Lessons from Those Who Went Before.

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Thriving in a Two-scientist Household: Lessons from Those Who Went Before.

Being in a relationship with a fellow scientist can be an amazing experience. First and foremost, they understand your passion for research. You can discuss your science thoroughly as they have the knowledge to understand the work, the frustration, and the joy, as well as an interest in science to enjoy the conversation. You can commiserate about the ups and downs of experimental foibles, and jointly celebrate manuscript acceptances and grant successes. But there can also be downsides. At times, your partner could be credited for your work merely based on gender differences. If you choose to have a family you need to find the balance between work and home life perhaps even more than families in which only one partner is the scientist (it can be hard to stop talking science at times!). Furthermore, you may end up competing for the same funding opportunities. Two scientist households are not uncommon, and have been the subject of a number of news features in Nature over the last decade that are worth reading, the most recent here: Dance, A. Relationships: Sweethearts in science. Nature 542:261-263, 2017. In this part of our series on women in science, we interviewed prominent, successful women who have thrived in a two-scientist household. We hope you enjoy learning about their personal journeys as much as we have and also gain some insight into how to maneuver through your own situation. In the first installment, we will share the experiences of Thalia Papayannopoulou, the Elo Giblett Endowed Professor of Medicine, past ISEH President, recipient of the 2016 Donald Metcalf Award and Wallace H. Coulter Award, mother of John and Alexi, wife to George Stamatoyannopoulos, and grandmother of 3 grandchildren. Thalia also answers some questions on tactics to being a successful woman in science and offers her perspective on how things have changed. Stay tuned for more stories from the women of ISEH.

Career overview:

I entered Medical School in Athens in my teens and throughout my 6 years of training, I received the grades I deserved and did not experience gender discrimination. After completing my residency, my husband (George Stamatoyannopoulos) and I went to the USA for specialty training and research opportunities. George had already lined up a position with the Medical Genetics Division at the University of Washington and I was planning to join the Hematology Division for my training. Both Hematology and Medical Genetics were Divisions in the large Department of Medicine and according to an existing regulation, husband and wife could not be appointed in the same Department (!). I therefore joined the Pathology Department for a couple of years and after the previous law changed, I moved to the Hematology Division under Dr. Clem Finch. Retrospectively, the diversion to Pathology turned out to be fortuitous as I gained experience in cell culture, histochemistry and enzyme biochemistry; skills, which served me well later.

At the end of my Hematology training, and upon completing my state license exams, I exhausted the limited support available from a Hematology Training Grant and I was asked to write an NIH grant to support my salary. I was given a copy of another NIH grant from the Gastroenterology Department, which at this point served as my only advice/assistance on grant writing. Not surprisingly, I did not get the grant and was soon without a salary and had to leave the Hematology Division. During this period, I volunteered in an outpatient Hematology Clinic at the Old Marine Hospital in Seattle. The desire to do research was still with me, however, and I realized that my prior research experience in cell culture and hematopoiesis could be useful to some of the projects being undertaken in the Medical Genetics Division. I was hired to do such research in a Program Project Grant (PPG) in Medical Genetics (full disclosure here, the PI of that PPG was George- I am still grateful today!). I love erythropoiesis and the research I did under this PPG did very well with papers and meeting presentations.

I then wrote an application for a Research Career Development Award (RCDA, customary at that time) for my subsequent incorporation into the Faculty of the Department of Medicine.

The grant was not funded and I was not appointed (the department did not want me in its Faculty at that time!). However, my subsequent individual grant applications were successful, and a Faculty appointment followed (not as prompt as would occur for a male candidate). I had support from the Head of Hematology (John Adamson) and many of my Hematology colleagues at that time. As a Hematology Faculty member, I did my Hematology attending duties (inpatient and outpatient), participated in teaching the Hematology course to medical students and for 15 years I was the PI for the Hematology Training Grant. I subsequently chaired the Full Professors promotion committee for the Department of Medicine (quite ironic for a department that originally did not want me in its Faculty!). I also participated in many ASH activities, (Scientific Committees, Nominating Committees, as an executive committee member) and in NIH activities (three terms as a Study Section member, as an NHLBI Council Member and participating in workshops). In addition, I regularly attended ISEH Scientific meetings to keep up to date with the latest in experimental hematopoiesis.

How has the environment improved for women in science since you started your career? How have they gotten worse?

I recounted my early steps (in a very abbreviated form) to convey some comparisons between then and now, to show how much the situation has improved today (thankfully) for women physicians in Academic Medicine, and to emphasize that academic life is a very long process with several ups and downs on the way (unless you are extremely lucky). During my training period, women in Medical Schools were ~5% of the students and it was the time when women were viewed “as assistants to somebody else (a man)”- the prevailing axiom was “men take charge, women take care”. There was a rather “unconscious” non-guilty bias by men that prevented the promotion of women in science. In one of my clinic appointments, after I had introduced myself to my scheduled patient, he told me “I would like to see a male doctor” (!).

