

WELCOME

IBC Education Day – Dec 5th 2020

The Morgan Welch IBC program is honored to **host the IBC-International Consortium (IC) Conference** in 2020-21, planned as a tentative in-person event in Dec 2021. To respect and accommodate COVID-19 pandemic restrictions and business travel limitations for most researchers and clinical faculty, the conference schedule was adjusted and **split into 2 sections**, including a IBC **virtual education day held on Saturday, Dec 5th 2020**, followed by an in-person conference tentatively planned for December 5-6th 2021 in Houston prior to the SABCS conference.

IBC International Conference



This year's **IBC Education Day** was a great success, **well attended with 245 participants** including **healthcare providers, patients and advocates**. We were able to provide physicians with CME credit for attending, we hope providing additional incentive to learn about this disease that they might not see routinely in their practices. The morning session consisted of a series of "Why?" talks focused on the clinical management of IBC including all aspects of trimodal treatment and some survivorship topics. Also included in the education day was a summary of basic and translational research in IBC, as well as a broad overview session on clinical trials being held at all the IBC centers (MD Anderson, Dana Farber, Duke, Northwestern and Europe).

Following the zoom webinar, we held a **pilot session for an online poster discussion** using a robotic avatar system (<https://avatarin.com/company/en/>), to discuss posters and communicate without needing to be physically available onsite. Eleven abstracts were received, and posters were sent to Japan where the company Avatarin's headquarters are. The robotic avatars allowed participants to interact virtually to share their research. While this technology was not perfect yet, the team felt it has tremendous potential, and the company plans to release a newer version of their technology in spring 2021.



We will share more information about the 2021 meeting closer to the event, once we are able to make a final decision about whether it can be held in-person or another format is needed.



News - Treatment Approval

On November 13th, 2020, the FDA approved **Pembrolizumab with chemotherapy** for **PD-L1+ metastatic triple negative breast cancer** (mTNBC). This is the second immunotherapy approval in breast cancer, providing additional choices for patients with PD-L1+ mTNBC. The FDA also approved a companion diagnostic test (PD-L1 IHC 22C3) which will be used to select patients for this treatment.



IBC Connect News



Location: **Cancer Hospital of the University of Chinese Academy of Sciences** (Zhejiang Cancer Hospital)

Welcome to **Cancer Hospital of the University of Chinese Academy of Sciences** (Zhejiang Cancer Hospital). Zhejiang Cancer Hospital, located in China is the **third international site to join MD Anderson's Cancer Network**. The hospital has recently **formed a formal IBC multi-team** and is looking forward to work with our team as of January 11th, 2021.

Zhejiang Cancer Hospital became the affiliated Cancer Hospital of the University of Chinese Academy of Sciences and the hosting hospital of the Institute of Cancer Research and Basic Medical Science of Chinese Academy of Medical Sciences on May 9, 2019.

The hospital **offers medical services to cancer patients from Zhejiang province and nearby regions**. The hospital was established in 1963 as one of the four earliest cancer hospitals in China. The hospital also houses the Zhejiang Cancer Research Institute, where scientists and cancer clinicians perform research to find methods for curing cancer. They are very much engaged and willing to learn the best care for IBC.

IBC Learning Academy update



MD Anderson faculty were honored to participate in the **first annual IBC Learning Academy**, a training **course for new IBC advocates**, in collaboration with the IBC Network Foundation. This 1.5 day course covered not only the latest in IBC science, but also selected general advocacy topics including becoming involved in grants, how to critically analyze scientific articles and social media. This course was offered electronically through zoom and recorded for future viewing by those who could not attend live. If you are interested in completing the course, you can sign up at <https://ibclearningacademy.org/>. So far 15 participants have completed the course, and a total of 120 registrants.

Following this, we have started to engage the interested advocates in conversations about moving forward with initial projects. We are thrilled such a large percentage of attendees asked to be placed on our advocate mailing list, and hope that once the social media hiatus is over, we can continue such outreach to these new advocates.

