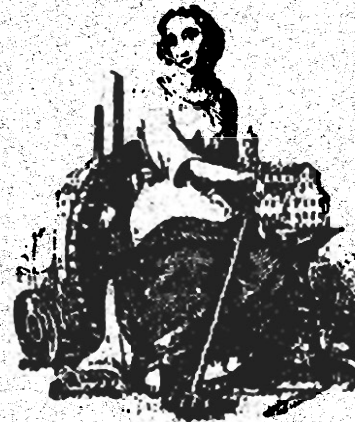


*WITH at Twenty-one*  
*A Look Back*



*1976-1997*

**Women in Technological History**

**A Look Back**

1997

## Introduction

The idea of capturing the history of our group by recording the memories of our members arose several times at our annual meetings during the 1990s. Now on the occasion of our twenty-first anniversary Women in Technological History (WITH) has gathered the reminiscences of just a few of our members in time for a celebration of our majority. We wish to thank the authors for sharing their stories, and Gail Cooper, Joan Rothschild, Carolyn Goldstein, and Haven Hawley for their efforts to collect them in this pamphlet.

Over the years WITH was lucky to have benefitted from the persistence of dedicated individuals who worked toward communal goals. This selection of reminiscences cannot capture the many contributions made by countless members toward our organizational survival and intellectual development. A simple list of officers is only a beginning toward that end. We are convinced that a greater variety of voices would yield a yet richer story. We hope that this collection will spark an renewed interest in both WITH's origins and its future.

## Martha Moore Trescott

I have interviewed many women engineers who said that over the course of their professional career they felt "totally alone." That's how I felt in 1969 when I began to attend SHOT meetings as a student. One of my earliest memories of a SHOT conference was Constance Green's presentation of her work on Eli Whitney and the controversy that provoked. I vowed then that I was going to help other women feel more comfortable in the profession.

At the 1975 SHOT meeting, I gave a paper on Julia B. Hall and the founding of ALCOA, along with the rise of electrolytic aluminum, from my dissertation and book, The Rise of the American Electrochemicals Industry, 1880-1910: Studies in the American Technological Environment. I did a lot of hard work to dig up the evidence on Julia's role, piecing together circumstantial and other "harder" evidence. Afterwards, the audience gave me a standing ovation and people gathered around to ask me questions; there was a lot of interest in women and technology. That year Ruth Schwartz Cowan also gave a paper on household technologies and their impact on women. From this beginning, a session was organized for 1976 with help and assistance from Carroll W. Pursell to whom I am continually grateful for so much support in so many things over the years.

The organization of Women in Technological History stemmed directly from that path-breaking session at the 1976 SHOT annual meeting on women and technological change. It was one that I organized and moderated together with Ruth Schwartz Cowan. [It included Daryl Hafter speaking on French weavers, Vern Bullough on reproductive technologies, Susan Levine on the social impact of the power loom, and Deborah Warner on women

inventors. Ed. T&C, 18 (1977): 485.] It was the first SHOT session devoted entirely to women and technological change.

That year some of us met rather informally and discussed how great it would be to form a women's organization within SHOT. For the first several years, I served as the secretary and newsletter editor of WITH, as we decided to name ourselves. In those early days, the newsletter appeared once every two months. It was not just a page or two, but began as four to six pages and rapidly expanded to twelve or so. Circulation too grew rapidly; within the first several months it increased from about twenty to several hundred. As I had no editorial or publishing help for several years, it was a tremendous undertaking to say the least. In addition, the newsletter became very expensive to put out. I was also editing the newsletter of the Women in Business and Economic History, a women's group I co-founded as part of the Business History Conference. At this critical juncture, I was helped immensely by my mother, Frances Marie McConnell Moore, who helped me with the financial cost of producing and mailing the newsletter; together we kept the WITH newsletter in print. A professional educator and feminist, she enjoyed attending those early SHOT sessions on women and technological change. When WITH began to collect dues, the newsletter finally achieved a financial base.

As a result of our 1976 session, there was tremendous interest in women and technology. Melvin Kranzberg, then editor of Technology & Culture, wanted to publish the session papers in the society's journal, but the session presenters felt it would be best to publish an anthology to give this field more visibility. We wanted to focus on both the impact of technology on women and women as agents of technological change, particularly as scientists, engineers, and consumers. We solicited additional articles and out of all these efforts, the anthology Dynamos and Virgins Revisited: Women and Technological Change in History appeared with

Scarecrow Press in 1979.

