

**Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange**

## Leadership Growth Activities

ASCP, working in collaboration with Q Synthesis, developed the Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange. This peer-to-peer learning collaborative enabled pathologists to develop their leadership skills and serve as effective change agents within their own institutions.

As part of the program, each learner developed and implemented a “leadership growth activity” to improve HER2 testing and reporting in breast cancer.

To learn more about how the participants implemented their action plans, please view the project summaries below.

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**Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange**

Apeksha Agarwal, MD at UT Health San Antonio

<b>Background</b>	HER2 IHC is interpreted by our breast pathologists. I would like to use this opportunity to disseminate information about the latest updates in HER2 testing and interpretation.
<b>Aim/Goal</b>	Educate others about HER2-low and how HER2 interpretation is evolving in breast cancer.
<b>Action Plan</b>	I will deliver a lecture to those in my organization regarding the latest updates on HER2-low, changes associated with HER2 interpretation, and the effect this will have on breast cancer treatment.
<b>Reflection</b>	This project helped me to act proactively. I saw the opportunity, approached the director of surgical pathology, and communicated the importance of the topic and how this would benefit residents, fellows, and attendings.

Robin Baker, MD at Kaiser Permanente

<b>Background</b>	Four pathologists in our group evaluate breast cancer biopsies for approximately 6,000 patients/year. Interobserver concordance at scoring HER2 at low levels of expression has not been previously assessed for our department.
<b>Aim/Goal</b>	Determine our department's interobserver concordance in scoring HER2 at low levels of expression.
<b>Action Plan</b>	A study set of 20 slides was compiled. Each pathologist reviewed and scored the slides. Interobserver concordance score was assessed.
<b>Reflection</b>	Intradepartmental concordance was much better than expected at nearly 100%. A larger study set to more rigorously test cases that are close to the threshold of score 1+ would be an improvement. This project led me to proactively communicate with department members by bringing up the topic in meetings, sending emails about the importance of HER2-low, and providing links to learning websites. In advance of distributing the study set of slides, these actions helped increase readiness of pathologists to participate in the project.

**Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange**

Martin Chang MD, PhD at the University of Vermont

<b>Background</b>	The diagnosis of HER2-Low Breast Cancer requires valid and reproducible IHC staining and interpretation. Approaches to maximize reproducibility are needed.
<b>Aim/Goal</b>	Enhance awareness among our multidisciplinary team about the challenges of IHC interpretation and develop mitigation measures.
<b>Action Plan</b>	We will audit our proficiency testing surveys to estimate HER2 agreement levels on the same stains/slides. We will use this data to inform our approach to future testing. This project will involve our histology lab and director, breast pathology team, breast tumor board.
<b>Reflection</b>	We achieved enhanced lines of communication between team members, increased awareness of how HER2-low is diagnosed, and formed a plan for future testing starting with consensus review of HER2-negative cases when trastuzumab-deruxtecan treatment is being considered. We learned that IHC concordance remains a challenge, that the classification of HER2-low is already being put into practice, and that our role as pathologists is highly valued in this process. In the future, we might perform our audit of IHC agreement differently, as proficiency testing samples are highly selective and potentially biased. This activity reinforced the value of multidisciplinary communication and data-driven decision making, particularly when managing expectations around change.

Shweta Chaudhary, MD at Northwell Health

<b>Background</b>	The FDA has approved a new therapy for advanced “HER2-low” breast cancers.
<b>Aim/Goal</b>	Educate clinicians and pathologists in the community about the concept of HER2-low breast cancer diagnosis and treatment plans. Focusing on pathologists and clinicians working in community-based rural settings.
<b>Action Plan</b>	Educate pathologists and clinicians using opportunities such as tumor boards and sign outs.
<b>Reflection</b>	I found that the topic of HER2-low was new to many pathologists and clinicians. By proactively bringing up this topic, this helped me strengthen communication with them and other members of the entire cancer care team. I believe this also helped to strengthen team spirit and increase trust between clinicians and pathologists.

## Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange

Martha R. Clarke, MD at St. Clair Health

<b>Background</b>	In light of the development of new therapeutics for advanced breast cancer that utilize HER2 as a vehicle to bring cytotoxic drugs into the cell, lower levels of HER2 expression are now an important parameter for pathologists to report, as these patients may be eligible for newer therapies and clinical trials.
<b>Aim/Goal</b>	Inform and educate our pathologists about the new therapeutics and the new approach to reporting HER2.
<b>Action Plan</b>	We discussed the concepts of HER2-low breast cancer at our department meeting. I distributed education materials, including videos and literature on HER2-low advanced breast cancer.
<b>Reflection</b>	I was able to accomplish this with the assistance of the information provided by the ASCP Trailblazers Program. I found the project to be very useful in keeping our department up to date. The Trailblazers program allowed me to focus on the issue and develop a clear understanding of this therapeutic progress.

Elizabeth Dellers, MD at Lehigh Valley Health Network/HNL Lab Medicine

<b>Background</b>	HER2-low is a relatively new concept, posing challenges that need to be understood by pathologists and clinicians.
<b>Aim/Goal</b>	Provide education for pathologists and clinicians on the concept of HER2-low, with attention to the challenges posed. Borderline cases 0 vs 1+ to be shared with colleagues to adjudicate.
<b>Action Plan</b>	I prepared a talk utilizing some of the ASCP slides as a starting point and adding pathologist-specific information from the literature. I scheduled a date to deliver this presentation with my pathology group with the goal of increasing knowledge among the group as a whole and to encourage collaboration among those who read HER2 IHC to improve consistency of reporting. I also plan to present some of this content to clinicians during a breast cancer tumor board.
<b>Reflection</b>	I learned about the HER2know.com website and found it to be a valuable resource. I also understand the challenges that we will face for consistent reporting and am aware of other strategies being investigated as potentially better assays for HER2-low (RT-PCR, use of AI with digital pathology, etc.). I suspect that follow-up discussions and meetings with the pathologists reading HER2 IHC will be necessary to achieve our best consistency. We will also be discussing a statement to place in the report alerting clinicians to the fact that there may be therapeutic options available for some patients with HER2-low. This work helped me reflect on how I prioritize projects that will directly impact patient care.

### Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange

Jessica Forcucci, MD at the Medical University of South Carolina

<b>Background</b>	Challenges with histotechnologist staffing have led to delays and irregular delivery of breast slides impacting patient care and resident education.
<b>Aim/Goal</b>	Collect data on neoplastic breast resection specimens to serve as baseline for future work-flow improvement and collaboration.
<b>Action Plan</b>	Collect data using Epic SlicerDicer on neoplastic breast resection specimens from May to July 2022. Format data for presentation to Anatomic Pathology and Histotechnology managers.
<b>Reflection</b>	While obtaining the granularity of data that I desired was challenging, I was able to gather case and block counts, talk with personnel involved in slide production, and observe trends over the past three months. I plan to share this information with the managers so that we may collaborate on a solution to improve regularity and turnaround time for slides. This work helped me develop skills in the areas of conflict resolution, change management, collaboration, strategic thinking, and operations.

Mica Grantham, MD at Howard University Hospital/Howard University College of Medicine

<b>Background</b>	There is an opportunity to provide HER2 education, including HER2-low, to residents who may not regularly see HER2 IHC, and to faculty who may not be aware of the emerging HER2-low category.
<b>Aim/Goal</b>	Provide HER2 education with a focus on HER2-low.
<b>Action Plan</b>	I started by giving a lecture to residents on HER2 interpretation, the emergence of HER2-low as a category, what it means and how it evolved. I then walked them through an interactive HER2 interpretation activity using images from the HER2Know website and CAP/ASCO guidelines. I chose to start with the residents, and I plan to give a lecture for the faculty in the coming months. Schedule conflicts did not allow faculty to attend the session I did for the residents. However, I was able to discuss the importance of HER2-low within the context of HER2 interpretation, with the AP leadership.
<b>Reflection</b>	I achieved my intended result for the education component. Additionally, HER2 IHC is a send-out test for us (with interpretation), and I have started the conversation with AP leadership about bringing HER2 interpretation in-house. I have started working on a second mini project that involves creating a plan to bring interpretation of HER2 IHC in-house. This includes details surrounding appropriate training and timeline and I have been able to justify the rationale for this and get people excited about it through the education I provided about HER2 interpretation and the emergence of the HER2-low category. I have been able to provide valuable education about a new topic, which has been empowering, and has strengthened my own knowledge. Now I have the opportunity to create something within the department that will help our pathologists deliver better care, educate our residents and provide ongoing education to all involved.

**Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange**

[Pablo Gutman, MD at Holy Cross Health](#)

<b>Background</b>	There is limited knowledge of the relevance of HER2-low breast carcinoma in the non-academic, community hospital setting.
<b>Aim/Goal</b>	Enable our pathologists and cancer clinicians to have a broader understanding of the relevance of HER2-low status and its clinical implications.
<b>Action Plan</b>	I shared information about HER2-low during staff meetings and tumor board, where surgeons, medical oncologists and radiation oncologists were present.
<b>Reflection</b>	I believe there is better awareness now of the relevance of knowing about HER2-low status, especially after the FDA approval of targeted therapy for this indication. I learned that being able to discuss this in a multidisciplinary setting helps in getting the message through. In the future, it may help to reach out to someone in an academic center who may be willing to share more in-depth knowledge of new tests and treatments. This project helped to confirm that bringing topics up for discussion in a multidisciplinary setting is a great way to engage physicians.

[Jigna Jani, MD at Veterans Health Administration, Atlanta VAMC](#)

<b>Background</b>	Cancer care is often fragmented. At our facility, we are not equipped to perform breast biopsies or lumpectomies. Only mastectomies are performed at our location. It often takes considerable time to obtain prior biopsy slides and biomarker test results from outside institutions.
<b>Aim/Goal</b>	Streamline processes of care when patients are diagnosed with breast cancer, undergo HER2 testing, and receive medical therapy.
<b>Action Plan</b>	We formed a breast care coalition group consisting of representatives from pathology, radiology (from a different VA hospital), medical oncology, women's health, surgery, and nuclear medicine.
<b>Reflection</b>	As a result of our efforts, we improved processes when requesting slides to ensure we receive them in a timely fashion before surgery. All these breast cancer cases are discussed before and after surgery. We now have input from a mammographer from a different VA facility for clinical radiology pathology correlation in each and every case. By working on this project, I reflected on ways to demonstrate leadership by recognizing the fundamentals of working in a team, bringing up issues so that the group may discuss them, and managing and validating each other's ideas. These are critical team-based factors that lead to success within the organization.

## Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange

Patricia Kim, MD at Pennsylvania State University, Hershey Medical Center

<b>Background</b>	There had not been any discussion about 'HER2-low' among my pathology colleagues or with clinicians.
<b>Aim/Goal</b>	I aim to bring awareness to my colleagues about this important, new category and address the inevitable challenges it raises in HER2 IHC.
<b>Action Plan</b>	It was necessary to bring our AP division chief into the discussion since it would significantly affect our workflow. It was also essential to hear from the clinicians and get their perspectives. A presentation at Breast tumor board seemed to be the most practical, efficient way to have this discussion.
<b>Reflection</b>	The presentation brought pathologists and clinicians together and fostered lively discussion. Pathologists had to work as a group to decide how HER2-low cases would be handled. I recognized that it can be difficult to introduce new concepts to colleagues. I found that it was very helpful to know who I could approach for help. Communicating through email messages was not nearly as effective as engaging in active in-person discussion. This project taught me to be patient, as new ideas may not be immediately accepted by others. I also learned to be proactive and to embrace new challenges.

Zaibo Li, MD, PhD at The Ohio State University

<b>Background</b>	HER2 IHC is usually manually evaluated by pathologists in current practice. This manual evaluation is subjective with interobserver variability, especially for the HER2-low breast carcinomas. Quantitative digital image analysis (QDIA) has emerged as a new scoring method to assess HER2 IHC by objectively evaluating cell membrane connectivity in a quantitative manner.
<b>Aim/Goal</b>	To validate and implement HER2 QDIA as a quality measure to evaluate low HER2 protein expression in breast cancers.
<b>Action Plan</b>	We will review current available QDIAs and select Visiopharm HER2 algorithm for this study. We will collect a study cohort of HER2 IHC slides which has a wide range of HER2 protein expression. HER2 IHC slides will be assessed by using automated QDIA and manually by at least 3 pathologists and the results will be compared using statistical analysis.
<b>Reflection</b>	We selected Visiopharm HER2 algorithm for this study after review. We have compared QDIA results with pathologists' read and found excellent correlation in a cohort of over 600 HER2 IHC slides. In addition, QDIA achieved significantly higher reproductivity than pathologists. This experience provided an opportunity to make plans for future, demonstrate our technical expertise and lead a study project to clinical practice.

**Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange**

Olivia Ludwig, MD at St. Elizabeth's Hospital

<b>Background</b>	The DESTINY-Breast04 trial demonstrates a new therapeutic modality for previously treated HER2-low metastatic breast carcinoma.
<b>Aim/Goal</b>	Educate myself, fellow pathologists, breast surgeons, and oncologists regarding HER2-low reporting and the new treatment option trastuzumab-deruxtecan in such breast carcinomas.
<b>Action Plan</b>	Develop a self-guided PowerPoint presentation to share with colleagues.
<b>Reflection</b>	I developed a PowerPoint presentation, I learned more about the algorithm of breast carcinoma treatment, about trastuzumab-deruxtecan specifically, and the roll I need to play as a pathologist in HER2-low reporting. I increased my knowledge base regarding breast carcinoma treatment, including cutting-edge therapy, and was able to share that information with peers. This allowed me to be viewed as a point of reference/leader in this arena by my physician colleagues.

Twisha Oza, MD at University of Tennessee Health Science Center (UTHSC)

<b>Background</b>	Taking into consideration the significant clinical benefits of novel therapies in “HER2-low breast cancers”, the challenge is in the interpretation of cases showing heterogeneity in HER2 expression.
<b>Aim/Goal</b>	Gain a better understanding of the biology of these tumors and gain in-depth knowledge with immunohistochemistry.
<b>Action Plan</b>	Discuss the clinical implications of HER2-low with our oncologists and residents. Share knowledge about recent clinical updates on this topic.
<b>Reflection</b>	Through the ASCP education resources, I gained in-depth knowledge about HER2-low and ways to improve IHC interpretation. I also found ways to increase communication with clinicians and to discuss “HER2-low” patient cases. This project gave me the opportunity to expand my education, develop better communication with oncologists, and increase awareness about this topic among other team members.

**Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange**

Marilin Rosa, MD at Moffitt Cancer Center

Lamees Saeed, MD at Moffitt Cancer Center

<b>Background</b>	In light of the approval of fam-trastuzumab-deruxtecan-nxki for the treatment of patients with unresectable or metastatic breast cancer for HER2 low (IHC 1+ or 2+ and negative by ISH) patients, we conducted a QA project to evaluate consistency in the interpretation of this new category.
<b>Aim/Goal</b>	To ensure consistency in reporting HER2-low category; to identify major discrepancies if present.
<b>Action Plan</b>	Dr. Marilyn Rosa, Head of Breast Pathology and Dr. Lamees Saeed, current Breast Pathology Fellow pulled 21 prior cases with known HER2 status (0, 1+ and 2+), captured high resolution digital images of the best representative area of hematoxylin and eosin slides as well as corresponding HER2 immunohistochemical stain (IHC) then circulated them in a survey format among the breast pathology faculty (6 members) at Moffitt Cancer Center to ensure agreement is established in scoring HER2.
<b>Reflection</b>	With 100% response rate from our team of pathologists and using the final report as a gold standard, our results showed 100% concordance in reporting HER2 0 status. In the 1+ cases, 58% were consistent as 1+, 32% were called 2+ and 8% were interpreted as 0. For the 2+ cases, 60% were scored the same, 36% were counted as 1+ while 4% were labeled as 0. This survey reveals that a slight challenge exists when differentiating 1+ and 2+ while totally negative (0) cases are readily recognized. This difficulty can be overcome with training and following the established guidelines. In addition, with reflexing to ISH testing, the 2+ cases that do not show amplification would stay in the HER2-low category. Collaboration between senior faculty and trainees under the umbrella of the ASCP HER2 Trailblazers emphasizes the role of pathologists as patient advocates where all team members come together to ensure accurate reporting of HER2 assay results and lead the way to optimal patient care.

