Interview with Chi-Huey Wong, President, Academia Sinica

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Academia Sinica celebrated its 80th anniversary in 2008. After this milestone, how does the institute define its activities today?

Academia Sinica was founded more than eighty years ago, as the highest ranking academic institution in the country. As a result of this, our obligations today lie in three areas. The first is to conduct academic research in science and the humanities. The second is to cultivate new talents to meet new challenges, as we need to have the right manpower to meet future needs. I see these two as the institute's primary missions. The third mission is to take the lead in directing, coordinating and promoting research and make suggestions to the government in terms of important policies, taking our direction from a scientific viewpoint in order to make suggestions.

Today, all three of these functions are working successfully: the institute has many first-rate scientists and researchers working in science and the humanities and social sciences. Academia Sinica has a collection of intellectual expertise in almost every field. We have done a lot: across the Chinese region, from Singapore to Hong Kong and Mainland China, based on all the criteria used by leading academic institutions, Academia Sinica is the best performing institute. I am very proud of this fact.

Do you think that Academia Sinica is the strongest institute in the Chinese region because the talent base it has, or do you think there are other factors that make it so strong?

There are many factors that contribute to this position. The first and most important is recruiting the best people, and in this area we have recently started to face competition. If you want to get the best people from around the world, you need to make sure you have the right salary, the right environment, the right bylaws in place, the right facilities, equipment and libraries, and naturally right opportunities. We are facing competition now because Singapore, Korea, Hong Kong and China are moving very fast. We are competing for the same pool of talents, so we need to do more to be competitive.

The biggest area for improvement in the Taiwanese biotech sector is the need to create the industry. We are strong in early stage discovery, but the major issue is working out how to move forward from this position. If we can move forward into translational research and medicine, we can create a new industry. This will lead to more job opportunities, which will in turn attract more talents to come to Taiwan. Otherwise Taiwan is only producing talent for academia and the government: at the end of the day, industry is the biggest space for attracting talent. We have not reached this stage yet.

The products that Taiwan produces today are not high value: the country’s medical device industry is not producing high value products, and a new drug has yet to be approved by the FDA. However, there are more than twenty Taiwanese drugs currently in clinical development, so I am fairly optimistic. The reason that the industry is where it is today is because the government determined to develop the biotech industry. The question that needs to be asked now is whether we currently have the right policies, regulation and environment to fully develop the industry.

When I came back to Taiwan, one thing I did was to help enact the Biotech and Pharmaceutical Act, similar to the biotech bylaw that was passed in the United States in the 1980s. Because of that law there is today a very good relationship in the US between academia and industry. We passed this act to encourage the same atmosphere for tech transfer and cooperation between academia and industry, providing incentives for investors and also for inventors.

From your perspective, what is still missing to take the success that Taiwan has in basic research and to translate it to commercial success?

We still have a long way to go. We need to build a capacity and capability to link basic research to industry. Many basic discoveries are not getting translated into commercial opportunities, so Taiwan needs to have a component there to identify the important early stage discoveries and move them into industry. In order to do this, the country needs to have a good investment team to identify key projects, and good legislation in place to encourage the translation into industry. The

government's 'Diamond Action Plan for Biotech Takeoff' was designed for such a purpose. It shows that we have a good understanding of the problem, and are trying to move in the right direction. What we need to do is to find the right people that can help to develop this activity: we have good people in discovery, but we still need to have good people to do this next stage.

One great thing about Taiwan is that we had a lot of students going abroad who are now very successful in the US and other countries. The question is now how to seek their help or to attract them to come back. The government is trying very hard to come up with good policy in order to do just that. This will bring different kinds of skills to the country, including management and business development. I am already seeing some people coming back: I think we need more to have a critical mass.

At the government level, it seems as thought Taiwan has identified everything that needs to be addressed in order to build its biotech sector. However, there are many different agencies all involved in this process, each one working from a different angle and trying to help in a different way. Isn't this inefficient?

