Not just family matters

To the Editor — After putting my children to bed and submitting my proposal to the Swedish Research Council (VR) last night, I read an interesting article in *Nature Geoscience*[1], reporting that the fraction of women obtaining tenure-track positions after earning a PhD in physical oceanography has decreased from 23% to 8% between the periods 1980–1995 and 1996–2009. This finding deserves attention. However, I found the discussion of the reasons for this drop unsatisfying.

Two explanations were proposed: a change in women's family situation, or less affirmative action from the institutions. Yet women and men with children can be as productive scientifically (measured in number of papers per year) as their colleagues without children, or even more productive[2–4]. Hence, "marrying and having children" is not necessarily the primary cause for fewer women in higher positions in academia.

In countries in northern Europe where affordable day care for children aged one year and older has been in place for more than 30 years, together with provisions for parents to share paid parental leave, there is still a lack of women in higher positions in science.

We have all participated in conferences where a large part of the audience was female, yet most keynote speakers were men. I suggest that visibility and exposure at conferences and elsewhere matter to women's career progress at least as much as having a family. If relatively fewer women than men are invited to give keynote talks at international meetings, asked to join invitee-only workshops, selected to become principal investigators for large, strategic research proposals and invited to write comments in high-profile journals, the effect on women's career chances will be noticeable.

Placing the responsibility with women who choose to have a family is too easy. Instead, if we are to combat gender inequality, women need to focus not only on performing high-quality, interesting science but also on ensuring that they are given equal access to high-profile networks. Only then will they have the same opportunities as their male colleagues to succeed in science. ❐

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Authors' reply — In our recent Correspondence[1] we presented a study based on the career trajectories of PhDs trained in the United States in the discipline of physical oceanography, focussing on the differences in the rate at which men and women attain tenure-track positions, and changes in these rates over time.

We speculated that the changes in success rates for women over time could reflect different family choices that women have made in recent years, but we did not mean to imply that having children explains all differences between men's and women's careers. At least in the USA, recent literature shows that women's careers are negatively affected by being married as well as by having children, whereas men's careers are not[2]. The tenure system in the USA requires individuals to be most productive in the first five years after securing their positions, and this period often coincides with the time when women choose to have children. A longitudinal study in the astronomy community of 800 PhDs who will be followed for 15 years is designed to assess whether family status directly impacts career decisions[3]. By contrast, our study was retrospective and we had no direct contact with individuals.

Hiring of female faculty in science, engineering, technology and mathematics fields has been observed to tail off after a critical mass of women in a particular discipline has been reached, but before the gender distribution of faculty hired represents that of the potential applicants[4]. Issues surrounding affirmative action may therefore provide most of the explanation for our results. ❐

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Biogenicity of Apex Chert microstructures

To the Editor – Marshall *et al.*[1] report mineral veinlets from the ~3.5-Gyr-old Apex Chert that they regard as "similar" to microstructures previously identified as microbial fossils[2–8]. On this basis, they question the biogenicity of the Apex fossils. Marshall *et al.*[1], however, did not analyse any of the originally described specimens.

The planar veinlets they report differ in composition, mode of emplacement, petrographic relations, three-dimensional structure, sinuosity, cellularity and size from the large assemblage of *bona fide* fossils known from the deposit[2–7]. The chert-permineralized carbonaceous composition of the fossils is documented by Raman spectroscopy supported by confocal laser scanning microscopy (Supplementary Fig. S1). Moreover, detailed analyses of the Apex carbonaceous matter show it to be structurally and chemically complex, "implying that the Apex microbe-like features represent authentic biogenic organic matter"[8].

The mineral veinlets described by Marshall *et al.*[1], like similar pseudofossils reported from other Precambrian units[7], have no bearing on the interpretation of the demonstrably biogenic Apex fossils[2–8]. ❒

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Additional information

Supplementary information accompanies this paper on www.nature.com/naturegeoscience.

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