New Clinical Protocol: Learning about the IBC Microbiome

We have recently opened a **new translational protocol** to gather information about the microbiome, with a focus on IBC patients although non-IBC breast cancers are included as a comparison. What is the microbiome you may ask? It turns out our own human cells are vastly outnumbered by non-human cells such as bacteria and fungi by an order of magnitude. These organisms, many of which do not cause us problems, actually may have profound influences on our health such as regulating responses to treatments or altering the biology of the cancer itself. Data is mounting in other cancers about the variety of bacteria correlating with responses to treatments, and we are interested to learn more specifically about these bacteria in regard to IBC. Dr Wendy Woodward's lab is collecting both breast skin swabs from patients with newly diagnosed untreated IBC or other breast cancers as well as fecal samples (to study the gut microbiome). We will also gather clinical information to analyze the associations between the microbiome results and outcomes such as pathological response to chemotherapy. We are also delighted that this is **one of our first collaborative projects with our IBC Connect colleagues**. MD Anderson at Cooper (NJ) has already activated the protocol and enrolled patients, and we are actively working on other sites to be added as well.

Kudos to Dr Le-Petross for contribution to QA meetings

Since August 10th, **our program initiated a weekly QA (quality assurance) meeting** to engage the IBC multidisciplinary team from the TMC campus with providers at the MDA-Houston Area Locations (HALs) and LBJ in Houston in regular discussions to standardize IBC patient management through in-depth case reviews. These sessions have proven to be incredibly valuable for the team to optimize the care of these patients through discussion of imaging findings, clinical trial opportunities and unique features of their treatment plans. To date, **45 patients have been presented** and important clinically relevant recommendations such as additional imaging, clinical trial options and radiation field design changes have been discussed. The program wishes to thank Jie Willey for her assistance with coordinating these meetings as well.



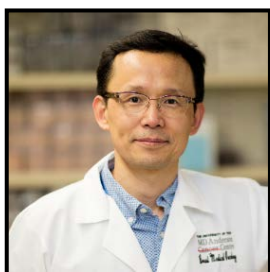
The program wishes to specifically **recognize lead IBC radiologist, Dr Carisa Le-Petross for her outstanding efforts in preparing for the QA meetings**. Dr Woodward nominated her for the division ROC-STaR award with the following statements: "She has pulled up research imaging and identified level III nodes not well imaged on other clinical images and connected PET findings to prior calls suggesting a met is a benign lesion. She reviews in detail the imaging needed for radiotherapy planning, and notes important subtle findings leading to follow up imaging not on the radar that profoundly impacts management. For these advanced cases, Dr's input and especially Dr. Le-Petross who has covered most so far is making a major difference. She is such an asset to our team and patients." Our program agrees and thanks Dr Woodward for taking the time to acknowledge these valuable contributions to the #1 IBC care anywhere in the world.

Recent Awards and Grants

Emily Schlee Villodre, Ph.D., Postdoctoral Fellow, Department of Breast Medical Oncology-Research was awarded 2nd place in the Clinical/Translational Cancer Research Category Oral Presentation at the 2020 Annual Postdoctoral Science Symposium (APSS).

2020 ZTA-IBC FELLOWSHIP AWARDS

This is an **annual travel award** that is awarded to first authors of **meritorious IBC abstracts accepted for presentation at national/international conferences**. Since 2012, the funds for this award have been generously donated by the Zeta Tau Alpha Houston Alumnae Association. We truly appreciate the continued support for this program which contributes to the ability to disseminate our research discoveries more widely. Thank you to Jennifer Reyes, President of Houston Alumnae Association, and Meghan Johnson, VP for this endowment and the opportunities provided for our trainees and junior faculty to engage in IBC related research.



