

TRULY, AND NECESSARILY, ON THE SHOULDERS OF GIANTS: AN ASTONISHING HISTORIC JOURNEY (1)

Mary Virginia Orna, Prof. Emerita, College of New Rochelle, maryvirginiaorna@gmail.com

Abstract

For my HIST Award Address, I chose to document the major drivers of my career, the “giants” on whose shoulders I sat in order to be able to see farther. Told in roughly chronological order, this paper describes the influence of seven major areas of my professional life: the Division of the History of Chemistry (HIST), the Division and *Journal* of Chemical Education (CHEMED), a sabbatical leave at New York University (NYU), the National Science Foundation Project ChemSource (CHEMSOURCE), travel to Israel under the sponsorship of Sidney Edelstein (SIDNEY), the Chemical Heritage Foundation (presently the Science History Institute) (CHF), and the “Italian Connection,” collaboration with chemists from the University of Florence (CIAO!). It was the people I met in each of these experiences that became the threads that ran between and bound up these experiences and endowed my historic journey with coherence and direction. Yes, I have traveled On The Shoulders of Giants (OTSOG) and to them I am grateful for the ability to see farther and more clearly.

Introduction

Celebrating one’s birthday on the Fourth of July necessitates going to a parade at least once a year. Unfortunately, not everyone loves a parade, especially if one is small, little, petite, dumpy, tiny, squat, diminutive, undersized or stunted (choose your adjective). Anyone answering to one of these not-so-desirable descriptors

gets to see only the backs of tall men unless one of them swings you up to his shoulders and lets you perch. My great good fortune is that more than one tall man (and quite a few tall women), both literally and figuratively, augmented my stature so that I could, indeed, like Isaac Newton (1643-1727, Figure 1), see farther, more clearly, and with unobstructed view (2).

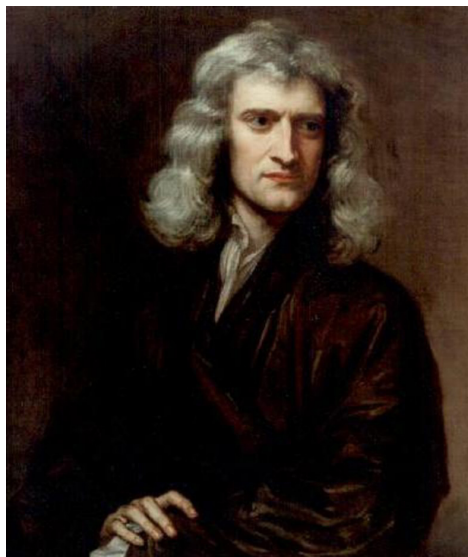


Figure 1. Godfrey Kneller (1646-1723), *Portrait of Isaac Newton, 1689. Oil on canvas.*

This paper will document my experiences from the crow’s nest provided by so many of my valued colleagues beginning with Jeffrey I. Seeman (2017 HIST Awardee), who nominated me for the HIST Award. (Figure 2).



Figure 2. Jeffrey I. Seeman

Though Jeff did not appear at the chronological beginning of my journey, it was he who, several years ago, sent me a copy of the book (Figure 3), that graces the title of this paper (3)—and made me begin to think about all those whom I have to thank, including himself as Chair of the Division of the History of Chemistry, for their support along the way. He also appears at the end of this journey as the enthusiastic nominator which made this award possible.

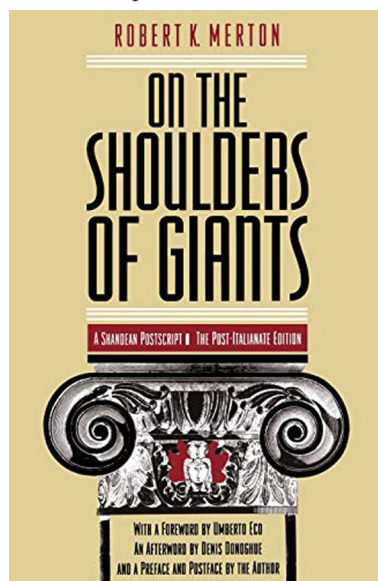


Figure 3. Cover Image of *On the Shoulders of Giants*.

As in any life, there are many threads that weave in and out over the course of decades. The most important ones in my life have names, and we will follow them in the order given here: HIST, CHEMED, NYU, CHEM-SOURCE, SIDNEY, CHF, CIAO!

