



ISE Newsletter

World Congress of the International Society  
for Enzymology  
Naples, Italy, May 21–24, 2000



This meeting, under the umbrella title *Basic and Clinical Enzymology 2000*, represented a joint meeting between our Society and Clinbio 2000, composite term covering the Tenth International Conference on Laboratory Medicine and the Seventh European Conference of Clinical and Molecular Biology. It was held in the Royal-Continental Hotels of Via Partenope flanking the glorious esplanade of Santa Lucia, in close proximity to Castel Uovo, and a relatively short distance from the Royal Palace adjoining the majestic Piazza Plebiscito. It was organized by the current President of ISE, Dr. Francesco Salvatore, with Drs. F. Cimino and M. Plebani providing invaluable help as co-Chairmen.

The Opening Ceremony was a remarkable occasion. A series of Welcome Addresses by officers of the Society, local dignitaries, and the Italian Minister for Universities and Scientific Research were followed by Plenary Lectures given by two distinguished Nobel Prize Winners. Christian De Duve of Brussels, who won the prize in 1974, spoke on *Strategies of Biomedical Research*. He was followed by Arthur Kornberg, who received the award in 1959 and whose topic was *Ten Commandments for the Enzymology of DNA Replication*. The Society had never previously attracted a speaker who had already won the Nobel Prize, although Kary Mullis who spoke at the 1990 meeting in Toronto received the award two years later. Having two Laureates was in itself a significant coup. The quality of the lectures raised the occasion into the highest realm of science and beyond the mere satisfaction of seeing two legendary investigators on the podium. A concert of Baroque Music followed and the evening terminated

with a Buffet offering superb examples of Neapolitan cuisine.

From that point onwards the scientific sessions over the next three days comprised two concurrent Symposia in the morning and the same again in the afternoon. This meant that the hundred or so registrants had to divide their attention between two competing auditoria. To an extent, this diluted the interaction between speakers and audience, and it generated a need to scramble from one hall to the other when selecting from both the presentations of maximal interest. Nevertheless, neither the speakers or the audience articulated much in the way of complaints, and everyone seemed to adapt well to the situation. The Scientific Program got off to a good start with two Symposia on Monday, 22<sup>nd</sup> May. The first of these, *Molecular Aspects in Clinical Molecular Biology* included lectures by J.-J. Cassiman (Leuven, Belgium) on the Functions of Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) Protein; by C.H.C.M. Buys (Groningen, The Netherlands) on DNA-based Diagnosis of Glycogen Storage Disease Type 1a; by A. Gal (Hamburg, Germany) on Molecular Genetics of X-Linked Non-specific Mental Retardation. The second Symposium of the morning on *Enzymes of Oxidative Phosphorylation* started with The Structure and Mechanism of Action of ATP Synthase given by Y. Hatefi (La Jolla, CA, USA), and was followed by Cytochrome Complex III of the Mitochondrial Respiratory Chain – Bifurcation of Electron Flow by a Conformational Switch; this was presented by U. Brandt (Frankfurt, Germany).

A Workshop: *Evaluation of Enzyme Activities in*

the *High Throughput Clinical Chemistry Analyzer*, sponsored by Abbott, was chaired by Robert Strom (Rome, Italy) and straddled a lunch break.

In the afternoon, the first Symposium: *Tyrosine Kinases and Downstream Signalling* included presentations by G.T. Plowman (San Francisco, CA, USA) on Origin and Diversification of Eukaryotic Protein Kinases, and Combinatorial Signal Transduction by Oncogenic Growth Factor Receptors, presented by Y. Yarden (Rehovot, Israel). The second Symposium of the afternoon was devoted to: *Cardiac Enzymes and Markers*. The relevance of this Symposium for clinical and diagnostic practice was not lost on an enthusiastic audience. The various papers dealt with release and intracellular localizations as markers of reversible and irreversible cardiac damage; diagnosis of acute coronary syndrome; biochemical markers – what is current, what is redundant?; integration between the clinical laboratory and emergency department; cardiac markers as early expression of angiogenesis, and a new enzyme in the field of chronic inflammation – acid nucleoside triphosphatase. A large contingent of foreign speakers participated: R. Rej (Albany, USA), J. Ravkilde (Aalborg, Denmark), P.L. Wolf (San Diego, CA, USA) and N. Dahlmann (Hamburg, Germany). The other two lecturers, M. Panteghini (Brescia, Italy) and M. Zaninotto (Padova, Italy) enjoy a distinguished reputation outside their native Italy, both making excellent contributions.

On Tuesday, the first morning session was devoted to *Clinical Enzymology: Genetic, Molecular and Pharmacological Aspects*. Seven speakers addressed a range of themes including crucial aspects of standardization, the interaction of alcohol and enzymes, a low enzyme activity that is predictive of spontaneous abortion in humans, drug metabolizing enzymes, CEA-related cell adhesion molecule and its effect upon vascular endothelial growth, iron metabolism complexity, and the role of dopamine peroxidase in neuromelanin biosynthesis. The second Symposium embraced *Structural Biology of Enzymes*. It included two excellent presentations, one from R.W. Carrell (Cambridge, UK) on the conformational activation of antithrombin and heparin. A later presentation by D.R. Davies (Bethesda, USA) on the molecular basis for substrate channeling in multienzyme complexes introduced some exciting

new concepts concerning the topographical regulation of activity in these complex enzyme systems.

Two Workshops ran concurrently with the luncheon break. The first, by Roche Diagnostics, dealt with *Osteoporosis and Bone Markers*, while the second sponsored by Beckman Coulter encompassed *Bone and Prostate Enzymes*.

