Roy’s Sabbatical at the National Gallery of Art

For the 1999 academic year, I was in residence at the National Gallery of Art, Washington, DC as a senior fellow in conservation science. I was involved in several research projects although I will only describe one here. Please see my website for a complete report: www.cis.rit.edu/research/mcsl/research/reports.shtml

The project was titled Direct Digital Capture Techniques of Two-Dimensional Works of Art. For a number of years, I have been involved in new techniques of color reproduction, specifically spectral-based techniques. While at the gallery, I was interested in applying these new methods to the image capture and reproduction of one of the Gallery’s paintings. During my first weeks, Vincent van Gogh’s Roses was under study in the painting conservation laboratory. van Gogh was known to have used a red-lake pigment with extremely poor lightfastness. In its current condition, the roses are white, shown at bottom left. Following a microscopic evaluation and the removal of a very small amount of green paint covering the edge of a rose, a vibrant red color was revealed. The fading of this lake red in van Gogh paintings is well known within the conservation community. It is possible to simulate what the painting might have looked like in van Gogh’s time, at the bottom of this column. Another van Gogh in the Gallery’s collection, Self-Portrait had also undergone a large color change. One of the intriguing aspects of this painting is that its edges have been protected behind the frame’s rabbet, indicating that the background was purplish rather than bluish. Thus I became involved in making spectral measurements of this painting and using it for my color reproduction interests.

During December, 1999, Francisco Imai and Mitch Rosen came to the Gallery and we used Gallery digital equipment and equipment brought from MCSL. Images were collected of the self portrait and we have spent this academic year analyzing the data and our techniques for image capture. The project is ongoing and our plan is to image the painting again during winter 2001 and produce a spectral-based printed reproduction (research supported by DuPont iTechnology). At this time, the painting will be in a laboratory for cleaning and scientific study.

In the right-hand column are two images of van Gogh’s Self-Portrait. The top image is an uncalibrated image, typical of many digital cameras. Because cobalt blue was used to paint the background, it reproduces as purple. After color correction, shown in the lower image, the background is bluish, similar to the actual painting. Interestingly, the top image’s background is probably closer in color to the painting when it was executed by van Gogh.

Some of the other projects I worked on were titled Colorant Selection for Inpainting Using Visible
Color Science MS - A First Year Student’s Experience

My name is Lawrence Taplin; I’m a second year graduate student in the color science masters program. I received my bachelor’s degree in computer science from the University of Delaware in 1996. Before coming to RIT I spent two years working as a programmer, developer and database administrator for a marketing firm in Stamford, CT. My decision to attend RIT came as the result of a re-evaluation of my long-term goals. To be happy, I wanted to ultimately be employed where I made a positive contribution to society. Additionally, I wanted to combine my expertise in computer science and my interest in art conservation and this program seemed like a logical bridge.

My first year at RIT was incredible. The small class sizes and interaction with the other students and professors made it a truly extraordinary academic experience. It’s exciting to be in an environment where everyone is there because they want to be and are actually eager to learn. The first year flew by; as spring quarter drew to close, I was faced with the decision of how to spend my summer vacation. Simultaneously, two RIT graduates returned from Applied Science Fiction (ASF) to give a presentation and conduct interviews. At the time I was unaware of the company so I previewed ASF’s website and learned that they developed ICE, an image correction and scratch removal software package. This software is currently used in Nikon film scanners. Since image correction fit into my long-term goals, I decided to learn more through a summer internship at ASF.

After learning about the specifics, a phone interview and one very long nondisclosure agreement, I had my summer plans settled. On arriving at ASF, I was delighted to find that I was not expected to wear a jacket and tie daily. This was ideal since the temperature many days rose well above one hundred. The corporate attire was, in fact, rather casual and Friday was Hawaiian shirt day. Having heard horror stories of poor treatment of interns at other organizations, I was pleasantly surprised by the effort the staff at ASF made to include all the interns in their research. During the summer I had the opportunity to work with many team members on various aspects of product testing and development. ASF is a relatively new company and while I was there they were going through some of the growing pains, typical of startups. The cutbacks started slowly with a reduction in snack food and company wide lunches, but culminated in the replacement of their founding CEO and a significant reduction in the staff. Surprisingly, through it all moral stayed high. The people at ASF were friendly and knowledgeable which made my summer quite enjoyable.

At the end of the summer I drove back up to RIT. After a couple weeks back in Rochester, I finally got to meet my thesis advisor, Dr. Roy Berns, who was on sabbatical during my first year. The meeting dispelled my long-term belief that he didn’t actually exist and formally started me on the path towards completing my thesis. The thesis topic I am working on is the implementation of a six ink multispectral printing system. This fall we have assembled a system allowing us to print six color separations and are in the process of modeling the printer for spectral matching.

I continue to be impressed with the level of research being conducted within the MCSL and I am grateful to have been given the opportunity to participate. I anticipate graduating around the end of spring quarter. After graduation I hope to get a job in a museum or start working on an advanced degree in art conservation. Of course, I’m open-minded and will enthusiastically accept whatever surprises and opportunities the future holds.

- Lawrence Taplin, MS Color Candidate