Meet an Expert: Mike Titterton

Dr. Mike Titterton acts as a senior technical assistance expert and adviser on a range of health, social care and education topics for the European Union, Council of Europe, WHO, DFID-UK and the World Bank. He is working with the University of Edinburgh and has previously worked as the director of the Scottish-based international charity Health and Life for everyone, assisting children and adults at risk of harm in the UK and overseas. He has worked for government, social work, the NHS and third-sector agencies in Scotland, and worked on health, social care and education projects in regions like the Balkans, Eastern Europe and Central Asia. He has worked closely with government, local authorities, health authorities and charitable organisations in Scotland on key issues, providing training, professional development, capacity building as well as strategic development. He has also taught and undertaken research at three universities in the UK. His Ph.D. was on the topic of risk and resilience in socially excluded groups and disadvantaged communities

How did you become interested in public health?

I became interested in public health for several reasons. One was a desire to help and improve the health and well-being of vulnerable groups, such as children at risk of harm, homeless people, women seeking refuge from violence, the health of prisoners, and people affected by HIV and other infections. And maybe over 30 years my interests have been developed in Britain and in international contexts, in countries such as Kazakhstan, Azerbaijan, Russia, Rumania, Bulgaria and also countries in Africa. Moreover, I have attempted to help improve understandings and conceptions of health as well as practical interventions of programs to improve the health of the population. So, it's a theoretical and academic interest, but it's also a practical interest that involves working with governments, professionals, NGOs and with patients and with users of these services themselves.

Have you got any comments on the growth of the field of microbial ecology and it's importance in modern world?

Yes, it's a very important area. Now, in 1959 there was a French microbiologist called René Dubos, who wrote a seminal book about this field, about his concerns, about the imbalance between problems in the environment and ecology, and man's eternal striving to exploit resources. His concern was that despite successes in reducing at that time tuberculosis infection rates and other diseases, such as diphtheria, unless we get that balance between man and his ecology right then there is always going to be a range of diseases emerging. And this has certainly proved to be the case of diseases which have largely social determinants, as well as biological determinants such as HIV, such as hepatitis and tuberculosis. And now we see Ebola currently afflicting people in Africa. So, this is a very crucial time for microbiologists in the world.

If we will talk about Ebola virus is it possible to create some vaccines?

Yes, it is. We have success stories in this field of microbiology and medicine to think about the examples in the past. The production and successful implementation vaccines for the HIV virus, for example, which can be effective for young children, babies and mothers. This has been one of the success stories in modern medicine, I think, especially the reducing of mother-to-child transmission. I think that a vaccine for Ebola virus will be produced; it's being tested in a number of countries, in places including Oxford in England. However, we must never underestimate the ability of the viruses to adopt and transform. The longer that they are coming to contact with the human systems, and immune system, the more they learn, the more they can be resistant. What is distinctive about the Ebola virus is that it's a virus that has incredible capacity to adapt and transform. It has been called in English the "transformer" virus. We need to take it seriously: the problem has been, however, under investment in medical intervention and vaccines for what we call it in English the "neglected" diseases and these tend to be in tropical areas, it tends to be poor populations and in places such as Africa. This is because the current model of

the study, research and production of vaccine is a problem. In the West is too much emphasis on the markets, on getting big business, big pharmaceutical companies to undertake such vital work. And despite excellent research in the universities throughout the world including the UK and USA and other countries, the big pharmaceutical companies don't see a profit in producing a new antibiotic: something like only one percent of research was spent looking at antibiotics, especially in relation to the so-called neglected diseases. So, there haven't been any enough investments, there hasn't been enough drive in international health community governance to take leadership and to produce these vaccines. Now, they have been encouraged to try produce a vaccine to Ebola virus. But this involvement should have occurred much earlier. This virus was discovered at 1976 by British researchers and others and there are examples of it having been contained, more recently in Nigeria. So, these outbreaks could been contained and indeed prevented.

Could you tell us some words about reductive dechlorination and why it is important in the environment?

Well, it's crucial that we have much better understanding of the intervention with the ecology and environment. We've seen much more emphasis now upon better understandings of microbiology, biochemistry, public health in medicine, and other fields that are placed within the broader context that is offered by societal factors, by ecological factors, and interactions and reactions with the environment. Remedial technologies are important for working to improve ecological and environmental damage, which can impact on the public health. Any that recognises we need to take a balance right, we need to have and understand better interactions, the connections with the ecology and the environment for understanding the core causes of disease, for understanding better what needs to be done, what public health measures need to be in place, what sort of directions for vaccine production, and for training professional development. This is crucial, so any international regulations developed by the international community on such matters should be followed carefully.

So, we can say that we can go to science and now this is the era of big science, so how do you think what is the future goal for investigating initiated research?

It's a very exciting era. If we think about the field such as genetics, t our understandings have been transformed think about other areas, not just in public health medicine, about the social models of health and the role that social and economic factors have to play. It is clear that soon we might have a vaccine for the Ebola virus, we might manage to contain the HIV and hepatitis infections and countries such as Holland provided examples of important harm reduction measures and other measures, but unless we learn to live with our environment, ecology and change our model of consumption then there is always going to be challenges such as new diseases, new infections, new viruses. And unless we change what we are doing in our economic models and our consumption models then we always going to be faced with these challenges and we can better use the effort and investment in other areas to improve the health and well-being of our citizens.

