The Cancer Research Institute is proud to share exciting accomplishments, funding opportunities and upcoming events with you.

Thank you to the >150 people who came to the CRI BBQ on September 22. The feedback has been largely positive and it was wonderful to see everyone in person again.

FY22 Annual Report Highlights

Each year we prepare an Annual Report for the Office of Research. This report celebrates the accomplishments of our affiliates and the amazing cancer community here at UCI. Here are some of the highlights from FY22:

- 73 actively engaged faculty affiliates with over 185 graduate students, 107 postdocs, and 185 undergraduates in their labs
- 252 publications by CRI affiliates (51% were published collaboratively with other members of the CRI)
- Over $70M in total costs awarded for grants and contracts, including 182 individual grants, 43 collaborative M-PI grants, 15 fellowship and training grants, and 4 research centers/cores.
- The UCI Campus-Wide Symposium on Basic Cancer Research drew an audience of 115 attendees and included a keynote address from Dr. Heather Christofk, Professor & Director of the Metabolomics Center at UCLA. It also included a poster session with a remarkable 31 presenters and four talks by CRI faculty. After the presentations, the CRI held a reception honoring Dr. Marian Waterman for her achievements during her tenure as CRI Director.
- We recognized Ms. Nita Driscoll for 36 years of service to UCI before her retirement in June 2022.

Scott Atwood
"Single-cell analysis of human basal cell carcinoma reveals novel regulators of tumor growth and the tumor microenvironment" 
Science Advances
READ MORE

Roberto Tinoco
"Targeting the PSGL-1 Immune Checkpoint Promotes Immunity to PD-1-Resistant Melanoma"
Cancer Immunology Research
READ MORE

Olga Razorenova
"Synthetic lethality of cyclin-dependent kinase inhibitor Dinaciclib with VHL-deficiency allows for selective targeting of clear cell renal cell carcinoma"
Cell Cycle (Georgetown, Tex.)
READ MORE

John Lowengrub
"Spatial dynamics of feedback and feedforward regulation in cell lineages"
PLOS Computational Biology
READ MORE

Cholsoon Jang

Robert Spitale & Scott Atwood
"Exploiting Endogenous Enzymes for Cancer-Cell Selective Metabolic Labeling of RNA in Vivo"
Journal of the American Chemical Society
READ MORE

Robert Edwards, Chris Hughes, & Anand Ganesan
"Structure-based design of CDC42 effector interaction inhibitors for the treatment of cancer"
Cell Reports
READ MORE
**Inhibition of nonalcoholic fatty liver disease in mice by selective inhibition of mTORC1**

*Science (New York, NY)*

**Claudia Benanvente**

*UHRF1 overexpression promotes osteosarcoma metastasis through altered exosome production and AMPK/SEMA3E suppression*

*Nature*

**Lauren Albrecht**

*Metabolism and Endocrine Disorders: What Wnt Wrong?*

*Frontiers in Endocrinology*

**Nicholas Pannunzio**

*Diversity upon diversity: linking DNA double-strand break repair to blood cancer health disparities*

*Trends in Cancer*

**Selma Masri, Michelle Digman, Rob Edwards, Nick Pannunzio, Marcus Seldin, Marian Waterman**

*Disruption of the circadian clock drives Apc loss of heterozygosity to accelerate colorectal cancer*

*Science Advances*

**Xing Dai**

*Defining mammary basal cell transcriptional states using single-cell RNA-sequencing*

*Scientific Reports*

**Maksim Plikus**

*Hedgehog signaling reprograms hair follicle niche fibroblasts to a hyper-activated state*

*Developmental Cell*

**Jennifer Prescher & Michelle Digman**

*Multiplexed bioluminescence microscopy via phasor analysis*

*Nature Methods*

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**NEWLY FUNDED AWARDS**

- **Bogi Andersen and Anand Ganesan** T32 "Interdisciplinary Training Program in Skin Biology" (T32 AR080622)
- **Yongsheng Shi** "mRNA alternative polyadenylation in B cell development" (R01 AI170840)
- **Xing Dai** "Intrinsic and extrinsic control of epithelial tissue stem cell activity" (R35 GM145307)
- **Lan Huang** "Advancing Proteomics Technologies to Decipher the Ubiquitin-Proteasome System" (R35 GM145249)
- **Peter Kaiser** "Developing corrector small molecules for reactivation of mutant p53 in cancer" (R21 CA267495)
- **Weian Zhao** "Spatial proteomics using highly parallel fluorescence hyperspectral and lifetime imaging" (R01 GM147741)
- **Klemens Hertel** "Regulation and impact of alternative splicing in biology and disease" (R35 GM145245)
- **Bogi Andersen** "The Initiation of Vesicant Skin Injury at a Single Cell Level" (R34 AR081502)
- **Wenqi Wang** "Interplay of heavy metal homeostasis and cell growth-related signaling networks" (R01 GM143233)
- NIH Diversity Supplements were awarded to Rémi Buisson's R37 award "Molecular Mechanisms of APOBEC-Induced Mutagenesis in Cancer", Nicholas Pannunzio's R37 Award "Rapid detection of CRLF2 rearrangements in Hispanic Ph-like ALL patients to access diagnosis and relapse" and Christopher Halbrook's R00, "Disrupting macrophage metabolism to reduce immunosuppression and enhance therapy in pancreatic cancer".
- **Angela Fleischman** "Impact of Electronic Nicotine Delivery Devices on clonal hematopoiesis and hematological malignancies" from the UC Tobacco-Related Disease Research Program
- **Olga Razorenova** "Defining the molecular mechanism for targeting oxidative phosphorylation in breast cancer" by the UC California Cancer Research Consortium
- **Francesco Marangoni** "Mechanisms and relevance of Treg expansion after PD-1 blockade in melanoma" by the Melanoma Research Alliance

