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## “Prognostication in young and elderly breast cancer patients”

### Propositions

1. The immune system seems to play a dual role in breast cancer progression; tumor immune attack leads to cancer elimination, but contemporarily results in tumor sculpting and selection of immune escape variants. (This thesis)
2. Tumor immune subtypes reflect a stable, validated, prognostic variable with high discriminative power, based on solid biological rationale. (This thesis)
3. Data on biomarkers as found in younger breast cancer populations cannot simply be extrapolated to the elderly. (This thesis)
4. Biological differences between elderly and young breast cancers are found in varying distributions of tumor types and differing host microenvironments. (This thesis)
5. Single biomarker studies are more prone to bias and confounding.
6. Underlying biological rationale should be as important as p-values and hazard ratios in the evaluation of biomarkers.
7. Statistical certainty is an acceptance of a certain amount of uncertainty.
8. It is not breast cancer awareness, but research that has potential to lead to better treatment options for breast cancer patients.
9. “It is not the most intellectual of the species that survives; it is not the strongest that survives; but the species that survives is the one that is able best to adapt and adjust to the changing environment in which it finds itself.” (Leon C. Megginson, *Lessons from Europe for American Business*, Southwestern Social Science Quarterly 1963)
10. “It was when the more fashionable doctors in Italy, in imitation of the old Romans, despising the work of the hand, began to delegate to slaves the manual attentions they deemed necessary for their patients... that the art of medicine went to ruin.” (Andreas Vesalius, *de Humanis Corporis Fabrica* 1543)
11. “We adore chaos, because we like to produce order.” (Maurits C. Escher, 1898-1972)
12. “Chi vol essere ricco in un dì è impiccato in un anno.” (Leonardo da Vinci 1452-1519)  
He who wishes to be rich in a day will be hanged in a year.