HIST

HIST is the thread that led me to my deep involvement with the Division of the History of Chemistry. 1976 was the year I joined the Division, hoping to find some material that would bring a more personal perspective to my general chemistry students, especially the role of women in chemistry (since my college was, at that time, an all-women's institution). Six years later, lying on my bed of pain following serious surgery, I got a phone call from then-nominating committee chair, John Wotiz (1919-2000) (Figure 4), asking me to run for chair of the Division.



Figure 4. John H. Wotiz, 1980 Chair of the Division of the History of Chemistry and 1982 Dexter Awardee (4)

In my weakened condition, I was hardly in a position to say “no” to John: even the strongest of my colleagues had a hard time doing that. However, when he told me the name of the other person on the ballot, I quickly acceded to his request, assuming that the name recognition of my colleague would easily get him elected. I'm still scratching my head over the turn of events that elected me; it taught me never to assume the outcome of any election based on preconceived notions.

That election, when I joined the ranks of HIST chairs (Figure 5) and subsequent involvement in the Division, led to further duties beyond the chairmanship, namely the office of Program Chair, Treasurer, and finally Councilor for the Division. In the latter position, in which I continue to serve, I have, over the course of 30 years, been a member of all the elected and standing ACS Council Committees.



Figure 5. Portion of the cover of the Centennial Special Issue of the Bulletin for the History of Chemistry showing the succession of Division of the History of Chemistry Chairs from its first century (5).

Table 1. HIST-Sponsored Volumes Edited or Co-edited by Mary Virginia Orna

Year	Symposium	Publication	Co-Editors
1985	<i>History & Preservation of Chemical Instrumentation (6)</i>	D. Reidel Publishing Company, Dordrecht, The Netherlands	John T. Stock
1989	<i>Electrochemistry Past and Present (7)</i>	ACS Symposium Series 390	John T. Stock
1996	<i>Archaeological Chemistry V: Organic, Inorganic and Biochemical Analysis (8)</i>	ACS Symposium Series 625	
2014	<i>Science History: A Traveler's Guide (9)</i>	ACS Symposium Series 1179	
2015	<i>Sputnik to Smartphones: A Half-Century of Chemistry Education(10)</i>	ACS Symposium Series 1208	
2019	<i>Chemistry's Role in Food Production and Sustainability: Past and Present (11)</i>	ACS Symposium Series 1314	Gillian Eggleston, Alvin F. Bopp
2020	<i>Archaeological Chemistry IX: Archaeological Chemistry: A Multidisciplinary Analysis of the Past (12)</i>	Cambridge Scholars Publishers	Seth C. Rasmussen



Figure 6. Symposium volume covers on a variety of topics: food production, chemical education, archaeological chemistry and science history travel. References are in Table 1.

Additional involvement with the Division came in the form of ACS National Meeting programming of timely symposia which, in many cases, resulted in book publications. Table 1 summarizes these contributions. Sample cover images for some key symposia are shown in Figure 6.

And, of course, my co-editors deserve the laurels as well. John Stock (1911-2005) (Figure 7) was an early mentor and dear friend. He not only mentored me and taught me my editorial skills but also was the contact person for two decades' worth of Science History Study

Tours, co-directed by Jan Hayes, and frequented by many HIST fans including Sharon Haynie and Jack Stocker. (Figure 8). The 2014 science study tour book (9) is dedicated to John Stock's memory.

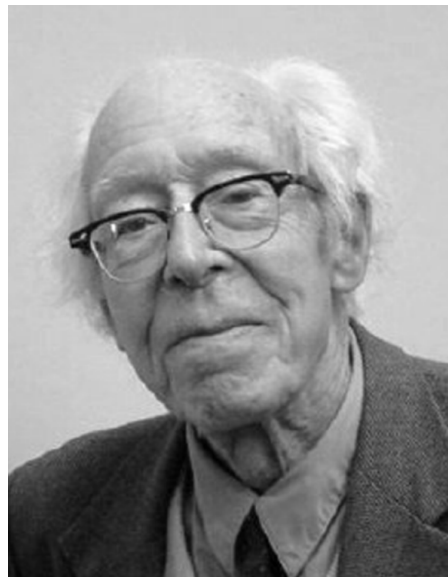


Figure 7. John Thomas Stock (Dexter Award, 1992). John was a Professor of Chemistry at the University of Connecticut, Storrs. For many years, John unfailingly presented an original paper in the HIST program at every ACS National Meeting.



Figure 8. Mainstays of the Science History Study Tours that ran (roughly) biennially from 1990 to 2018, suspended only due to COVID-19. Left to Right: Janan M. Hayes, co-organizer; Sharon Haynie and Jack Stocker, perennial travelers.

