

Year report 2016

BioTech Delft

Foundation Biotechnology Academy Delft



BioTechDelft
POSTGRADUATE EDUCATION

Preface

Life-Long learning is becoming more and more important in our global internet-grown society requiring innovative solutions for a growing population. As BioTech Delft this year we have educated 182 students, in 7 courses, which is a record in our 30-year history. This proves that the demand for dedicated, high-quality education, in the field of biotechnology is still high. We are very proud as Department that we can contribute to this, and in this way share our knowledge with (future) colleagues and industries.



In 2016 we welcomed our new Chair of the Board: dr. ir. J.M.A. Geertman. With his network and experience as manager product & process research at Heineken, the Netherlands, he is excellently suited to fulfil this role. We look forward to a fruitful collaboration. Also we thank dr. J.G.H. Joosten for his committed guidance as Chair over the past 8 years.



In 2016 BioTech Delft (formerly known as BSDL) presented its new logo and website. We also moved to a new location at the campus of the TUDelft, to the building of the faculty of applied sciences. This location allows even more the interaction of students with the staff and facilities of the department of Biotechnology.

Digitalisation, and as a result there of a more sustainable less paper consuming (!) way, for presenting our course material was started this year. The trial with Surface Pro tablets is a great success. It also allows us i.e. to use dedicated bioinformatics programs in the classroom, and will expand the possibilities for blended education.

Finally, I would like to thank Vincent Renken and Jenny Boks for their professional guidance and support for BioTech Delft in 2016.

Prof. Dr. Isabel Arends

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1. Summary

BioTech Delft has successfully organised biotechnology courses since 1987. The courses are evaluated yearly and thoroughly revised every year, in order to maintain their quality.

BioTech Delft is in good shape. With the organization of seven courses this year we attracted 182 participants. A record! In addition, the trial with a digital course books was successful. We will therefore add digital course books as a regular item to our post-graduate education.

Besides a name change (from BSDL to BioTech Delft) we changed the corporate style (logo, brochures, flyers, etc.) and given it a modern look. Communication and promotion activities have been revised: the newsletter is now a course calendar and the flyers are distributed more targeted. The website has been updated: testimonials for all courses are now on the website and there is a portal for participants to find the preparatory materials.

In the BioTech Delft organisation Dr. Ir. Geertman succeeded dr. Joosten as chair of the board. The secretary, Mrs. Boks-Zondervan, left. Claudia Westhoff will start in 2017.

We thank our partners (Wageningen University & Research and Forschungszentrum Jülich), all lecturers and participants for another cooperative and successful year!

2. BioTech Delft in 2016

2.1 General

The foundation "Biotechnology Academy Delft" (short: BioTech Delft) manages the outreach program of the department of Biotechnology at the Delft University of Technology. Our aim is to stimulate high-end education activities in the field of biotechnology. Our target group are scientists and engineers from universities and industries.

In our courses we invite a wide variety of influential lecturers from universities and industries speak about their vision on the biotechnology. Our Advanced Courses are short in depth courses, which are full-time and given in one or two weeks.

Our current portfolio consists of seven advanced courses. Four of them are organised yearly, three every other year:

Yearly:

- Bioprocess Design (in partnership with Wageningen University & Research)
- Downstream Processing
- Environmental Biotechnology

- Microbial Physiology and Fermentation Technology

Every other year:

- Biocatalysis and Protein Engineering
- Genomics in Industrial Biotechnology
- Metabolomics for Microbial Systems (in partnership with Forschungszentrum Jülich)

In 2016 all seven courses were organised.

2.2 Strategy and goals

BioTech Delft has a strong portfolio and the courses have a well-known reputation. Besides organising our courses, effort goes into the continuous maintenance and improvements of the courses. We will shortly go into the goals set in 2016 and the results.

- maintaining and improving the current courses

For AC DP we have invested in a book on “Downstream Processing in Biotechnology”. This year the first version was used during the course. The practical (fed-batch) part of MPFT has been improved and used during the course.

- digitalisation

Website has been improved to enable the sharing of movies and articles behind a login portal. Furthermore, digital course books replaced the paper course books. There have been two courses at which we have tested the digital course books (Metabolomics and Genomics course).



- promotion

We have changed the corporate identity and most materials used for promotion. Brochure is now in full colour and in smaller format. Flyers were redesigned, newsletter changed to a course calendar, LinkedIn group for participants were started, testimonials are now found on the website, MOOC Industrial Biotechnology has been used for advertisement and participants were more actively involved as promoters of the courses.

