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#### ACCEPTED MANUSCRIPT

## **Abscopal Outcomes**

**Reflections on Distant Effects** 

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## ACCEPTED MANUSCRIPT

## **Abscopal Outcomes**

## Reflections on Distant Effects

The abscopal effect, called nonsensical when I was in medical school fifty years ago. Now being hailed as the explanation for distant outcomes far from the radiation site. Complex molecular and chemical signaling resulting in away-from-primary target responses, molecular injury, the cellular Lyft for rides to unsuspected places.

But why should abscopal seem so foreign while, in the quantum world, Schrödinger's cat lives in two boxes simultaneously. And every morning, both a particle with mass and a wave which has none, illuminating our world, stretching our disbelief about what we think and know.

And so on to those moments when at the end-of-life the light begins to fade, respondent to heroics but seemingly hopeless when the therapies have been many.

But unlike the day, the night begins in light as if from further away, creating hopefulness when there was none. The right cell responding to a distant star, striking down the malignant counterpart.

And are the physical and biological worlds so different, both with classical continuous and quantum discontinuous events? Who knows, when it seems like everyday new universes are being discovered far away and only one of several hundred passengers survives a fiery crash, untouched.

So don't tell me that something is nonsense...impossible. The true creative moment that leads to deep understanding is always a distant star, far ahead of the wave that generates innovation, outcomes, and hopefulness, illuminating understanding of the heart and soul of this walking, talking primate by the warmth of the fireside.

Frank L. Meyskens, Jr., M.D., F.A.C.P.