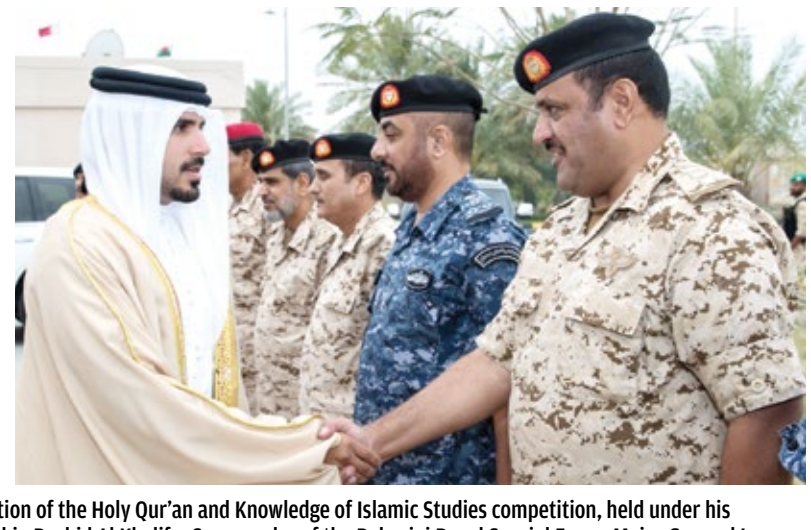
His Royal Highness Prime Minister Prince Khalifa bin Salman Al Khalifa received members of the royal family and senior officials at Gudaibiya Palace yesterday. He discussed with them local and regional issues, stressing that the Kingdom is the state of institutions and law which have to be respected. He praised the role of Bahraini people in serving their nation and society, stressing the one-family spirit characterising the Bahraini community under the leadership of His Majesty King Hamad bin Isa Al Khalifa.



His Highness Shaikh Mohammed bin Salman bin Hamad Al Khalifa, yesterday attended the closing ceremony of the 29th Bahrain Defence Force (BDF) recitation of the Holy Qur'an and Knowledge of Islamic Studies competition, held under his patronage. Upon arrival, His Highness Shaikh Mohammed was welcomed by the BDF Assistant Chief of Staff for Human Resources, Major General Shaikh Ali bin Rashid Al Khalifa, Commander of the Bahraini Royal Special Force, Major General Isa Mohammed Al Rumaihi, the Religious Guidance Director, and a number of senior BDF officers. During the ceremony, HH Shaikh Mohammed highlighted the support provided by the BDF in organising the annual event, which provides a platform to provide knowledge on the noble teachings of Islam.

'Cancer cure research progressing at fast pace'

World renowned biotechnologist Dr Robert Langer highlights the need to boost research commercialisation to create life-saving products

Mehr Jan
TDT | Manama

A leading exemplary, who has contributed tremendously to the field of biotechnology, Dr Robert Langer is widely recognised as a renowned researcher whose publications have been cited over 283,000 times. His research laboratory at MIT is considered the largest biomedical engineering lab in the world; maintaining over $10 million in annual grants and over 100 researchers. The US Embassy in the Kingdom recently hosted Dr Langer as he took part at the Global Entrepreneurship Congress meetings conducted. He was also visiting the island as a guest of the Capital Governorate. The Tribune had an exclusive interview with the prominent scientist as he emphasised the need for "research commercialisation" and shed light on his technological contributions to many branches of medicine including fatal diseases like cancer. Excerpts:

What has been one of the most groundbreaking discoveries you have been a part of?

