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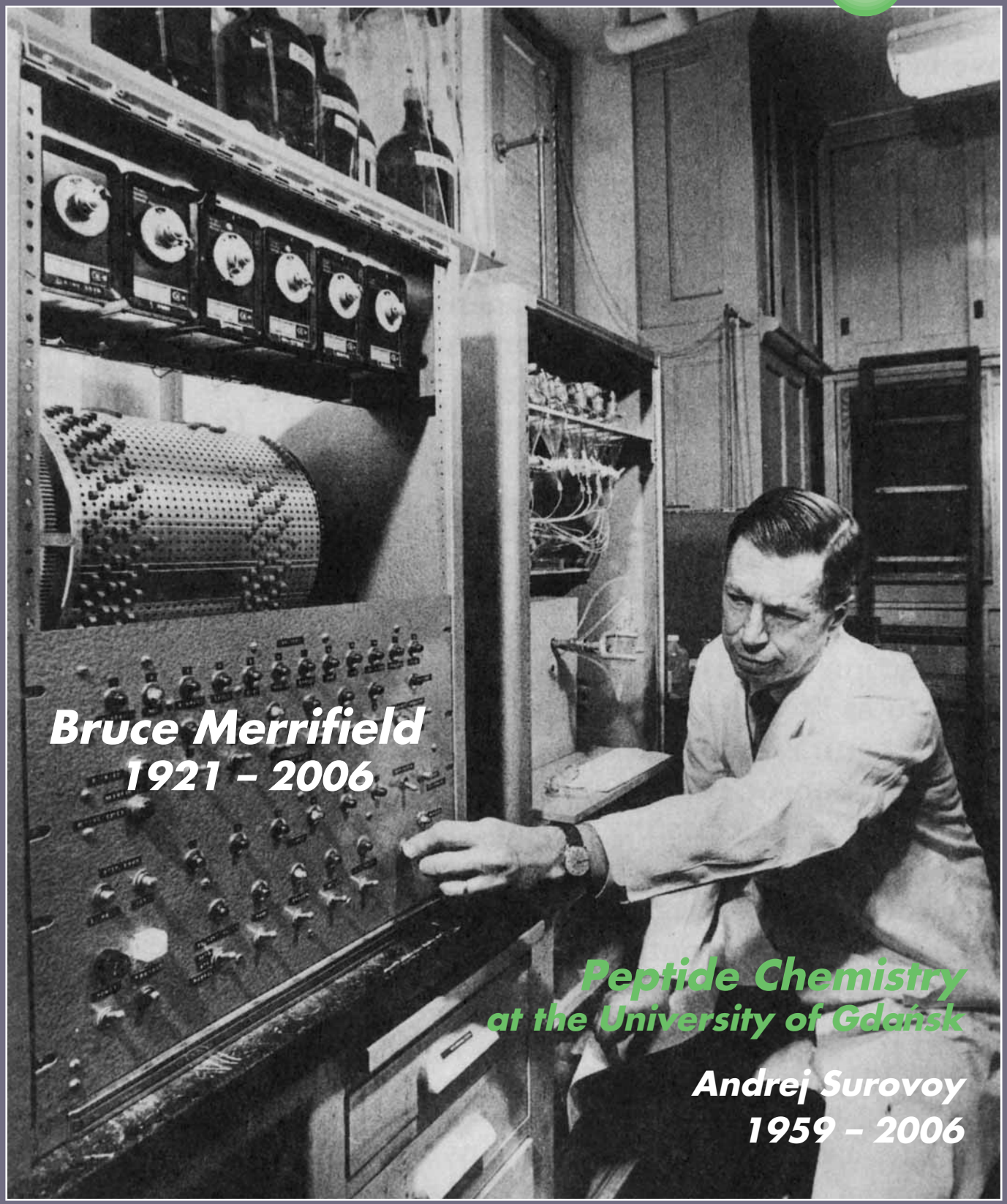

Bruce Merrifield 1921 – 2006

Peptide Chemistry at the University of Gdańsk

Andrej Surovoy 1959 – 2006

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Hellenic Forum • Naples Workshop • M. Zaoral´s 80th Birthday • H. Maia Retires

Cover photo: Bruce Merrifield operating the automated Peptide Synthesizer; 1969

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Peptide Chemistry
at the Faculty of Chemistry, University of Gdańsk (Poland)