Jangsoon Lee, Ph.D., Assistant Professor, Department of Breast Medical Oncology

Abstract: Identification of novel molecules that enhance neratinib efficacy in triple-negative breast cancer by high-throughput RNA interference

Authors: Jangsoon Lee, Troy Pearson, Huey Liu, Jon A. Fuson, Toshiaki Iwase, Irmina Diala, Lisa D. Eli, Alshad S. Lalani, Debu Tripathy, Bora Lim, Naoto T. Ueno

It is a great honor to receive this fellowship. This is also a great recognition of translational research by Enhanced Drug-development Guidance and Evaluation (EDGE) Preclinical Program teamwork. In collaboration with Puma Biotechnology Inc., we discovered potential therapeutic targets to enhance the efficacy of neratinib in triple-negative and HER2-positive breast cancers, including inflammatory breast cancer. On the basis of the result, we are communicating with collaborators to translate our findings to the clinic. We hope this study will reduce the suffering of inflammatory breast cancer patients.

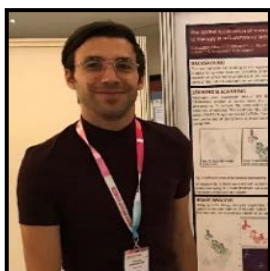


Moises J. Tacam, BS., Research Assistant I, Breast Medical Oncology - Research

Abstract: Mechanism of MEK inhibitor resistance in triple negative breast cancer

Authors: Moises J. Tacam*, Maria Gagliardi, Lakesla Iles, Yuan Qi, Lajos Pusztai, Debu Tripathy, Geoffrey Bartholomeusz, Chandra Bartholomeusz

I have been working in Dr. Chandra Bartholomeusz's lab as a Research Assistant since 2019 after graduating from undergrad at Duke University. Dr. Bartholomeusz and I have worked together as a team on different projects, such as understanding MEK inhibitor resistance in IBC and TNBC cells, testing novel agents that have clinical potential in IBC cells, and working side by side with exceptional collaborators. Receiving this award only motivates me to continue putting my full effort into the projects that we have ongoing, and I can't wait to share our findings in the near future.



Christophe Van Berckelaer, MD, PhD Student, Translational Cancer Research Unit, University of Antwerp

Abstract: The spatial localization of CD163+ tumor-associated macrophages predicts prognosis and response to therapy in inflammatory breast cancer.

Authors: C. Van Berckelaer, C. Rypens, S. Van Laere, K. Marien, P.J. van Dam, P. Vermeulen, C. Colpaert, L. Dirix, M. Kockx, P. van Dam

I am truly honored to be awarded this fellowship, and I would like to thank the Morgan Welch Inflammatory Breast Cancer Research Program and all judges for their trust. This fellowship is a great recognition of the work that my colleagues and I are doing. In our research project, we examine how the tumor immune microenvironment contributes to the aggressive and unique biological features associated with IBC. We hope that the successful accomplishment of this research will improve care for all IBC patients.

Winners: 2019 Boot Walk Funding Award

Our program utilizes the Boot walk- IBC Wranglers funds to award grants to support the advancement of Inflammatory Breast Cancer (IBC) research. The 'Boot Walk Funding Award' requires applicants to **submit a novel 'IBC Concept-Idea or IBC Project Short Application'** for review by a rigorous selection process by a committee of faculty and advocates, to select awardees that will receive **support up to \$5,000**. The awardees present their research findings and impact on the IBC community at the MWIBC Seminar Series meeting.

We are extremely happy to share that five (5) grants were awarded to the below members this year. Congratulations Team!!



Emily Schlee Villodre, Ph.D., Postdoctoral Fellow

Abstract: Targeting PI3K/mTOR to prevent NDRG1-mediated tumor progression and metastasis in inflammatory breast cancer

Authors: Emily Schlee Villodre, Ph.D., Xiaoding Hu, Ph.D., Bisrat Godefay Debeb, DVM, Ph.D.

I believe this project will bring a new light into the role of NDRG1 in IBC. Furthermore, this fund will give me the opportunity to create preliminary data to further improve our understanding of IBC aggressiveness.



Xiaoding Hu, Ph.D., Postdoctoral Fellow

Abstract: Therapeutic efficacy of decorin recombinant protein for inflammatory breast cancer

Authors: Xiaoding Hu, Ph.D., Emily Schlee Villodre, Ph.D., Bisrat Godefay Debeb, DVM, Ph.D.

This funding will help us obtain high-quality DCN recombinant protein and evaluate its treatment in vivo. These findings will facilitate the development of potential combinatorial strategies to treat IBC and establish a preclinical rationale.



