interests and how the two relate.

All panelists emphasized that you should keep your PI up to date with any information regarding the collaboration and that they should also actively be engaged in its establishment. This gives the request more weight and facilitates an easier connection.

Once the collaboration has been established, maintenance of the project includes the creation of a goal-oriented timeline and maintaining communication with your partners. When asked what to do in the case of a slow-going project, the panelists cautioned against faulting another, but rather to be proactive in communication to move it along. Dr. Madan advises that, from the very beginning, to get a sense of the priority level of your project with the collaborator, as this will allow you to set realistic expectations of how quickly the project will progress.

Dr. Donahue proposed asking the partners what is causing the holdup and if there is anything you can do to help speed it along. Most important of all, maintaining open and honest communication with all involved is necessary for seeing a project to completion.

As Dr. Donahue imparted to us, no one person can be the expert in everything, and thus, scientific collaborations pose a beneficial aid to our study of current research gaps. These ventures are not easy; they require time and resolve to see them through. But by learning more about the process from our expert panel, hopefully, fellows will feel more emboldened to pursue these kinds of connections.

Workshop

How to have a Science Conversation that Fosters Creativity

By Giana Vitale

Rigorous scientific study is hardly, if ever, associated with whimsical imagination and what-if thinking. As scientists, we are trained first and foremost in skepticism, doubt, and the null hypothesis. This skepticism is necessary to keep our work grounded but may also shut down new avenues of possibility. In Dr. Oliver Bogler's workshop, "Night Science: how to have a science conversation that fosters creativity," we explored the power of improvisational thinking when exploring new scientific ideas and how it can lead to unexpected discoveries.

There are a few "rules" to maximize the effect of improvisational thinking in science. First, we need to hold brainstorming sessions with another person. Second, these sessions should be held one-on-one with, ideally, a good friend. Third, the mind must be let to wander, without dwelling on perceived challenges or impossibilities. Fourth, we must encourage and welcome all ideas.

The first two "rules" dispel the myth of the lone genius. Bouncing ideas off other people can expose gaps in our thinking, pool shared knowledge and return useful suggestions. However, having these discussions in a large group can actually negate these benefits by diffusing responsibility and implying judgement for ideas.

Instead, working with a single partner is best. Many of the greatest scientific discoveries were the product of close-knit duos, like Marie and Pierre Curie or Daniel Kahneman and Amos Tversky.

The last two "rules" focus on creativity and encouragement. New ideas may sound strange when first proposed and it's tempting to point out potential problems right away. Try practicing the "yes, and…" rule, borrowed from improv theater, when discussing new ideas. Instead of focusing on what may fail, consider what may work. A key element of this practice is preventing embarrassment or imposter syndrome, so when having these conversations with your partner, practice support and encouragement.

Improvisational scientific thinking requires more than just understanding; one must practice. After explaining, Dr. Bogler encouraged us to try it out in pairs. We spent at least fifteen minutes each pitching our "worst" ideas to each other. My partner and I initially struggled against our instinct to doubt, and we took several minutes trying to find the right language to encourage each other. Our trouble with this exercise was revealing. How many interesting experiments have we missed in our real work because of this tendency to quit before we even start? Once we got rolling, my partner and I had fun discussing wild ideas, like how to develop non-targeted, universally taken-up gene therapy. Another group considered an implantable system that would constantly monitor and treat HIV infection. Sharing our ideas with the group was exciting and demonstrated the impact of the exercise on our thinking.

Improvisational thinking with a partner can enable us to break out of old habits and explore unconsidered ideas. My experience in the Night Science Workshop revealed some of the shortcomings in my own ideation process that I will work to overcome using the strategies named here. The next time you sit down to plan your next experiment, consider riffing with a colleague!

