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## Drawing on Science

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### RESTORED

These days, former chemistry major Kristen Watts '13 is playing less with beakers and more with paint as an important member of a team charged with preserving *The Triumph of David*. (Watts is in the acqua shirt.)

# K

Kristen Watts '13, by her own admission, is no artistic virtuoso. "I enjoy painting," she chuckles, "but nobody would say I'm brilliant at it." That, however, hasn't stopped the former chemistry major from becoming a critical contributor on a team charged with restoring and preserving *The Triumph of David*, a painting

## Drawing on Science

*Chemistry major turned art restorer, Kristen Watts '13 is bringing the lab to the studio.*

BY ANDREW HUANG '11

hanging in Villanova University's Falvey Memorial Library.

Attributed to 17th-century artist Pietro da Cortona, the 12x19-foot piece was given to the university in 1956. Before

that, it hung from the walls of Italy's Castle Nemi. Exposure to the elements (Castle Nemi's walls were damaged in World War II), along with layers of varnish and paint added

during other restoration campaigns, left *The Triumph of David* discolored, faded, and flaking. Watts, who is pursuing a master's degree in chemistry at Villanova, joined the project as part of what she terms the "three-legged stool" of art conservation: "conservators, art historians, and scientists."

While Watts doesn't participate in the physical restoration, she does enlist analytical chemistry techniques to comb paint and canvas for invaluable information that aids the effort. Using non-destructive methods (such as X-rays and infrared images), and analyzing microscopic cross-sections of paint, Watts is able to determine the elemental makeup of pigments, find evidence of pentimenti—



## THEN

### *Reflection on the Importance of Furman as It Was*

In the late 1940s, the old campus rested cozy, majestic, and green on the hill with the Bell Tower at the center of activity.

Furman was Baptist with a capital “B.” We were required to attend chapel exercises twice a week, where many local Baptist preachers were invited to intone their concerns to sleepy students. Four semesters of religion were required. We were all men, including the faculty, except for an occasional girl from the Greenville Woman’s College who came across town to take a class—much to our delight.

Our football team entertained Clemson in their opening game each year. Freshmen were required to wear a purple beanie with an “F” on it—all year unless Furman beat Clemson in football, which was in the world of dreams.

Furman was a liberal arts university, but “liberal” was a soft word in those days. Occasionally one of our religion professors would make a statement about the “fatherhood of god and the brotherhood of man” that would rankle the segregated society surrounding us.

In 1946, things changed radically for Furman with the

influx of returning soldiers from World War II, who had been granted a free education through the monumental—and to many of us, incredible—GI Bill. All of a sudden, classes were filled with an admixture of men of all ages and backgrounds, many ill-prepared for college. But this mix added significantly to the richness of discussion in many classes.

I was one of those unprepared GIs, but Furman became the pivotal point in my life. With patience and understanding, the professors opened the world of free inquiry and gave me the courage not only to seek answers, but also to question those answers.

#### **ABOUT THE AUTHOR**

*William (Bill) Hale '50 became a teacher, school administrator, college professor, university executive, professional speaker, and author. His memoir, The Village and Beyond, was published in 2014.*



*When the opportunity came to spend seven months in France performing analyses on a first-century Gallo-Roman shipwreck, Watts dove in.*

alterations made to the painting during its creation—and even track the removal of old varnish, which helps determine where specific cleaning agents can be used. “You can think of it as technical art history,” says Watts.

Watts’s work on *The Triumph of David* is not her first foray into this unusual science. While working in Sandra and John Wheeler’s analytical chemistry lab at Furman, Watts envisioned doing forensic science to analyze crime scene evidence. A chance conversation, however, directed her toward another application of analytical chemistry: art conservation.

When the opportunity came to spend seven months in Grenoble, France, performing analyses on timbers excavated from a first-century Gallo-Roman shipwreck, Watts dove in. Her reaction

was immediate: “I fell in love with the field.”

Watts says her passion for the work, which she discusses on her blog about the project (<http://projects.library.villanova.edu/paintingrestoration/>), stems from “intellectual curiosity” and a desire to make these masterpieces “more dynamic.” In doing so, she also hopes to advance her part of the field to match the art it’s preserving. “As part of my master’s thesis, I’m currently working on developing a new [analytical] method using a technique known as absorption electrospray ionization mass spectrometry,” she explains. This approach, she says, has the potential to replace some of the destructive, but necessary, techniques conservationists use now.

Which will likely mean more “triumphs” to come—not just for David or Watts, but for art and science. **F**