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**SPOTLIGHTED ACCOMPLISHMENTS**

**Gina Lee awarded Mary Kay Ash Foundation grant to study LAM (a cancer affecting women)**

*Drs. Gina Lee*

is the recipient of the Mary Kay Ash Foundation Award. The Mary Kay Ash Foundation is committed to eliminating cancers affecting women and ending the epidemic of domestic violence.

The $100K award will allow Dr. Lee's lab to study LAM (lymphangioleiomyomatosis) disease, a rare tumor syndrome in women that causes uncontrolled cell growth in the kidney and lung. The team will investigate how estrogen stimulates the production of tumor-promoting proteins in LAM cells. While traditional studies focused on estrogen-dependent gene expression changes, our research will unveil...
Liangzhong (Shawn) Xiang and Gregory Weiss win the Chao Family Comprehensive Cancer Center BIDD Pitch Competition!

On June 9, 2022, the Cancer Center Biotechnology, Imaging & Drug Development program held their Pitch Day event - the culmination of a two part series to address unmet cancer care needs in our community. Each pitch was expected to address a problem shared during a patient and physician panel. Among the funding recipients were Drs. Greg Weiss and Liangzhong (Shawn) Xiang. Funds will be used for startup companies.

Thank you to Dr. Nicholas Pannunzio for judging the competition and for the work he does with the community organizations who participated in the patient panel prior to pitch day.

ICTS Pilot Funding Awarded to Weian Zhao & Wenqi Wang

Dr. Weian Zhao received a Planning Grant Award in Interdisciplinary and Translational research in cancer-related cognitive impairment.

The proposed study will dive deep into the neurobiological underpinnings of radiation- and chemotherapy- neuroprotective effects of BDNF against various forms of cognitive impairment associated with cancer treatment modalities (such as chemotherapy, radiation, and immunotherapy).

Dr. Wenqi Wang received pilot funding for his study: "Developing a small peptide modulator of the Hippo-YAP pathway for cancer treatment."

The ICTS Pilot Studies are designed to support exceptionally innovative and/or unconventional research projects that have the potential to create or overturn fundamental paradigms.

View abstracts here.

CFCCC Scientific Retreat = Strong CRI Representation!

The Chao Family Comprehensive Cancer Center scientific retreat took place September 8-9 in Lake Arrowhead with over 130 attendees in attendance. Over 40 graduate students and postdocs presented their research, including these scholars from CRI affiliated labs:

- Christopher Douglas "LonP1 Drives Proneural-Mesenchymal Transition in IDh1-R132H High Grade Glioma"
- Javier Lepa "Magmas Facilities Metabolic Changes Induced by Stressors in GBM"
- Naomi Lonelli "Neurological sequelae in ID8 ovarian cancer mouse model: p38/JNK MAPK inhibition as a potential therapeutic for cancer-related cognitive impairments and chemotherapy-induced peripheral neuropathy"
- Paige Vail Halas "Investigating the Metabolic Mediators of Breast Cancer"
Metastasis

Shannon Geels " Interruption of CD8: Treg crosstalk in immunogenic melanoma improves the efficacy of PD-1 blockage immunotherapy"

Brian Miller "Development of implantable sensors for disease monitoring and precision drug discovery"

Wyatt Swift-Ramirez "Synthesis of Multifunctional-Antibody Cogugates (MACs) via Three Component Bioconjunction"

Bryan Ivan Ruiz "Glutamine supplementation to suppress colon cancer cachexia"

Ying Yang "SAP-3 is an AMPK inhibitor and controls metabolic homeostasis"

Valeria Rangel "Etiology of Ph-like ALL in Latinx Patients"

Maryam Fattleh "A small molecule corrector of P53 mutants found in Cancer"

Bridget Fortin "Clock Disruption Promotes an Immunosuppressive Tumor Microenvironment"

Gayoung Seo "Hippo kinase MAP4K2 regulates cellular energy homeostasis via autophagy"

Han Han "The hippo pathway kinases LATS1 and LATS2 attenuate cellular responses in heavy metals through phosphorylating MTF1"

Rebecca Vargas "Interactome Analysis of Human Phospholipase D and Phosphatidic Acid-Associated Protein Network"

Liankun Song "Phosphoserine Phosphatase (PSPH) in overexpressed in African American prostate cancer and stroma and regulates cell proliferation"

Vinh Le "Nitidine Chloride suppresses in vivo growth of advanced prostate cancer by targeting AR and AR-V7 degradation through the HSp70/STUB1 ubiquin-proteasome pathway"

Rebecca Lee "Multimodal gene and targeted drug therapy for hematological malignancies"

We would also like to acknowledge CRI faculty affiliates who gave excellent talks or whom facilitated discussion: Michael Demetriou, Aimee Edinger, Young Jik Kwon, Richard Van Etten, Suzanne Sandmeyer, Selma Masri, Chris Halbrook, Angela Fleischman, Anand Ganesan, Mei Kong, Nicholas Pannunzio, and Peter Kaiser.