Al Bopp and Gillian Eggleston (Figure 9), native and adopted New Orleanians respectively, lent their expertise to the food scene that inspired *Chemistry's Role in Food Production and Sustainability*.

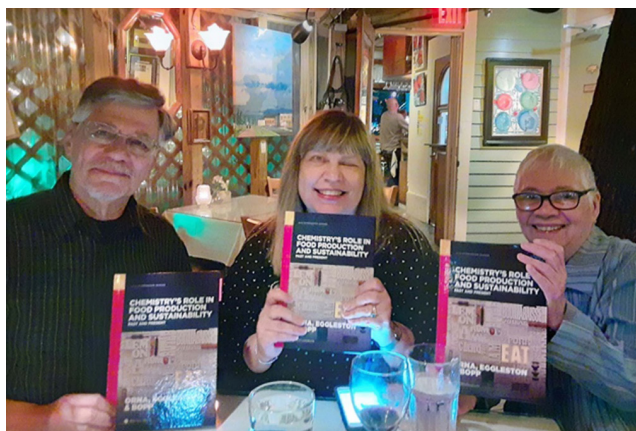


Figure 9. Co-Editors of *Chemistry's Role in Food Production and Sustainability, Past and Present* (11), Alvin F. Bopp, Gillian Eggleston and Mary Virginia Orna, at a book-signing event in New Orleans, 2021.

Seth Rasmussen (Figure 10) was the power behind the throne in masterminding the *Archaeological Chemistry: A Multidisciplinary Analysis of the Past* volume (12) with Cambridge Scholars Publishers, but is also a Springer series editor of numerous other volumes, including three of his own, namely, *How Glass Changed the World: The History and Chemistry of Glass from Antiquity to the 13th Century* (13), *The Quest for Aqua Vitae: The History and Chemistry of Alcohol from Antiquity to the Middle Ages* (14) and *Acetylene and its Polymers: 150+ Years of History* (15). He also edited an additional volume, *Igniting the Chemical Ring of Fire: Historical Evolution of the Chemical Communities of the Pacific Rim* (16), arising from a HIST-sponsored symposium held at the International Chemical Congress of the Pacific Basin Societies (Pacifichem) in 2015. Their covers are shown in Figure 11.



Figure 10. Seth C. Rasmussen, HIST Chair, 2021-2022.



Figure 11. Four volumes written or edited by Seth Rasmussen. Three are part of the SpringerBriefs in Molecular Science series; the fourth is a volume resulting from a symposium held at the 2015 International Chemical Congress of Pacific Basin Societies (Pacifichem 2015).

My own books that are part of the Springer series, *The Chemical History of Color* (17), *Carl Auer von Welsbach: Chemist, Inventor, Entrepreneur* (18) and *Chemistry and Chemists in Florence: From the Last of the Medici Family to the European Magnetic Resonance Center* (19, 20) are shown in Figure 12. Then, the Royal Society of Chemistry got into the act by offering me a book contract right at the beginning of COVID-2019—and at what I **thought** was the end of COVID, I delivered the manuscript in July 2021. The cover of the result, *March of the Pigments: Color History, Science and Impact* (21) is shown in Figure 13.



Figure 12. Four volumes written or co-authored by Mary Virginia Orna; three are part of the SpringerBriefs in Molecular Science Series.

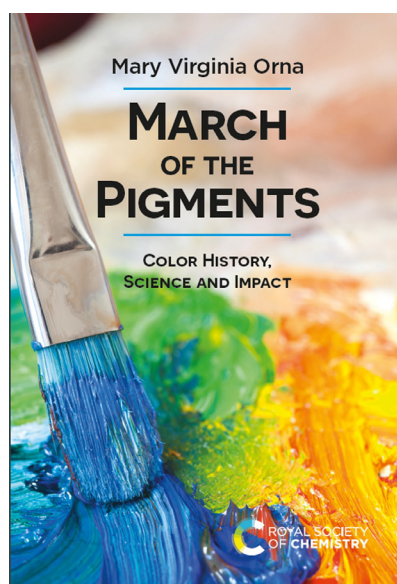


Figure 13. March of the Pigments: History, Science and Impact. Stories about pigment use and discoveries informed by history, religion, sociology, science and human endeavor.

CHEMED

Picking up another thread, that of chemistry education, we have to return to that banner year of 1976 when Bassam Shkhashiri (Figure 14), who was General Chair of the Fourth Biennial Conference on Chemical Education at the University of Wisconsin, Madison, gave me a role as an ingénue plenary speaker to talk about my pioneering course in chemistry and art.