In addition, I was elected as the first woman on the society's Executive Council in 1976 and was soon followed by Daryl Hafter and others. Since WITH's formation I have enjoyed and encouraged the work of other women scholars in SHOT such as Autumn Stanley's work on women inventors.

For many years I have been writing a history of women engineers based on over a hundred interviews with pioneering women engineers. Their stories are extremely fascinating and important. I have spent my professional life trying to capture the forgotten contributions of women in technology. It is tremendously ironic then that as historians we have been so lax in writing our own history. I am very glad for this opportunity to tell about WITH's founding and early years.

## Daryl M. Hafter

I will never forget the excitement of my first SHOT meeting when we founded Women in Technological History. A call for papers appeared in one of the women's history newsletters, perhaps it was for the Coordinating Committee for Women in the Historical Profession, inviting participation in a panel on the connection between women and the history of technology. Its title was --as I recall--Do women make a difference in the history of technology? I could hardly believe my eyes! There was the topic I had been aiming at as I studied guildwomen in eighteenth-century France. I could explore the ways women acquired skill to do a myriad of crafts and set their activities within the context of pre-Revolutionary French society. I could aim at technology to link my topics. Through this focus I could explore how the preindustrial society used technology to produce goods and also located that technology in particular social institutions. A vigorous discussion with the other panelists, Vern Bullough, Martha Moore Trescott, and our chair and commentator, Ruth Cowan, suggested that this was just the tip of the iceberg. We looked forward to the next exchanges.

But how to make them happen? Was the topic of women in technological history going to be a one-time presentation, just an inspiring thought without enough material to make a new historical focus? The interest generated by the panel spilled over into discussions, and then the first formal meeting of interested scholars. If this sounds like the origins of the American women's rights' movement, when Lucretia Mott et al met on a bench in front of the British Museum to plot their strategy, I hasten to add that the cause was different. They had been refused the chance to speak in public (on behalf of abolition), but we were encouraged

to do so. Mel Kranzberg had made the Society for the History of Technology a group that welcomed new members and immediately gave them responsibility. To be sure, we were pioneers, since this was one of the first interest groups that SHOT had spawned. But those who gathered, besides the folks on the panel, were some of SHOT's tried and true like Mel Kranzberg, Ed Layton, Deborah Warner, Carolyn Cooper, Bart Hacker, Sally Hacker, Bayla Singer, John Beer, and even, if I remember right, Mrs. Brooke Hindle and Mrs. John Brainerd, the wives of two of SHOT's officers.

First steps were to decide our aims. Were we interested in discovering women's impact on technology? Or should we focus on technology's effects on women? Would we support female historians of technology, irrespective of their research agenda? Or would we only lend our enthusiasm to scholars, whether male or female, dealing with women in technological history? We decided to cast a wide net focusing on the two major aspects of interest: a) women as subjects in technological history, taking part in the use of technology or being acted upon and b) female scholars of technical history, no matter what their research interest. In short we would nurture the subject and the people.

What about our activities? We knew this was going to be a fellowship, or should I say a sisterhood, that went where its members wanted it to go. We had no prescribed route to follow and since there had been few other "interest groups" before us, we could decide how to interact with SHOT. We were fortunate in having Mel Kranzberg's talent with acronyms--he suggested that we needed a zippy title and we arrived at WITH (much better than something like that Coordinating Committee for Women in the Historical Profession or CCWHP). The first step was to elect officers who could carve out roles for action. I was elected chair of the group, Martha Trescott undertook to be the newsletter editor, and eventually Debbie Warner accepted the pesky job of

treasurer. High on our list of accomplishments was getting known by SHOT and winning its respect. To this end, I reported at every meeting of the executive council, whether or not I was on the board, the activities that our group had decided on. They concentrated at first on sending at least one panel to the program committee so we could be sure that women in technology had at least that public forum. To get that panel together was a matter of conferences to find a title and many phone calls to get the participants. We also supported presentation of separate papers throughout the programs. Eventually we were asked to become readers for projects submitted to the National Science Foundation.

