Predictive medicine and clinical cytomics research: résumé of the 15th Annual Meeting of the German Society for Cytometry (Deutsche Gesellschaft für Zytometrie, DGfZ)

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On 19–22 October 2005, this year's annual meeting of the German Society for Cytometry (DGfZ; <http://www.dgfz.org>) took place in Leipzig, Germany, at the Centre for Environmental Research (UFZ) Leipzig-Halle (<http://www.ufz.de>) with over 220 participants from more than 20 countries. This event is of some interest to the readers of *Cell Proliferation* as well as the members of the European Cell Proliferation Society (ECPS; <http://www.smd.qmul.ac.uk/ECPS27>). On the one hand, it was supported by the ECPS by publishing the meeting abstracts in *Cell Proliferation* (German Society for Cytometry 2005). On the other hand, close scientific relationships between the ECPS and the DGfZ were discovered which hopefully might lead to the agreement to collaborate for upcoming annual meetings of the DGfZ in Leipzig and also perhaps for organizing joint sessions.

The intention of this brief resume is to introduce the DGfZ and give a brief overview about this year's congress and next year's plans.

HISTORY OF THE DGfZ

The Society of Cytometry (Gesellschaft für Zytometrie, GZ) was founded in 1989 in Heidelberg, Germany by the Foundation Council represented by Cess Cornelisse, Georg Feichter, Wolfgang Goehde, Klaus Goerttler, Holger Hoehn, Andreas Radbruch, Peter Schwarzmann, and Günter Valet. An association was born dedicated to basically providing an interdisciplinary platform for interested scientists in the field of flow and image cytometry. Founding members were scientists whose personal scientific development was and still is closely interlinked with the development of cytometric technologies in Europe (Valet 2003).

In 1994, the original name of the Society was changed into Deutsche Gesellschaft für Zytometrie (DGfZ, German Society of Cytometry). Since the foundation, annual meetings have been organized to provide a platform for interdisciplinary exchange in basic research, clinical and industrial developments. The DGfZ offers an organizational structure to the expanding science of cytometry. The focus of scientific interest of DGfZ activities is the analysis of genetic,

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physiological and structural processes in cells. The aim of the DGfZ is the promotion of methodological and technical innovation in flow cytometry (FCM), image cytometry (ICM) and slide-based cytometry (SBC) which furthers understanding of the cell and its integration into multicellular systems (Valet 2005a). The spectrum reaches from oncology, immunology and pathology to cytogenetics, microbiology and plant culture, as well as ecology, and includes all areas within which the cell is the centre of attention. Since its foundation, the DGfZ has been dedicated to providing a platform for interdisciplinary scientific exchange and facilitating communication as well as transfer of knowledge. The society has been continuously engaged in innovative science and, within the community, cutting-edge technologies have been developed. Examples are the first commercially available flow cytometer, as well as methods for dual laser flow cytometry, cell separation and sorting, among others (Dittrich & Gohde 1969; Buchner *et al.* 1971; Schumann *et al.* 1971; Stohr *et al.* 1977).

THE ANNUAL MEETINGS

The annual meetings of the DGfZ are traditionally the highlight of the membership year and the major activity of the society. Until 2004, all meetings took place in the prestigious communication centre of the German Cancer Research Centre (DKfZ) and have been regularly organized, initially by Klaus Goerttler and later for many years and with outstanding enthusiasm by the late Karl-Josef Hutter and Michael Stoehr. In 2005, after this long-standing tradition, the society needed and found a new location for the convention and the 15th annual meeting took place for the very first time outside of Heidelberg, namely in Leipzig, Germany, and was excellently housed in the conference venue of the UFZ (<http://www.leipziger-kubus.ufz.de>). Leipzig is an ideal place for innovation as it is one of the main centres for cytometry in Germany, harbouring a unique potential for academic and industrial networking. In the last few years, Leipzig has made great leaps forward to become one of the leading biotechnology centres in Germany and Europe, partly because of the newly founded BIO CITY – a biotechnological–biomedical centre, where industry, science and research live and work together. Also, the recently established Fraunhofer-Institute for Cell-Therapy and Immunology, IZI (<http://www.fraunhofer.de/fhg/EN/profile/fhi/IZI/profile.jsp>) provides an important new platform for technology development and medical application of cell analysis. The city of Leipzig, with the availability of the congress centre of the UFZ, the Kubus (<http://www.leipziger-kubus.ufz.de>), has an efficient infrastructure and also cultural versatility which provides an ideal platform for the 15th Annual Meeting.

