

qPCR dPCR & NGS 2017 3rd – 7th April 2017

Symposium & Exhibition & Workshops

**Liquid Biopsy, Integrative Big Data Analysis,
Biomarker Signature ... and beyond**

@TUM, Freising-Weihenstephan, Germany



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First Event Announcement -- qPCR dPCR & NGS 2017

Dear researcher,

The great international interest in the previous qPCR dPCR & NGS Events from 2004 till 2015 with a constant audience of more than 500 participants from all over the world motivates repeating the success next year in April 2017. Hence the date for the 8th international **Gene Quantification Event** is from **3rd to 7th April 2017**. We broaden our focus in genomics applications from **quantitative RT-PCR**, over **digital PCR** to the latest **Next Generation Sequencing technologies** and the connected **integrative Big Data Analysis**. As done in previous years, we offer a three day scientific symposium with around 70 talks in two lecture halls. Parallel to the scientific symposium an **Industrial Exhibition** will take place where around 35-40 international companies will present their newest qPCR, dPCR and NGS services, hardware and technologies. The symposium will be followed by various 2-day **PCR & NGS related Workshops** taking place April 6th and 7th powered by leaders in the field.

Event location is the central lecture hall complex and the foyer at [TUM School of Life Sciences](#) (Technical University of Munich) in Freising Weihenstephan, Germany. The TUM and the Biotech region around Munich are part of the largest Biotech cluster in Europe ([BioM](#)), representing more than 250 companies and academic institutions, located close to the Munich airport (MUC) directly in the heart of Bavaria.

The focus topics of the qPCR dPCR & NGS 2017 Gene Quantification Event are:

Liquid Biopsy, Integrative Big Data Analysis, Biomarker Signature ... and beyond

As usual the qPCR dPCR & NGS Event is structured in three parts:

1. **Scientific Symposium** -- taking place April 3-5, including **multiple Talk & Poster Sessions**
2. **Industrial Exhibition** -- taking place April 3-5
3. Followed by various **PCR & NGS Application Workshops** taking place April 6-7

The scientific organization is managed by international well-known scientists in the field of gene quantification:

Stephen Bustin	Prof. of Molecular Medicine, Faculty of Health, Anglia Ruskin University, UK
Mikael Kubista	Prof. of Biotechnology, BTU, Czech Academy of Sciences & TATAA Biocenter, Sweden
Vladimir Benes	PhD, Head of the Genomics Core Facility at EMBL, Heidelberg, Germany
Jim Huggett	PhD, University of Surrey, Nucleic Acid Metrology, LGC, London Twickenham, UK
Justin O'Grady	PhD, Medical Microbiology, University of East Anglia, UK
Jo Vandesompele	Prof. at the Center of Medical Genetics, University of Ghent, Belgium
Michael W. Pfaffl	Prof. of Molecular Physiology, TUM School of Life Sciences, Weihenstephan, Germany

Symposium

The symposium is based on around **70 lectures and 100 posters** presented by international recognised experts in their application fields. The emphasis will be on unbiased, didactic and scientific information exchange. One third of the talks will be presented by invited speakers, one third of the speakers will be selected from the submitted abstracts and one third will be given to PCR and NGS company R&D representatives. Various poster sessions will be held in parallel in a separate poster exhibition hall. All scientific contributions will be published in an abstract supplement of [Biomolecular Detection and Quantification](#) (Elsevier, ISSN 2214-7535). All talks will be recorded and made public in autumn 2017 via the www.eConferences.de streaming platform.

Symposium Sessions for Talk & Poster Presentations:

Please register and submit your scientific contribution (talk or poster abstracts) via our online registration tool, called **ConfTool** => <http://registration.qPCR-dPCR-NGS-2017.net>

Main topic: Liquid Biopsy & Circulating Nucleic Acids

The capture of whole, circulating tumor cells (CTCs) was the initial focus of **liquid biopsy**. Today it includes the collection of **cell-free nucleic acids** (cell free DNA & RNA) and all type of **micro-vesicles (incl. exosomes)**, to provide useful information on the physiological status. The session includes any kind of **circulating nucleic acids** families (DNA, RNA, small RNAs, microRNAs, piRNAs, and long ncRNAs). One focus will be on exosome or micro-vesicles isolation & purification, amount & size quantification, and biomarker characterisation techniques, including intra-cellular, membrane bound protein or lipid markers.

