

# Training and Retaining Physician–Scientists in Dermatology: Japan

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Recently, the number of dermatologists who pursue scientific research careers has been dwindling in Japan. One of the major reasons for the reduction is the recent alterations of the Japanese medical specialty training system. Our strategies against the decline of young dermatologists' desire to be physician–scientists include the establishment of a simultaneous PhD program for specialty course trainees, the establishment of a young academician-fostering seminar by the Japanese Society for Investigative Dermatology, and support for studying abroad by the Japanese Dermatological Association.

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## Similar trend of dwindling physician–scientists in Japan

I read the article entitled “Training Physician–Scientists for Careers in Investigative Dermatology” (Li et al., 2021) with great interest. This article tells us the current state of affairs in the United States (US) physician–scientists in detail, and the authors carefully analyzed the affairs from all conceivable aspects. My first impression is that we exactly share the situation with US investigative dermatologists and definitely follow the US in the dwindling number of physician–scientists. Recently, fewer Japanese dermatologists pursue scientific research careers even after obtaining a PhD. In this paper, I would like to offer a commentary from the Japanese perspective.

I try to look back on the time when young dermatology trainees became altered and lost interest in becoming physician–scientists. For Japanese investigative dermatologists as members of the Japanese Society for Investigative Dermatology (JSID), the

International Investigative Dermatology (IID), which is now changed developmentally to International Society for Investigative Dermatology (ISID), provides a milestone to review this issue. Targeting IID 2008 and IID 2013, our dermatology trainees were enthusiastic for basic research with laboratory works, and they succeeded in achieving the goal in these meetings as well as in the JSID annual meetings held in between. The cultural environment in the department also helped to foster physician–scientists. We were able to keep our activities in 2018 when IID 2018 was held in Orlando, but I began to feel the decline of young dermatologists' desire to be physician–scientists in those days, whereas, perhaps, this trend was more remarkable in other clinical departments than in dermatology.

It is apparent that eagerness for research is important for a doctor who specializes in clinical medicine. Part of the reduction of the willingness of Japanese dermatology trainees to become physician–scientists results from two



recent significant alterations of our medical specialty training system. With these changes in the clinical training system, fewer young doctors in all departments are showing an interest in research careers.

## First change in clinical training system in Japan

The first reform took place in 2004, focusing on the 2-year period of the early (junior) residency, which corresponds to the postgraduate year in the US, when interns started to rotate through many different departments (Figure 1). After the 2-year period of early residency, medical trainees generally entered a course of specialty programs. Until 2004, each university or college hospital was entrusted with postgraduate medical education by different programs because there was no clear boundary between early and late residency. Therefore, in some university hospitals, residents worked as researchers as well as dermatologists, getting early training as physician–scientists. After the change, early exposure to research was lost. On entering the late period, specialty residency (usually 5 years; corresponding to the US-style residency), the trainees had to decide to serve as usual residents with or without research work or to take a PhD course in parallel. Although the flexibility to do research was reduced compared with that in the system before, they were still able to aim to be researchers at this point. Thus, the number of talented physician–scientists in dermatology was retained with this change.

Under these circumstances from 2004 to 2017, the Japanese Dermatological Association (JDA) conducted the 5-year dermatology specialty program and accredited the board-certified dermatologist with the society-based examination for the purpose of training excellent specialists in dermatology. The applicants should attend JDA-oriented lectures, have at least three publications, give presentations at certain dermatological meetings, and finally pass the JDA examination. Thus, JDA gave the qualifications of dermatology specialists, including the board certification and its renewal. The other

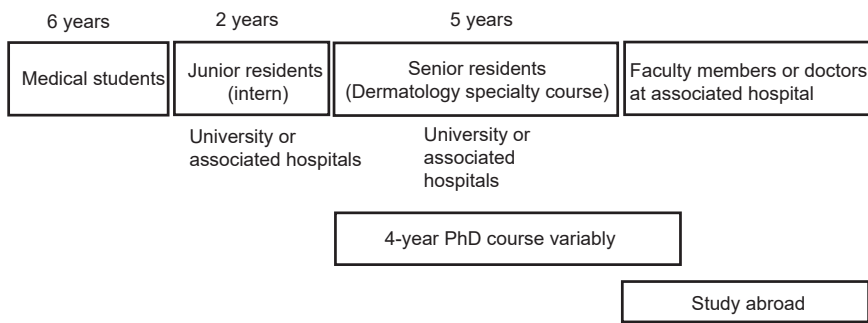
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## COMMENTARY



**Figure 1. Timeline for clinical and investigative dermatology training during residency in Japan.**

clinical departments also had their own board-certified systems. Renewal required credits obtained by attending meetings or making presentations. By that process, a high proportion of the dermatology specialty residents were engaged in research if the faculty had an investigative culture, mentors, and funds that allowed the residents to do so.

### Second change in clinical training system in Japan

In 2017, we had the second drastic transformation, which was concerned with the 5-year specialty training (Figure 1). This change was conducted comprehensively by the newly established Medical Specialty Board in all clinical medical specialties. The dermatology course was determined to be one of the 19 basic specialties. The former society-based authentication was thus changed to the general certification system by the Medical Specialty Board, which is organized by the Ministry of Health, Labour and Welfare. Although JDA is continuously in charge of administering the examination assigned by the Medical Specialty Board and maintaining its training courses and other dermatology-related meetings, the board also insists that attendance for common lectures for physicians, which was newly added and could be formal, is obligatory.

