

## INTRODUCTION TO WIA MEETING

*C. Megan Urry*

We are here because we see the need to change the “face” of science, or we recognize that change is already happening and we want to understand how best to deal with it.

Each of us may have a different reason for supporting change.

For some, it is simply a case of fairness, of justice, of enabling others to share the joy we find each day in doing science. Most scientists choose their careers for the sheer intellectual pleasure of it. There are physical rewards as well: science in this country is big business, largely supported by taxpayer funds. Yet he who benefits is not necessarily she who pays. Could this be why Congress is sometimes reluctant to fund science? That it doesn’t serve their constituency, increasingly populated by women and people of color?

Others of us are concerned about academic inbreeding, in a system that seems to clone itself very efficiently from one generation to the next. New ideas and approaches can easily be excluded by the current system. Perhaps widening our “net” to attract new people—those who do not traditionally enter science majors in college, for example—will enliven the intellectual atmosphere and strengthen the discipline. The central paradox here is that those of us in this room today, discussing this topic, mostly professional or soon-to-be professional astronomers, are by definition not the people we are talking about including.

Finally, the pragmatic among us have recognized the plain fact that the U.S. needs more Ph.D. scientists and engineers than current projections forecast, and that the shortfall is substantial. Much of the gap in recent years has been filled by foreign graduate students, who often take their expertise back to their home countries, leaving the U.S. still short of scientists. Furthermore, as more women and minorities enter the workforce, they become more of the “pool” from whom all scientists will come. Does it make sense to exclude *a priori*, knowingly or not, explicitly or implicitly, the majority of the talent pool?

The underlying assumption in all of this is that women and minorities are no less able than white men to do science. I believe this fundamentally. I have never seen credible evidence to the contrary. I don’t know how many people—how many tenured professors of science in our universities—actually do believe there are inherent differences in ability. Certainly few would admit it out loud (though some still do, as every female and minority student can probably attest to).

I believe, and I think some of our talks today will describe how, the outsiders are as talented in science as the insiders. Our closely-held faith in “weeding out” as an efficient selection process for scientists—the idea that rigorous courses and tough exams will let the cream to rise to the top—is simply not true. Our system of producing scientists fails to attract the brightest people, fails to keep them, fails to nurture them and to stimulate them.

Our system has its successes, manifested in scientific problems solved and new fields explored. But our system has a number of serious problems: the hectic life that leaves no time for thought or reflection on larger problems; the hyperspecialization that has

each of us delving deeper and deeper in our own corner of the sandbox; the crisis of standards arising from severe pressure to publish first, publish often, publish anything; and the low morale that is the consequence of all of the above.

Women who are in science say they are there not because of their white male teachers, but in spite of them. This is not the symptom of a healthy situation. The old model for science, with its strict hierarchy, unrelenting competition, and tendency toward isolation, is counterproductive and flawed. The elite [male] scientist stands high atop his ivory tower, surrounded by other academic scientists who are very much like him. There are few women faculty, and some more women at the graduate student level, but very few minorities in the faculty or graduate student populations. The “face” of the general public, which I have represented here as the undergraduate pool (perhaps an optimistic assumption already)—half women and with many more minorities—looks very different from that of established scientists, which is not only an unhealthy situation but an unstable one.

*insert ivory tower here*

We need to move toward a new model for science, a model that encourages discussion, collaboration, interaction, that encourages lively questioning, that doesn't punish new ideas or approaches, and that allows diverse peoples, insiders and outsiders both, to be comfortable and productive.

We will encounter problems in trying to move toward this new model. Among those who make up the current structure, there is a lack of awareness of the problems—a sense that all is well. Among any group, there is a natural resistance to change. Developing new strategies is not easy, or it would have been done already. Some strategies now in place—for example, affirmative action—are widely misunderstood and sometimes resented, and in the absence of shared understanding and goals, can be counterproductive. The insiders rarely open the palace door to the revolutionaries, unless they somehow can be made to feel it will be to their benefit.

I have been referring to outsiders generally, not just women. Indeed, of all the outsiders, women are arguably closest to entering the castle keep. Originally we limited the focus of this meeting to women, in order to concentrate on areas we were most familiar with and could most easily affect. We thought the dismal numbers of minority astronomers meant the problems were fundamentally different and more severe. In the year since that decision, it has become obvious that, first of all, the problems of women and minorities are very much the same: essentially being the “outsiders” in a culture defined by a set of white, male insiders. It's only that the problems for women are less severe, perhaps because it's easier for a woman to look like a man than for a person of color to look white.

