60 SECONDS WITH...

PROFESSOR

SUSAN SHARFSTEIN

BioProcess International Academy

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Susan is currently a professor of Nanobioscience at Suny Polytechnic Institute in New York and has a particular expertise in mammalian cell biotechnology, bioprocessing and chemical engineering.

Her research interests involve understanding the effect of culture conditions on living systems used for industrial production of therapeutic proteins and carbohydrates.

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To start, can you summarise your experiences to date in the biotechnology industry?

While I am an academic, I collaborate heavily with companies in the biotechnology/biopharmaceutical industry and about half of my former students and postdoctoral fellows are currently employed in the biotech industry.

What would you consider to be the main areas of growth and development in the biotechnology sector?

There are a lot of them. Biosimilars are very significant, more so in Europe but getting there in the US. Bispecific antibodies and antibody-drug conjugates are growing rapidly. The entire area of immuno-oncology is exploding which includes CAR-T cells.

Nucleic acid based therapies (including gene therapy) are just starting to enter the market and I expect we will see a lot of them going forward and finally, regenerative medicine is coming. I expect in the next 10 to 20 years (and maybe even sooner), we will see all sorts of regenerative therapies to address diabetes, neurodegenerative diseases and musculoskeletal issues.

What, would you say, are the main challenges first-time companies or individuals find when manufacturing their first biopharmaceutical product?

I think for a new company a lot of issues deal with how are they going to make their product. Are they going to develop their cell lines in house or contract that out? Should they use a CMO or buy their own disposable reactors?

What advice would you give to first-time companies or individuals looking to enter the biotechnology sector?

I think the key to being successful for a small company (besides having a good product) is to figure out what are their core competencies and what they should contract out.

Most small biopharmaceutical companies these days launch their first products collaboratively with a big pharmaceutical company because the big company has more resources.

Lastly, what can attendees expect to learn from the upcoming A Beginner's Guide to Biopharmaceutical Manufacturing course?

A lot! The course really covers the history of biopharmaceuticals, the biology of recombinant DNA technology and the engineering and regulatory information that goes into developing a bioproduct and designing a bioprocess.

A Beginner's Guide to Biopharmaceutical Manufacturing is a 4-week online academy requiring just 2 hours per week on average to complete

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