

# ***Seven Practices of Working Mother Researchers***

***Consider Woman Life as an Optimization Problem***

***– Take not a local maximum point but a real maximum having a long-term view –***

**Prof. Takako Hashimoto**

IEEE JC WIE Vice Chair  
Associate Professor, Chiba University of Commerce  
**takako@cuc.ac.jp**



# Seven Practices of Working Mother Researchers



**Community formation provides high added value**

**Prof. Takako Hashimoto**

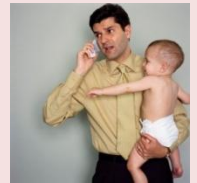
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## Seven Practices of Working Mother Researchers

1. Never give up your research work.
2. Conduct good communication.
3. Find and leverage your time.
4. Show a visible result.
5. Defend your home.
6. Education and home discipline are of great value.
7. 7. Be active.



## Consider Woman Life as an Optimization Problem

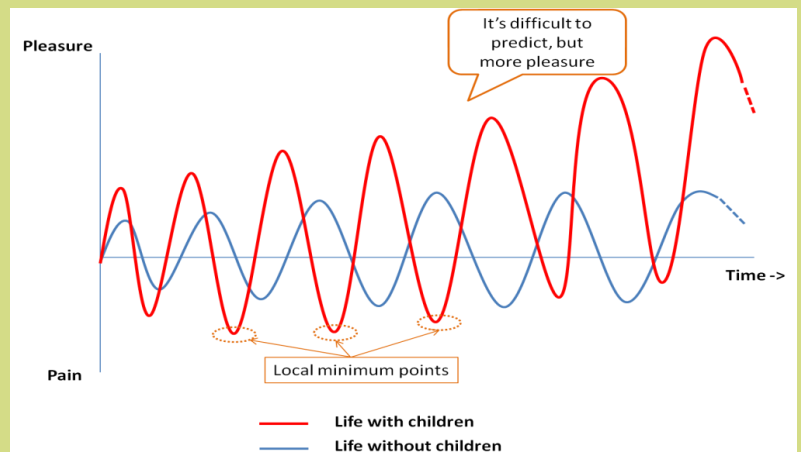
**– Take not a local maximum but consider it as an integration problem–**

I graduated from the Ochanomizu Women's University in 1985 which is the leading national women university in Japan. I had worked as an industrial researcher for 24 years. In my private life, I had two children and a little bit physically vulnerable parents. For them I took twice maternity leaves and company's special welfare holidays. Though I had strong difficulties to continuously work as a working mother researcher and I had often felt that I could not keep working, every time I was depressed, some help from others could make me continue to work.

Through my experiences, I have been trying to find what would be most important things to continue working. Of course there is no strict answer for a problem like this. However, there would be effective practices to continue your work. My solution at present is that I should take my life as an optimization problem.

In our life, there are many local maximum or minimum points. In a local minimum point, we tend to think there is no hope and that we will have to quit our research positions. For example, when you are given a new-born baby, it would be the local minimum point. At the bottom, you may not predict the existence of near future maximum points because you are tired, occupied with boring daily routine housework. You have no idea that the gloomy tunnel has an end and that you can soon emerge from the bottom.

You should not consider your research life in a short-sighted way. You have to continue your research work. After you emerge from the minimum point, your research time would increase gradually. Concerning measurements of your happiness, you have to consider that as an integration problem.



## Seven Practices of Working Mother Researchers (1)

The followings are seven practices of working mother researchers that I obtained through my 24 year experiences. I hope they help you continue your research work and encourage young researchers.

### 1. Never give up your research work.

You had better consider your life as an optimization problem. You should take not just a local maximum point but a totally maximum having a long-term view. Considering your life integrally could make your life fruitful. The point is to think rightly about your priorities at present. If you have a new-born baby, the first priority will be your baby. For about two years your research work will not be the top priority. Though you may every day sigh deeply at your hard conditions, you then should be practical, just thinking about the next coming maximum point.



### 2. Conduct good communication.

You will have to communicate many persons around you if you have a child. Since you are a mathematician, you might not be good at talking to others and you may prefer to be isolated from others. However, a working mother researcher requires a lot of helps from others. Then you ought to ask many things to others to continue your job and for raising your child. You will have to speak much more for good communication with others. In my case, even when I attend an international conference, during its tea time, I will call a mobile phone to another mother in Tokyo concerning my son's school activities to be held tomorrow after I call a skype phone to my subordinate about our job. Then I will not forget tiny gifts to my colleagues.

### 3. Find and leverage your time.

Your working hours are limited. Then you ought to find your working hours in every place. In my case, I would attend and help my son's football team activities on Sundays. While waiting for my son at the form with other mothers, I would write weekly reports on my mobile PC, nodding to other mothers' talks. Parallel processing is important because your time is limited. To conduct this kind of things, you must in advance have other mothers understand your hard situations. You have to communicate a lot with both working mothers and domestic mothers, so that they would like to help you. In conclusion, you had better possibly conduct parallel processing based on good communication in advance with others.

### 4. Show a visible result.

You will have to show a visible result to your superior. As you do not have enough time, you cannot do an excellent job. However you have to show a visible result by the deadline even if the quality is less than your level.

When my son was a baby, I had to continuously write a technical paper. Although the first version of my paper was not excellent, I could revise that by others comments and advices. Anyway writing something is important before long thinking without outputs.

## Seven Practices of Working Mother Researchers (2)

### 5. Defend your home.

You are a manager of your home. You must manage your family members. If your children have difficulties at school, you should primarily devote your time to solve the problem. You should never put off the problem. Every day you have to check how your children's health and minds are as much as possible. Actually it is very difficult to check your family, when your mind is occupied with research works. However if your children say something to you, you should right soon listen to your children talk.



### 4. Education and home discipline are of great value.

The most significant thing concerning children is 'Education'. An entrance examination is also hard in Japan. In general, there's a saying that a working mother has from scratch a disadvantage for children's entrance examination competitions. Therefore I tried to balance my research and the preparation of children's entrance examinations by prioritizing work and life clearly. To conduct that, it is significant to establish working and nonworking mothers' network. I developed mothers' close network. IT tools such as a mobile phone and a skype really help me communicate with others. Through these relationships among mothers, I could acquire useful information and receive a lot of help on our children's education. Currently, our children's education is going well. In addition, my children well help me at home. My son sets on a rice cooker before I go back to home and my daughter washes dishes after dinner.

### 5. Be active.

For improvement of your working situation, you should be active. In my company, I conducted many tiny things. When I was working in the company, because my parents were vulnerable, I used every available support system offered by the company. They were twice one-year maternity leaves, a remote working at home, and a part-time working. There is no other person who uses these three systems like me. The first thing I conducted was to ask about a maternity welfare because I did know nothing about that. Against a new environment you would face, you must be flexible and be active for your work. Writing many letters is important. If there is an attractive conference or meeting, you should write a letter to the chair person or the committee. If you would like to know your child at school, you will have to attend PTA meetings and assist teachers as a researcher as frequently as possible. Your active attitude will make your life more fruitful.

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