Moises Tacam B.S., Research Assistant I

Abstract 1: Role of a novel second-generation MELK-selective inhibitor in inflammatory breast cancer

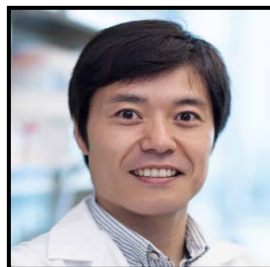
Abstract 2: Determine the biological role of Mcl-1 in inflammatory breast cancer tumorigenicity

Authors: Moises Tacam, BS., Chandra Bartholomeusz, M.D., Ph.D.

The funding received for the MELK project will allow us to evaluate the anti-tumor efficacy of our second-generation MELK inhibitor in vivo. Our collaborator Dr. Kevin Dalby has helped in synthesizing the MELK inhibitor that we are evaluating in vitro. Our hope is that we can use the funds to gather in vivo preliminary data that matches our in vitro results and to use for a future grant proposal.

The funding received for the Mcl-1 project will help in understanding the role of Mcl-1 in IBC as well as aide in continuing to evaluate a Mcl-1 inhibitor. We have seen that this Mcl-1 inhibitor is effective in IBC cell lines in vitro as a single agent drug. We would like to use this fund to go deeper into the mechanistic role of Mcl-1 with this inhibitor. We hope that we can use this to expand our understanding in IBC and its clinical potential in IBC patients.





Takashi Semba, M.D., Postdoctoral Fellow

Abstract: Establish genetically engineered mouse models of inflammatory breast cancer

Authors: Takashi Semba, Ph.D., and Xiaoping Wang, Ph.D.

Focus of my research is on the tumor microenvironment (TME) and stemness of cancer. Recently I am focusing on the identification of the role of c-Jun N-terminal kinases in tumor cells and TME of breast cancer, in particular, triple-negative breast cancer. I am also investigating the role of TIG1 or SMAD4 or on the aggressiveness of Inflammatory breast cancer.



Evan Cohen, Ph.D., Instructor, Hematopathology-Research

Abstract: Towards development of a Circulating Tumor Cells (CTC) gene expression signature for IBC

Authors: Evan Cohen, Ph.D., Gita Jayachandran, Ph.D., and James M. Reuben, Ph.D., MBA

This seed money will be used for the development of a circulating tumor cells (CTC) gene expression signature for IBC. Using advanced technology, we are able to isolate cancer cells that have detached from the tumor and can be found circulating in the blood. This funding will allow us to test a targeted gene expression panel we are developing using the High Throughput Genomics nuclease protection assay to characterize these circulating tumor cells in IBC with the ultimate goal of improving targeted therapy.

Recent Publications and Abstracts

Antigen-agnostic microfluidics-based circulating tumor cell enrichment and downstream molecular characterization. Published by *PLoS One*. **Authors:** Cohen EN, Jayachandran G, Hardy MR, Venkata Subramanian AM, Meng X, Reuben JM. 2020 Oct 23;15(10):e0241123. doi: 10.1371/journal.pone.0241123. PMID: 33095819; PMCID: PMC7584183

Birinapant Enhances Gemcitabine's Anti-tumor Efficacy in Triple-Negative Breast Cancer by Inducing Intrinsic Pathway-Dependent Apoptosis. Published by *Molecular Cancer Therapeutics*. **Authors:** Xuemei Xie, Jangsoon Lee, Huey Liu, Troy Pearson, Alexander Y Lu, Debu Tripathy, Gayathri R. Devi, Chandra Bartholomeusz, and Naoto T. Ueno. 2020 Dec 15;molcanther.1160.2019. doi: 10.1158/1535-7163.MCT-19-1160. PMID: 33323457

NDRG1 Expression is an Independent Prognostic Factor in Inflammatory Breast Cancer. Published by *Cancers*. **Authors:** Emily S. Villodre, Yun Gong, Xiaoding Hu, Lei Huo, Esther C. Yoon, Naoto T. Ueno, Wendy A. Woodward, Debu Tripathy, Juhee Song and Bisrat G. Debeb 2020, 12(12), 3711; <https://doi.org/10.3390/cancers12123711>. PMID: 33321961, PMCID: PMC7763268

10th Annual Postdoctoral Science Symposium

“NDRG1 is a poor prognosis marker and a driver of tumorigenesis and brain metastasis in aggressive breast cancer.” poster presentation by Emily Schlee Villodre, Postdoctoral Fellow in Dr. Bisrat Debeb's lab.