Workshop

Career Transitions

By Lisa Poppe, PhD

Jackie Lavinge, PhD, MPH, Training Director for the NCI Division of Cancer Epidemiology & Genetics (DCEG), lead the "Navigating Career Transitions from your Postdoctoral Training" workshop, focusing on the things she would have wanted to hear when she was a postdoc. Throughout an interactive and engaging seminar, Dr. Lavinge acknowledged the challenges of the current climate and reminded attendees that postdocs are very important to both the NCI and the future of science, possessing a wide assortment of skills, resiliency, and adaptability. Neither the current challenges nor the postdoctoral fellowship period will last forever, so she emphasized the importance of remembering why you became a scientist and making the most of your time at NCI.

She laid out a list of goals to keep in mind throughout the postdoctoral fellowship period: contribute to science, build scientific skills, collaborate, network, advance career skills, and land your next position. In working towards your next position, Dr. Lavinge had several helpful strategies for success including focusing on where you have control, beginning to plan early and assess your goals often, managing up, and taking advantage of the wide variety of resources available to fellows at the NCI. Resources like career counseling, intramural workshops, seminars, and development programs, as well as myIDP self-assessment and the Clifton strengths finder can help fellows explore different career paths and identify those that are a best fit. Additionally, fellows can build their resume and experience outside of their lab work by utilizing NIH's interest groups and Coursea licenses.

Ultimately, everyone walks a unique path and no one solution fits all, so Dr. Lavinge encouraged fellows to reach out and form a solid mentorship and support team to help guide their way. Especially during the current times, it is important to remember we are not alone and there are plenty of people ready and willing to help fellows achieve their goals and continue on to successful careers.

Workshop

Beyond the resume: building a personal brand that gets you noticed

By Keerti Mishra, PhD

In today's competitive landscape, navigating the job market can feel overwhelming. With rising expectations and limited opportunities, having clear guidance on how to distinguish yourself is more important than ever. Thankfully, the Center for Cancer Training (CCT) continues to support trainees in building a professional edge that sets them apart.

Chanelle Case Borden, PhD led an engaging session on "Beyond the resume: building a personal brand that gets you noticed", offering practical tools to empower participants in their job search.

The session opened with a thought-provoking 5-minute self-assessment exercise, where attendees reflected on their core values—an essential foundation for building a professional identity. Dr. Borden emphasized that our core values shape how we present ourselves in the workplace and influence the connections we form. After all, we naturally gravitate toward people who share similar values, fostering more meaningful and authentic professional relationships.

Dr. Borden explained that while core values may be rooted in personal experiences or interests, they also define the professional contributions we bring to the table. When crafting a resume or personal brand, it's not just about listing skills—it's about demonstrating how those skills align with an employer's mission and goals, positioning you as an ideal candidate.

However, in a crowded job market where many candidates offer similar qualifications, your personal brand becomes your unique differentiator. Your brand reflects the distinctive qualities, perspectives, and expertise that only you can offer. It builds credibility, highlights what makes you stand out, and positions you as a valuable resource in your field—making your job search more targeted and effective.

A crucial step in building this brand is maintaining a strong professional presence, particularly on platforms like LinkedIn. Your profile should showcase your professional identity—from your photo and cover image to your summary and shared content. Regularly engaging with your network by posting relevant updates keeps you visible and reinforces your expertise—especially during active job searches.
In essence, creating a strong personal brand is an ongoing process that blends:

Who you are – Your core values
What you offer – Your skills and experience
What sets you apart – Your unique contributions

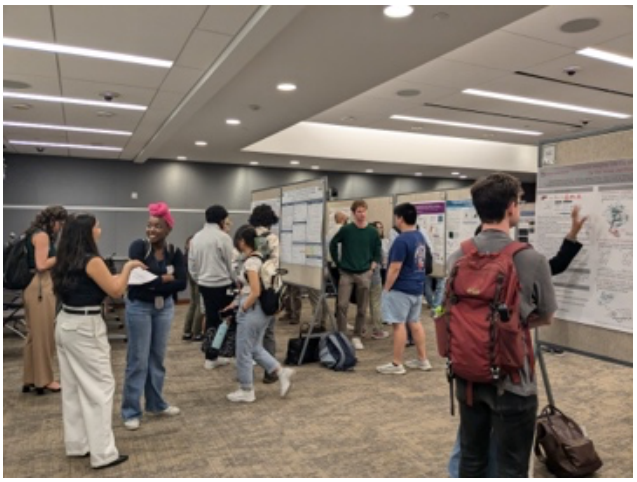
Together, these elements help you establish your presence, build professional relationships, and unlock new career opportunities. Dr. Borden concluded by reminding attendees to leverage digital tools strategically, while never underestimating the power of adding a personal, human touch to professional interactions.