Figure 14. Bassam Shkhashiri, Professor of Chemistry at the University of Wisconsin, Madison, and American Chemical Society President in 2012, was a foremost advocate of the use of chemical demonstrations in the classroom

Why chemistry and art? It is all due to Sr. Mary Jane Robertshaw (Figure 15), then head of the Fine Arts Department at the College of New Rochelle, who encouraged me to think about and develop a chemistry course that would appeal to art majors. She saw a link between chemistry and art that had never occurred to me: both form in sculpture and color in the decorative and fine arts have their basis in molecular structure. Knowing nothing about how to proceed, I decided to go to where art and chemistry meet: the Conservation Center at the Institute of Fine Arts, New York University (NYU), which is the third thread in this tapestry.

NYU

Armed with a National Science Foundation grant designed to help educators develop new interdisciplinary courses, I settled in for a sabbatical semester there under the kind guidance of Norbert Baer, physical chemist, and Larry Majewski, art historian and conservator. It was there that I met Walter McCrone, who “wrote the book” on chemical microscopy, and Tom Mathews, art historian, who was busy writing a book on Armenian Gospel Ico-

nography. Between Walter and Tom, I suddenly found myself the world's expert on sampling and analyzing the pigments in medieval manuscripts and involved in another kind of history of chemistry. Walter has passed on, but my collaboration with Tom continues to this day although he is now living in Greece. The internet has shrunk the globe. (Figure 16)

Sampling manuscripts was one thing, but reading them was quite another. A different thread of research that also began at NYU was taking a look not so much at what was painted on the medieval manuscripts, but rather what was written about those paints and pigments—namely the medieval painters' manuals that were supposed to clue us in to painting practice. Some of these manuscripts are well known, such as the *Mappae Clavicula*, or *A Little Key to the World of Medieval Techniques*; it contains numerous recipes for making dyes and pigments (22). The other, contemporaneous with the *Mappae*, *Compositiones ad tingenda musiva*, or the *Codex Lucensis 490*, sometimes called the “Lucca Manuscript” (23) contains much of the same material. Two other manuscripts, the tenth century work of Heraclius, *De diversibus artibus Romanorum* (24) and the twelfth century treatise of Theophilus (Roger of Helmarshausen



Figure 15. Mary Jane Robertshaw, OSU, MFA. She was the impetus toward my development of courses and literature in the relationship between chemistry and art.

(25), make up the sources of what the late medieval manuscript painter could access.

However, some of the more practical pigment recipes, but untranslated, were found scattered in medical treatises housed in various libraries, mostly in Europe, like the British Library and the *Bibliothèque nationale* in Paris. That is where my study of Latin came in handy since almost all of the treatises were written in that language, although some were in medieval Italian and medieval English. The biggest hurdle was the handwriting, and to comprehend that, I had to take a crash course in paleography. So once I had my recipes lined up, it remained for me to try my hand at experimental archaeology, *i.e.*, at reproducing the pigments synthesized by the medi-

eval artists. This, of course, involved ingredients that one will not find on the shelves of Sigma Aldrich or Fisher Scientific, stuff like calcined eggshells and hot horse dung. And then, once these products appeared in my beakers and test tubes, the next step was to characterize them—query these pigments to find out who they were by means of comparing their X-ray diffraction profiles with those found in standard databases. This turned out to be the most daunting task because some of them were



Figure 16. Norbert Baer; Walter McCrone; Thomas F. Mathews

not present in the X-ray powder diffraction file, and furthermore, had different crystal morphologies from those described in the literature. One of the most spectacular compounds I synthesized turned out to be the double salt calcium copper acetate hexahydrate, a compound produced by a medieval recipe but not entered into the chemical catalogue until the early 20th century (26)!

Let me review: the beginning of the first thread was my involvement with HIST via election; the second was chemistry education and my talk at the BCCE, and the third was my two-pronged research at the NYU Institute of Fine Arts. The BCCE talk about the resulting course on art and chemistry that I developed got me into publishing in the *Journal of Chemical Education*. My first paper describing the course I was teaching (27) engendered so many requests for reprints that I did not know how to handle them, but I was greatly helped by Mickey Sarquis (Figure 17), then an Associate Editor, who steered my subsequent publications on the topic (28, 29).



Figure 17. Arlyne (Mickey) Sarquis, Associate Editor, *Journal of Chemical Education*.