The move from Heidelberg to Leipzig went hand in hand with the presentation of a completely refurbished scientific and teaching programme. Of course, presentation of innovative cytometric science, based on recent and sophisticated technologies that allow quantitative analysis of cellular parameters, remains the key aspect. Furthermore, the scientific programme (German Society for Cytometry 2005) reflected more progressive approaches aimed at understanding complex biological systems, not only on a higher (systemic) level, but also on a smaller (bacterial) scale, in natural, impaired, environments. It has been realized that, in modern analytical strategies dedicated to understanding the function of cells within cellular systems [for example, systems biology and cytomics (Hood *et al.* 2004; Valet 2005a,b)], or within microbial communities, there is certainly a need for existing and novel cytometric technologies. The internationally discussed concepts of cytomics and the human cytome project initiative (Valet 2005a,c) as a novel discipline within the field of systems biology had their beginnings within the DGfZ and constituted an essential part of the scientific programme of the meeting that has been held in 2005 in Leipzig.

Cytomics represents an innovative strategy in understanding the biocomplexity of cellular systems by utilizing both established and innovative cytometric technologies for cell biology research. However, in contrast to analysing cellular components, cytomics considers molecular content and function and cell morphology, as well as tissue architecture as a whole and integrated system (Ecker & Tarnok 2005; Kriete & Boyce 2005). Clinically, utilisable knowledge can be extracted from the abundance of data generated by quantitative multiplexed analysis with the help of exhaustive bioinformatics extraction of biological information (Hood *et al.* 2004; University of Leipzig at <http://www.uni-leipzig.de/veranst/herzzentrum-workshop/>). Against this background, an improvement in the scientific agenda of the DGfZ meetings could be achieved that would correspond well to the goals and future demands of biomedical sciences. The power of innovative thinking and approach was reflected by the programme of this year's meeting.

Systemic cellular and tissue analysis is a challenge for the future and now needs the education of young and engaged scientists. The DGfZ is aware of a great responsibility for supporting this development. In this year's annual meeting, education in cytometry, image analysis and clinical cell analysis received particular attention. Tutorial programmes, as well as hands-on courses, were aimed to facilitate education and to motivate young scientists to move into this highly developing field of research with its impact, not only in basic research, but also in clinics and in new drug development.

CONCLUSION AND PERSPECTIVE

Overall, the DGfZ will maintain the tradition which has its origin in Heidelberg. The society's elevated dedication is to promote the education of young scientists and technicians in cytometry and in related fields and to encourage them to join the community of cytometrists. The meeting provides a valuable chance to meet and communicate with experienced scientifically high-ranking peers who could support their personal scientific development. This idea is consequently supplemented by taking workshops and practically orientated courses dealing with topics of cytometry. Since 1994, the Klaus-Goettler-Prize, for which graduate students can apply, has been advertised for outstanding scientific work in the field of cytometry, emphasizing the special concern of the society towards young scientists. In addition, multicentre studies are organized for quality assurance of cytometric methods. The DGfZ cooperates with further national European cytometry societies, the International Society for Cytology (ISAC) and several other international life sciences and technology societies.

The Leipzig DGfZ conferences in 2005 and 2006 are complementary to the traditional Leipziger Workshops in the springtime (Tarnok & Emmrich 2003; Leipziger Workshop on Slide-Based Cytometry 2004; Lenz *et al.* 2005) that are focused on highly specialized topics in cytometry, cytomics and clinical applications. The DGfZ uses the World Wide Web for advertising and, at the same time, encourages all members and interested scientists to use the medium for keeping informed and actively exchanging information by using the communication forum at the particular website.

In conclusion, moving from Heidelberg to Leipzig had a refreshing and stimulating impact on the meetings. To enhance interdisciplinary and international interaction, joint meetings will be arranged in the future. We hope that this spirit will also be present at the 2006 meeting. We are very proud that the upcoming meeting, which will take place at the same location again, will be in collaboration with the European Cell Proliferation Society (ECPS).

The committee of local and scientific organisers cordially invite you to keep in touch with the society. The activities of the society and the latest announcements can be found on our regularly updated website (<http://www.dgfz.org>). We hope this information has aroused your interest and will motivate you to join us at the upcoming annual meeting. We are looking forward to seeing you in Leipzig in October 2006.

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