Daman Samrao, MD at University of Nevada Las Vegas, Sonic Healthcare USA

<b>Background</b>	Pathologists need to be better trained to identify low levels of HER2 expression in breast cancer. The development of a new drug targeting “HER2-low” breast cancer makes this clinically important.
<b>Aim/Goal</b>	Assess and improve concordance between pathologists in practice groups who read out HER2 IHC for 0 and 1+ scoring.
<b>Action Plan</b>	Identify 20 cases each of previously scored 0 and 1+ HER2 IHC. Have each pathologist who interprets HER2 IHC re-score the cases; double scope and resolve any discrepant scores.
<b>Reflection</b>	The project took longer than I anticipated and required more education regarding its importance. Overall, I feel the project was successful and helped me develop my communication and management skills.

## Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange

### Gloria Sanders, MD at Riverside Health

<b>Background</b>	HER2 reporting has historically been deemed positive or negative. There is now a clinically relevant reason to report the IHC scores as 0, 1+, and 2+ so that patients may receive appropriate therapy.
<b>Aim/Goal</b>	Achieve excellence in complete HER2 reporting. Include the IHC score where oncologists can easily find the results.
<b>Action Plan</b>	Pulled 50 cases where HER2 staining was present but reported as negative. Pathologists interpreted the results and learned how to improve IHC scoring from these cases. We reported these findings to oncology clinicians.
<b>Reflection</b>	We achieved our intended results and our pathologists learned how to better interpret and report HER2 results. By improving this type of communication with oncology clinicians, eligible patients may be identified for appropriate therapy.

### Elisabeth Shearon, MD at Franciscan Health

<b>Background</b>	“HER2-low” is a new categorization of HER2 status with implications for treatment.
<b>Aim/Goal</b>	Facilitate communication across the Breast Cancer Committee members (radiologists, surgeons, oncologists, pathologists); increase awareness about HER2-low.
<b>Action Plan</b>	Presentation of HER2-low categorization.
<b>Reflection</b>	Presentation was well-received and facilitated good discussion. Breast Cancer Committee is very collaborative; members are open to new information and updates on testing. Pathologists are integral members of the patient care team; our input is invaluable. The more that pathologists contribute, the stronger our role becomes.

### Kate Serdy, MD at Allegheny Health

<b>Background</b>	New HER2-low data provides an opportunity to optimize the diagnosis and clinical management of our patients with advanced breast cancer.
<b>Aim/Goal</b>	Educate our team (medical oncologists, radiation oncologists, surgeons, pathologists, nurse navigators) regarding the impact that the recent data on HER2-low will have on their daily practice and clinical decision-making. Prepare them to have educated discussions with patients regarding this topic.
<b>Action Plan</b>	Deliver a mini-series of educational content at our weekly breast MDC, outlining the existing literature on the biology of HER2-low tumors, the biology of anti-HER2 agents, the potential impact of trial data on clinical management, and scenarios that require future study (eg, HER2 heterogeneity).
<b>Reflection</b>	I received positive feedback from on this timely topic and I look forward to ongoing discussions with colleagues.

**Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange**

Kamaljeet Singh, MD at Brown University

<b>Background</b>	Unknown concordance in HER2 IHC scoring in breast cancer within the department.
<b>Aim/Goal</b>	Assess and improve concordance in HER2 scoring.
<b>Action Plan</b>	Work with 7 breast pathologists to study the concordance in 30 cases of breast cancer. This will be followed by a teaching session and a follow up concordance test.
<b>Reflection</b>	The study remains in progress, but this has taught me to build a research project for a junior faculty member.

Gulisa Turashvili, MD, PhD at Emory University

<b>Background</b>	Tumors with low HER2 expression are subject to interobserver variability as visual quantification of low levels of protein expression is challenging. This creates an opportunity to assess interobserver agreement of HER2 IHC (immunohistochemistry) scoring within the same pathology department (ie, the same IHC staining protocol).
<b>Aim/Goal</b>	To assess interobserver variability for invasive breast carcinomas reported as HER2 1+ and 2+ by immunohistochemistry.
<b>Action Plan</b>	Identify invasive breast carcinomas reported as HER2 1+ and 2+ by IHC. Breast pathologists within the department will assess the same cases visually.
<b>Reflection</b>	This work remains in progress. This has helped me explain the issue of interobserver variability to colleagues and offer solutions to increase interobserver agreement.

**Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange**

Cigdem Ussakli, MD, FASCP, FCAP at PhenoPath a Quest Diagnostics company

<b>Background</b>	The new category “HER2-low” is not well understood by many pathologists and oncologist.
<b>Aim/Goal</b>	I interact closely with many pathologists who may have questions about HER2-low. As a molecular genetic pathologist working in a reference lab, I wanted to use this project to educate, train, and test myself on “low HER2” concept and categorization, identify any issues that might come up with our current processes such as reporting, make changes in our local practice - if needed-, and educate other pathologists and oncologists that we serve.
<b>Action Plan</b>	My initial aim was to really understand the concept of HER2-low. I decided to take on a leadership role to prepare us, the pathologists in my local lab, for what might be on the horizon. I started sharing the information with the solid tumor pathologists in my group and then I extended these discussions to our local CRO team since I wanted to inquire about any potential collaborations and/or clinical trials (not only in breast but other organ systems). Following the ASCO meeting and FDA approval, I felt a greater urgency to act on this. I asked my medical director/leadership to be part of the Breast Resource Committee and gave a presentation to this committee. The discussions from that meeting and some of my suggestions (including distinction of score 0 from score +1) were incorporated into a summary and sent to the resource committee members. Furthermore, I informed the group of the educational resources such the “her2know” website, ASCP’s prior webinars on this topic, the CAP Today article as well as an upcoming webinar series organized by USCAP.
<b>Reflection</b>	My involvement with this national resource committee provided representation of our local lab (PhenoPath) for the first time. Through this interaction, I got to interact with many more solid tumor/breast pathologists I had never met. They also got to know me, learn about this project, and hopefully they will use me as a resource for further related projects and questions. I was able to get direct feedback from the breast pathologists during our committee meeting on a couple of items such as reporting and commenting on eligibility for specific new drugs. My participation in this project and breast resource committee facilitated a new antibody validation project for triple negative breast cancers, and I got to lead that validation in our lab. I gave a didactic on the concept of “low HER2” and this project provided me with the encouragement to get out of my comfort zone and I felt very empowered to lead. It was a great opportunity to discuss the importance of the terminology we use in our reports (not only for HER2 but also for other biomarkers) and the scientific evidence behind it.

## Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange

Jin Xu, MD at University of Wisconsin–Madison

<b>Background</b>	A new type of anti-HER2 therapy is available and shows promising clinical data for patients with breast cancer showing low levels of HER2 expression. The accurate interpretation of HER2-low (IHC 1+ and 2+ with ISH-negative) is becoming critical.
<b>Aim/Goal</b>	Address the degree of inconsistency in HER2 IHC interpretation between individuals and even between different attempts within the same individual. We aim to develop a practical and objective way to increase the reproducibility of this assessment.
<b>Action Plan</b>	We will conduct a review of HER2 (1+) cases by 9 breast pathologists at different experience levels to assess interobserver agreement. The same slides will be analyzed by a digital imaging analysis (DIA) system. Results of both modalities will be compared with each other and correlated with HER2 mRNA results.
<b>Reflection</b>	We will also use the HER2 intensity in benign breast tissue as an internal control aid in our interpretation of HER2 (1+) staining, both with our pathologist reviewers and with our DIA analysis, with the ultimate goal of establishing an algorithm for clinical use. This experience is a source of motivation to keep us updated in our field and to creatively solve practical, real-life daily practice problems in a way that will be useful for both our pathology and clinician colleagues. Ultimately, this will be beneficial to our patients.