Soon these efforts gained international ties. In concert with women scholars in the History of Science Society (HSS), particularly Margaret Rossiter and our Bucharest contact Eva Vamos, we helped to put on two conferences in Hungary, one in Vespem and one in Bucharest. They were the first international gatherings in which scholars from the USSR and Eastern Europe exchanged information on the role of women in science and technology in their countries. It was an eye-opener for me, and for many others, to learn that definitions of feminism and good conditions for women varied so widely. In the Communist world women doctors, architects, and engineers abounded and social services were plentiful, while women were absent from political roles and had to spend hours in food lines. In the West, women were still setting goals for women to become technical specialists, but our prosperity meant greater ease in provisioning the family. From these beginnings, WITH allied with HSS women to lobby the International Congress for the History and Philosophy of Science, Medicine, and Technology (ICHPS) to establish a regular section for research and presentation of women's themes. This effort has been successful and the ICHPS now regularly presents panels on themes of interest to us. Eda Kranakis was much involved with these activities.

The link we had between conferences was the magnificent Newsletter which Martha Trescott wrote. Where did she find all the items? Her news of books, reviews, conferences, and fellowships was a source of much inspiration. More than anyone else, she deserves credit for keeping WITH a viable group with a forward-looking agenda. How I wish she were involved with us today! And as we gained confidence in our own activities and received the respect of SHOT, our meetings came to be the measure for others in the organization. Twenty years after our debut, SHOT has helped institutionalized the special interest groups (SIG), given them time on the official program, and they form a lively entity within the big organization to press for particular activities from having more panels on early modern technology to getting museum and education specialists together for communication outside the SHOT community.

WITH meetings are always a source of positive action. When we met in Upsala and London, specialists in women's history were eager to make ties and to have our research circulated. In Sweden and Hungary we were especially struck by the need for getting topical books and articles into the hands of international scholars. Individuals from our ranks like Judy McGaw and Susan Smulyan have contributed to making the K-12 curricular materials reflect technology. And Joan Rothschild inspired a successful effort through our group to initiate double-blind refereeing for articles, a move that brought Technology and Culture into the standard practice of modern periodicals. Her books on women in technology and teaching women in technological history have been important accomplishments for the field as a whole. And what a triumph when Ruth Cowan's seminal book, More Work for Mother was published, and when Ruth, one of our own, became president of SHOT!

As we enter our second twenty years, WITH is ready for

new challenges. The chair of the group has now been circulating to newer members. The problem of membership dues which Debbie Warner has bravely handled, getting us established as a legal tax-free organization and opening a bank account are important steps on which the next treasurer can build. SHOT's traditional openness and welcoming posture has helped to nurture this feminist organization, which, in turn, keeps the Society for the History of Technology honest, flexible, and ready to accept new challenges.

### Carroll Pursell

When WITH was founded in 1976 I was Secretary of SHOT and, therefore, should have been aware of much if not all of what was going on in the society. In retrospect, however, it is all pretty much a blur, except for the enormous energy and commitment of Martha Moore Trescott. It may well be that the quest for the "real" founder of WITH is as quixotic as the attempt to discover who "really" invented the airplane, or any other famous technology. Each of the group of founders (and there were many) made her or his own contribution; but Martha's fingerprints are still indelibly on nearly every aspect of the operation. Critically, it was she who edited the early issues of the WITH newsletter, beginning with Volume 1, Number 1 on June 6, 1977. Parenthetically, I believe it was Martha who also suggested that SHOT revive its own newsletter which had ceased to appear. The SHOT newsletter that we are now so dependent on must have restarted at about the same time because my oldest copy, Number 2, is dated September 1977. It contains the news, by the way, that Martha had finished her dissertation on "The Rise of the American Electrochemicals Industry" and that James Williams was beginning

one on the energy history of California. Looking back twenty years I am struck by how receptive SHOT was to the ideas both of more women working professionally in the history of technology and of more scholarly work on the role played by women in technological change. Mel, of course, encouraged this initiative like he did all the activities that went on within the family as it were. At the same time it must be said that it took the positive and forceful pushing of WITH members to get the society to do what all of us now feel was the right thing. WITH worked hard to get women appointed to society offices, to get them on the program, to organize sessions of women's topics, to get double-blind reviewing instituted at T&C. That twenty years later we still have occasion to celebrate "first"s by female members of SHOT is somewhat sobering. At the time it seemed to many that all this progress was made so very easily, but none of it was inevitable and none happened of its own accord.