The BCCE talk also got me into the meeting circuit and other adventures. I was scheduled to show up to speak in a symposium organized by Glenn and Jane Crosby at the April 1979 ACS national meeting in Honolulu. That was precisely when United Airlines went on strike and very few people showed up to give their talks. I found a way, through a friend practiced in manipulating airline schedules prior to the internet, and I arrived on time via Anchorage and a flight with Western Airlines! That put me in the Crosbys' good books, and we collaborated for many years thereafter. It was at that same meeting that

I met Ted Ashford (University of South Florida) and Albertine Krohn (University of Toledo) who ran the ACS Examinations Committee, and they immediately got me involved—my first assignment was to work with Dwaine Eubanks, who headed the General Chemistry Exam. Dwaine eventually became Director of the newly-formed ACS Examinations Institute, ably assisted by Lucy Eubanks, and I served for a number of years on the Institute's Board (Figure 18).

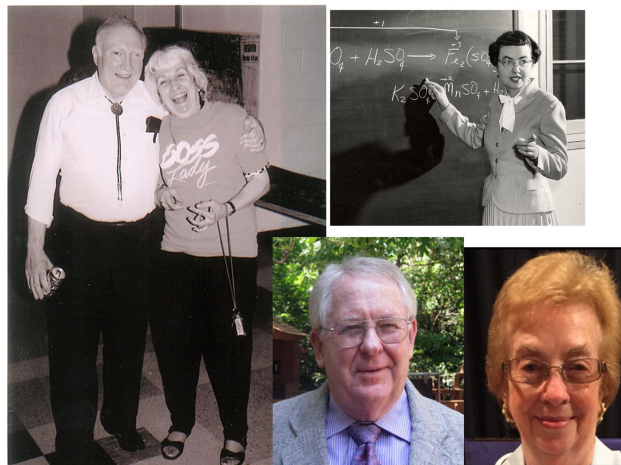


Figure 18. Glenn and Jane Crosby; Albertine Krohn; Dwaine Eubanks; Lucy Eubanks.

CHEMSOURCE

The next thread came spinning along in 1984 in the person of my academic Dean who recommended that I participate in the National Institutes of Health (NIH) Extramural Associates Program—actually a school for grant writing for people from small colleges. The major product of this adventure was called *ChemSource*.

Let me tell you about it. When I landed at NIH, I found that one of my colleagues and office-mates was Harry McKone (Figure 19), Professor of Chemistry at Saint Joseph's College in West Hartford, Connecticut, and one of the first people to invite me to speak about my medieval manuscript research at an ACS Connecticut Valley Local Section meeting. We have been close friends and colleagues ever since.

The grant writing expertise paid off when, encouraged by Marjorie Gardner and Stanley Kirschner, two giants in chemical education, I wrote the grant that landed us with about \$1.8 M *in toto* to develop a strategy for enhancing the talents of burgeoning chemistry teachers who may not have had the chemistry background to teach it. This project, called *ChemSource*, eventually

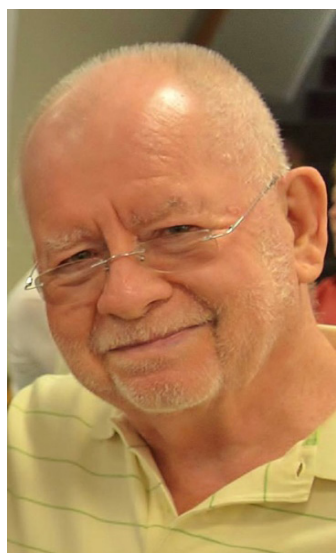


Figure 19. Harold T. McKone, Professor Emeritus of Chemistry, Saint Joseph's College, West Hartford, CT.

consisted of a four-volume, 2200-page monograph called *SourceBook*, five hours of accompanying videos called *SourceView*, and a *GuideBook* for pre-service teachers. *ChemSource* reached about 20,000 teachers of introductory chemistry during the 25 years of its lifetime, from 1994 to 2019. It enveloped almost the entire chemical education community in its web including outstanding chemical educators such as Henry Heikkinen, Jim Schreck, Dorothy Gabel, Loretta Jones, Pat Smith and Phil Ogata, to name only the tip of the iceberg (Figure 20). Henry and Jim were Co-Editors of *SourceBook*, Dorothy was the Director of *SourceView*, Pat and Phil were part of the *SourceBook* writing team and Loretta facilitated updating of the whole project to *The New ChemSource* in 2010 (30). Phil's expertise was especially helpful in inserting a module on color chemistry in a later version of *SourceBook* and, by the bye, was the authoritative, rigorous reviewer behind my Springer book, *The Chemical History of Color* (17). And history? Each module of *ChemSource* incorporated a history section developed by Larry Friedman, husband of 2023 ACS President Judy Giordan, that made sure to tell a different story from the usual dead white male narrative that was prevalent at the time.