A view of the City of Gdańsk

Peptide research in Poland commenced in the early 50's at the Gdańsk University of Technology by Professor Emil Taschner. He was in fact one of the pioneers of peptide chemistry in Europe, belonging to the very exclusive club of the participants of the 1st European Peptide Symposium called «Symposium on Methods of Peptide Synthesis», Prague 1958. E. Taschner transferred his passion for peptides onto a group of young graduates of the Technical University of Gdańsk, who in the 60's founded research groups that continued their mentor's research. Among his successors were the following professors: Andrzej Chimiak (Gdańsk University of Technology), Barbara Rzeszotarska (University of Opole), Teresa Sokolowska (Gdańsk University of Technology) and Czeslaw Wasielewski (Gdańsk University of Technology). Among his PhD students were also Bogdan Liberek and Gotfryd Kupryszewski who were appointed in the 50's, at the Higher Pedagogical School in Gdańsk which combined with the Higher School of Economics in Sopot in 1970, founding the University of Gdańsk.

B. Liberek and G. Kupryszewski established independent groups and focused their interest on peptide chemistry. Initially these operated within the Institute of Chemistry, and since 1991 within the newly–founded Faculty of Chemistry of the University of Gdańsk. Till their retirement (B. Liberek in

1996, G. Kupryszewski in 1999) both scientists led respectively the Amino Acids Group and the Bioorganic Chemistry Group. They did not give up research activity as *professor emeriti*, either. Unfortunately, prof. Kupryszewski's research was terminated by his death last year.

G. Kupryszewski's achievements in the early stage include introducing the method of synthesizing peptides using active pentachlorophenyl esters. This method found wide use and constitutes a permanent part of peptide chemistry. Later professor Kupryszewski turned his attention towards biologically–active peptides. At first these were N–acyl derivatives of lysine and ornitine exhibiting antimicrobial activity, analogues of thyrotropin releasing hormone (TRH), opioid peptides (enkephalins, kyotorphins, casomorphines) and analogues of tissue hormone angiotensin II. In the 80's and 90's professor Kupryszewski's interest started to include larger peptides of more complex structures, like cholecystokinine, gastrine, arginine vasopressine analogues, galanin and its analogues, immunoactive peptides, serine proteinase inhibitors or the plant peptide hormone systemin. G. Kupryszewski was also the organizer of the First National Conference «Chemistry of Amino Acids and Peptides» in Gdańsk in 1967. In time these conferences turned into Polish Peptide Symposia (ww.pps.univ.gda.pl) held regularly every two years. The next one, 19th Peptide Symposium, will take place in Warsaw in 2007 and will be organized by professors Aleksandra Misicka and Andrzej Lipkowski.

Among the more important achievements of B. Liberek one should note the halolysis reaction for selective cleavage of the ester group using lithium halogenides, discovered in the late 60's. Of high acclaim is his later research in mechanisms of side reactions in peptide synthesis, in particular of dehydratation of amide group to nitrile group in asparagine and glutamine moieties. Bogdan Liberek investigated and proposed a detailed mechanism of racemisation of amino acid moieties by direct αhydrogen abstraction. He also dealt with Z–E isomerism in N–nitroso–N–alkylamino acids and their derivatives.

The University of Gdańsk

Scientific achievements and respect of both researchers in the scientific society caused many talented young scientists to gather around them. Some of them passed all the steps of scientific career, winning professor titles. In Professor G. Kupryszewski's group these were: Bernard Lammek, Krzysztof Rolka, Zbigniew Maćkiewicz, Piotr Rekowski. Professor B. Liberek's successors are: Zbigniew Grzonka, Jerzy Ciarkowski, Leszek Lankiewicz and Franciszek Kasprzykowski. With the exception of the deceased L. Lankiewicz the others are leaders of research groups with main research interests focused on widely understood investigation of biologically–active peptides, creating the strongest peptide research centre in Poland. At the same time this is the most strongly represented field of research at the Faculty of Chemistry of the University of Gdańsk. Research areas of the individual teams are detailed below.

The research activities of Bernard Lammek group are broadly concentrated in two areas. The first one is centered on synthesis and pharmacological evaluation of new analogues of bradykinin and neurohypophyseal hormones (arginine vasopressin and oxytocin). He has provided useful information about structure–activity relationships and opened up new possibilities for designing potent agonists or antagonists. The other part of his group is focused on conformational studies of previously synthesized, biologically–active peptides using e.g. two–dimensional Nuclear Magnetic Resonance (2D NMR), Raman Spectroscopy (RS), Surface–Enhanced Raman Spectroscopy (SERS), as well as theoretical calculations. Theoretical calculations are based on quantum mechanics and molecular dynamics calculations *in vacuo* and in explicit

full–atom solvation models. These cover receptor–ligand and receptor–cellular membrane interactions – possibly allowing for predicting the properties of new hormone analogues before theis synthesis and clinical tests. Because of the additive character of scientific approaches to the same technological problem, there is constant cooperation between these two groups in all possible fields of research.

