

NCW 2007: The Many Faces of Chemistry

Career Profile: Molecular Biophysicist Turned Jewelry Designer

by Raven Hanna

Describe your present position.

I am involved in several projects in the area of “creative science education”. My main project is my company, Made With Molecules, where I design and sell science-inspired items such as molecule jewelry.

Did you get to your present position because of your background in chemistry and area of specialization or did life experience(s) take you there?

What I am doing is certainly because of my love of science and my intimate relationship with molecules gained through formal scientific training. Understanding the chemistry allows me to distill the science into a form that non-scientists will understand and appreciate.

In what areas of chemistry did you specialize?

I earned a Ph.D. in molecular biophysics and specialized in nucleic acid biochemistry and structure. My thesis project examined the 3D structure of an RNA enzyme called the Group I Intron Ribozyme.

Do you use chemistry on a daily basis? Describe what you do on a day-to-day basis.

I don't use chemistry on a daily basis in my work, although chemistry remains a big part of how I look at the world. I tap into my chemistry background when I research new projects. On a day-to-day basis, I solder silver, mail orders, read science magazines/journals, and work on new projects. It's thrilling when the projects come to fruition. Last week, I finished a necklace—a choker of human beta endorphin—that was months in the works. Seeing its completion made all that work worthwhile.

Related Resources

1. *Chemical & Engineering News* Talks with Raven Hanna. <http://pubs.acs.org/cen/science/84/8429sci2.html> (accessed Jul 2007)
2. Veca, A.; Dreisbach, J. H. Classical Neurotransmitters and Their Significance within the Nervous System. *J. Chem. Educ.* 1988, 65, 108.

If you aren't happy with the career options, make your own. It can work.



Raven Hanna prepares “Made with Molecules” jewelry.

Describe the personal skills that have played an essential role in your present position.

My success is largely dependent on my curiosity about the world on a molecular level and a desire to share my wonder at Nature's processes. I'm also open to learning new skills. For example, when I first decided that I would make a necklace based on the shape of the serotonin molecule, I had never made jewelry before. I gained those skills as I went along.

What advice do you have for those who wish to pursue this or some other nontraditional career path?

Do what excites you, what makes you smile or laugh or your spine tingle.

How and where can readers learn more about this type of career?

The University of California–Santa Cruz offers a great science communication program. It focuses on science writing, but the lessons are applicable to visual communication as well.

Are there other thoughts or lessons learned that you would like to share with our readers?

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Related Profile: Designer and Entrepreneur, Laury Ostrow

JCE staff saw Hanna's and Sweetman's (pp 1567, 1581) work at an NSTA conference in St. Louis, MO. Their products were at a booth run by Laury Ostrow, creator of the Dancing Helix, a kinetic mobile that creates rhythmical wave patterns. The mobile can be used to visually demonstrate various principles related to wave movement, such as standing waves and harmonic oscillation, as well as being an object of art. Ostrow also uses the mobiles in a class he shares with middle school students, "ODE (observation, description, explanation) to Science". Students discuss patterns seen in nature, as well as the patterns created by the mobile, and eventually make their own mobile to take home. Although Ostrow has no



Laury Ostrow and workers preparing materials for the mobiles.

specific chemistry background, his work appeals to science teachers, as it "communicates to others the beauty of these usually invisible rhythmical patterns of Nature". He runs his own company as an independent designer and entrepreneur.



The finished Dancing Helix mobiles.

His advice for those who wish to pursue the path of entrepreneurship: "Get a well-rounded education in business practices. Once grounded in a good understanding of business, then take your inspiration and run with it."

photos by www.dancinghelix.com