Thankfully Academic Centers now have more transparent policies for salaries and promotions and there are more women at the Assistant and Associate Professor level. However, women still lag behind at the full Professor level, despite women accounting for over 50% of the graduates from Medical Schools and nearly 50% of those receiving STEM doctorates. So we continue to witness the “leaky pipeline“ for women in academia. There are several reasons for that: a) an increased burden of family responsibilities at the same time as career development, b) lack of many role models combining career and family responsibilities, c) lack of research funding, d) poor mentoring, e) a male-based environment and f) lack of assertiveness in women in negotiating salaries or new positions (and note that a woman showing such assertiveness in negotiations is viewed differently than their male counterparts). Overall, however, there is a lot to celebrate. For example, the University of Washington (UW) boasts the highest percentage of female Faculty in the College of Engineering, which is amongst the top 50 engineering schools in the country. Further, the number of female Faculty in 19 STEM departments across 3 UW colleges has almost doubled (from 60 in 2000 to 112 in 2015), and more than half of the female faculty are now Full Professors with tenure. In our Hematology Division, there are seven female full professors: one was the President of ASH, two have won ASH awards and one is a Chair of

Medicine in a large affiliated Hospital. So we have been lucky both at UW and specifically in our Hematology Division, with several women at the Full Professor level to foster a supportive environment for our younger female Faculty.
Recognizing the “women-related” realities, several Academic Centers have introduced family-friendly policies and many of the Scientific Societies recognize and appoint women in leading positions and strive to facilitate networking among the members. The presence of successful women either in the immediate environment to provide a supportive ”niche” or even outside the field has been an important parameter for motivational support.

As a successful female researcher married to a successful male in a similar field, has this impacted your career negatively at any stage of your career, and if so, how did you deal with any of the negative experiences?

Despite the long list of improvements at several levels, there are still special challenges to balance academic work and family responsibilities when both partners are in academic positions. In addition to routine daily needs for every family (school schedules, child care assistance, rides for activities, etc), families in academia face additional and unusual needs. These include unusual work hours in a day and the instability in funding. Many academic centers have significantly expanded their faculty base relying on outside funding to support their salaries (a good recipe for disaster when there is an abrupt restriction in funding). This can put couples at odds for negotiating new positions after every career step (the so-called “two-body” problem). This atmosphere can result in imbalances in career trajectories, as moves might be good for one not so good for the other, etc.
There are additional hurdles for couples in the same discipline of academic work. When they publish together, the usual perception is that it was the man’s idea that the woman worked on- all the credit goes to the male of the family. Indeed, this issue came up during my promotion, but the defense by my colleagues in the Hematology faculty prevailed. Therefore, it would help if they have independent publications, or if one of the two diversifies to a different research area (if possible). In general, to face all of the above challenges, and especially for women with their added burden in family affairs (i.e small chidren), a supportive partner is of paramount importance. Plans for one to slow down and support the other partner (man or woman) with a good advancement trajectory can be a good family decision. When both partners are competing at the same time, this creates a high level of stress. Every successful woman with children that I had the opportunity to observe in Medicine had a supportive partner to save the family from unpredictable child-related events and other family emergencies, in addition to the financial burden for child care.

What advice would you offer other women in science?

Despite the evolution in academic research, what is perpetually important, both then and now, is the quality of mentoring a trainee receives and the local scientific environment. Successful mentoring requires that the mentor is interested in what you are doing and he/she is committed to your success, putting your career development ahead of his/her own. There is a continuous exchange of ideas and a continuous learning process for both the mentor and the mentee. In my opinion, besides the scientific input, the personal virtues and

character of the mentor and mentee are particularly important for developing good relationships. Mentoring is also particularly effective when the mentor insists that the mentee expresses his/her ideas in writing. This exercise is extremely useful for writing papers or grants. Another important factor is to prepare the mentee(s) for the failures that will inevitably come along the way, either at the bench, or after a paper or grant is rejected. For me, I remind them of my own failures. The successes are easy to celebrate. Mentoring should be an enjoyable process for both the mentor and the mentee. Both should cherish the memory later. The mentor should rejoice and celebrate the mentee's upward success and the mentee should cherish the inspiration and support he/she received. It is a gift for both.

We hope that you have found Thalia's story as inspiring as we have, and may it give hope to those who are currently experiencing any of the difficulties she has encountered. We thank her so much for taking the time to share her journey in research with us. In our next post in this series, we will hear from Teri Moore, Associate Professor (soon-to-be Full Professor!) at Mt. Sinai.

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