The research of Krzysztof Rolka's group is focused on synthetic inhibitors and substrates of serine proteinases. Initially, the leading structures for designing new inhibitors were low–molecular–weight inhibitors isolated from the seeds of the Cucurbitaceae family: CMTI (trypsin inhibitors isolated from pumpkin) and EETI–II (trypsin inhibitor isolated from jumping cucumber). More recently they have chosen as a starting structure the amino acid sequence of trypsin inhibitor SFTI–1 isolated from the sunflower seeds. Such investigations, carried out for years, led to discovering potent and selective inhibitors of trypsin, chymotrypsin and elastase. Some of these synthetic peptides belong to novel classes of serine proteinase inhibitors. A part of this long–term project is devoted to the design and synthesis of chromogenic substrates of serine proteinases. These investigations are carried out using both the classical approach and combinatorial chemistry methods. It is also worth to mention the other objects of this research group: neuropeptides such as opioids, tachykinins, nociceptin and its analogues and fragments of prion protein. This research includes both chemical synthesis of suitable analogues and determining space structures in solution of peptides exhibiting interesting pharmacological profiles.

The main interest of Zbigniew Maćkiewicz is the application of synthetic peptides in immunological investigations. The goal of this work is to develop synthetic vaccines and diagnostic tests. The objects of these studies are fragments of Hepatitis C Virus (HCV) proteins. More recently he turned his interest towards peptides with antimicrobial activity, such as histatin–5, statherin and parathormon. The analogues of these naturally–occurring polypeptides synthesized by his group are then evaluated for antimicrobial and immunogenicity activity in cooperation with biology groups.

Piotr Rekowski with his group designs and synthesises biologically–active peptides and their analogues: neuropeptides (galanin, P substance, and vasopressin) and the plant hormone systemin. A new area of research is interaction of peptides and proteins with nucleic acids (interaction models: zinc fingers from TFAIIIA transcription factor with 5S RNA, Tat protein of HIV–1 with TAR, peptides selected from a phage library with modified RNA fragments). Rekowski also began synthesizing nucleoside– and nucleobase– containing amino acids (NBAs) with the aim of researching peptide – nucleic acid interactions. Investigations of interactions of peptides and proteins with nucleic acids saw the marked presence of Piotr Mucha, who worked out an efficient method of analyzing protein – nucleic acid complex formation using capillary electrophoresis.

Professor Liberek's group was the place where the scientific activity of Zbigniew Grzonka, rector of the University of Gdańsk in years 1990 –1996, started. In the 60's and 70's Grzonka investigated the synthesis of nitrile–group–containing amino acids and peptides, as well as tetrazole mimetics of amino acids and peptide analogues containing them. In the 80's Grzonka's group participated in SAR investigations of biologically–active peptides: vasopressin, oxytocin, enkephalins, dynorphins and angiotensin. The 90's till now saw the gradual shift towards more complex problems like: lysosomal catepsin inhibitors, investigating the molecular mechanisms of Alzheimer's disease, searching for inhibitors of cystatin C oligomerisation, investigating the molecular mechanism of Finnish amyloidosis – creation of amyloid fibriles originating from gelsolin. Professor Grzonka's pupils – Leszek Lankiewicz and Franciszek Kasprzykowski – actively co–created the group's record in the area of chemistry of amino acids and peptides. The late Leszek Lankiewicz worked in assymetric synthesis of non–protein amino acids. At the moment the group is led by Franciszek Kasprzykowski, who continues the research directions. Kasprzykowski is involved in designing, synthesising and investigating the activity of azapeptide inhibitors of cysteine proteases and of copounds exhibiting anti–microbial activity. He has recorded great achievements in quantitative analysis of peptide mixtures using chromatography methods.

Within professor Grzonka's group there is independent research being conducted by Wieslaw Wiczk. His activity is focused on physicochemistry of amino acids and peptides, including: synthesis and photophysical analyses of 3–(benzoxazol–5–yl) alanine, investigation of protein structures using Fluorescence Resonance Energy Transfer (FRET), investigation of inclusion complexes of amino acids and their derivatives as well as of peptides with cyclodextrins.

