

**2015**  
**219<sup>th</sup> Annual Oration**

**ORATOR: Paul M. Steen, MD**

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**ORATION: Medicine and Art**

Shortly after completing my art docent training at Worcester Art Museum (WAM), I noticed visits by medical students and family practice residents. My curiosity was triggered. Why would medical students and residents take a field trip to an art museum? I discovered that over the past 17 years, an unusual partnership has been developing between medical schools, hospitals and art museums to teach medical students, residents and even practicing physicians how to improve their observational skills. To quote William Osler: “There is no more difficult art to acquire than the art of observation....”

The first mention in the literature of the concept of using art to teach health care providers was in 1981 in Ohio, but no actual program was instituted. The first formal program began at Yale Medical School in 1997, when Dr. Irwin Braverman, a dermatology professor, was unhappy with the way his residents presented descriptions of their patients on rounds. He believed that visual training would improve their observational skills and partnered with the Yale Center for British Art to develop a program to accomplish this goal. It seemed logical that visual skills could be improved, but would it be transferable to medical observation? In 2001, Dr. Braverman published in *JAMA* the first controlled study on this process, showing a 10 percent improvement in medical observation skills. This was a fairly small, but encouraging, finding, and other medical schools began to adopt the system. In 2008, in the *Journal of General Internal Medicine*, Dr. Joel Katz, of Harvard University, published a study that incorporated both a clinical and more intensive visual training component that resulted in a 38 percent improvement in medical observations over the control group.

Thanks in part to these studies, the program has spread to at least 27 medical schools and community hospitals in 25 states and internationally. In studying these programs, I found that most have altered the program to meet local goals and needs. Most of the programs fall into two groups: 1.) humanities workshops and 2.) observation workshops. Both have art museum visits about two to three hours in duration. The humanity workshops have one to two sessions, whereas the observation workshops have four to 13 sessions. The humanities workshops use literature, reflective writing, film and plays to educate on patient-physician interactions, as well as how people face disease and difficult health decisions. Their goals are directed toward personal balance and well-being of physicians. Some also work on teaching medical team dynamics and physician leadership, areas of rapidly growing importance in today’s team-oriented care delivery. Most of the programs we see at WAM fall into the humanities group. The observation workshops are frequently combined with clinical teaching focused on medical observation. Even though I have separated them into two neat divisions, each group borrows components from the other. Observation is at the very heart of the “Art of Medicine,” and experts have stated that it takes 10 years to become accomplished at any skill. At the very least, these workshops aspire to shorten this time.

Let me tell you about an experience I had as an intern at Kings County Hospital in New York City, the second largest hospital in the world at the time, with 3,600 beds. I was handling 20 patients, of which five were called “placement patients,” meaning they were waiting for a nursing home, which, in those days, could keep them in the hospital for one to two years! Time was short and the time per patient even shorter, especially the “placement patients.” On my third day, I noticed something odd about one of the placement patients. She had been diagnosed with pneumonia when admitted 10 months ago and was doing well other than her dementia. To me, she looked jaundiced. My resident was doubtful but agreed that I should order testing. As he predicted, the tests were negative. I researched what causes the combination of yellow discoloration of skin and dementia and came up with a differential diagnosis list that included pernicious anemia. This time, her lab tests confirmed the diagnosis. After treating her with B12 and folic acid, she began to recover and she left the hospital fully functioning. This type of observation error is called Inattention Blindness, defined as: “Failure to notice a finding that is in plain sight because it wasn’t expected or looked for and because our attention was distracted.” This is a good clinical example: The yellow skin was in plain sight, was not expected with dementia and not noticed because of distraction from time pressure.

So don’t we teach observation in medical school? The answer is yes. We teach pattern recognition, which is essential to making diagnoses in all branches of medicine. We learn by rote memorization that findings A and B mean the patient has a specific disease (e.g., cough and fever in January could be flu). Over many years of practicing medicine, we learn to see details and patterns we didn’t see before. I refer to this as “analytic observation.” A good analogy is how we learn to read, memorizing words at first and later using phonics to sound out new words. This analytic process doesn’t lend itself to lecturing; we actually have to train ourselves. As Sherlock Holmes said to Watson, *“I see no more than you, but I have trained myself to notice what I see.”*

Why are art museums so well suited to teach observation skills? Art is inherently complex and ambiguous, leading to endless analytic opportunities. Artwork selection can focus on specific needs like social or emotional issues. Analytical observation is encouraged over pattern recognition. A not-so-hidden benefit in taking students and residents out of the high-pressure clinical setting into a less-pressured environment encourages participation and risk-taking. Lastly, patients change; art doesn’t. This allows us a consistency from visit-to-visit, knowing what to expect and instruct.

