Masters of Radiology Panel Discussion: Women in Radiology—How Can We Encourage More Women to Join the Field and Become Leaders?

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INTRODUCTION

Each quarter, the *AJR* will publish the transcripts of the Masters of Radiology panel discussion hosted by Drs. Howard P. Forman and Marcia C. Javitt. The panel will review topics of importance in the field of radiology and share their unique insight into how these issues are shaping or will shape the future of the specialty.

Forman: Thank you everybody for joining. This is a very open-ended topic: "How can we encourage more women to join the field and become leaders in radiology." I will open up the discussion with two questions.

The first is "Should we care that women are grossly underrepresented in radiology?" Until very recently, women were between a one quarter to one third of all radiology residents, certainly well below the 50 percent or more of all medical students graduating from medical school each year. They represent an even smaller number of practicing radiologists. So, should we care that women are underrepresented in our specialty?

Second, "How can we change the current situation to encourage more women to join the field and become leaders in radiology and help perpetuate their presence in appropriate numbers?"

Crowe: Regardless of sex, becoming a leader in our field usually requires an element of volunteerism—the willingness of people to give their time on behalf of others. Without going beyond your everyday comfort level, you do not get a chance to grow. With that said, we should care greatly about the gross underrepresentation. Women bring immense value from perspectives that are otherwise not expressed.

Larson: I mentioned this topic of discussion to my wife, who responded that she takes with a large grain of salt the conclusions of any group of men discussing what is best for women. I acknowledge that this is outside my domain of expertise, and I will keep my comments brief to hear more from our women on the panel.

The sex imbalance in radiology concerns me on a number of levels but perhaps most because of its implications that, as a specialty, we may not be equally welcoming to all. In a time when women are at least equally represented in other medical specialties, it is not due to a sex imbalance in medical students. I do not know exactly what the reasons are, but it is worth assessing women medical students' perceptions of the nature of the work, career opportunities, role models, work-life balance, etc., and then working to improve where we can.

Norbash: To have increasing numbers of women join radiology, it would be helpful to create an atmosphere where women fundamentally are appreciated and valued, given parity where leadership and research positions are concerned, and given the autonomy and resources to create appropriate mentoring and support services. Simultaneously, there will need to be attention paid to resources and need to establish the appropriate environment to secure work-life balance. Specific actions should include formulating match lists to ultimately yield 50% of matched women in each department, formulating policies to ease women residents' desire to start a family, and balancing faculty to promote and celebrate the advancement of women radiologists to positions of responsibility and leadership.

Beauchamp: We also should keep in mind that diversity is an opportunity not an obligation. Extensive research shows that as you increase the diversity of your groups, productivity, creativity, innovation, and problem solving also increase. Also relative to this conversation is the case of diversity in terms of getting more women in medicine. We are missing an opportunity, given the

numbers you stated—48% of people in medicine are women, but only 24% go into radiology. For example, women tend to bring a more democratic and participatory approach to leadership. This can be particularly effective in guiding a team through the complexities confronting health care these days. Women also may be more effective multitaskers. A recent article in *Time* magazine reviewed how women are perhaps the most consummate multitaskers because they have to constantly balance home, work, children, and all the other things that they do.

Finally, there is a fairness question in terms of providing equal access to opportunities that should concern all of us. One study regarding diversity and women reviewed the letters of recommendation of 300 applicants. The letters for women were shorter and provided minimal assurance of the quality of the candidate. In another study, the investigators took the same curriculum vitae (CV) and evaluated the impact on the rating of candidates based on whether there was a man's name or a woman's name on the application. They found a statistically higher rating for men. Such inequity must be overcome.

Kaye: Two points—I want to commend all the men on this call for their courage. It takes a certain amount of courage to speak your mind on a subject that is politically sensitive. I am really more on the call to learn than to opine. I do not know that I have all of the answers to the questions before us. Diversity is very important, but I think a one quarter to one third representation is not that much out of balance. My main concern is that there is a level playing field and that it is fair to women. I do not want it to be perceived or reality that our specialty is thought to be unfair to women. I tend to be more of a market-based person on this. Perhaps there are some things about radiology that are not attractive to women for reasons other than discrimination or lack of opportunity. It may just be that it is not an attractive field to them. I do not believe that I have enough knowledge about that, and I do not see any of that in my own practice or my own residency program to believe strongly that there really is a problem.