- expanding course portfolio

In 2016 a start has been made with the preparation of two new courses: Biorefinery and Multiscale Computational Methods. We aim to run them in 2017.

For 2017 we will focus on the development of the new courses, the gradual changes on new brochures and other materials (e.g. powerpoint slides etc.) according to the new corporate identity, using of digital coursebooks, and on

the effectivity of our communication strategy. Furthermore the book for downstream process will be improved and extended.

2.3 Organisational changes

On 27 September 2016 we launched our new corporate identity. Name, logo, flyers, brochures and website were transformed (as can be seen on the right). With this change, Leiden University is not a part of the foundation anymore. We do keep close connections with Leiden University and continue to have one Leiden University staff member in the board of BioTech Delft (currently prof. Van Wezel).

The chair of the board changed. Dr. Joosten was succeeded by dr. ir. Geertman during the board meeting on the 9th of May. Furthermore the secretary of the foundation has left BioTech Delft. The new secretary will start in the beginning of 2017.

During 2016 the department of Biotechnology as well as BioTech Delft moved to a new location. During the Advanced Course of Genomics in Industrial Biotechnology (November 2016) the new building has been successfully used as course location.



3. Results 2016

In total, 182 participants have joined our seven courses; a record (at least as far as we could trace back)!

With an average of 26 participants, the courses were sufficiently full. The maximum capacity is 30-36 participants (depending on the course). So, promotion of the courses at different platforms will remain a point of attention.

This year we organised two courses in collaboration with a partner: Metabolomics for Microbial Systems with Forschungszentrum Jülich and Bioprocess Design with Wageningen University & Research.

3.1 Advanced Courses

A short overview of the advanced courses is given in table 1.

Table 1: Courses in 2016

Advanced Course	Times organised (since)	Length (weeks)	Participants (Industry / PhD / PDEng)
Microbial Physiology and Fermentation Technology 11-22 January	30 (1987)	2	34 (18/16/0)
Biocatalysis and Protein Engineering 4 - 8 April	16 (1999)	1	33 (4/29/0)
Bioprocess Design 18-22 April	3 (2014)	1	27 (13/3/11)
Environmental Biotechnology 31 May – 10 June	21 (1993)	2	26 (3/17/6)
Downstream Processing 4-8 July	27 (1989)	1	29 (19/4/6)
Metabolomics for Microbial Systems Biology 11 - 15 July	6 (2010)	1	15 (13/2/0)
Genomics in Industrial Biotechnology 31 October - 4 November	6 (2005)	1	18 (8/10/0)

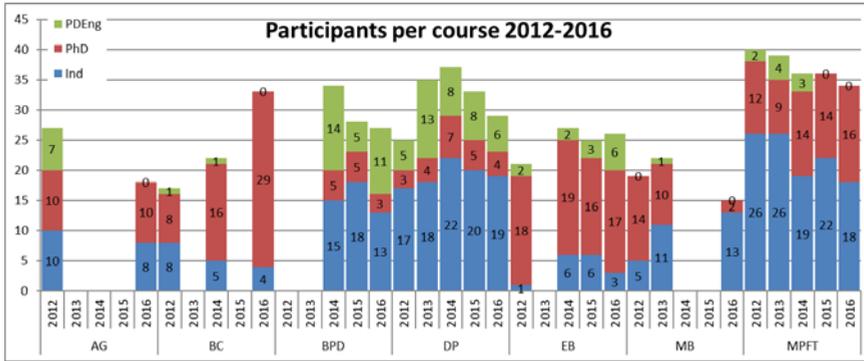


Figure 1: participants sorted per course over the last 5 years.

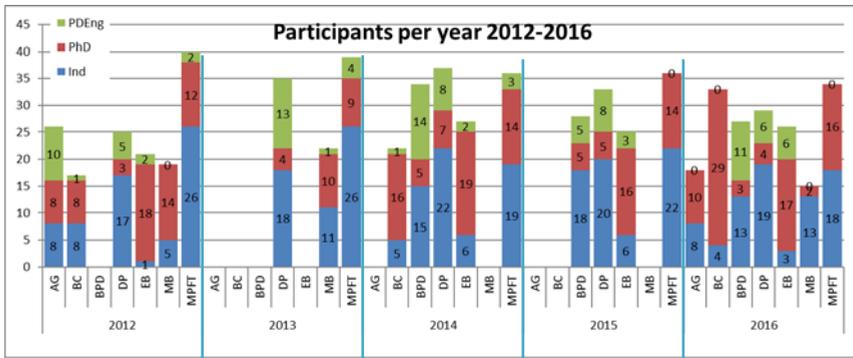


Figure 2: Participants sorted per year.