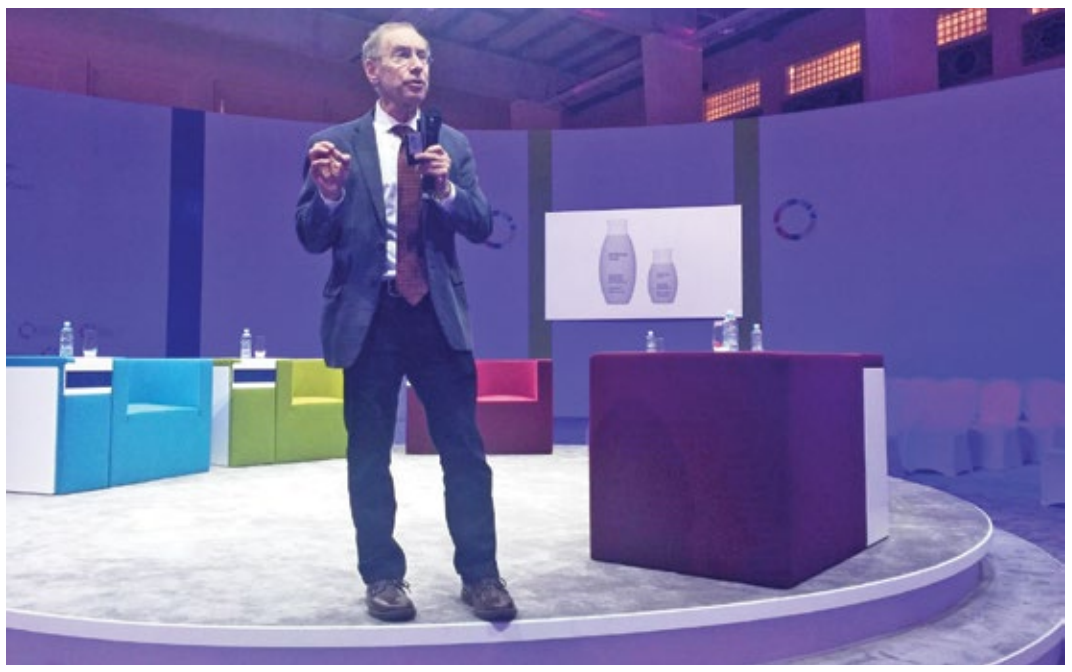
I have been part of the research, which discovered how to control the movement of macromolecules through solid materials such as polymers. This would help us pioneer the field of controlled drug release and numerous lifesaving systems to treat cancer, heart disease, and mental health disease. Also the isolating the first inhibitors of blood vessel growth, which would help lay the groundwork for the development of angiogenesis inhibitors, such as avastin, which are widely used to treat cancer and blindness.

How close are we to be able to find a cure for cancer?

Not close. But progress is being made. One of the latest advances is new ways of unlocking the immune system to treat cancer.

How far has the research and technological advancements led to breakthroughs in biotechnology?

Long ways. It has led to numerous new therapies for treating many diseases like cancer and has laid the foundation for many more. It has also led to new ways of providing foods, like genetically modified foods, and contributed to many areas of our society.



Dr Langer speaking at the Global Entrepreneurship Congress.

What has been the major impact of your initiative to isolate the first angiogenesis inhibitor?

It has led to new treatments for cancer and the first pharmacologic treatments for eye diseases like macular degeneration and diabetic retinopathy. An article in the journal Nature estimates that they will be used by over 500 million people.

What is the latest findings on your work pertaining to tissue engineering in regenerative medicine?

It is leading to artificial skin, new treatments for paralysis, new approaches for restoring hearing, approaches for creating new blood vessels for treatment of heart disease, and the creation of an artificial pancreas to treat diabetes, among others. It is also leading to organs on a chip including an intestine on a chip and a heart on a chip.

DID YOU KNOW

An angiogenesis inhibitor is a substance that inhibits the growth of new blood vessels. It is used to effectively treat cancer,macular degeneration in the eye, and other diseases.

Have there been any major advancements through your findings and work regarding the treatment and/or cure to diabetes 1 and 2?

Yes. We have made an artificial pancreas based on the synthesis of new super biocompatible polymers (that prevent a foreign body response) that can be used to encapsulate islet cells. We have also just published a way to deliver insulin orally that is based on a swallow able capsule that can automatically inject insulin into someone's stomach tissue (which has minimal pain receptors).

How important is it to encourage 'research commercialisation' among various facilities and organisations around the world?

I think it is very important. There are numerous benefits: creation of new life-saving products, new methods of transportation, new methods of communication, and overall will change the future of the world for the better. It will also build the economy and create countless numbers of new jobs.

What current projects are you and your team leading right now, focused upon making a major impact towards the betterment of human life?

There are many. We are doing a number of projects funded by the Gates Foundation to help the developing world. These include ways of creating new pills that can deliver drugs orally for many weeks if needed so that a patient can be treated with a single course of treatment (malaria and AIDS are two examples), a way-- based on a new three-dimensional printing technology we developed -- to create a single step method of immunising patients as opposed to the current procedure of many multiple injections, and new approaches for providing vital nutrients like iron and Vitamin A through the use of novel edible materials that can withstand harsh cooking conditions that can encapsulate such nutrients and then release them to the body once they are eaten. We are also developing approaches for delivering macromolecules like insulin orally by designing new types of pills, and we are doing a lot of work in the area of nanomedicine to deliver potential new therapeutics based on siRNA, mRNA, and DNA. Finally we are doing a lot of work in the area of tissue engineering including developing an intestine on a chip and an artificial pancreas to treat diabetes.