SIDNEY

Another thread that also began to be woven in the late 1970s involved a job interview at the College of New Rochelle along with a great friend of the history of chemistry and of the Division, Sidney Edelstein.



Figure 20. Top Row: Henry Heikkinen, James O. Schreck, Dorothy Gabel (Photo courtesy of the Dominican Sisters of Sinsinawa, www.sinsinawa.org); Bottom Row: Loretta Jones, Patricia Smith, Philip H. Ogata

First the interview: there were two finalists, Tom and Zvi, for a position as professor of physical chemistry and, as department chair, I had to make the decision. We had recently begun a School of Nursing and the word came down from on high that we needed to have someone with not only a physical chemistry background but also some experience or expertise in medicinal or biochemistry. Both candidates were absolutely superb—I remember the topics of each of their lectures to this very day. I really wanted to hire both of them, but reality prevailed, and the choice had to be Tom because of his biophysical chemistry background. With tears in my eyes, I conveyed the news to Zvi and was so glad that he was able to pick up an alternative position immediately. But we kept in touch. Meanwhile, back to Sidney Edelstein. Sidney, an expert in the history of dyes and pigments, was the initial supporter of the present award which he named the “Dexter Award” after the Dexter Chemical Company, of which he was the founder and CEO—“dexter” signifying “the right hand of chemistry.” The award eventually evolved into the Edelstein Award and is presently the HIST Award, to be known as the Joseph B. Lambert HIST Award starting in 2023. Sidney and I were conversing in the exhibit at a late-1980s ACS meeting when he popped a question: his proposal was that I act as a visiting consultant to an educational institution, Shenkar College, in Israel, that he wanted to fund to establish a center for the study of middle- and near-eastern textiles. When I found out that I'd be going to Israel, I was thrilled and immediately contacted my dear friend in chemistry education, Nava

Ben-Zvi, who was a professor at the Hebrew University, and also Zvi, who had meanwhile made “aliya” to Israel, but I did not know where he was situated. I told him that I’d be evaluating the program at a Shenkar College—had he heard of it? Back came the answer: Yes. But when I arrived at Shenkar, I found out that not only had Zvi heard of Shenkar, but he was teaching there as the backbone of the chemistry department! What a small world! And after a rigorous inspection and thorough interviews on the Shenkar campus, I was prepared to report to Sidney that they got an A+ and deserved the funding. And thus it was founded in 1991, and remaineth to this day—a superb Edelstein Center for the Analysis of Ancient Artifacts directed by? You guessed it, our own Zvi Koren. It and Zvi have become major players on the stage of dye and color history, heritage and preservation. While visiting, David Samuel (Figure 21), President of Shenkar and a Professor of Physical Chemistry at the Weizmann Institute of Science encouraged me to apply for a Fulbright fellowship—which was duly accomplished for the academic year 1994-95 under his and Nava’s joint sponsorship (Figure 22).



Figure 21. Sidney and Mildred Edelstein; David Samuel; Zvi Koren, Director of the Edelstein Center.

That time in Israel was one of the most fruitful periods of my life—interaction with all kinds of people, Arabs, Israelis, Druze, Baha’i, Muslims, Eastern Orthodox, undergraduate and graduate students, archaeologists, high school teachers, museum personnel including the Directors of the Israel Museum and the Bible Lands Museum, university faculty, internationally recognized chemical educators—it was a heady time.

CHF

Following that formative sabbatical leave, I returned to undergraduate teaching for several years, but with the ongoing experience of marketing *ChemSource*

and the mind-expanding experience of my time in Israel, I seemed to be hankering for something a bit more global in terms of my educational activities. The chance came when, in 1997, Arnold Thackray (Dexter Award 1983, President, Chemical Heritage



Figure 22. Professor Nava Ben-Zvi, Professor Emerita of Chemistry, The Foundation, Hebrew University, and former President, CHF) recruited me to edit their newsmagazine, *Chemical Heritage*, and to eventually become Director of Educational Services at CHF—the beginning of another thread in my career.

Editing *Chemical Heritage* was a totally new experience that broadened my horizons immensely. Through personal meetings and correspondence, I interacted with a whole new world of persons involved in the history of chemistry. Putting out the issues each quarter was very demanding, but just so interesting and exciting. Figure 23 shows the first few covers under my editorship just to give a flavor of what was afoot.