Closing address

By Sumeyra Kartal, MD

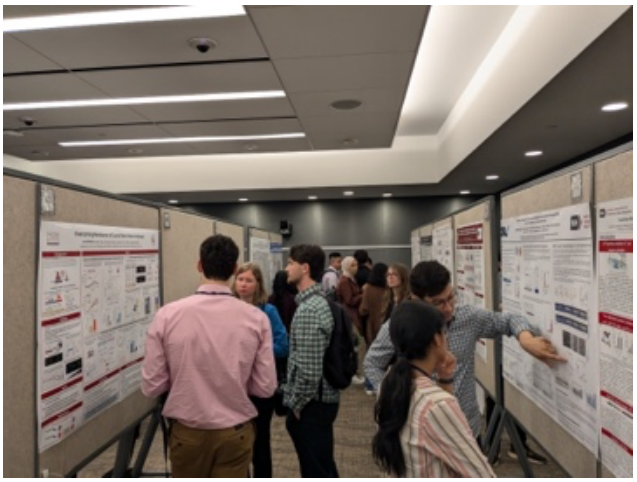
At the end of two inspiring and content-rich days of panels, workshops, and presentations at the CCR-FYI Colloquium, Dr. Chanelle Case Borden delivered a thoughtful closing address where she reflected on key moments and messages of the event. Dr. Borden, who also spearheaded an

engaging workshop during the Colloquium, is currently the Branch Director of the Office of Training and Education (OTE) in the Center for Cancer Training (CCT).



Dr. Borden emphasized the educational and motivational impact all of the presentations, panels, and workshops provided, offering fresh perspectives for all fellows on how we can advance our careers and explore professional paths.

The CCR-FYI Colloquium Planning Committee did an outstanding job putting together such a meaningful program, with their dedication and hard work apparent in every little detail of the Colloquium. Dr. Kristen Fousek and Dr. Riley Metcalfe, co-chairs of the Colloquium, should be applauded for their unwavering leadership and adaptability amid ongoing logistical changes that required so much last-minute quick thinking. The external speakers were wonderful and engaging and should be commended for their commitment to supporting all career trajectories for early career fellows at the NIH.



The dedication of early career fellows and investigators is what drives cancer research, which in turn drives us all forward. Our jobs as fellows at the NIH are so incredibly important! Thank you to all participants for the enthusiasm, thoughtful questions, and engagement. It arguably has never been important to build and maintain connections with one another, the broader research community, and the general public, and we hope the Colloquium offered not only valuable knowledge, but also lasting connections.

We encourage all fellows to continue building upon the energy and the momentum from the Colloquium. Remember, CCR OTE is here to support all NCI fellows, and OTE staff is available to help you at every step of your time here.

Award Winners

We are pleased to recognize the following awardees:

Outstanding Postdoctoral Fellow Award

Enitome Bafor, PhD

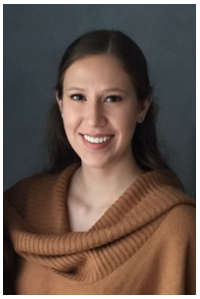
Outstanding Postgraduate Fellow Award

Divya Nambiar

Outstanding Oral Presentation Awards

Eleanor Pope

Rachel Carter, PhD



Eber Guzman-Cruz

Chelsee Smoot-Holloway, PhD

Outstanding Poster Presentation Awards

Meghali Goswami, PhD

Sanjay Pal, PhD

Olga Drozdovitch

Jacob Minin