In the 70's in professor Liberek's group began the scientific activity of Jerzy Ciarkowski, who at first dealt with stereochemical aspects of N–alkyl–N–nitrosoamino acids, and in the 80's assembled databases for determining cyclodipeptide conformations. The last decade of his scientific activity involved application of molecular mechanics and molecular dynamics for investigating peptide and protein conformations, including uncovering the mechanisms of activation/inhibition of G Protein–Coupled Receptors (GPCR), which is the key to rational drug design.

In the late 80's in professor Ciarkowski's group theoretical studies of peptide and protein chemistry were undertaken by Adam Liwo. He deals with theoretical analysis of conformations of neurohypophyseal hormones employing molecular fields. Of great importance is his method of searching the conformation space for forecasting the space structure of proteins on the basis of their amino acid sequences employing empirical force fields.

The last thirty years of peptide chemistry at the University of Gdańsk can be circumscribed with a "symposium brace". In 1978 professor Gotfryd Kupryszewski organized the 15th European Peptide Symposium, which took place in Gdańsk. About 150 peptide chemists participated, mostly from Europe and the USA. In September 2006 we, the pupils of professor Kupryszewski, will be co–organizing the 29th European Peptide Symposium. We fervently hope that we will be able to greet in Gdańsk as many colleagues – the participants of the 15th EPS from 28 years ago – as possible.

Contributed by Piotr Rekowski and Krzysztof Rolka

«5th Hellenic Forum on Bioactive Peptides»

Patras, 14–16 May 2006

The 5th Hellenic Forum on Bioactive Peptides was held again at the Conference and Cultural Center of the University of Patras, Greece on May 14–16, 2006 under the auspices of the European Peptide Society, the "Leonidas Zervas" Foundation and the University of Patras. The meeting has been organized by the Department of Pharmacy of the University of Patras and it was very successful, having an attendance of 190 participants from 14 Countries and 24 Academic Institutions from all over the world.

The scientific programme included 21 Invited Lectures, 9 Short Oral Presentations from young Greek scientists and 67 Poster Presentations. Most of the scientific contributions described novel approaches to the design, the synthesis and the applications of bioactive peptide analogues as therapeutics.

The Opening Session was dedicated to the memory of the late Professor D. Theodoropoulos and his contribution to the Peptide Science, and it was chaired by the entire board of the "Leonidas Zervas" Foundation. The Rector of the University of Patras Prof. Christos Hatjitheodorou and the Scientific Affair Officer of the European Peptide Society Prof. David Andreu addressed the audience and officially declared the opening of the 5th HFBP.

During this In Memoriam Session, Prof. Raniero Rocchi and Prof. Paul Cordopatis addressed the audience and presented in brief the Life Work of D. Theodoropoulos, as teacher, friend, colleague, scientist and of course his 40–year dedication to the University of Patras. The family of D. Theodoropoulos was specially invited to attend the session and Prof. Raniero Rocchi at the conclusion of this part, presented to his daughters, Zetta and Melpo, a plaque in recognition of his achievements in the field of Organic and Peptide Chemistry in Greece and of the support given to the University of Patras, as a founder and Head Administrator from the early years of its existence.

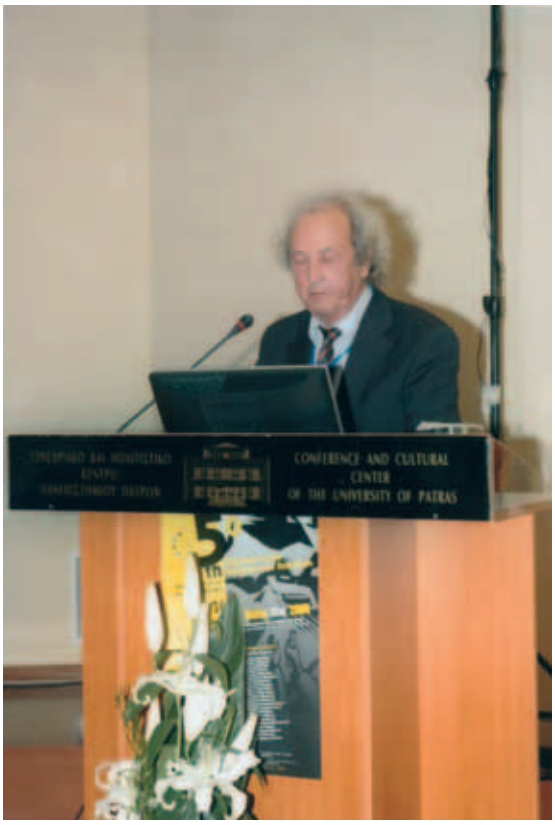
The Board of the «Leonidas Zervas» Foundation at the Opening Ceremony. Left to right: G. Stavropoulos, A. Yiotakis, G. Kokotos, K. Sakarellos and P. Cordopatis.