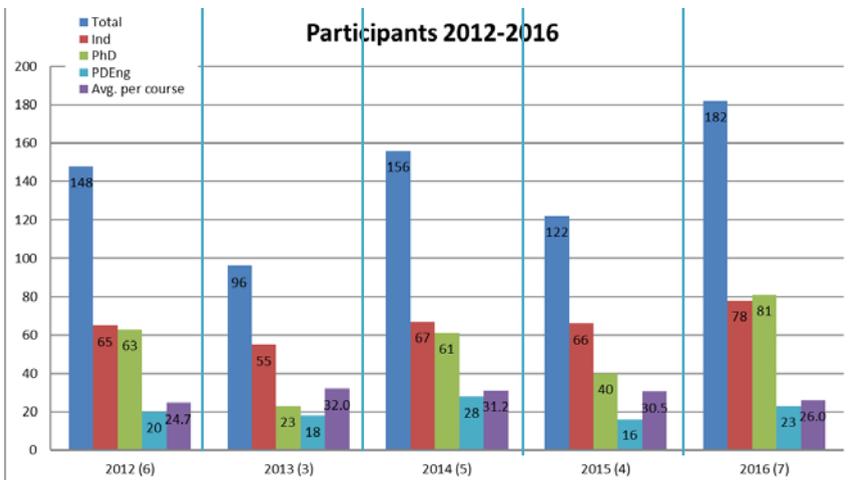


Figure 3: Participants totals per year in three groups. Below: year (number of courses)

In the graphs on the previous page, the number of participants of the last five years is shown. Three groups are visualised: PDEng (Professional Doctorate in Engineering), PhD's and participants from industries. Looking at the graphs, we can see that in 2015 there were more participants per course (average 30.5), compared to 2016 (average 26.0). Looking at the four similar courses organised in 2015, it was 30.5 compared to 29. It could be some participants make choices which course to follow, diluting the participants over more courses in 2016.

As BioTech Delft we thrive for a reasonable distribution between academic and industry participants. Our experiences are that mixed groups of participant coming from public and private institutions is beneficiary for both groups. There are large differences per course (e.g. AC EB and AC DP) in the type of students who are attracted. Coming year we will look more closely into the wishes of the course board per course concerning the distribution and if necessary, start up actions to accommodate these differences.



