

Meet the Lab's Lady Ph.D.s



Maureen Gardner (Chemistry Department) is the youngest of the eight and in her second year on the job. Her degree is in Nuclear Chemistry (Illinois Institute of Technology), but here she is actively engaged in quantum chemistry.

Maureen's work – chemical modeling – is the computer calculation of possible combinations of atoms, in which the characteristics of the individual atoms form the basis for determining the stabilities and binding energies of their compounds. Her project is a part – “the first step” – in a modeling program to simulate chemical lasers.

“I went the Ph.D. route because I wanted to do independent research,” Maureen said. “In graduate school, about 10 to 20 per cent of the students were women. I wouldn't say that any limitations are placed on women in this field – certainly not here.”



Virginia Brown (Theoretical Physics) has her degree in Theoretical Nuclear Physics from McGill University. She spent a year at Yale University on a Post-Doctoral Fellowship then came to LRL on a two-year Post-Doctoral Fellowship. She spends most of her time on computer studies to obtain a better understanding of the forces between two nucleons.

Both at Ohio State University, where she did some graduate work, and later at McGill, she was the only woman graduate student in her department.

“I never was concerned about that situation,” she said, “perhaps because physics to me is not just a job but a way of life, which thus far has been most satisfactory. My interest in physics came as a natural outgrowth of my love of mathematics and philosophy.”

There are 483 PhDs working at the Laboratory.

Eight of them are women: Luisa Hansen, Mary Cunningham, Virginia Brown, Iris Borg, Maureen Gardner, Virgie Shore, Florence Harrison and me – the author of this piece – Val Evertsbusch.

As an individual, each of us is happy with the work she does and the recognition she receives. None is flattered at being placed in a special category and all enthusiastically lambast the stereotype of the poor brave little lady scientist fighting for a niche in a man's world. The consensus is that:

- that sort of thing just isn't very important any more
- competence isn't male or female
- it isn't any more remarkable that a scientist should be a woman than that a scientist should be a man
- the problems of combining homemaking with a profession have been greatly exaggerated.



Virgie Shore (Bio-Medical Division) has a degree in Biochemistry from UC-Berkeley. She came to LRL after six years at Washington University in St. Louis. In her work here she studies the proteins of cell membranes and serum lipoproteins. She's trying to learn how their structures and properties are related to their functions in the body.

At the start of the interview she said she hoped she wasn't going to be asked why she went into science. She can't really state the reason but added she couldn't imagine doing anything else.

“I wouldn't say that I had too much encouragement in graduate school, except from my husband. But I don't think I had to prove myself in any special way because I was a woman. And the same is true now. I'm not aware of any discrimination being directed against me.”

Five of our group are married – all to scientists.

Dick Borg is a professor in the Department of Applied Sciences (UC Livermore-Davis), William Hansen a chemist at UC-Berkeley, Bernard Shore a biochemist and Division Leader in the Bio-Medical Division, Mel Harrison a mathematician and Deputy Department Head in Computations Department, and Don Gardner a chemist in Radiochemistry Division.

Except for Maureen, all of the women were married before they received their degrees. They have approached the homemaker/career question in different ways, all apparently successful.

Luisa Hansen believes that the so-called difficulties for the professional woman arise mostly because tradition demands them.

“In Chile, where I come from, there are many, many wives and mothers in the pro-



Luisa Hansen (Experimental Physics) clearly considers herself not a woman who has invaded a man's world. Instead she sees herself as a scientist comfortably and happily at work studying nuclear forces. A PhD in Nuclear Physics from UC-Berkeley, she has been at LRL for 11 years. She publishes about two papers a year, and attends her share of scientific meetings.

Luisa does not feel she has any problems as a woman scientist.

“No woman has to defend her right to a place in her field, except by her work,” she said. “It is her own self-assurance, her own confidence in her abilities, that is important. Of course, it is what she gets from her family, friends, and teachers, that determines how much confidence she will have and what she will make of her life.”

“I feel as I do partly because I am from Chile. There, in middle-class families, it is fully accepted that educated women shall have careers of their own. It happens more often than not. So there is no reason why a girl should not choose any career that her abilities will allow.”

fessions, and no one considers that there is anything remarkable about it. It is so also in Argentina, in Uruguay, in most of Europe, but not in this country.

"I do not know why. It is only necessary to have a good housekeeper; I do not believe in trying to do everything myself.

"It is not necessary to interrupt your career to have children, but you must plan carefully. I had my degree in June and my baby (a son, now eleven) in July, so you see we planned *very* carefully. I spent six months at home, really a sort of extended vacation, and my mother came from Chile to be with me for a year. Then I went back to work.

"I think you can have a better relationship with a child when you come to him fresh from other activities. Children are precious, but it is not good for a woman to live at child-level mentality for 24 hours a day."