What is your philosophy in doing outstanding science?

I think, to do really excellent in outstanding science we need to accept standards and brand marks that are internationally accepted, that are signed up to, not just by scientific community, but through engagement and dialog with international organisations, such as the World Health Organisation, such as the United Nations. But governance, as well, needs better understood among politicians, among members of society and ordinary people paying taxes for this science and research. They need to be able to understand and to better appreciate the power and potential that can be developed and exploited and implemented. At the moment there is limited understanding. Currently in terms of the Ebola virus, the public is not understanding and even some medical students here, I think, have a limited understanding. It is a new virus and there are some very unusual and frankly mistaken theories about the virus emerging from the Internet and other sources. Now this is not good science: it is bad science to ignore the evidence base and to only listen to biased and prejudiced sources. We need to think better, we need to be able to think as students and as teachers: we need to be able to use our brains, to think about what is the evidential basis, what do we know on a factual and proven basis. Silly serial of internet, about the derivation of this virus. The reasons for the emergence of such diseases and problems need to be well understood, and well established in science. So, we need to be good scientists, we need to learn to

look at the evidence, we need to use our brains and thinking power. Please don't just go to the Internet and take the latest silly suggestion about where the virus has come from or about who has created it and why. . We need to be sensible, educated and mature about such topics.

What initially attracted you to a career in science and engineering?

"Well, I think there are many fantastic opportunities at that moment. Ok, a moment ago I criticised the internet. But there is a lot of good in internet as well as a lot of potential and exciting power of the internet for creating better communication, sharing understanding for putting scientists across the world and students, and teachers across the world and others doing engage them good solid evidence based dependent discussion, sensible discussion. So, we need to be able to explore the power of the internet to our scientific purposes to prove international understanding so cooperation, collaboration. For example, I hope that we will be able to produce research programs between the United Kingdom and Kazakhstan in the future. So, the use of the Internet and new forms of communication and social media, it will be very important for this. There is good as well as bad in the development of modern technologies such as internet and we need to be better prepared combat what is bad and to promote what is good for improving scientific understandings. "

Can you say us a little bit about the program between United Kingdom and Kazakhstan? What are you planning to investigate?

"Well, one area of interest concerns how we can better prevent diseases in the future, how we can promote health, how we can improve the health in well-being of the vulnerable groups, children and adults at risk of harm that I talked about earlier. We are looking towards British funders and others to support research that is being developed in some UK universities and among university researchers here and which also affects professionals in health and social work, and government ministers as well. Now, one topic that I find very exciting and which I have published and written about is that of trying to produce better conceptions on understandings of risk and interconnections with resilience, and promoting the ability of individuals and communities to meet the challenges that they face in terms of their health and well-being. There are very exciting models to explore with clear, practical implications for Government departments and ministries for centers such as the AIDS Center, the TB Center and others, and for health and social care professionals, and the social workers, for example, which is new profession. There can be wonderful opportunities to explore what this means for country such as Kazakhstan to demonstrate the great potential of such theoretical and academic research and why it is important. It is clear that models are needed for the protection for vulnerable groups, for children and adults, risk of harm, for their social models of health, for social medicine. These fields that are required need further developed and replicated, as well as spelling out the further implications for research and academic undertakings for government policy and strategies and for the practice of health care workers, doctors, and social workers in Kazakhstan. So, it is a very good investment and it is very cost effective, as well, for Government and International Organisations to invest in."

What factors do you use to motivate young people into exploring careers in science and engineering?

"Well, this is an interest of mine….this is could not a better time to be entering science and entering these other fields and engineering, as well. This is a perfect time because we see such great potential, we see such wonderful advances in technological understanding, in forms of science across all fields; we see a great deal of development and excitement in field of genetics, for example. But also about how that relates to other fields, including the social sphere, and economic, ecological, technical spheres in society. And, this is a wonderful time for young people because we know how to share this information and again it is a better side of the internet. This allows access to data, to general articles, to sharing scientific knowledge, technical knowledge. This is excellent. However, there are challenges at the moment as we've seen in the economy, particularly in Europe, which has been under stress recently and it is has been the case that it's been younger people who have paid the price for this through lost opportunities. So, I call upon Governments across the world and International Organisations and business here and abroad, as well, to invest in young people; they are our future to be treasured and invested in and we need to develop their educational skills, the social skills and technical

skills. They have a lot of energy, a lot of great ideas and we honestly need them to improve in order to meet the challenges that I noted earlier. So, these can be done cost effectively; it does not need a lot of money, it just needs better investment. It is amazing how far you can go with the right investment in a right place, and we know that it is very cost effective measure and through the development of mentoring and internship schemes, various employment schemes to giving work opportunities in combination with scientific and educational chances. Then, these allow young people to chance to explore this world, to show it we have to contribute and to demonstrate to the public and to the Government how wise it is to invest in them. "

What would you like to wish to our journal?

"I think your journal is very exciting and interesting. Congratulations to you on this wonderful invention. I think, it has been a wonderful experience for you to develop your skills, your experience, but also what you are doing is demonstrating the value that younger people have to make society to scientific community to share knowledge not just among the students but improving the dialogue with professors, teachers, and researchers. So, I think that your journal has great deal of potential to offer, and I congratulate you most wholeheartedly. All the best for the Future! "

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