Prize winning team during AC BD



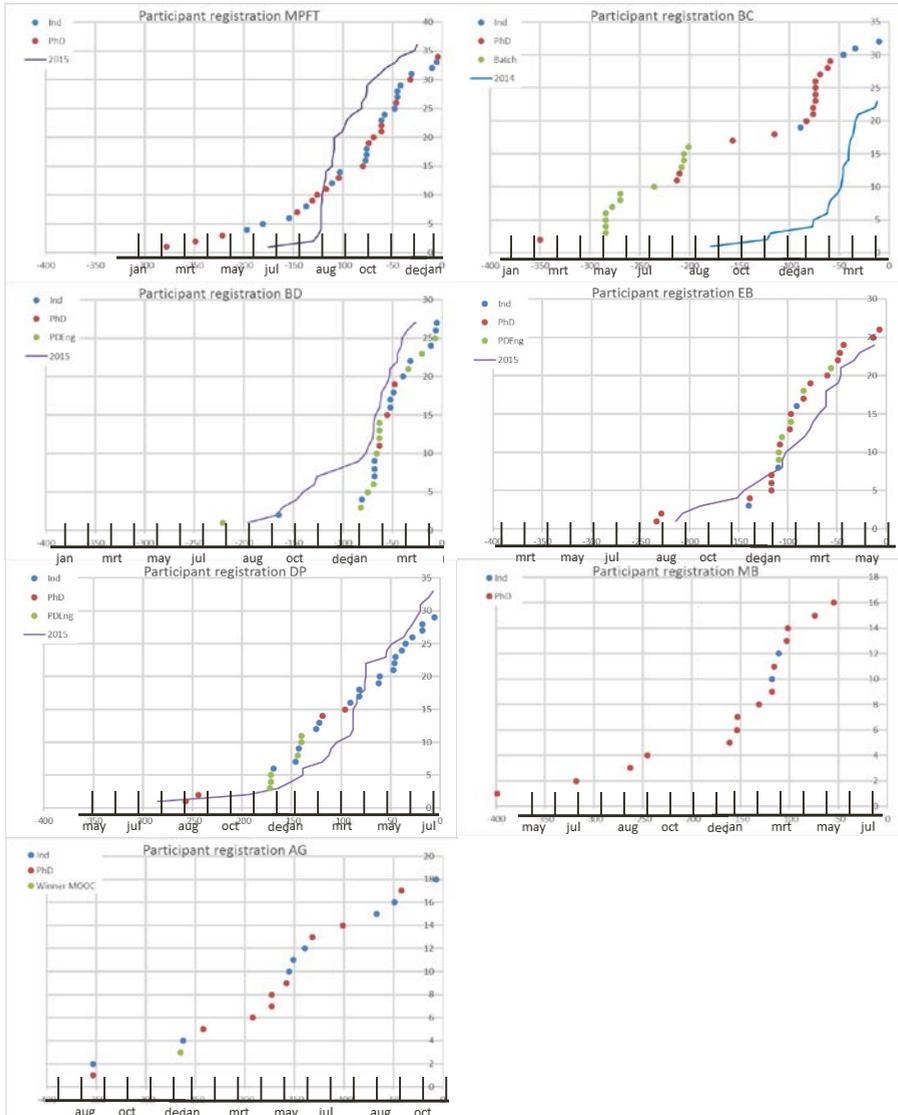
Excursion in Rotterdam during AC EB



Group picture during AC MPFT



Group picture during AC DP



Graph 4: Registration of participants in time. 3 categories of participants are visualised (dots) and the data of last year (line)

Most participants register between 150 and 100 days before the course starts. Generally speaking, industrial participants register later than PhDs. Coming year, we will put more focus on communication and promotion in order to achieve full courses and attract more industrial participants. With the current two years as start-measurement, we can see how effective our efforts will be.

3.2 Quality of the Advanced Courses

To ensure the quality of the Advanced Courses, all courses are evaluated and discussed yearly with the course board. The evaluation give insight in the relevance and didactical qualities of all presentations and lecturers. Furthermore the organisational part the course is evaluated.

The average numbers are given in table 2. The scoring is given from 1-5.

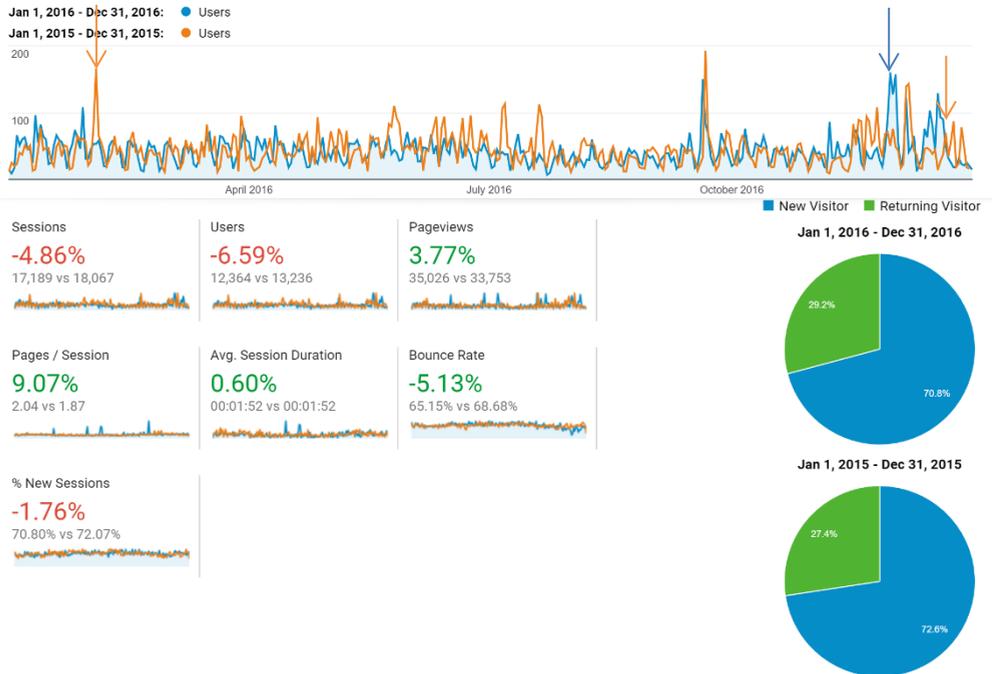
Table 2: results of evaluation Advanced Courses 2016