Forman: There are a few reasons why you would want to have not just women but the full breadth of diversity within the ranks of our specialty. Some of it has to do with the unique perspectives that each person brings to the practice and being able to relate to issues around cultural competence as well as sex issues. All medical issues do take some account of our demographics and our socioeconomic status and our position in life. Although there are certain groups that we are not going to be able to represent in radiology and within medicine in general, it behooves us to include all who are capable of practice. So I think that the inclusion of women in radiology helps us to be able to relate to other women and actively incorporate issues that are highly and specifically relevant to women. One obvious one is breast cancer, but there are many others that are either unique or have a different impact on women than men.

Another issue relates to research. People tend to research things that interest them, and this often means that they can personally relate. So, by having an underrepresentation of women in our specialty, we at least run the risk of underrepresenting research about women in medicine and in particular women's imaging issues. Therefore, I do think it is a pressing issue.

I agree with what Dr. Kaye said. We do not have to have a 50–50 representation, but one does wonder why there is such a disparity, particularly because there are so many things about radiology that would appeal to everybody of both sexes, particularly flexibility of work. And I will add one other point here, women are disproportionally represented among part-time radiologists for obvious and less-obvious reasons, and that means that women are even a smaller fraction of the full-time equivalents in the profession. I think those are all things to consider.

Crowe: Is the fact that more women are part time really a reason to try to recruit more women to radiology?

Forman: Not necessarily—I think that what it means is that if you think that 30–40% of our field is an appropriate threshold, then the aggregate numbers that Dr. Beauchamp mentioned are actually overstating the issue because women tend to be more likely to practice part time.

Norbash: Departments, in celebrating and supporting the need for sex diversity, should also be flexible in creating employment contracts for part-time positions and potentially for offsite departmental teleradiology services that may also be appealing for a disproportionate number of women radiologists who could telecommute on a fixed basis. This is part of the work-life balance environment that we need to create and expect. Such an environment should not only celebrate and appreciate the contributions of women radiologists, but, more fundamentally, such an environment should actually provide the necessary infrastructure to allow women to shoulder the disproportionate childcare burden they most often face, while providing a bona fide opportunity to seek professional fulfillment.

Crowe: What about representation in academics?

Forman: I do not have the actual numbers. Dr. Beauchamp may have them.

Beauchamp: A study done by the Association of American Medical Colleges (AAMC) showed that the percentage of women in academic medicine is increasing. In their 2011 report, the percentage of women in academics was 35%. This is up from 1970, when the percentage was closer to 15% but is below the 48% that one would anticipate on the basis of the percentage who graduate from medical school. The AAMC also noted that career advancement, once a career in academics is chosen, remains a substantial issue in which 42% of assistant professors are women but only 19% of full professors are women. There is more work to be done.

Kaye: I just raised the academic issue with respect to your comment about research. If research is the issue, perhaps women are equally represented. I do not know.

Kazerooni: It does matter because when you are in a service industry serving patients and referring providers and you represent that population, you are going to do a better job at understanding and meeting their needs. In radiology, with the underrepresentation of women radiologists, it goes one step beyond that. There are many women who practice in the field of radiology, but they are technologists and staff members as opposed to radiologists. I think it is very important to reflect the population we are serving.

Forman: We all agree that we should make the specialty as welcoming as possible. The second question is "What do we need to do to encourage more women to join the field and become leaders in radiology?"

Javitt: There are common themes that influence medical students to select a career path. Some of these are "sex blind," such as mentorship, exposure to role models, encouragement and positive feedback for excellence, and freedom to explore one's abilities. Also important are intellectual stimulation, patient contact, and graded responsibility that are increased with each new level of achievement. Most students are excited by direct personal contact with patients, referring providers, and consultants. Also rel-

evant to many students is the perspective that they hear about radiology from their medical school deans, career counselors, and student advisors. The career decision is also dramatically affected by the students' perceptions about the competition for residency, the work hours, the lifestyle, the job market, and the expected average professional income.

Crowe: Perceptions of radiology are sometimes influenced by other students who themselves may have limited knowledge or understanding of radiology.

Larson: In the research that Dr. Beauchamp references, the authors looked at why women are not choosing radiology as a specialty. Ninety-five percent of them said that it was lack of direct patient contact, 33% noted that they had not been exposed to radiology, and 29% indicated a lack of radiologists as role models. Most students make the lifelong commitment to a specialty during their third and early fourth year of medical school, whereas radiology rotations often occur during the fourth year. I wonder if students are making this decision on the basis of experience or perception. Perhaps the first step is to ensure that students have positive interactions with radiologists early on, even if it is not in the setting of a dedicated rotation. Encouraging mentorship by women role models would also likely help young women be able to envision themselves in a fulfilling career 10–15 years down the road and have a happy successful career.