Like SHOT itself, WITH has always been known for its ecumenical nature. Men have always been welcomed into its ranks as well as women; WITH fostered scholars of both sexes who worked on women's issues, and encouraged women who worked on anything in the history of technology. If over the years recuperative studies have gradually been joined by gender analyses--a change evident in the larger field of women's studies--both are still encouraged by WITH. A whole new generation of women historians of technology has joined the fold since 1976. And it is due, in no small measure, to WITH and its founding members that these scholars have found a place in the society and are making contributions to the field that would have astonished us and gladdened our hearts twenty years ago. They still do.

## Ruth Schwartz Cowan

Deadlines do tend to focus the mind!

Ever since the first request for WITH memories came over the internet, I've been struggling to recover lost memories of WITH and wondering why mine seemed to be lost in the first place. Yesterday morning the answer came to me with an exceedingly dull thud; I probably wasn't there.

The late 1970s were a profoundly difficult time in my life. I had two (later, three) small children; my husband had returned to graduate school, (translated this means we had very little disposable income); I was just keeping my head above water at work; the book that eventually became More Work for Mother was only slowly getting written; for six months in the winter and spring of 1978 I was bedridden with back pain, subsequently resolved by surgery which required six weeks of recuperation.

One not inconsequential result of all of this is that I probably didn't attend SHOT meetings for several years, unable to afford either the cost of the trip or the time away from home. And one, not inconsequential result of my inability to attend was that I probably wasn't present either at the founding WITH meeting or at its earliest subsequent meetings.

My sentiments were with WITH, of course, but not my body. I once had a very thick file folder of WITH correspondence (possibly now packed away in an orange crate in the basement--or, horror of horrors for an historian--possibly incinerated). Fortunately, I have a very clear memory of what was in that file folder and I can use that memory to pay tribute to four people who probably were present when WITH was created in 1976.

Martha Moore Trescott's letters filled a good part of that folder. Martha seemed to have unbounded energy and enthusiasm,

not only for WITH, but also for the book of papers on women and technology that she saw through endless author's delays and publisher's rejections. Dynamos and Virgins Revisited is a tribute to Martha's devotion; I find it astonishing (when I recall how many problems Martha tackled in getting that volume to press) that it appeared when WITH was only three years old.

Mel Kranzberg. Unless someone can report with certain memory that Mel wasn't actually present at the founding meeting, I'll remain convinced that he must have been. Certainly my WITH file folder contained many letters from Mel--encouraging us to organize meeting sessions, T&C submissions, fund raising. I have vivid memories of WITH meetings at which Mel was the only man in the room--and entirely at ease. Some may be wont to say that Mel encouraged WITH in the same way he encouraged every SIG, but I suspect (and am surely not alone in suspecting) that Mel's unrelentingly innovative mind was really tantalized by the fairly radical feminist revisioning of his favorite subject.

Finally, my file folder was crammed with the early WITH newsletters and bibliographies--none of which would have seen the light of day were it not for the quiet yet pioneering work of Daryl Hafter and Gay Bindocci. WITH members must have been terrible correspondents, citation submitters, and dues payers--but Daryl and Gay (if memory serves, sometimes alone, sometimes together) kept those newsletters coming for more than a decade. If other people helped put out those early newsletters I apologize for the neglect spawned of poor memory (and misplaced file folders). All the early newsletter editors deserve our thanks, for they provided the continuity which allowed WITH to continue.

Finally, on a slightly different but nonetheless related subject, the recent and excellent T&C issue on gender and technology states that my article, "The Industrial Revolution in the Home," was the first article on women and technology to appear in the society's journal. This is not true. The first article on that

subject in T&C was Alison Ravetz, "Modern Technology and an Ancient Occupation: Housework in Present Day Society," 6 (1965): 256-60. I want to remind readers of this for several reasons. First, Alison's article inspired my first foray into the history of housework; I read it, I think, in the summer of 1970. Second, Alison and I maintained a correspondence for over a decade, a correspondence in which she continued to inspire me to pursue topics at the intersection of gender and technology. And third, Alison was never, I believe, a member of SHOT or of WITH but I want to argue here that she deserves to be considered one of the foremothers of our field, if only for having seriously thought about the subject of women and technology long before any of the rest of us did.

## Joan Rothschild

(Originally written in the winter of 1996, this contribution was updated slightly in the fall of 1997.)