I think we need to have better coordination. With regards to technology, we need to look at everything we have here in Taiwan, and decide what to do next and identify what we are currently lacking: whether to build them ourselves or to outsource them. However, this relates to strategy, and I think the government has a good overall strategy regarding this industry.

The next segment that needs to be addressed is investment. The government has established a 'megafund,' which will act as a VC pot for developing the biotech industry. Previously, venture groups in Taiwan were focused on the ICT industry, not on biotech. The VCs that were interested in biotech didn't have the expertise to evaluate and identify projects – rather they just followed the crowd. Taiwan needs to have a good VC with professional industry expertise in place to identify Taiwan's most promising companies.

The third issue is deciding where to specialise. This is another thing that investors need to think about: what are Taiwan's real strengths and how do we link these strengths to Mainland China? For example, what kind of diseases is the Taiwanese biotech industry going to focus on? Even if we choose to focus on diseases of Asian significance, this still creates a large potential market.

The key factor in this is working with Mainland China on the regulation situation: what kind of regulatory guidelines should be followed, so that either the two countries recognise each others' data, or whether instead to follow international standards like FDA or EMEA. There is an emerging consensus, which is that both countries should follow international standards, so once a product

finishes clinical trials, it will be recognised by more than two areas.

Is it going to be easy to convince China that this is the right way to go?

I think so, and this is currently being discussed. The last time I visited China I had meetings with both the Chinese Department of Health and the SFDA. We brought up this issue, and we basically agreed: it's also to China's benefit.

The healthcare section of ECFA is still to be discussed before the end of this year. What are your honest expectations from it?

There will be a lot of opportunities for Taiwan in the years to come, not just from China but also as a result of the global health economy. New reforms passed by Mainland China will increase their healthcare budget from 4% of GDP to 8% of GDP. President Obama also had his healthcare reform bill passed by the US Senate, which will inject around U$ 3 trillion into the sector. Altogether the global health economy in the next five years based on these estimates will be worth U$ 5-6 trillion. As the largest industry in the world, this cannot be ignored.

Taiwan simply needs to decide how much it wants to contribute. In the semiconductor industry, Taiwan takes about 60-70% of the world market. If we take 5% of the global healthcare market, it will immediately become the largest industry in Taiwan. 5% is a reachable target: Asia is forecasted to have 30% of the global market, and within Asia, it is not a difficult problem at all for Taiwan to contribute 15% of the Asian market, which is comparatively small.

How much collaboration with multinational pharmaceutical companies does Academia Sinica do?

Many pharmaceutical companies use Taiwan as a hub for late phase clinical trials: Novartis has around 60 currently ongoing. However, we need to encourage these companies to look to Taiwan as a local for conducting more early-phase discoveries and developments. This is where Taiwan's real strengths lie.

Every year Academia Sinica sits down for discussions with Novartis in order to identify common interests for collaboration. Last year the institute signed a memorandum of understanding to participate in The Lilly's TB Drug Discovery Initiative, something we are proud of. We also have small-scale collaborations with other pharmaceutical companies on an individual project basis.

What are your aims in this regard? Would you like to have more collaboration with pharmaceutical companies?

I would like to see more collaboration, but at an earlier stage of drug development where it is easier to attack important problems. Taiwan is very focused on discovery, and big pharma have more experience in development: most big pharma companies have shifted their focus from early stage to development in recent years. Moving from discovery to development costs from U$ 300 million to U$ 1 billion: 60% of which is spent on marketing. Taiwan cannot afford to focus on late stage development in this moment of its industrial development: we lack the requisite experience and skill. Hence, collaboration is very important.

Do you have a final message for our readers about Academia Sinica?

In the last ten years Academia Sinica has been very successful, particularly in the life science area. In the future I would like to see more of our basic research results utilised by the industry, and see more research projects directed towards important disease problems. It is through this that a world leading biotech sector can be created. Without industry, Taiwan’s researchers do not know how to focus on the important medical problems facing the world.

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