Beauchamp: It all starts with diversity being embraced as an opportunity not an obligation. It must be made a part of the core values and mission and should be reflected in the tactics and initiatives implemented by a department. You need to systematically review your policies and procedures for the impact on underrepresented individuals in your department. We track and do a blinded annual review of salaries and make sure there are no compensation inequalities. We track progression from assistant to associate to full professor by sex to ensure that we are being successful in supporting career advancement. We started a program called "Women in Radiology." Dr. Yoshimi Anzai, one of our department leaders, helped me understand differential sex challenges in medicine and the need to establish an interest group that would discuss strategies and provide mentorship. We bring together the residents and junior and senior women faculty. Dr. Kazerooni was one of our esteemed speakers.

Importantly, it starts with the pipeline. It is reaching down to first- and second-year medical students so that they can see radiology as an impactful career in medicine that is fulfilling, embraces balance, and values diversity. In particular, the department needs to represent its commitment to diversity. For example, recently our program director realized that when we interviewed resident applicants, we unrepresented the diversity within our department. Thanks to her, we now do a wonderful job of conveying the faculty and trainee diversity and the infrastructure that we have to support women in radiology.

Kaye: Radiology, especially today, is very much numbers driven. Relative value units (RVUs) are very common benchmarks for salary, productivity, and compensation. To the extent that we have faced the issue that you mentioned before, Dr. Forman, about part-time versus full-time, that may be something that is intimidating for women to come into the field. In one of my hospitals, we are looking to implement a 24/7 final-read policy. When we went around the table and asked who would be willing to participate, the demographics of the positive respondents were weighted against women. The women generally said that they did not want to do it. Perhaps with the increased emphasis on RVUs, productivity, and 24/7 coverage, this may be intimidating to women or will limit their interest in radiology.

Kazerooni: I think a lot of the explanations for why women do not go into radiology also impact other disciplines that actually have a large proportion of women. Obstetrics-gynecology has been 24/7 in the hospital setting. For many years, there have been obstetricians on duty who sleep in the hospital. Most specialties are becoming increasingly metrics driven, such as noting the number of new patients who are seen, the time it takes to get an appointment, and the time it takes to get a new appointment. Most of medicine is becoming metrics centered and many practices are 24/7. Most of those things are affecting all medical disciplines and not just radiology.

For any minority or unrepresented group in an area, the balance should be between 40% and 60% comparing men to women. A balance of African Americans to whites in a group is necessary for people to feel comfortable in a group or a practice. In radiology, we are not in that 40–60% range of women to men. Breast imaging is an area where we are balanced. Women feel very empowered to be part of practices that are heavily involved in mammography and women's imaging, but most of radiology has not reached that balance yet. I think part of it is role modeling. We do not get to the first-year medical students to show them that radiology is more than sitting at a computer in a dark room and cranking through images and medical records to generate a report. We do not show the benefits of things like breast imaging, ultrasound, and interacting with patients. We have a number of women going into interventional radiology, but it is not introduced to students early enough in their careers for them to see the patient impact that they are having.

So getting to medical students very early and trying to reach critical mass, even if it is in one small area of the radiology department at a time, are important. People can begin to see that there are people like them who can be successful and not consider it such an aloof goal to be a radiologist or a leader in radiology.

Norbash: Similarly, in many instances women residents may be made to feel less than welcome when they decide to have a family. Once they have stated their pregnancy status, rather than creating an effortless system whereby the resident easily transitions into the appropriate rotations, schedules, and celebrates this joyous and fulfilling occasion, residents often instead are made to feel uncomfortable and may even be apologetic. This latter result is fundamentally and strategically self-damaging. The stories of such unwelcome treatment spread rapidly, and these stories serve in part to drive women away from specialties. These reactions are perceived as unwelcome and lead women toward specialties that have been consistently more welcoming to families, such as family medicine and pediatrics.

To successfully attract women radiologists in sufficient numbers, thought leaders, radiology residencies, radiology departments, and the American Board of Radiology may want to describe and formulate a transparent and simple approach to permitting residents adequate time off for pregnancy, perhaps up to a year per pregnancy as is the case with certain other "family-friendly" nonradiologic specialties. Such time off would be without pay, although specific details will need to be addressed, such as covering health care costs through deferred expense allocation. As test cases, because of organizational and staffing considerations, such programs could initially and most readily be implemented at larger residencies as a first step, expecting that such mechanisms should ultimately be in place at all training programs.