I got to work with many wonderful people while there including Ted Benfey (HIST Award, 2019), author-science historian Mary Ellen Bowden, Frances Coulborn Kohler, who eventually took over the editorship, and Ron Tempest, on leave from Germantown Academy and an expert on fuel cells and their history (Figure 24).

CIAO!

The final thread that I’d like to talk about involves both Italy and finality, and so is appropriately labeled “ciao!”

I first met Marco Fontani and Mariagrazia Costa (Figure 25) when running a history of chemistry study tour to Italy in 1996. Although at the time, Marco, having just completed his doctorate, was working at

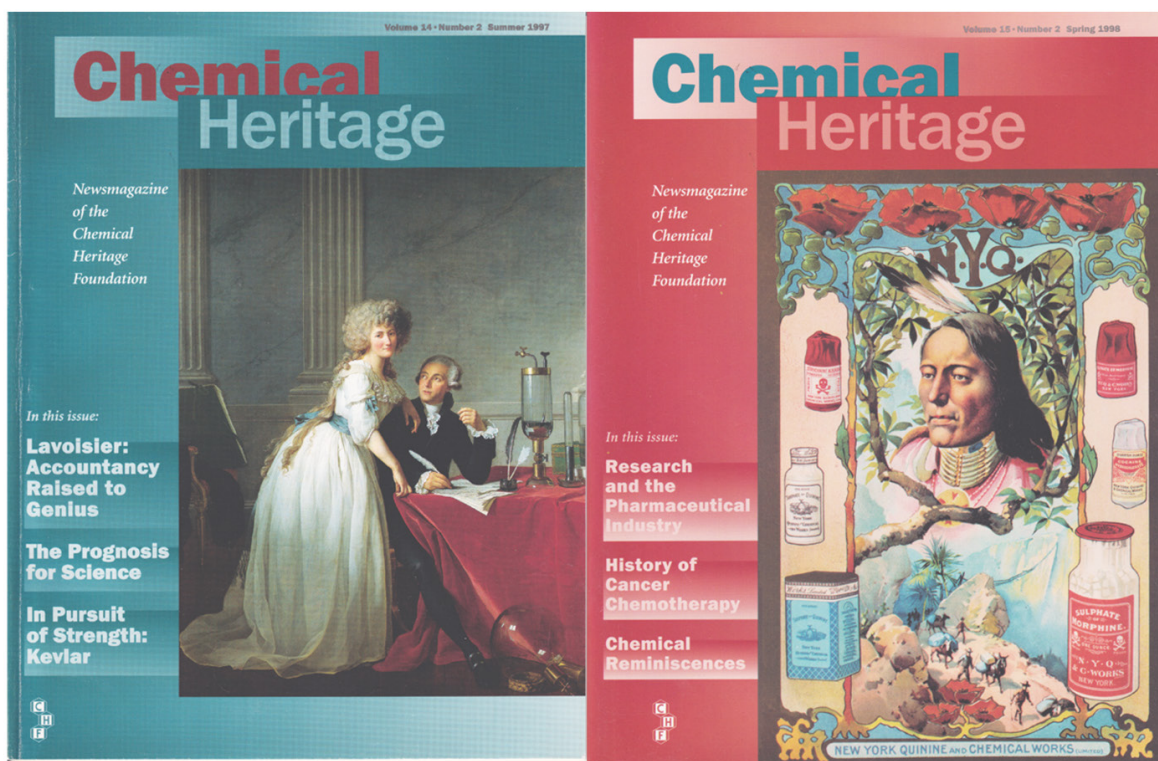


Figure 23. Some Chemical Heritage (31) newsmagazine covers during my editorship. Courtesy of the Science History Institute.

the University of Siena, through his close association with Mariagrazia, who was in the Chemistry Education Department at the University of Florence, he co-hosted, along with Paolo Manzelli, our group of about 25 chemical educators. We have remained close friends ever since, co-authoring two books, *The Lost Elements* (32) (Figure 26) and *Chemistry and Chemists in Florence* (18) (Figure 12) and numerous papers on the history of chemistry in both English and Italian. Among the most notable are the lead historical article on the actinides and transactinides in Wiley's *Encyclopedia* on the heaviest metals (33), our co-editorship of a *Substantia* special issue commemorating the 150th anniversary of the periodic table (34), a *Comptes Rendus Chimie* article on chemists and physicists behaving badly (35), and an article on the discovery of three notable elements predicted by Mendeleev's periodic table (36). Marco's personal specialty is the history of the work of the French chemist, Georges Urbain (1872-1938), which is treated in another paper in this issue (37).