"Foremother" - that brought me up short. I never thought that term would be applied to me as I began in the '70s to ask: Where are the women - indeed, where are feminist perspectives - in the history of technology? Yet, when the editors of the "Gender and Technology" issue of Technology and Culture used foremother to refer to me and others from that era, I realized the term was apt. We did break new ground - but we didn't do it alone. We found each other and worked together, and we had outside support.

It seems fitting somehow for me to write this just a little over a month since Mel Kranzberg died, and as I continue to marvel at his contributions, even as I mourn. For, despite his playful, courtly mien toward women, Mel was one of the first to recognize the importance of feminist scholarship. His support of my work early on, especially for Machina Ex Dea when it was originally published in 1983, was strong and unwavering. I can't count the number of letters and the encouragement he extended on my behalf over the years. But, more important, in recognizing and taking feminist work seriously, Mel set the tone for the rest of the Society. We have come a long way, baby!

Which takes me back to my first SHOT meeting. It was in Toronto in 1980 at a joint meeting of the four societies: SHOT, HSS, PSA, 4S. There I met members of WITH, which I promptly joined, and was introduced to the issues and struggles of other Foremothers at a stimulating, well attended panel of women from the four societies. I was impressed by how much had been going on since the early '70s, not only to get better representation of women on panels, in official positions, and in the journals, but also to extend feminist scholarship to new areas, following the lead pioneered in history, and taken up in other disciplines.

Among my fondest memories of Toronto is spending time with another Foremother: Sally Hacker. I had met Sally in May when she participated in a women and technology panel I had organized at the National Women's Studies Association (NWSA) meeting. Learning of her work, I had also asked her to contribute to a journal issue of Women's Studies International Forum and to Machina which I was then working on. What a delight Sally was! It was she who introduced me to Mel, and to the rest of the SHOT clan at their nightly ritual, the hospitality suite. No other professional association I had ever joined, I might add, had welcomed me so warmly. Sally's research was truly innovative-

from her insights into engineering education, including those probing and unorthodox queries of MIT engineers; her skillful linking of class, race, and gender in industries undergoing technological change; to her revealing insights about gender and social stratification at Mondragon in Spain. Her work, her adventurous spirit, and her courage, still inspire me.

Reminiscence is perhaps always bittersweet. But, as I look back now over 21 years of my own work in this field - and to membership in SHOT and WITH for almost 17! - I am not sad. Indeed, I am encouraged. The field has changed. There are more courses incorporating women and gender issues, more women coming into the field and more women on panels and in official positions. Feminist research continues to grow, and to open new areas for probing scholarship. My own work has branched out into exploring feminist perspectives on the meaning and interplay of design and technology - through a conference, network, and forthcoming book.

But, this said, we still have a way to go. The special T&C issue on gender is a good sign, but we need much stronger journal representation, both in articles and in reviews; we must not be ghettoized. Above all, in a continuing climate of backlash and conservatism, we need to find ways to expand and broaden, and not narrow, funding opportunities so that scholarship which is innovative, cross-disciplinary, but outside the traditional mold, gets a fair hearing and support.

In short, we have much to build on but still much more to do, and so make Foremothers and Daughters proud!

## WITH List of Officers

1976-79

Chairperson

Daryl Hafter

Newsletter Editor

Martha Moore Trescott

Assistant Editor

Mary Robischon

Bibliographer

Eleanor Maass

1979-82

Chairperson

Elizabeth Hitz

Newsletter Editor

Gay Binocci

Treasurer

Mary Robischon

1982-84

Chairperson

Gay Binocci

Newsletter Editor

Kathleen Ochs

Treasurer

Deborah Warner

Bibliographer

Helena Wright

Rhoda Ratner

1984-86

Chairperson

Kathleen Ochs

Vice President

Mary Robischon

Secretary/Newsletter Editor

Rachel Maines

Treasurer

Deborah Warner

Bibliographer

Eleanor Maass

1986-89

Chairperson

Rachel Maines

Vice President

Mary Robischon

Secretary/Newsletter Editor

Lisa Robinson

Treasurer

Deborah Warner

Bibliographer

Lisa Robinson

Stephen Cutcliffe

Gay Binocci

Kathleen Ochs

1989-93

Chairperson

Lisa Robinson

Newsletter Editor

Daryl Hafter

Newsletter Coordinator

Arwen Mohun

Treasurer

Deborah Warner

1993-96

Chairperson

Carolyn Goldstein

Newsletter Editor

Daryl Hafter

Newsletter Coordinator

Deborah Douglas

Treasurer

Deborah Warner