“NDRG1 expression is an independent prognostic factor in inflammatory breast cancer” oral presentation by Emily Schlee Villodre, Postdoctoral Fellow in Dr. Bisrat Debeb's lab.



2020 Annual AACR Meeting Abstracts Presented

Birinapant enhances gemcitabine's anti-tumor efficacy in triple-negative breast cancer by inducing intrinsic pathway-dependent apoptosis presented by Xuemei Xie, Jangsoon Lee, Troy Pearson, Alexander Y. Lu, Debu Tripathy, Gayathri R. Devi, Chandra Bartholomeusz and Naoto T. Ueno.

2020 SABCS

"A picture is worth a thousand words – "classic" inflammatory breast cancer (IBC) appearance associated with lower overall survival" presented by Wintana Balema, Ph.D. candidate in Dr. Wendy Woodward's lab.

"Identification of novel molecules that enhance neratinib efficacy in triple-negative breast cancer by high-throughput RNA interference" presented by Jangsoon Lee, Ph.D, Assistant Professor, Breast Medical Oncology.

Spotlight Poster Discussion 1 – Novel Therapeutics session, Novel Targets section, moderated by Bora Lim, M.D.

News/Events

IBC Wranglers Virtual Boot Walk- November 7th @ 9:15 AM

Team Captains: Jie Willey and Hope Murphy



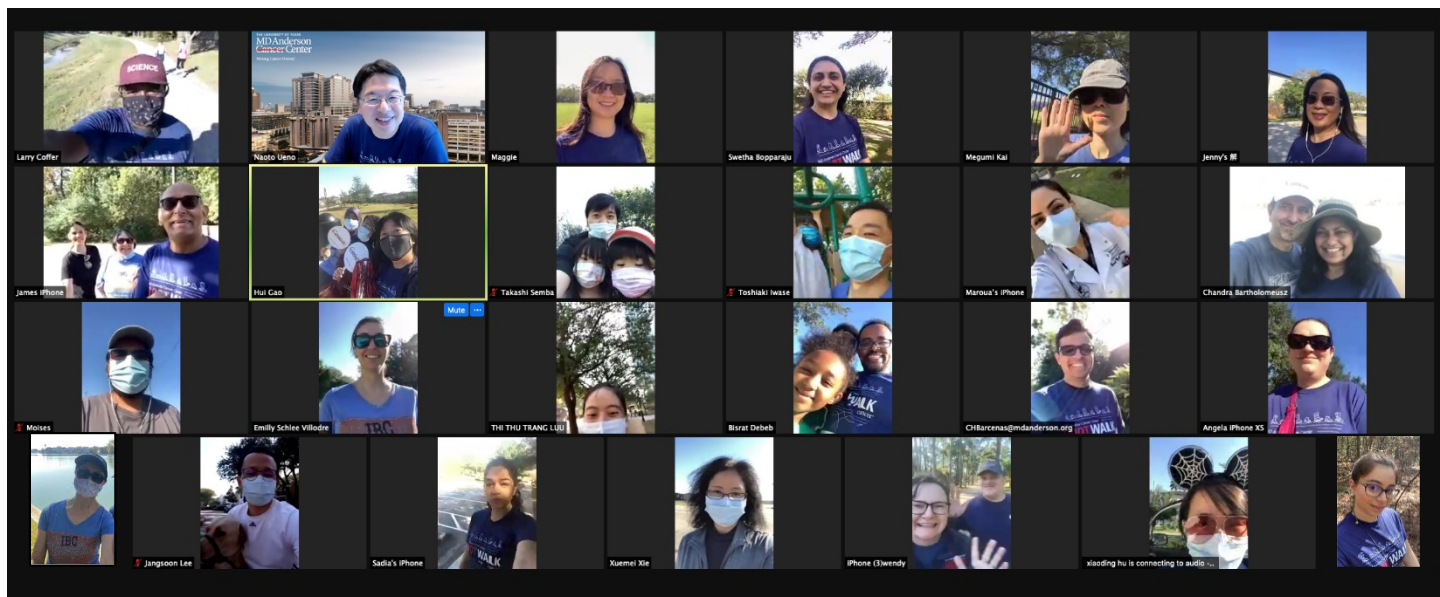
Despite the pandemic and its challenges, the 5th MD Anderson's Boot Walk to End Cancer® event was not canceled and was held on Saturday, Nov 7, 2020. However, this year we did not walk side-by-side on MD Anderson's campus as in prior years, instead **we put on our boots to join 5,000 cancer fighters around the globe and walked the 1.2 miles wherever we were**, on any day and at any time.