Advanced Course	2016 Content / org.	2015 (previous course) Content / org.	Historical avg. (10yrs)
Microbial Physiology and Fermentation Technology	4,5 / 4,9	4,5 / 4,9	4,2
Biocatalysis and Protein Engineering	4,3 / 4,6	(4,2 / 4,5)	4,2
Bioprocess Design	4,3 / 4,5	4,5 / 4,8	4,2
Environmental Biotechnology	4,5 / 4,6	4,5 / 4,7	4,4
Downstream Processing	4,1 / 4,5	4,2 / 4,8	3,9 / 4,0
Metabolomics for Microbial Systems Biology	3,9 / 4,1	(4,4 / 4,7)	4,4 / 4,3
Genomics in Industrial Biotechnology	4,3 / 4,1	-	-

Both on content and organisation, all courses score very high. Participants are enjoying the depth, intensity and broadness of the courses. The Advanced Courses have a long and solid reputation and expectations of the participants are high. Due to the continuous effort of the course boards and the department of Biotechnology we continue to deliver the high quality of Advanced Courses.

3.3 Promotion of the Advanced Courses

Promotion efforts were intensified in 2016: More flyers were distributed (e.g. to congresses and local (internationally oriented) events), LinkedIn promotion was intensified; improvements were made to the website including written testimonials. We expect this to lead to an increase in participation numbers in 2017.



Graph 5: website visitors, last two years compared

In 2015, two email campaigns were launched (orange arrows); this year one (blue arrow in graph 5). There is a clear connection to sending out an email campaign and visitors to the website on the short run. This did not reflect participant registration. On average, we had 33,8 (2016) vs. 36.3 (2015) visitors per day. Most peaks in the website visiting are on Tuesdays. The big peak in September (third week), was also in both years on a Tuesday. Coming year, we will therefore send out the mailing during that period.

The relationship between visitors and registrants is not understood. Therefore, the current promotional activities (e.g. brochures) will remain an important part of our promotion.

3.4 Synergy with the department of Biotechnology

The Advanced Courses offer staff members the opportunity to keep, and get, in contact with industries via invited lecturers as well as via participants. The reputation of the Advanced Courses is strong and has a positive effect on the branding of our department.

Furthermore, they form an important part of the PDEng students' education as well as PhDs from the department and campus. The opportunity to let PhD and PDEng students work side by side with industrial participants is appreciated by all.

5. Organisation

5.1 Employees of Foundation BioTech Delft

Program Director

V.L.J. Renken, MSc MSc(Ed)

Office Manager

J. Boks-Zondervan (till November 2016)

Finance

I.G.M. van Kersbergen (Kersenbentjes BV)

5.2 Board of BioTech Delft

Chair: Dr. Ir. J.M.A. Geertman (started on 09-05-2016), Manager product & process research, Heineken, Zoeterwoude

Vice-chair: Prof. Dr. I.W.C.E. Arends, Head of the department of Biotechnology and professor in Biocatalysis, TU Delft

Treasurer: Prof. Dr. P. Osseweijer, professor in Biotechnology and Society, TU Delft

Board member: Dr. A. Wahl, Assistant Professor Cell Systems Engineering, TU Delft

Board member: Prof. Dr. G.P. van Wezel, Professor in Molecular Biotechnology, Leiden University

Chair: Dr. J.G.H. Joosten, Managing Director Dutch Polymer Institute (until 09-05-2016)

5.3 Advisory Council

Dr. E.C. Roos, (voorzitter), Eric Roos Consulting/Koninklijke Nederlandse Chemie Vereniging, Delft

Dr. R. Bos, TIFood & Nutrition, FrieslandCampina, Deventer

Prof. Dr. Ir. C.J.N. Buisman, WETSUS, Leeuwarden / Universiteit Wageningen

Dr. Ir. C.B. de Gooijer, Food & Nutrition Delta, Wageningen

Dr. P.C.A.M. van Helvoort, Royal HaskoningDHV, Amersfoort

Prof. Dr. Ir. J.F.T. Keurentjes, TNO, Delft

Drs. A.C.A.J. van de Leur, Synthron Biopharmaceuticals, Nijmegen

Dr. B. Marthi, Unilever Research Laboratorium, Vlaardingen

Dr. Ir. F.J. Nagel, Janssen Biologics BV, Leiden

Dr. W. van Waesberghe, Heineken Supply Chain, Zoeterwoude

Dr. Ir. R.J. Zoetemeyer, Corbion Purac, Gorinchem

5.4 Contact information

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6. Acknowledgment

Our courses could not be organised without the effort of a large part of the Department of Biotechnology. We would like to thank all staff and lectures of our courses.

Special thanks go to dr. Joosten as chair of the foundation for his untiring efforts and commitment for eight years and Jenny Boks-Zondervan for her efforts and commitment towards the foundation for the last two and a half years.