

## IN MEMORIAM

# Claes Lundsteen—in Memoriam

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Claes Lundsteen died unexpectedly of cancer on 10th November 2003. At the time of his death, he was head of the Chromosome Laboratory in the Department of Clinical Genetics at Rigshospitalet, University of Copenhagen. Throughout his career, Claes sought to introduce new approaches, particularly quantitative methods based on computer image analysis, into the clinical practice of cytogenetics. His interest in this area started at an early stage. His MD thesis in 1979 described approaches to automatic chromosome classification, based on a number of his papers throughout the 1970s, which were among the earliest publications on this topic. He was able to tap into engineering interest in this problem in the still youthful field of Pattern Recognition. In Claes, the engineers working in this area found an ally of a rare and valuable kind: a clinician who was willing to understand engineering problems and cooperate in detail to create working systems. In the late 1970s, the opportunity of building an automated karyotyping and metaphase finding system arose in the clinical chromosome laboratory of the Department of Obstetrics and Gynecology at Rigshospitalet. Claes and his colleague John Philip decided to use this opportunity and commissioned the British instrument firm Joyce-Loebl, later renamed Applied Imaging International Ltd, to construct a prototype. At that time, such systems were highly experimental, and only limited trials had taken place. With typical energy, insight, determination and patience, Claes and his colleagues found ways of integrating automated karyotyping into routine laboratory practice, as well as contributing to the technical development of the system. Automated karyotyping systems are now commonplace pieces of equipment in the cytogenetics laboratory, but that status owes a great deal to the pioneering, patient work in Copenhagen. Claes remained keen to introduce new quantitative developments, and in particular his group developed a sensitive approach to using CGH analysis for clinical studies, building on their experience of automated karyotyping.

Claes was one of a small group of people who, in the mid-1970s started a series of workshops in automated chromosome analysis that quickly grew to encompass

other applications of image and signal analysis in cytogenetics. Ultimately, these workshops turned into a Concerted Action in 1988, supported by the European Commission, under Claes's direction. This helped to widen interest in this field and acted as a focus for a growing community with related research interests. The atmosphere at the Concerted Action workshops was characterised by a friendly informality that contributed significantly to scientific interactions between researchers from diverse fields in bioscience, engineering, computation and clinical practice. Those of us fortunate enough to be involved recall with affection the combination of fun and scientific stimulation that attends the best scientific enterprises. Following the success of this Concerted Action, further activities have taken place – another Concerted Action, a series of Euroconferences, and, currently, a Marie-Curie activity – developing and enlarging this community. Claes has been actively involved at the centre of each of these activities, a consistent, powerful voice for directing scientific and engineering results towards clinical practice.

Claes was a sociable man who created many friendships among scientific colleagues from around the world. In recent years, his travelling was curtailed by his need for constant dialysis resulting from a kidney condition and a subsequent failed transplant. He bore these discomforts with fortitude and good humour, and his colleagues and friends would still see him at a scientific meeting once every year or so. We will remember him for his warmth, his generosity, his good humour and his musical talent – he was a fine singer and pianist. Modest persuasion could induce him to entertain us with the songs of Tom Lehrer and Carl Nielsen. We will miss him greatly.

Jim Graham, Elisabeth Blennow, M Guida Boavida, Nigel Carter, Christoph Cremer, Thomas Cremer, Olivier Delattre, Tommy Gerdes, Erik Granum, Anne Hagemeyer, Jesus Maria Hernandez Rivas, Olli Kallioniemi, Maria Kirchhoff, Steen Kølvrå, Peter Lichter, Peter Pearson, John Philip, Jim Piper, Mels van der Ploeg, Anton K Raap, Mariano Rocchi, Carla Rosenberg, Michael Speicher, Frank Speleman, Niels Tommerup, Nadine van Roy, Joris Veltman and Ted Young