Main topic: Advanced Molecular Diagnostics

This session is focusing on the application of highly sophisticated methods, application and algorithms to discover, detect, and validate **molecular diagnostic marker** or **biomarker signatures**. A special focus is lying on the integrative analysis of **multi-level biomarkers**, e.g. microRNA – mRNA, integrative analysis of genomic, proteomic, metabolomic and phenotypic markers.

Main topic: Integrative Big Data Analysis

The data analysis in RT-qPCR expression profiling and NGS experiments is still challenging and time consuming. It is well known, that a lot of error is introduced by wrong experimental study design, poor sample and group normalisation or differential gene expression analysis. This session is focusing on the application of **useful new algorithms & data analysis methods** to get better and more reliable results, e.g. R-based freeware, and software applications for data mining and comparison, calculation of relative expression, for any kind of nucleic acid (mRNA, microRNA, piRNA). One focus of this session will be the **integrative analysis of multi-level biomarkers** (mainly the microRNA-mRNA), mathematical modelling, multivariate expression profiling, statistics in NGS and qPCR, multiple regression analysis, **3D data visualization**, and more.

Main topic: Biomarker Signatures

A session about the discovery, detection and validation of molecular biomarkers: diagnostic, prognostic or therapeutic markers on **DNA, RNA, microRNA or small RNA, metabolome and proteome level** (e.g. disease markers, cancer or stem-cells markers, tissue specific markers, differentiation markers, methylation markers). New assay systems will be presented like high throughput proteomics (MS based proteome map), PLA (Proximity Ligation Assay) or PEA (Proximity Elongation Assay).

Digital PCR

Digital PCR (dPCR) can be used to directly quantify and clonally amplify nucleic acids including DNA, cDNA, mRNA, microRNA or any other small-RNA species. It allows a more reliable collection and **highly sensitive measurement** of nucleic acid amounts, applications in copy number variants, point mutations in molecular diagnostics.

Non-coding RNAs -- microRNA, isomiRs, small RNAs, long non-coding RNAs

This session is dedicated to the family of non-coding RNA and its RNAi mechanism and applications. A new focus will be on the identification and the data analysis & modelling of new **isomiR biomarkers** and **long non-coding RNAs**. RT-qPCR or small RNA Seq technologies to quantify small & long non-coding RNAs and other classes of small RNAs, like **piRNAs**. Further siRNA knock down applications, microRNA targets and microRNA precursors, new siRNA manipulation, etc. will be presented.

MicroGenomics & Single-Cells Diagnostics

Focus in this session is on micro-genomics, the application of molecular methods to detect biomarkers in a minimal amount of tissue or any biological matrix. New applications in **single-cell biology** will be presented: isolation, separation, characterisation technologies, laser micro dissection, capturing of **circulating tumour cells (CTC)**, pre-amplification techniques, sub-cellular PCR, micro-manipulation of cell clusters, cellular micro injection, single-cell handling, FACS sorting and spotting.

Next Generation Sequencing (NGS)

NGS applications offers new holistic analysis of any kind of nucleic acid, to investigate the Genome, Exome, Epigenome, Transcriptome and Splicome (total RNA, microRNA, small RNA Seq, long ncRNA), CHIP purified nucleic acids, etc.

Various NGS sub-sessions will be presented:

- NGS overview talks - information technology in the era of NGS & diagnostic applications
- Pre NGS - sample preparation & setup & library generation
- NGS – new sequencing technologies (e.g. in-situ, single molecule and pore sequencing)
- NGS – data analysis (data management, mapping, alignment algorithms, data de novo assembly)

Molecular Diagnostics in Life Science

This session is dedicated to molecular diagnostics in Life Science, with focus on **Agriculture, Veterinary Medicine, Food and Environmental Science**, which is the major research focus at the TUM School of Life Science Campus Weihenstephan. All applications of highly sophisticated quantification methods, field application or algorithms to research the wide field of agro-veterinarian or life science are very welcome.

MIQE & QM & Standardisation Strategies in Molecular Diagnostics

This session is focusing on standardisation strategies and quality management in **molecular diagnostics**. The goal is to guarantee **better and more valid results**. Of special interest in the context of qPCR or dPCR are the **MIQE guidelines** (minimum information for publication of quantitative real-time PCR experiments). Following these guidelines will encourage better experimental practice, allowing more reliable and unequivocal interpretation of qPCR and dPCR results.