We also chose to focus the meeting on the graduate level and beyond, again thinking we could have the most influence there, and further, wishing to avoid relegating the problem to a place for which we have no responsibility (for example, saying, however true, that the problem really needs to be addressed via K-12 science education, thus washing our hands of the matter). Notwithstanding this stated focus, it is clear that we, as professional astronomers and educators, have a tremendous influence on whether undergraduate students choose to pursue scientific careers.

In the discussions that occur during this meeting, therefore, it is entirely appropriate that the focus be widened to include the issues of undergraduate education and of minority participation.

I'd like to relate a story that I think might serve as an example of how communication is the key to solving the problem of exclusion. When we first started organizing this meeting, several of the ST ScI staff got together to discuss what the meeting should be. Some of us started from step 2, in a sense, taking for granted that the situation for women in astronomy was terrible, and moving on to explore the questions of why things are the way they are and how to change them. After all, we had been living the story, as women astronomers, for our entire professional lives. When I arrived at ST ScI in 1987, for example, there was only one woman Ph.D. scientist among the 50 or so AURA tenure-track staff, despite the fact that ST ScI was a new institution, not top-heavy with male astronomers hired in those “sexist 60's.” (By the way, I'm happy to say there are now six women Ph.D. scientists on the AURA tenure-track staff!)

Much to my distress, one of my male colleagues, whom I would describe as a sensitive person much interested in issues of education, accused us of planning a one-sided meeting with a pre-ordained outcome. He insisted that the meeting should simply address the question, “is there discrimination against women?” presenting “both sides”

of the question. We argued about this for two hours. I was astonished that he could be so blind! He was astonished that I could be so blinded! This planning session ended badly, with no resolution, and he later decided not to participate in the meeting.

I tell this story not to say, “What a Neanderthal man! Why doesn’t he realize the situation?” (although I might have thought that at the time), but to say that I now understand why he said that. He’s not stupid or oblivious; he simply hasn’t lived the life I’ve lived. He doesn’t know overtly sexist people, he isn’t overly sexist, (any more than any of us raised in this culture), and he sincerely hasn’t experienced a problem at first or second hand. His experience tells him there is no discrimination. On the other hand, I have grown up seeing few women scientists as faculty, students, department heads, speakers at meetings, or science award winners. I’ve also seen women who are fine scientists ignored and passed over for jobs, for talks, and even just ignored in daily discussions. MY experience tells me there IS discrimination.

Am I right and my colleague wrong? No, we both have valid experiences. What we need to do is educate one another, try to understand each other’s experiences, discover our common ground, and proceed from there. That is what I hope this meeting is able to do for all of us.

Let me describe the organization of the meeting. The first morning and afternoon will be devoted to informational presentations, both for the full audience and in five parallel break-out sessions. To satisfy my anonymous colleague and like-minded people among you, we will start the meeting with statistics describing the status of women in astronomy and related scientific disciplines. Interspersed with the talks and break-out sessions, and for much of the second day, we will be meeting in “working groups,” to which each of the registered participants have been assigned. The purpose of these groups is two-fold: to give everyone a chance to talk and to exchange ideas and experiences, and more formally, to draft the Baltimore Charter.

The Baltimore Charter was described in literature sent to participants before the meeting. Briefly, we envision this document as a set of guidelines and principles to facilitate the inclusion of diverse cultures within the disciplines of astronomy and other sciences: a Magna Carta for diversity, if you like. In several brain-storming sessions this summer, we developed a basic outline that can serve as a template to stimulate your ideas (a copy is in your registration packet), but it is not meant to be final, or even comprehensive.

Each working group has been assigned to a particular part of the outline. Laura Danly has been in charge of organizing the groups and will describe the process in greater detail before the morning coffee break. Note that working groups will meet on the first day during the coffee break, lunch, at the end of the afternoon, and all morning the second day.

The Charter will be drafted by you, in your working groups, over the two days of the meeting. It will be synthesized and edited into a single document by an integration team that consists of the panel from the second afternoon plus a few additional people. The final Baltimore Charter is being published in the proceedings of this meeting, which will be sent to each of you and will be widely distributed to the astronomical community as well. The hope is that it will apply not only to women and to astronomy but to all people and all sciences, and that institutions like ST ScI or your university or your observatory will ratify it as their own.

Let me close by saying that I know all of us are interested in achieving something positive in this meeting. To sit around and complain about what is, to tell our personal anecdotes, may have a certain healing power for the speaker, and there is a place for that, but in the end, little changes. Our hope is that by exchanging views freely and openly, by mixing people with different perspectives, and by coming to consensus on a Charter for progress, we will indeed have achieved a positive step toward change.

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