Two Symposia were held during the afternoon of Tuesday, 23<sup>rd</sup> May. The first: *Proteases and Nucleases in Pathology and Therapy* included a lecture by J.F. Riordan (Boston, USA) describing the nuclease activity of angiogenin, while a later paper by K. Dano (Copenhagen, Denmark) described cancer invasion and tissue remodeling as related to proteolytic matrix degradation. The second Symposium that afternoon was devoted to *Enzymes in Neoplasia*. The initial lecture, by M. Plebani (Padova, Italy), dealt with the role of enzymes in the metastatic process. This was followed by S.M. Kelsey (London, UK) who spoke on caspases and apoptosis in malignancy. M.K. Schwartz (New York, USA) who has towered like a giant over this area of enzymology over three decades spoke about enzyme inhibition in the control of neoplasia, followed by H.A. Fritsche (Houston, USA) who presented interesting information on computerized diagnosis of prostate cancer.

As so often happens on the last day of a 3-day Conference, the attendance started to wilt. Departures occasioned by tight travel schedules accounted for many of the empty seats. Others testified to a mad headlong rush by scientists incarcerated over the last two days and whose final opportunity had come to see some of the glories of this fascinating city blessed as much by its history as its geography. Nonetheless, many good things continued to happen in the air-conditioned but rarefied atmosphere of the conference center. A Symposium: *Basic Enzymology and Pharmacology of Peptides* discussed definitions, mechanism-based drug design, X-ray crystallography applications, the impact of genes upon enzyme structure, folate-dependent enzymes, enzymatic transition states and design of inhibitors, and the diagnostic role of troponin T in predicting heart transplant rejection. Three of the speakers were from USA: D.L. Purich (Gainesville), R.G. Matthews (Ann Arbor), V.L. Schramm (Bronx, NY). If it was hard to discern a common link between the in-

dividual lectures in this Symposium, this was certainly not true of *Basic and Clinical Aspects of Human Kallikreins*. In fact, this session suffered from a certain amount of overlap and redundancy, but was notable for a large number of high-quality presentations, all of the participants being distinguished foreign guests. The roster of speakers included J. Clements (Brisbane, Australia), E.P. Diamandis (Toronto, Canada), H. Lilja (Malmo, Sweden), H. Rittenhouse (San Diego, USA), and S.P. Little (Indianapolis, USA). This was the only Symposium with commercial sponsorship: Beckman Coulter Corporation and Eli Lilly Company.

For the final afternoon, Symposia devoted to *Enzymology of Nucleic Acids* and *Enzymology of Apoptosis and its Physiopathological Implications* brought the scientific program to a conclusion. The first Symposium featured P. Schar (Zurich, Switzerland), together with T. von Zglinicki (Newcastle, UK), and the second was notable for lectures by H. Walczak (Heidelberg, Germany) and B.A. Hemmings (Basel, Switzerland).

All in all, this was a tough uncompromising program that took no prisoners. It required intense concentration, a genuine interest in the very specialized topics forming the presentations, and some familiarity with nomenclature and jargon, problems that are making communication between scientists in different topic areas difficult to comprehend and to sustain. There was an over-emphasis on presenting recent personal research data at the expense of providing general overviews that could crystallize the topic for scientists outside the field who will not benefit from gory practical details. Perhaps the extension of the program from 36 to 72 papers created the space for this amount of specialization. Some of the registrants felt that they would have benefited from a series of plenary lectures in the course of which whole sections of enzymology could have been broadly summarized. Doubtless, these are issues that future organizers will have to consider.

A final word about the organization is necessary. This was superb. The facilities within the two auditoria were *state of the art*. Apart from the Opening Ceremony, all other scientific sessions started on time or no more than a few minutes late. The registration desk, staffed by Emmezeta Congressi was a source of smiles and useful information,

with much help being given to those who had to change their travel arrangements or who wished to book tours. Special mention must be made of Ms. Eliana Stendardo who directed this operation with charm and efficiency.

The Final Program ran to more than 157 glossy pages, being packed with information that included Abstracts of the Symposium presentations, as well as Abstracts of the 52 Posters that were displayed in the special viewing area. Of this number, all but one (from Argentina) was from Italy. This comes as a great disappointment: not that the Italian Posters were not of high standard, but their exclusively Italian origin points to our failure to convey awareness about this Congress on a wide international basis, combined with the fact that the timing of announcements made it extremely difficult for non-Italians to comply with the deadline for Poster submissions.

On a more up-beat note, it should be recorded that the hospitality met the awesome standards of quality and generosity that characterize scientific meetings in Italy. Although no specific times were set aside for coffee breaks, coffee there was in plenty, usually in the form of that black concentrated tasty nectar dispensed in the usual doll's house cups that elevate imbibing to a liqueur-like experience. A fine assortment of juices was always available demonstrating the creative artistry in this form of confectionery for which Italy is famous. Sit-down lunches with delicious local wines were served at a delightful restaurant, La Bersagliera, situated at the water's edge opposite the hotels and adjoining one of Italy's premier Yacht Clubs. It was here that the real Naples came alive and, for an hour or so, swept the dusty cobwebs of science from the jaded minds of the registrants.

In closing, it is appropriate to extend our warm thanks and congratulations to Franco Salvatore and his colleagues for a memorable four days. Thanks must also be expressed to those commercial companies providing essential financial support:

**Principal sponsor** – Roche Diagnostics

**Major sponsors** – Bayer Dade Behring; Eurogenetics Italia; PE Biosystems

**Sponsors** – A. Menarini; Abbott; Beckman Coulter; Bouty; Dasit; Instrumentation Laboratory; Momo Line; Ortho Clinical Diagnostics.