UPCOMING EVENTS

5th Annual SoCal RNA Symposium
Friday, Oct 21, 2022, 8:30 a.m. to 5:30 p.m.
Location: CALIT2 Auditorium, 4100 E. Peltason Dr., Irvine, CA
The SoCal RNA Symposium is an annual meeting hosted by the UCI RNA Club, featuring a keynote speaker and a number of local speakers from major universities and research institutes from Southern California. More information [here].

ACS Making Strides of Orange County
Join the CRI Team "UCI Cancer Research Institute", and walk with us October 23, 2022
Registration: 8:00 AM : Walk: 9:00 AM
Location: Segerstrom Center for the Arts : 600 Town Center Dr., Costa Mesa, CA
Website: [https://secure.acsevents.org/site/STR?pg=entry&fr_id=103096](https://secure.acsevents.org/site/STR?pg=entry&fr_id=103096)

Cancer Biology Research-in-Progress Mini-Symposium
Date: November 17, 2022; 3:00 - 5:00 pm
Location: 105 Sprague Hall

2022 SoCal Genome Stability Symposium
Date: December 9, 2022
Location: The Cove at UCI Beall Applied Innovation
Website & (Free) Registration: [https://cancerresearch.uci.edu/socalgss/](https://cancerresearch.uci.edu/socalgss/)

Deaminet 2023
4th International Conference on Base Editing – Enzymes and Applications
January 22 – 24, 2023
Location: Palm Springs, CA
Website & Registration: [HERE](https://cancerresearch.uci.edu/socalgss/)

CRI Graduate students have organized a Halloween Party for October 28 from 12:30-2pm in Sprague Hall, Room 105. There will be a costume contest with prizes awarded to "the most authentic", "the most creative", and the "most scientific". We look forward to seeing the creative costumes CRI affiliates come up with! All faculty, staff, and students are invited and lunch will be provided.
ICTS and Office of Research Responsible Conduct of Research Workshop: October 22, 2022
Responsible Conduct of Research (RCR) is increasingly viewed as an essential component of training, regardless of a researcher’s source of funding. The National Institutes of Health (NIH), National Science Foundation (NSF), and U.S. Department of Agriculture (USDA) require certain categories of researchers to receive RCR training. RCR is defined as the practice of scientific investigation with integrity. It involves the awareness and application of established professional norms and ethical principles in the performance of all activities related to scientific research. Register to attend here. Available via zoom or in-person.

UCI Women in Research (WIR): join the Fall 2022 cohort now!
UCI WIR is a grassroots, volunteer-led organization which was developed to support postdoctoral women by providing them with an opportunity to discuss their experiences, uncertainties, and aspirations with other women in a group setting. The program provides peer mentorship in areas unrelated to science and is currently forming a Fall 2022 cohort. More information available here.

Faculty Success Program: deadline February 9, 2023
The Faculty Success Program provides participants with a supportive community committed to accelerating productivity and advancing career goals. UCI faculty have benefited from the Faculty Success Program through:
- Setting achievable personal and professional goals
- Establishing a consistent, healthy, and sustainable daily writing routine
- Developing a publication profile that exceeds the institution’s promotion criteria
- Mastering best-practices in academic time management
- Identifying areas of resistance and developing strategies to move through them
- Nourishing physical and emotional health
- Providing a supportive community to process challenges and celebrate successes
The Summer 2023 cohort will be accepting applications soon for a February 9, 2023 deadline. The program website is available here.

FUNDING OPPORTUNITIES
The Cancer Center is working with SOM to develop a website of cancer-related non-federal and federal funding opportunities. Check it out here.

A few opportunities we would like to highlight:
- **NCI Early Investigator Advancement Program (EIAP) due October 1 - November 1.** The EIAP aims to enhance professional skills, guide preparation of an R01 grant application, provide access to a mentoring and peer network, and grow a community of emerging independent investigators from diverse backgrounds. More info available here.
- **Barry Hoeven Memorial Cancer Research Project funded by the Kure It Cancer Research due October 31.** Kure It Cancer Research was established in 2007 with the goal of becoming the leader in granting funds to cancer researchers conducting innovative research projects to better treat and ultimately cure underfunded cancers. The proposed research project should be a new project intended to support clinical and translational work to advance the treatment approach to kidney cancer that is not receiving significant funding from any other source. More info here.
- **Melanoma Research Alliance:** multiple award mechanisms; next deadline November 2. More info here.
- **Elsa U. Pardee Foundation Grant: next deadline December 15** These grants focus on cancer detection, treatment, cures and new cancer researchers or new cancer approaches. More info here.