This year the Boot Walk was challenging, but surprisingly successful. Due to everything being virtual, it was harder to raise funds, but we were **successfully able to raise \$50,821.60**. This is less than we have raised in previous years, but we were able to raise enough money to be in **4th place**. Our team were highly engaged, with **Dr Naoto Ueno being our top fundraiser**, raising a total of **\$12,444**, and Dr Woodward also raised **\$9,435**. With these totals, Dr Ueno and Woodward were among the top 5 employee fundraisers overall. Congratulations Drs Ueno and Woodward!

We plan to use these funds to continue to support more patients travel expenses while on clinical trials, and to expand more clinical and research collaborations in the community through the IBC Connect program to increase IBC community outreach, awareness, and improvement of early and accurate diagnoses, thus being able to provide the best-standardized treatment for IBC in the community.

We would also like to acknowledge Mr. Forrest Smith who raised \$21,850 for Team Cathy, which will also support IBC research.





Picture: Zoom capture of team members walking on Nov 7th in their neighborhoods to support our Boot Walk

Social Media Update

In recent weeks MD Anderson has temporarily halted the ability of programs such as ours to post on social media sites due to cybersecurity risks. We apologize for the lack of communication regarding this mandate, which was communicated to us with immediate implementation. Therefore, some of our usual interactions have been limited – such as the **casual chats which we initiated in October 2020 and our regular Facebook Live videos**. The casual chats were zoom meetings we held in the early evening, which we opened to any IBC patients or advocates regardless of whether they are MD Anderson affiliated or not. We held our first open forum in October 2020 and had good engagement by a small group of patients who joined. In November, we were pleased to invite Dr Ishwaria Subbiah from the Department of Palliative, Rehabilitation and Integrative Medicine at MD Anderson to share about the supportive care services their department offers and how patients can benefit from early access to them.

Once the social media hiatus is over, we will schedule further chats in the New Year and share the information on our social media. Please note that the previous zoom link is no longer valid – we had to change it for future events. If you wish to receive this information via email and do not use social media, feel free to email ibcp@mdanderson.org to be added to our email list for this information. In addition, if you have any requests for topics/speakers we are grateful to hear from you so that these events can be of most benefit to you.

IBC Program Presentations

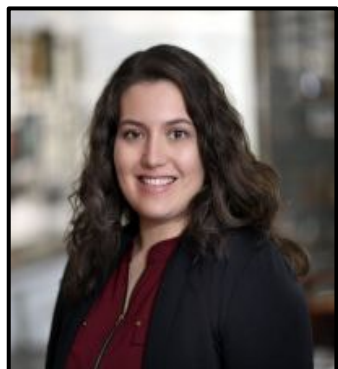
NDRG1 is a poor prognosis marker and a driver of tumorigenesis and brain metastasis in aggressive breast cancer

*Emily Schlee Villodre Ph.D., Postdoctoral Fellow
Department of Breast Medical Oncology - Research*

Enumeration and Molecular Characterization of CTC using the Hitachi Chemical Microcavity Array Liquid Biopsy System

*Evan Cohen, Ph.D., Instructor
Department of Hematopathology- Research*

Guest Speaker(s)



Dr. Gloria Vittone Echeverria, Ph.D.