Mariam Youssef, MD at MetroHealth

<b>Background</b>	Pathologists and residents need to know about the latest clinical advances in HER2-low breast cancer.
<b>Aim/Goal</b>	Teach residents about HER2 IHC testing in breast cancer, discuss criteria used for interpreting, and explain the importance of HER2-low.
<b>Action Plan</b>	Developed a presentation to review the latest updates on HER2-low breast cancer. Discussed with staff on how to report HER2 and encouraged them to communicate with clinicians and discuss how they need it reported.
<b>Reflection</b>	As a breast pathologist, just out of training, this opportunity helped me work on my leadership skills by educating residents about HER2 interpretation and anticipating the implementation of a future plan to report a new and emerging category within my group.

## Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange

Teresita Zdunek, MD at Ascension Illinois

<b>Background</b>	There is a need to update clinicians about HER2-low breast cancer.
<b>Aim/Goal</b>	Increase understanding of HER2-low from a pathology perspective.
<b>Action Plan</b>	Educate colleagues by providing an overview of HER2-low at a tumor board conference. Oncologists, surgeons, residents will be present.
<b>Reflection</b>	The discussion was understood and appreciated by the clinicians. Our standardized biomarker report has been updated and Negative (1+) has been changed to 1+ (HER2-low), and references cited. I learned that the clinicians depend more on the pathologists to help guide and implement new changes around the classification of tumors and implementation of new guidelines. A team approach is needed with fast moving changes in the medical field of oncology. Our role on the cancer team has always been recognized and more so now.

Gloria Zhang, MD, MPH at Cleveland Clinic

<b>Background</b>	HER2-low is a newly defined entity and the FDA has approved a therapy targeting this subset of breast cancer.
<b>Aim/Goal</b>	Improving my understanding about HER2-low and provide education to fellow pathologists and other care providers.
<b>Action Plan</b>	I began by educating myself by viewing several presentations about HER2-low breast cancer. Then I started a project including 314 consecutive breast cancer cases and studied the incidence, clinicopathological features and Oncotype Dx scores in the HER2-low group.
<b>Reflection</b>	Through this program, I learned more about this subset of breast cancer and conducted a research project. This also motivated me to share knowledge with my colleagues, to understand the issues with HER2 IHC interpretation, and to find solutions.

### Pathology Trailblazers: HER2-low Breast Cancer Collaborative Learning Exchange

Huina Zhang MD, PhD at the University of Rochester

<b>Background</b>	The newly-proposed concept of “HER2-low breast cancer” and the FDA-approval of T-DXd in advanced HER2-low breast cancers provide great opportunities for patient care and research. However, there are challenges and unanswered questions on HER2-low breast cancers
<b>Aim/Goal</b>	To know more about HER2-low breast cancers and to educate pathologists and clinical providers about this new concept.
<b>Action Plan</b>	Conduct research projects, as well as give lectures and write update review articles on HER2-low breast cancers.
<b>Reflection</b>	I finished a research project on understanding the limitations of using IHC as the primary method to identify HER2-low breast cancers. I also gave a lecture to pathologists about this topic. I published an updated review on HER2-low breast cancers. By joining the ASCP Trailblazers program, I understood the unmet needs on this topic from the view of other pathologists, which greatly help me shape my research direction. More importantly, it triggered me to give lectures and write review articles on this topic and help pathologists better understand this new concept. This program definitely helped my leadership growth.

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<b>Background</b>	Anti-HER2 therapy has been widely used in different types of solid tumors.
<b>Aim/Goal</b>	Optimize HER2 IHC on different types of solid tumors. We may find ways to improve how we perform HER2 IHC by evaluating what we are doing with different tumors.
<b>Action Plan</b>	I have validated the HER2 IHC on upper GI (esophagus, GEJ, and stomach), pancreaticobiliary, and colon cancers. Next, I plan to validate it on lung cancers. I have been and will continually work with my pathology colleagues, clinicians, and our residents on this project. By comparing how we perform HER2 IHC on different types of tumors, we may find ways to optimize our testing process for breast cancer. We have been doing HER2 IHC on all the GI cancers at the advanced stages. HER2 IHC has a much shorter turnaround time than NGS, which is very helpful for clinical decision-making.
<b>Reflection</b>	This project has helped me compare how HER2 IHC is being performed for different types of tumors. This information can help me and my colleagues as we diagnose different cancers. This work has also helped me build stronger relationships with the oncologists. Residents have gotten involved in the IHC validation process.