Iris has found no difficulty in combining homemaking and career.

"Of course, Dick is very understanding. As for housework – I do my own. I've never felt any need to have help."

The Borg's have one son, nine, and according to Iris, "Most of our outside activities are things we do as a family. We're avid skiers, campers, and travellers, and we enjoy music."



Iris Borg (Plowshare) has the first Ph.D. in Geology ever awarded to a woman at UC-Berkeley. She came to the Laboratory in 1962 as a consultant and worked part-time in the Chemistry Department for several years. She has been with Plowshare as a mineralogist for five years.

"I think I'm in this mostly because I enjoy solving the problems," Iris said. "I enjoy finishing them off and putting them away."

She admitted that she had had one experience with male prejudice – not at LRL.

"I think that day is about gone," she added. "Once you've demonstrated your competence in the laboratory you have no problems."

Iris has had her share of recognition: Guggenheim Fellowship (1968-1969), Fellow of the Geological Society of America, Fellow of the Mineralogical Society of America (which she serves currently as a member of its Awards Committee). She has also co-authored a book (*Calculated X-Ray Powder Patterns of Silicate Minerals*, published by the Geological Society of America). In mid-March Iris and her husband Dick left for Egypt where they were to spend 10 weeks at the American University of Cairo – she as a lecturer on "Shock-Induced Glasses" in the Department of Materials and Engineering, and he as a Visiting Professor of Physics.

The Harrisons have a son (18) and daughter (12).

"When our daughter started school, I came back to work," said Florence. "I had to set up strict priorities. I have someone come in to clean the house. I had cut off all community service activities – all board and committee memberships – except one or two things that have to do with ecological problems. That's a very special concern of mine. And I've given up all activities except skiing, tennis and other things that include my family."

Virgie shrugged off the question of the housework.

"If there's a rush and something has to give, it's usually the house. As far as our social life goes it isn't very complicated. We don't do much entertaining. We like spending our leisure time out of doors – long walks along the beach, that sort of thing – or going to art exhibits."

Maureen has no present conflicts between home and career, "but children could present a problem. Mine isn't a field you could leave for a few years and then come back to. It's moving too fast. I'm not sure – I don't know yet how I'll handle it."

Conclusions? Each of us is doing the work she most wants to do, and enjoying it. As women, no doubt we have some special problems. But as scientists we seem to have pretty much the same needs as scientists in general – confidence in our own abilities, reasonable freedom to work and to develop independently, reasonable freedom from irrelevant distractions, adequate tools and working facilities, and reasonable recognition and rewards based on merit.



Florence Harrison (Bio-Medical Division) has her degree in Zoology from the University of Washington. After a year at Stanford, she retired for seven years "to have our children." She came here in 1964 to study the accumulation of radionuclides by freshwater and marine animals, especially those used for food by man.

"If there were any special pressures on me during graduate school," she said, "they just didn't register, probably because I'm not a competitor. One professor, a woman, actively discouraged me from a research career, warning me that as a woman I would encounter difficulties.

"Everyone else was encouraging and helpful, especially my research adviser, a man. As it developed I found no difficulties – except for the occasional box that's too heavy to lift."



Mary Cunningham (L-Division, Nuclear Testing) has a degree in Nuclear Physics, one of the first two awarded to women by the University of Oregon. She has been at LRL for six years, working on shot diagnostics.

"My work takes me to the Test Site quite a lot," Mary said. "In the beginning, I had dire warnings that the miners took a very dim view of women entering the working areas. But as it turned out everyone, miners included, have always been very helpful. In fact it was a technician who painted the flowers and lacy border on the hard hat I wear. Actually, I'm thoroughly spoiled and I enjoy it."

For any girl considering a career like hers, Mary passes along some advice she had from a fellow graduate student, a black man: "Don't compete just for the sake of competing. Whatever attitudes you meet, don't let them change you – don't let them make you more aggressive or less aggressive."

When Mary applied to graduate school she found requirements for entry were higher for women, "and rightly so," she said. "Their record up to that time had not been admirable; not one had finished."

Once working Mary found some people suspicious of her competence and stability. But she added "I've rarely felt any antagonism directed against me because I'm a woman – the contrary if anything."



As for me – **Val Evertsbusch** – I earned my degree in pharmacology from The University of Chicago. I taught there one year then went to Argonne National Laboratory for eight years as a technical editor in Biology and Medicine Division. I came to LRL in 1964 and work in the Technical Information Department.

I'm a writer/editor mostly because I like helping other people figure out how to express their ideas. I'm more interested in that than in solving scientific problems, but it takes everything I know about science to do it, and often that isn't enough. I like working across the broad range of the biomedical fields, and occasionally, getting into other areas of the Laboratory's work.