Assistant Professor – Lester & Sue Smith Breast Center

Baylor College of Medicine, Dan L. Duncan Comprehensive Cancer Center

Department of Molecular and Cellular Biology

Investigating the metabolic evolution of chemoresistance in triple negative breast cancer

Summary: Survival of residual tumor cells following standard chemotherapy treatment in triple negative breast cancers leads to poor prognoses for many patients. We are investigating mechanisms driving metabolic vulnerabilities of residual TNBCs to improve targeted therapeutic interventions

Current Clinical IBC Trials Open for New Patient Enrollment

Neoadjuvant (newly diagnosed):

- 2016-0177 – A randomized phase II study of neoadjuvant Carboplatin/Paclitaxel (CT) versus Panitumumab/Carboplatin/Paclitaxel (PaCT) Followed by anthracycline-containing regimen for newly diagnosed primary triple-negative inflammatory breast cancer
- 2016-0537 – A phase 1b study of neratinib, pertuzumab and trastuzumab with taxol (3HT) in metastatic and locally advanced breast cancer, and phase II study of 3HT followed by AC in HER2 + primary IBC, and neratinib with taxol (NT) followed by AC in HR+ /HER2- primary IBC
- 2018-0002 – Phase II study of combination ruxolitinib (INCB018424) with preoperative chemotherapy for triple-negative inflammatory breast cancer

Adjuvant (after surgery and radiation):

- 2016-0096 – A phase II study of anti-PD1 (Pembrolizumab) in combination with hormonal therapy in patients with hormone-receptor (HR)-positive localized inflammatory breast cancer (IBC) who did not achieve a pathological complete response (pCR) to neoadjuvant chemotherapy
- 2018-0550 – Atorvastatin in triple-negative breast cancer (TNBC) patients who did not achieve a pathologic complete response (pCR) after receiving neoadjuvant chemotherapy, a multicenter pilot study

Radiation:

- SWOG1706 – A phase II randomized trial of olaparib administered concurrently with RT vs. RT alone for inflammatory breast cancer

Metastatic IBC:

- 2014-0533 – A phase II study of anti-PD1 (MK-3475) therapy in patients with metastatic inflammatory breast cancer (IBC) or non-IBC triple-negative breast cancer (TNBC) who have achieved clinical response or stable disease to prior chemotherapy.
- 2016-1096 – A Phase I Study of OTS167PO, a MELK inhibitor, to Evaluate Safety, Tolerability, and Pharmacokinetics in Patients with Advanced Breast Cancer and Dose-Expansion Study in Patients with Triple Negative Breast Cancer.
- 2016-0890 – A phase II study of triple combination of Atezolizumab, Cobimetinib, and Eribulin (ACE) in patients with chemotherapy-resistant metastatic inflammatory breast cancer



2018-0493 – An open-label, multicenter, phase 1b/2 Study of Rebastinib (DCC-2036) in combination with paclitaxel to assess safety, tolerability, and pharmacokinetics in patients with advanced or metastatic solid tumors

We currently are actively developing several new clinical trials for patients with newly diagnosed IBC and patients with metastatic disease and will share more details once they are activated.

Current Clinical IBC Lab Studies:

Currently, we have 11 open clinical IBC laboratory studies which collect blood and tissue for analysis of host and tumor biology and clinical correlates.

Facebook Live (on hold)

Monthly live chats with Drs Naoto Ueno and Angela Alexander are informal opportunities to learn about new discoveries, treatments and ongoing research that relates to IBC and metastatic breast cancer. Questions received beforehand or during the video are addressed by the panelists. Follow our facebook page for event notifications, and/or contact us at ibcp@mdanderson.org to receive an email notification.

 Facebook: www.facebook.com/InflammatoryBreastCancer  Twitter: www.twitter.com/InflammatoryBCa

Newsletter Committee

Marcy Sanchez Angela Alexander

Swetha Bopparaju Emily Schlee Villodre

Jie Willey Hope Murphy Naoto Ueno