The attempt by the ministry to control the disparity of specialist numbers as well as the regional disparity in each clinical department could decrease the number of dermatology specialty residents, resulting in the decreased number of talented physician–scientists in dermatology. There may be a concern that a small number of dermatology

trainees have inadequate time to spare and, as a result, just concentrate on daily practice alone.

To fix the problem, JDA played an initiative role, and all clinical departments have made an appeal to include a program that a certain number of specialty-course residents are able to enter a PhD course simultaneously. This program is still nascent in Japan but hopefully is comparable with research-in-residency (RiR) or physician–scientist training programs (PSTPs) in the US. It needs a wide variety of structures and timelines, involving the integration of dedicated research time into the clinical curriculum. Although we do not know whether this will be work, we believe that it will be promising by negotiating with the Medical Specialty Board.

### Attempts to promote physician–scientists

Generally, it is not easy to train and retain young physicians to become successful scientists. To sufficiently prevent the decline of young dermatologists’ desire to be physician–scientists, the Japanese societies have conducted a number of strategies. JSID played an initiative role for the society-based educational programs. JSID established a 3-day seminar in Okinawa to train promising, enthusiastic young dermatological researchers, named “Kisaragi Juku” (young academician-fostering seminar), started in 2010. This seminar is also aimed at raising future leaders. “Kisaragi” is the Japanese lunar word for February, and we continue to hold the seminar every February for 30–40 attendees. JSID believes that providing intensive seminars to educate young researchers through human exchanges of heated

educational discussions can be one of the solutions to help change those circumstances. Warm exchanges are naturally the basis for “Kisaragi Juku”. It is ideal that attendees and their tutors could establish lasting friendships. “Kisaragi Juku” successfully increased the number of talented physician–scientists who remained in academic research.

Furthermore, in 2017, JSID launched a seminar named “Aoba Juku,” focusing on earnest doctors younger than those participating in “Kisaragi Juku.” The seminar is held annually with 30 attendees. “Aoba” is the Japanese word for fresh green leaves, evoking the young people who absorb energy quickly and grow up rapidly. To further intensify the research activity, it is indispensable to recruit more talented doctors into this field. It is assumed that there are many young dermatological trainees who hesitate to explore basic research. There will also be a synergistic effect between “Aoba Juku” and “Kisaragi Juku.” Young attendees of “Aoba Juku” show zeal for basic research and come to “Kisaragi Juku” as more motivated and enthusiastic physician–scientists.

Studying abroad is one of the requirements to raise global physician–scientists from Japan. Many Japanese physicians studied overseas in the US, European countries, and other areas not only to further develop their science but also to promote friendship with foreign researchers. Recently, however, the number of postdoctorate degree holders studying overseas from Japan has been reduced. This trend seems to be associated with the change of our specialty training system. Given the 2-year intern residency, 5-year specialty residency, and period of PhD course, it is difficult for physicians to squeeze in time for studying abroad (Figure 1). Raising children is a big concern when it comes to pursuing a career as a physician–scientist. Moreover, the recent situation does not economically allow them to study abroad. Therefore, in 2019, JDA established a study abroad support system, in which about 15 JDA members are awarded a maximum limit of 5 million JPY.

Potential strategies may include early contact between faculty and students not only through teaching in medical

school lectures but also by supporting their participation in the annual meetings of the societies. This can help to connect dermatologists with interested students and showcase research projects and guide them toward a career in investigative dermatology.

The clinical component of residency may be modified to enable more time for research. We do not have the US system of Investigative Training Track in Dermatology, a 2 + 2 track, allowing trainees to focus on the clinical dermatology curriculum in the first 2 years, with reduced direct patient care duty in years 3 and 4 to enable additional time for dedicated research. This also would be helpful in Japan. Instead of 2 + 2 track, we have proposed the PhD-parallel course of specialty training period. Since 2020, this kind of training program has been performed flexibly by some universities, in a modified 2 + 2 or just parallel way. Each department is ultimately responsible for a mixture of clinical practice and research, and there is no definite timeline for physician–scientists. In most cases where physicians choose a PhD course, they work as medical trainees for a couple of years after the

early residency and subsequently enter the PhD course. Therefore, we do not have a high frequency of leaky pipeline, but after obtaining a PhD, only a small population of physicians pursue the physician–scientist career. There is another problem that MD doctors with PhD courses may not sufficiently devote their time to research because they usually work as physicians for a considerable time.

### Conclusions

As clearly pointed out (Li et al., 2021), a key factor in successfully implementing the proposed timeline is the support of the department chair, who can manage the training of physician–scientists through mentorship, monetary investment, and creation of a supportive departmental culture. It is important to harmoniously keep a balance between physician–scientists and clinical dermatologists generating more revenue.

Technology is essential for the development of science, but clinical trainees may hesitate to do research because of uneasy entrance into wet-bench basic research training. The recent trend toward clinical and computer epidemiological studies may be

an option to address this issue, but there is a penetrating remark that this might stem from the difficulty of laboratory work.

To further intensify research activity, it is indispensable to recruit more talented dermatologists into investigative dermatology. They will become leaders in dermatology and advance the field. Once again, we should keep in mind that success in research leads to improving the clinical abilities of the individual.

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### CONFLICT OF INTEREST

The author states no conflict of interest.

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Li S, Yancey KB, Cruz PD Jr, Le LQ. Training physician-scientists for careers in investigative dermatology. *JID Innov* 2021.



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