Student News

Last summer I wrote a short article for the Chroma Zone about my background and initial work on my thesis research. At that point in time, Mark and I had decided to investigate the role of color space in JPEG image compression. However, I had only read a few articles and had just begun programming the JPEG algorithm.

Since then I have managed to accomplish three important steps in my research. First, the JPEG compression algorithm has been written and successfully implemented on the Munsell Laboratory's computer system. Second, my primary psychophysical experiment went well and I now have some results for my research. These results are that RGB is the worst color space to compress images in and nonlinear color spaces, such as CIELAB and CIELUV, are the best. In addition, linear transforms of the device space, XYZ and YIQ for instance, are better than RGB but worse than CIELAB and CIELUV. Lastly, I just returned from Newport, RI where I presented my results to the Inter-Society Color Council. This last step was especially exciting to me because it was my first technical presentation to a professional audience.

Of course I got quite a bit of help along the way. Mike Stokes' programming assistance made implementing the JPEG algorithm relatively painless. I am also grateful to the 25 observers who examined 4,200 pairs of images for the psychophysics experiment. Hopefully the candy bars and brownies will encourage all of them to return for the second experiment. Finally, Mark and the rest of the lab provided good constructive criticism for my two practice runs for my ISCC presentation.

Now all that is left is one more psychophysics experiment and the final draft. This should take about two months and then I will be done with my thesis research. Looking back, my thesis work has been one the most challenging and yet rewarding intellectual experiences in my academic career.

-Nathan Moroney

RIT Forms First ISCC Student Chapter

The first student chapter of the Inter-Society Color Council was formed in March 1993 at RIT. Through the efforts of Dr. Robert Chung, professor of printing technology and chairman of the Education Committee of the ISCC, the chapter has been formally recognized by the parent chapter. Timothy Kohler, president, and Noah Durham, treasurer, worked tirelessly to receive club status from RIT student government.

The club has about twenty-five members, representing the departments of color science, imaging science, graphic design, technical photography, printing management, and printing technology. Next year, we hope to expand our membership base to students of physics, chemistry, psychology, fine arts, food science, and packaging science.

The goal of this organization is to increase awareness of color as it relates to art, science, and industry. The club will also allow students to interact with experts in color and related fields, share knowledge among disciplines involved in color, and begin communication with other universities interested in color. The student chapter will also benefit the parent organization. Dr. Paula Alessi, ISCC president, explains in ISCC News, May 1993: "The ISCC will have much to gain from student chapters, such as an increased student membership base, strengthened interactions among ISCC student members through a student chapter networking mechanism, and help from the student chapters with conference activities like registration and audio visual support."

Currently six RIT-ISCC members, through the generosity of the Munsell Lab, recently attended the ISCC Annual Meeting in Newport, Rhode Island. At this meeting, Tim and I presented a poster and discussion on how to begin student chapters, and the first student chapter was officially recognized by the ISCC. Many educators who were present were very interested in beginning chapters at their universities. A package of information will be organized which explains the purpose of RIT-ISCC student chapter. This package will be sent to all educators who are members of the ISCC as well as other major universities who are interested in color. Once a network of "color" universities has been established, we hope to sponsor student conferences and tours of other campuses.

Creation of the poster was the first club activity. It describes the formation of the chapter and encourages
other colleges and universities to do the same. All members participated by writing sections of text, typesetting, or construction of the poster. Joe Tusinski, an imaging science student, edited the text and Sarah Tregay, a graphic design student, did an outstanding job designing and constructing the poster. It is displayed in the Munsell Color Science Laboratory in the Chester F. Carlson Building.

The future activities of the new student chapter will be to design a banner to illustrate the connection of the group to ISCC as well as its uniqueness as a student chapter. At least two speakers will be brought to RIT to discuss areas of general interest in color. These will be open to all students on campus. Tours of local industries are also planned. It is hoped that more students will be able to attend the ISCC annual meeting in Detroit next year.

All activities this quarter have been funded through a $5.00 dues per member. We have submitted a budget to student government and hope to get some money from them for next year. One fund-raising idea is to make and sell tie-dyed t-shirts in the quad. Another possibility is a poster sale in the Union. Many members have elected to become members of the ISCC parent chapter at their own expense. Hopefully, the chapter will be able to cover part of this cost next year.

As president next year, I hope to continue along the successful path on which we have embarked. New ideas for improvement are welcomed, as are new members.

-Karen Rybarczyk
RIT-ISCC President Elect

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ISCC Beer Labels
A few issues ago, in Chroma Zone, Mark Fairchild wrote an editorial about the lack of beer at ISCC wine & cheese receptions. Mark told of Lovibond, the first brewer/color scientist and his work with colorimeters. Word of this got to Romesh Kumar, the chairman of the 1993 ISCC annual meeting. Romesh called the Munsell Laboratory and told us that he would order beer to be brewed if we would design and provide labels.

Well, Nathan Moroney and I took on the job. Nathan researched Lovibond and made several potential beer label sketches. The members of the Munsell Color Laboratory voted for a design which was actually very similar to what was produced. I began working with Nathan's sketches, a couple of Macintosh drawing programs and a few scanned images. I was able to produce a label ready for the next process. Color separation films were performed from the digital file on campus at RIT in the School of Printing. Finally a local printing establishment printed the labels.

At the annual meeting, several people were seen saving labels or bottles. The ISCC beer was a successful addition to the reception at the 1993 ISCC meeting in Newport, Rhode Island. And it all started from a column in this newsletter. What will we come up with next?

-Tim Kohler

Konica Visiting Scientist
Here in Rochester I've always wanted to work as Americans do. I've been trying to work efficiently from 8:30 a.m. to 5:30 p.m. and spend my time after that relaxing or studying English and other things. Now I look back and find that I've been totally unchanged. Working until late in the evening has caused me to wake up late in morning. (I should mention that I don't think I'm a typical Japanese worker.) One reason (except for my laziness) is that there were so many unexpected walls blocking me from beginning my color gamut mapping experiments. Lots of software created and left in my directory remind me of how I've been struggling to solve the difficulties. I still remember the times I was complaining to my Macintosh monitor. Pleasures were to see reproduced images and to see experimental results. I was quite happy when most of the reproduced colors in the prints looked the same as in original transparencies after lots of computational effort.

For people like me who had background knowledge of color science and image processing, the things we learn here every day are quite helpful. I had so many questions through the color reproduction process: how to match appearance between different media, how to deal with accuracy of instruments and apply data from the instruments to actual measurements of appearance, and so on. I could at least find out how to approach these questions by listening to lectures, discussing with professors, and going through my gamut mapping experiments. Now I'm getting closer to the target, I hope. The success of color reproduction of high quality images also made me confident of both my color reproduction techniques and computational techniques.

I would be very glad if I can contribute to Konica Corporation and industries back in Japan with the new education I got in this laboratory.

-Toru Hoshino