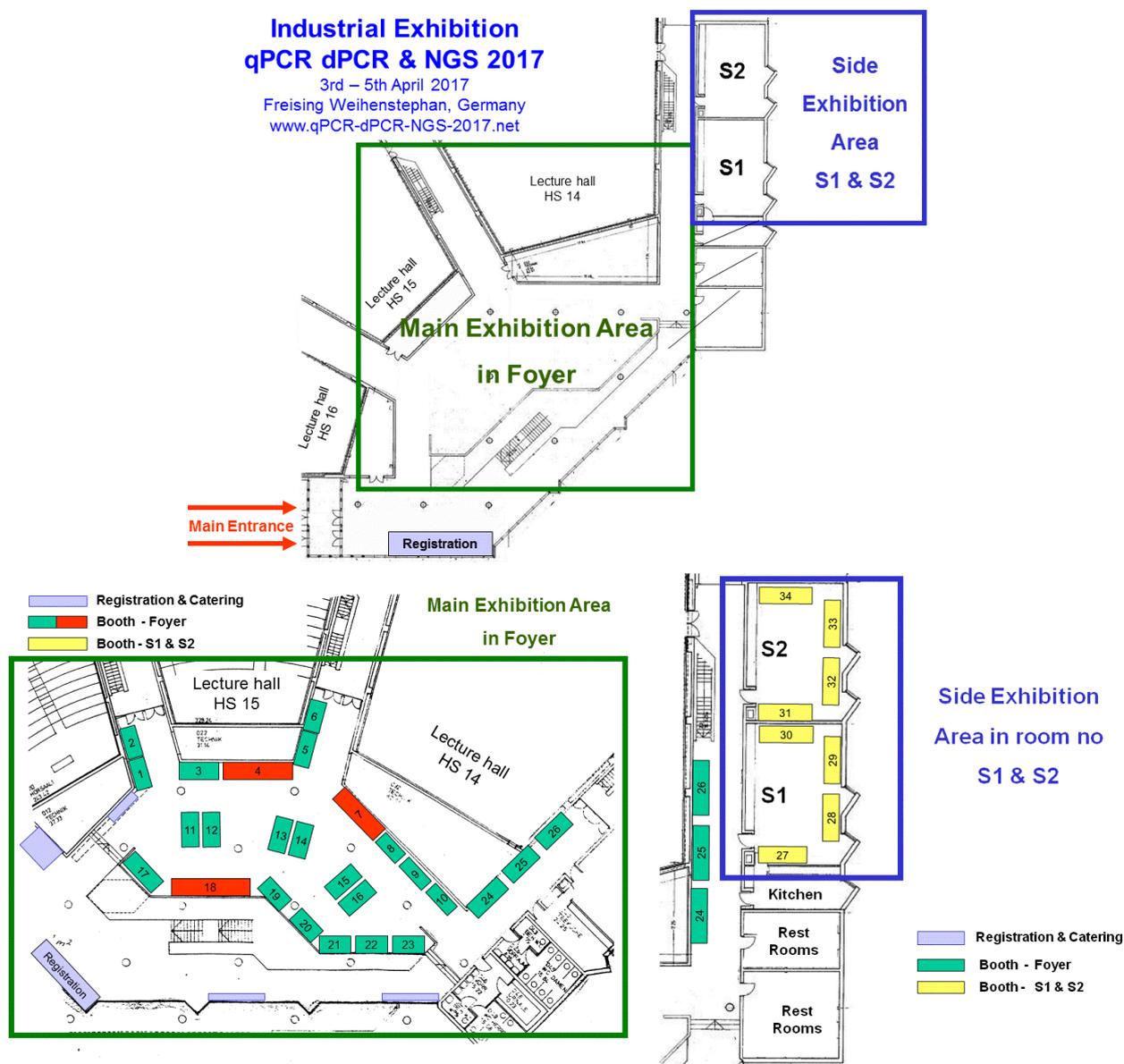
Industrial Talks

Participating companies have the opportunity to [sponsor the event](#) and present their latest services, hardware and technologies. From our Lead- and Gold-Sponsors we expect to have 15-20 industrial presentations. All these presentations should be [focused on key problems and scientific challenges in molecular diagnostics](#) using PCR or NGS and should offer solutions to these. Participants like to be informed about methodological news and their application based on innovative industrial research. The organizers strongly appeal to the participating companies to present an [interesting academic talk](#) (25 min talk and 5 min discussion) showing results from R&D and NOT a sales promotion of existing products. Therefore company representatives from the [R&D and research orientated product specialists](#) will be given priority. All talks will be recorded and made public in autumn 2017 via the www.eConferences.de streaming platform together with around 280 talks from qPCR 2010 onwards.

