

On Masterpieces and Breast Cancer Research

The artist Henri Matisse captured the essence of a problem we often have in science—those landmark discoveries that benchmark the type of progress we think we should be continuously making. This edition of *CCR Focus* presents instead an alternative view of discovery and progress, one in which a steady expansion of our understanding of the biology of breast cancer has led to progress on multiple fronts. In the past decade, we have come to see breast cancer not as one disease but as comprising multiple diseases, a significant step over the 1970s era classification as estrogen receptor (ER)–positive or –negative. A breast cancer diagnosis of luminal A or B, HER2, basal-like, or normal-like subtype may eventually be more important than ER status. Notably, the gene expression profiles of all the molecular subtypes can be found within the triple-negative category, and additional profiles identified, as discussed by Turner and Reis-Filho. To reach its potential, such classification needs, of course, separate therapies for each subtype. Tabchy and colleagues note that the PIK3CA mutation is most common in ER⁺/luminal tumors, highlighting a potential target in that subset for which drugs are already in development. Progress in other areas is discussed as well—Bardia and Baselga argue for pathologic complete response as an early endpoint in neoadjuvant therapy to evaluate new therapies. Two articles put renewed emphasis on the tumor microenvironment. Zhang and colleagues look at potential targets in the microenvironment that support tumor dormancy, allowing metastatic disease to emerge years after all evidence of the tumor has disappeared. Disis and Stanton move beyond the evidence that the infiltration of a breast tumor with immune effector cells portends an improved outlook to show how we might engage the immune system in breast cancer therapeutics. Lin and colleagues discuss the problem of central nervous system recurrence in breast cancer. This represents an emerging problem that can be directly tied to success in controlling or eradicating systemic disease. Introduced by our expert Guest Editor, Carlos Arteaga, these articles highlight the many challenges that remain in developing truly effective breast cancer treatment. For now, the collective efforts in breast cancer represent a work in progress. Someday, these advances will constitute a masterpiece.

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I was very embarrassed when my canvases began to fetch high prices, I saw myself condemned to a future of painting nothing but masterpieces.

—Henri Matisse



Figure 1. Cambodian postage stamp, issued in 1999, showing *Crockery on a Table* by Henri Matisse (1869–1954), © Blue Moon/Fotolia.

Clinical Cancer Research

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