How do typical programs work at WAM? Most of the programs involve University of Massachusetts Medical School fourth-year students and family practice residents. Most of the programs fall in the humanities category, with groups of four to six participants. The sessions are two to four hours long and involve four to five works of art, mainly paintings or sculptures, but prints and photos can be used. I like to choose paintings that have numerous details, portraits, symbolism and are ambiguous or mysterious.

There are four stages involved in each painting: 1.) Observation, 2.) Description of details, 3.) Analysis, and 4.) Interpretation. Often we add a fifth stage if art appreciation is the goal – Judgment – which asks the participants for a personal opinion of the painting.

### **Old Woman Praying (1)**

*1655, by Nicolaes Maes (Dutch, 1634-93)*

This painting is the easiest of the four, as it is loaded with detail that is easily recognizable but is harder to interpret because of the symbolism that was intended for a 17th century audience.

**Step 1 – Observation:** Students are told to study this painting for five minutes, getting an overview first and then focusing on sections. Our goal is to slow the students down to focus thoroughly on the picture. We remind them that the artist puts every item in the painting for a reason, and they are to find them all and eventually decipher their meanings.

**Step 2 – Description:** Our goals are to get a complete list of items in the painting. Think of this as similar to signs and symptoms in medicine. After five minutes, the participants are asked to name what they see. In this picture, the most common first response is, “It’s an old woman praying.” We ask them how do you know it is a woman, that she’s old and that she’s praying? We want them to report only what they actually see, not interpret. This is followed by naming the obvious: hourglass, glasses, books, flowers, baby porcelain figure, candle, inkwell, ink quill. They usually miss the small details. We guide them along by asking, “What else is there in this picture?”

**Step 3 – Analysis:** We want the students to figure out the techniques the artist uses. This is really advanced description, and they need some guidance from us in the form of questions. Typical questions are: “What was the first thing you noticed when looking at the painting?” “What did the artist do to achieve this?” In this case, most start with the woman’s face because it is the brightest or the table because of the bright-colored tablecloth. Light and dark contrast, color, texture, shapes, composition are common techniques to emphasize the subject or to tell a story. Our goal is not to teach art appreciation, although this is a nice by-product.

**Step 4 – Interpretation:** What is the artist trying to tell his target audience? This is where group discussion takes place, and students learn problem-solving and teamwork. There are frequently two to three different interpretations, and we try to get the team to come to a mutually acceptable one. Think of this as similar to a differential diagnosis in medicine. We hope doctors arrive at a single working diagnosis. Generally, the students read the painting this way: a frail elderly woman is praying. There are symbols of the shortness of life (hour glass, faded flowers and the unlit candle). This is usually where we come in with relevant art history information. This type of painting is called *vanitas* (Latin for vanity). It is about the transience and meaninglessness of life and would have been readily understood by its 17th century Dutch audience.

The remaining two paintings will not be discussed in the same detail. I will tell why I selected each artwork. They are, in my opinion, increasingly difficult, as they are increasingly ambiguous and require deeper intellectual analysis.

### **Portrait of the Artist’s Daughters (2)**

*1763-4, Thomas Gainsborough (English, 1727-88)*

Portrait paintings are mainly about personality, mood, social environment and occupation. What makes this painting so interesting is that it has been changed several times relative to the sisters’ positions. We can see a second image of the standing daughter originally facing her sister. Later, she was repainted to be next to her. The discussion with the students is how this changes the perceived relationship between the sisters and their personalities?

### **The Brooding Woman (3)**

1891, Paul Gauguin (French, 1848-1903)

In this painting, there are only a few objects, and the students usually find them all. Gauguin is famous for unusual colors. The rug's color and the grass create two focal points. The big question is what is the relationship between the woman and the man on horseback? What role did the artist intend for the dog? In this case, even experts don't know the answers, so the discussion is always spirited.

What are the challenges? At present, even with a growing use of art for improving observation, there are only a small percentage of students and residents involved. The challenges to expand this involvement include an already crowded curriculum, time availability of faculty and students and skepticism. Many of the skeptics at Yale and Harvard were won over after the studies were published, and the program became a requirement. It seems to me that this is an area ripe for more research to optimize the program.

What I hope you take away from this presentation is that observation in medicine is a skill that can be improved by using fine art as a supplement to the patient learning experience. The bottom line is that I believe this process works, both in improving medical observation skills and as part of a broader student education in the humanities. I leave you with this final quote:

“The trouble with many doctors is not that they don't know enough, but that they don't see enough.”

– Sir Dominic Corrigan, 1853



1. Old Woman Praying



2. Portrait of The Artist's Daughters



3. The Brooding Woman