Industrial Exhibition

An industrial exhibition will be held during the qPCR Symposium **April 3rd-5th** in the **main exhibition area** foyer of the central lecture hall complex (marked by green frame) and in the **side exhibition area** (room S1 and S2 marked by blue frame). The exhibition sites are very close to the lecture halls HS 14 and HS 15 where all the symposium lectures will be held.

If you are interested to participate in the industrial exhibition, please contact the bioMCC event organisation team Eventmanagement@bioMCC.com



Application Workshops

All workshops offer extensive hands-on training by PCR and NGS experts. The workshop labs and seminar rooms are close to the lecture hall complex. Link to a detailed description => <http://workshops.qPCR-dPCR-NGS-2017.net>

PCR Workshop Topics:

The qPCR and dPCR workshops will be held in parallel 6th and 7th April 2017 and are hosted by TATAA Biocenter (www.tataa.com)



- **Basic real-time qPCR Application Workshop** (2-days) hosted by TATAA
- **Analysis of qPCR data - how to get reliable results compliant with guidelines** (2-days) hosted by TATAA
- *dPCR workshop (2 days) to be announced!*

NGS Workshop Topics:

The NGS and NGS data analysis workshops will be held in parallel 6th and 7th April 2017 and are hosted by TATAA Biocenter (www.tataa.com)



- **NGS – Library construction and quality control** (2-days) hosted by TATAA
- *NGS data analysis workshop (2-days) to be announced!*

Symposium & Workshop Fees

The registration fees include:

- Printed proceedings showing all abstracts of the scientific talk and poster contributions in a supplement of Biomolecular Detection and Quantification (Elsevier, ISSN 2214-7535).
- Online access to full presentations with permission from the authors and presenting companies all recorded talks, presentation slides, and posters will be available online as PDF on the streaming portal www.eConferences.de (password protected until autumn 2017 and only available for participants)
- Full catering service including all kind of soft drinks, coffee bar, milk bar, various cold or hot snacks, lunch meals during the symposium and workshops. You participate at three evening events, a Bavarian style **Get-Together Reception** on Monday evening April 3rd and a **Conference Dinner** on Tuesday evening April 4th, in Bräustüberl Weihenstephan the “*world's oldest* brewery” <http://www.braeustueberl-weihenstephan.de> with various delicious international buffets, alcoholic drinks, soft drinks, and a **After Dinner Party** with cocktails, music and dancing on Tuesday night April 4th.

	Early registration fees until 31 st January 2017	Late registration fees from 1 st February 2017
Symposium (3 days)		
students*	360 Euro	410 Euro
academic attendants	460 Euro	510 Euro
industrial attendants	560 Euro	610 Euro
Workshop (2 days)		
students*	440 Euro	490 Euro
academic attendants	540 Euro	590 Euro
industrial attendants	640 Euro	690 Euro
Symposium + Workshop (5 days)		
students*	750 Euro	850 Euro
academic attendants	950 Euro	1.050 Euro
industrial attendants	1.150 Euro	1.250 Euro
* The students should present a valid student passport at the registration.		
Net prices are displayed -- 19% German VAT is additionally charged to the net price!		

Please register and submit your scientific contribution (talk or poster abstracts) via our online registration tool, called **ConfTool** => <http://registration.qPCR-dPCR-NGS-2017.net>

Have a look on the previous event trailers and talks from 2010 to 2015 on www.eConferences.de

If you have further questions, we are pleased to help you. Up to date information is available on the Symposium Homepage www.qPCR-dPCR-NGS-2017.net

Hope to meet you in April at the qPCR dPCR & NGS 2017 Gene Quantification Event in Freising!

Michael Poff