To continue a sense of welcome and support, departments should spend energy and

thought in supporting childcare options in childcare facilities. If the considerable resources of radiology are spent lobbying for such amenities sought by working radiologist mothers, such as onsite ad hoc childcare for when caregivers may be unable to provide routine childcare or for brief school breaks, then women radiologists would inevitably support such evidence of sensitive leadership with their loyalty.

Javitt: The fact that residency occurs during childbearing years is of paramount importance in this discussion about attracting women to radiology. Although there has been significant progress in reducing sex bias and sharing responsibilities of parenting, we are far from perfect. Flexible work schedules, especially with teleradiology and emergency radiology and the lesser likelihood of night call for breast imagers, make for a selection bias for women in these areas. Full-time careers in radiology have been likened to a "leaky pipe," with larger numbers of women entering the field as full-time residents and fellows but with fewer and fewer remaining as full-time employees over time. This reality makes it much more difficult for women to climb the academic ladder and no less difficult to ascend to positions of authority in private practice.

If we ask ourselves "What we are doing to attract the best and the brightest students (men and women) and what has happened to our image as perceived by them?" the answers are multifactorial. Radiology's future as a specialty is directly related to our ability to sustain a steady stream of qualified trainees not only at the entry level but also throughout the entire cycle of maturation, from medical student on rotation to residency, fellowship, staff, and beyond. If we continue to be dispassionate and uninvolved, then we are failing to advocate for the future of our personal practices—for radiology as a specialty and for our future role in the multispecialty patient-centric health care team that is currently in evolution.

Forman: Are there factors that we are not considering? Some of you have addressed why medical students are not going into radiology. Are there other factors that may be in play or larger issues that we can address on a leadership level to make the field more attractive for women?

Crowe: We should encourage and highlight the leadership of women. To the extent that this permeates through the specialty, more women might be encouraged to participate in practice and in organizational leadership roles.

Kazerooni: I think one of the important issues is helping women understand that they do not have to do everything at the same time. In most instances, even for women who do choose to go into radiology, men may be choosing to become leaders and take on more responsibility in the profession at the same time that women are having children. This happens by default, even in this modern society.

Many of those primary responsibilities still fall to the woman of the household, whether it is children or taking care of the house in general. That still is the case in many of the households in the United States. Although men are able to take on professional responsibilities and leadership roles, it becomes much more difficult for women during that same 30–45-year-old time period. By the time women are able to take on responsibility, whether in professional societies or in their practices, I believe that they often believe that time has passed them by. They think they are no longer able to contribute because they did not do it for the past 10 or 15 years. While they were waiting for their kids to get older, perhaps they could have had that opportunity.

It is important for women to know that they do not have to do things on the same time track or the same trajectory as their male counterparts. They may want to get into leadership in their practice or leadership in their profession later in their career. There is nothing prevent them from leadership roles. Time has not really passed them by; however, I think that many people believe that is an obstacle.

Crowe: It is absolutely true that groups and partners should support whatever kinds of medical and community involvement that people can engage in during those critical years of 30–45. Also, we are competing against a lot of other activities. If medicine is going to have any credibility, we need to mentor and support physician involvement in our community organizations, schools, churches, and similar activities.

Larson: Serving as a mentor takes time away from clinical, research, and administrative activities without equivalent compensation on the CV in or the pocketbook. Encouraging these types of relationships means supporting women mentors with appropriate time, training, and recognition. It should not take a great deal of time, but it does take some time and group members and leaders should support the efforts of those colleagues who make that sacrifice for the incoming generation of radiologists.

Beauchamp: Women are treated unfairly in terms of promotion. The bias tends to be implicit or unconscious. Specifically, promotion in rank or position is a meritocracy, but the literature shows that women receive less recognition for equivalent accomplishment. Thus, selection committees have to be vigilant in identifying excellence that for sex reasons might otherwise go underacknowledged. Finally, I found a dearth of literature on barriers for women approaching the field of radiology. We need more work to understand this bias and to look at ways to understand it. It should not be so hard to find literature on such an important topic in radiology.

