

# MOVERS

**Shinya Yamanaka, L.K. Whittier Foundation Investigator, Gladstone Institute, San Francisco**



**2004–present:** Professor, Institute for Frontier Medical Sciences, Kyoto University, Japan

**1999–2005:** Associate and then full professor, Nara Institute of Science and Technology, Nara, Japan

**1996–99:** Assistant professor, Osaka City University Medical School, Osaka, Japan

Shinya Yamanaka, a rising star in stem-cell research, has taken a specially created post as a senior investigator at the Gladstone Institute in San Francisco, California. For Yamanaka, it's a homecoming of sorts.

As a young sports-player, Yamanaka's experience of injuries led him into a career as an orthopaedic surgeon. But he longed for intellectual conversations with colleagues. "If you do surgery every day, there's no time to make friends," he says. So he moved towards basic research, earning a PhD in pharmacology at Osaka City University. In 1993, he took a postdoctoral position at the Gladstone to work on knockout mice. "He exemplified qualities that often yield success in biology," says Robert Farese, who was a postdoc with Yamanaka and is now a senior investigator at the Gladstone. "Thoughtful intelligence and focus combined with an outstanding work ethic."

Yamanaka relished mingling with other scientists. His subsequent positions back in Japan, where labs are more isolated and the faculty more hierarchical, have offered less chance for discussion, he says: "Since I left the Gladstone, it has been my dream to come back to this place."

Although Yamanaka will direct a full-time team of about five postdoctoral fellows and technicians, he will still spend about three weeks a month at his current position at the Institute for Frontier Medical Sciences in Kyoto.

Yamanaka made headlines this June when his and two other laboratories revealed that they could transform mouse skin cells into cells essentially indistinguishable from embryonic stem cells (K. Okita, T. Ichisaka and S. Yamanaka *Nature* 448, 313–317; 2007). The technique was an advance on his breakthrough of last year, which showed that inserting four genes into differentiated mouse cells yields cells that can become most tissue types (K. Takahashi and S. Yamanaka *Cell* 126, 663–676; 2006). At the Gladstone, Yamanaka will move to human cells. His first postdoc, a colleague from Nara, has already begun experiments, he says. In Japan, Yamanaka would have had to wait at least a year to get permission to work with human embryonic cells.

Deepak Srivastava, one of the Gladstone's directors, says of Yamanaka's specially created position: "We wouldn't do it for everybody, but the magnitude of his discovery was worth the investment." Yamanaka says he will remain at Kyoto University for now so his family can stay in Japan and so as not to disrupt his graduate students. Eventually he plans to come to the Gladstone full-time. ■

**Monya Baker**

## NETWORKS & SUPPORT

### Nurturing physician-scientists

Many in the biomedical research community have voiced concern over a future shortage of physician-scientists in the United States. Tighter budgets at the National Institutes of Health and the escalating cost of medical education seem to be discouraging would-be investigators from committing to research careers.

Data describing the research activity of medical students provide additional insight. According to the Association of American Medical Colleges, nearly 80% of American medical students who were accepted to residency programmes in 2007 reported having actively participated in a research project. But as most of these will abandon research soon after, this statistic suggests that potential is being wasted — there is a need to fund more aspiring physician-scientists. In my view as a medical student, it also emphasizes the need for renewed commitment from investigators to mentor students and foster genuine enthusiasm for research early on.

Students and trainees know the biggest reason so many are engaged in research: it is perceived not as an end in itself, but as a means of gaining admission to medical schools, residencies and fellowships. When I told my college advisers that I was going to apply to medical school, they

said I needed "some kind of research experience" in medicine. Yet at the time, I had little interest in biomedical research — I was a history major — and doing so would have felt forced.

Good mentors can work against this perception. After a year working in a genetics lab during medical school, I developed such enthusiasm for basic-science investigation that I spent a year on a Sarnoff Fellowship in cardiovascular research. Both experiences were remarkable for how my mentors identified and nurtured my budding interests. They helped me understand not only the challenges of a research career but also its rewards. They shared with me their belief that the most exciting scientific discoveries in medicine are yet to come. Thanks in large part to mentors who invited me to try my hand at research, my new dreams of becoming a physician-scientist are coming to fruition.

I am fortunate in having had such proactive mentors. But if an imperative of the biomedical research community is to replenish its stocks with outstanding physician-scientists — and outstanding future mentors — I should not have to count myself as only one of an exceptionally lucky few. ■

**Albert Luo is a third-year medical student at Case Western Reserve University in Cleveland, Ohio.**

#### POSTDOC JOURNAL

### Surviving public speaking

I stood on the stage, stared at the sea of faces before me, and felt the strong urge to run away, or at least to hide behind the podium. My heart was pounding, my mouth was dry, my breathing was shallow, and I clutched the pointer tightly in my cold, shaking hand. They say that an animal, when threatened, will exhibit the fight-or-flight response. As I poised myself to give my first oral presentation as a postdoc, I was clearly exhibiting all the physical symptoms of acute stress. Fortunately, I had gone to the ladies' room before my talk. I was no longer a composed postdoc who was confident in her data. Alone in the spotlight, looking at the international audience full of leading scientists in my new field, I felt like helpless prey, surrounded by predators.

Public speaking has always been a nerve-racking affair for me. Since my elementary-school spelling competitions, I have had the same deer-in-the-headlights feeling in front of large audiences. I sometimes wonder why I don't just tick the 'poster presentation only' box. But ideas are the currency of the scientific market, and our ability to communicate the importance of our work — to colleagues as well as to the public — is a necessity and a responsibility. And so, yet again, I stand my ground and fight my fear of public speaking. After all, it's a jungle out there and it's important to develop the right skills for survival. ■

**Maria Thelma Ocampo-Hafalla is a research fellow at Cancer Research UK's London Research Institute.**