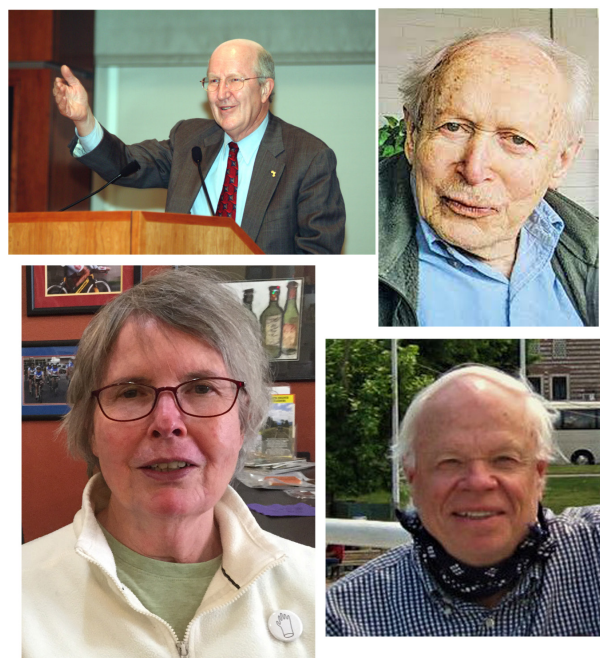


Figure 24. Clockwise from top left: Arnold Thackray (Courtesy Douglas A. Lockard Photography), O. Theodor (Ted) Benfey, Ronald T. Tempest, Mary Ellen Bowden.



Figure 25. Marco Fontani and Mariagrazia Costa, University of Florence

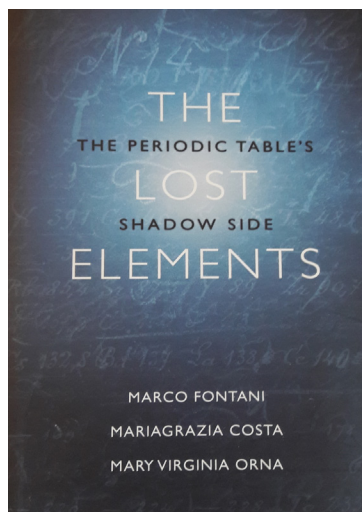


Figure 26. International Collaborative Effort: Publication of *The Lost Elements: The Periodic Table's Shadow Side* (32)

In every one of the threads that wove around, in and through my life, there was one constant: that of OTSOG. It was on the shoulders of all of the giants to whom I have introduced you in this paper that I happily and profitably sat. They have supported me, encouraged me, corrected me, and in the case of Jeff Seeman, nominated me for this wonderful award. I owe each of them my great gratitude. (Figure 27)



Figure 27. Receiving the HIST Award on 22 March 2022. Left to Right: Seth Rasmussen, HIST 2021-2022 Chair; Mary Virginia Orna, Awardee; Nicolay Tsarevsky, HIST Program Chair

References and Notes

- 2021 HIST Award address presented at the 263rd National Meeting of the American Chemical Society, San Diego, CA, March 22, 2022.
- Newton is famously credited with having stated, "If I have seen further, it is by standing on the shoulders [sic] of Giants," although the observation has been attributed to Bernard of Chartres (ca. 1124), and even farther back to Priscian (Priscianus Caesarianus, ca. 500 CE). The last five words of Newton's citation form the acronym OTSOG. https://en.wikipedia.org/wiki/Standing_on_the_shoulders_of_giants (accessed 22 Feb 2022).
- R. K. Merton, *On the Shoulders of Giants: A Shandean Postscript*, The Post-Italianate Edition, University of Chicago Press, Chicago, IL, 1993.
- The major award in the history of chemistry carried several names over the decades: the Dexter Award, the Edelstein Award, and the HIST Award in the History of Chemistry. For a history of the awards, please see <http://acshist.scs.illinois.edu/awards/index.php> (accessed 13 March 2022).
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19. M. Fontani, M. V. Orna and M. Costa, *Chemistry and Chemists in Florence: From the Last of the Medici Family to the European Magnetic Resonance Center*, SpringerBriefs in Molecular Science, Springer, Switzerland AG, 2016.
20. Published in Italian by the University of Florence as M. Fontani, M. V. Orna and M. Costa, *Chimica e chimici a Firenze: Dall'ultimo dei Medici al Padre del Centro Europeo di Risonanze* (Italian Edition), Firenze University Press, Firenze, 2015.
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About the Author

Mary Virginia Orna is the recipient of the 2021 HIST Award for Outstanding Achievement in the History of Chemistry.