Kazerooni: We know that there are certain types of leadership that women are asked to take on and men are less often asked to do. Those often include leadership in education, taking on the responsibility for the medical students or the radiology residents. Although those are wonderful leadership opportunities, when faculty members take this on early in their careers, those types of responsibilities require large time commitments—much more of a time commitment than taking on other leadership opportunities that are more operational in nature. I think women will take on these responsibilities, and it precludes them from taking on other responsibilities. They may take them on because of a natural inclination that people say women sometimes have toward teaching just as they have toward children, but it may prevent them from taking on other opportunities as well. One of the things that I often counsel women on is to think about what they see themselves doing in their career over time and trying to avoid taking on responsibilities, particularly teaching responsibilities, that are extremely time-consuming and will prevent them from reaching their ultimate goals.

Norbash: The lack of parity for women where leadership positions in radiology at large is concerned, in addition to the lack of individual departmental leadership, poses a barrier to transparency for attracting women radiologists to the field. If the senior officer positions in organized radiology in addition to departmental chair, vice chair, sectional, and research leadership showed selective sex equivalency, radiology would be seen as earnest regarding sex parity. As it currently stands, there are very few women chairs of academic radiology departments and hardly any women research vice

chairs or section heads, and there is a distinct underrepresentation of women leaders in our national radiology societies and organizations outside of breast imaging and perhaps ultrasound. If this lack of parity is not addressed, then expecting women to enter radiology and feel welcome in ever-increasing numbers is, in my opinion, unrealistic.

Javitt: The truth is that every contact made with a medical student passing through radiology is a prime opportunity to invest in the future. Not only by teaching and providing mentorship but also through spending time and effort in personally engaging each student (men and women) in the work we do every day can we achieve these goals. Moreover, it is just as important to educate the students who will become our referring providers as it is to educate the future radiologists. Their attitudes and habits are developed early. I suspect that every person on this esteemed panel can say, "Some of my teachers did this for me when I was a student." It is a fundamental truth that we have to do the same for our own students, methodically, and with a renewed personal commitment. The opportunity cost for a full-time staff radiologist to teach students is high because of lost revenue for that time. The cost of doing nothing to turn the tide of the current unpopularity of our specialty is even higher and may become incalculable.

Forman: One additional question: Do you think that within your particular specialty women are underrepresented?

Crowe: In our private group of 40–50 people, there is a slight tendency for women to work more in the mammography and pediatric areas during the daylight hours, but everyone works nights and weekends. I was just looking at our night call schedule for next month and five of the 13 people taking call in the next month are women. This sample is typical. I do not know if night and weekend call truly impacts our recruitment, but women are represented at all levels of work and leadership in our practice.

Larson: In pediatric radiology, it is closer to 50–50. Although we have greater representation of women compared with other radiology specialties, we have lower representation compared with other pediatric specialties. I suspect that women tend to choose pediatric radiology for similar reasons that they tend to choose other pediatric specialties. I do not know exactly what those reasons are; I imagine that increased patient and family contact and the opportunity to work with children play a role.

Beauchamp: My practice is as a neuroradiologist and an interventional neuroradiologist. In my experience, diagnostic neuroradiology seems to follow the rest of radiology, with perhaps 25% women. Interventional neuroradiology has a much lower percentage of women.

Kaye: Our practice is about 25% by head count, but in terms of full-time equivalents, it is significantly lower than that. Of the eight women we have, not one is full time.

Kazerooni: I have statistics in front of me for our department; 29% of our faculty members are women. If you look at the clinical faculty, which is physicians, it is 37%. For our research faculty, it is under 10%. The disparity is even higher when you look at research scientists compared with clinical physician faculty and academic radiology departments. The number that I quoted before about sex and sex balance in terms of people feeling part of an environment in which they are comfortable is 36–64%. One division in my department, cardiovascular radiology, is balanced. I firmly believe that a lot of it has to do with role modeling. One department that is woman dominant is breast imaging. We have one man who is a breast imager and nine women. We have one department that is actually the opposite. In the rest of the departments in which women are in the minority, women are 10–20% of the faculty in their sections.

Javitt: The bulwark against commoditization and marginalization of radiology is to be seen, be heard, and be part of the team that collaborates in the care of our patients. No doubt the students will take note of this just as much as the patients and referring providers. Ideally students today will remember where they began and teach their own future medical students in radiology someday. More will be women if we are proactive about medical student education, we both teach and learn to self-advocate, network more effectively, and negotiate for what we need.

FOR YOUR INFORMATION

Photos and biographies of our panel are available online at www.ajronline.org.