In the second part of the Opening Session, Prof. A. Yiotakis on behalf of the "Leonidas Zervas" Foundation, presented and gave the awards to young Greek researchers for their work in the field of bio–organic chemistry. The Session continued by the Opening Keynote Lecture, this year presented by Prof. Luis Moroder (Martinsried), entitled Structural and Folding Studies of the Cysteine–Rich Head Domains of Minicollagen–1 from Hydra Nematocysts. The first day of the 5th HFBP was concluded by the Welcome Reception, given at the Foyer of the Conference and Cultural Center.

The invited speakers who covered the next two days were: Myriel Amblard (Montpellier), David Andreu (Barcelona), Ettore Benedetti (Napoli), Ivano Bertini (Florence), Florine Cavelier (Montpellier), Jean–Alain Fehrentz (Montpellier), Ernest Giralt (Barcelona), Nikos Karamanos (Patras), Leondios Leondiadis (Athens), Gabor Mezo (Budapest), Haralampos Moutsopoulos (Athens), Dionissios Papaioannou (Patras), Antonello Pessi (Rome), Krzysztof Rolka (Gdansk), Maria Sakarellos–Daitsiotis (Ioannina), Jirina Slaninova (Prague), Georgios Spyroulias (Patras), Dirk Tourwé (Brussels), Jannis Vlachojannis (Patras) and Peter White (Nottingham).

The official languages were both Greek and English with a full cross translation service. In addition to the scientific programme, all foreign and invited delegates had the opportunity to visit the CBL Company (Prof. Kleomenis Barlos) at the Industrial Area of Patras, a leading Greek

Raniero Rocchi and Paul Cordopatis presented to D. Theodoropoulos' daughters a plaque in recognition of his achievements.



Luis Moroder during his plenary lecture.

manufacturer for peptide synthesis reagents. We must also refer to the presence, for the first time, of the Bulgarian team with 8 delegates and 9 Poster Presentations, whose contribution to the scientific and social events of the 5th Forum was remarkable. During the Forum works, the Greek delegates had accepted and signed the official statute documents for the foundation of the Greek Peptide Society, the general outlines of which were discussed and agreed upon during the works of the previous Forum in April 2004.

The Forum was rounded off with the Banquet given at the "Politeia Resort" which is an excellent restoration example of the old town–slaughterhouses to a 'small village' dedicated to cultural and social events of the city of Patras, which is also for this year the Cultural Capital of Europe. Before dinner the delegates had the opportunity to attend a specially produced performance at the "Politeia Theatre" presented by Anny Onoufriou (Voice) and Sofia Kamayanni (Piano), dedicated to Greek songs of various composers who have contributed, each one in his own style, to the maintenance and evolution of a long tradition, which carries the "greek idiom". The dinner that followed at the "Politeia Main Hall" gave way to a really nice–time late event, with live Greek and World music and of course dancing from almost all the attendants.

The 6th Hellenic Forum on Bioactive Peptides will be organized in Patras on May 2008.

Contributed by Paul Cordopatis and George Pairas

Workshop
«10th Naples Workshop on Bioactive Peptides»

Naples, 11–14 June 2006

The tenth edition of the Naples Workshops on Bioactive Peptides was held in Napoli, Italy at the Centro Congressi d'Ateneo of the University of Napoli "Federico II" on June 11–14, 2006. The meeting has had an attendance of 149 peptide scientists from 16 different Countries from all over the world. The meeting, has been organized by the Dipartimento delle Scienze Biologiche and the Centro Interuniversitario di Ricerca sui Peptidi Bioattivi (CIRPEB) of the University of Napoli "Federico II", by the Second University of Napoli, by the Istituto di Biostrutture e Bioimmagini of the C.N.R. of Italy, by the Centro Regionale di Competenza in "Diagnostica e Farmaceutica Molecolari". The Workshop was held under the auspices of the European and the American Peptide Societies and the Regione Campania Assessorato all'Università ed alla Ricerca Scientifica.

The theme of the Workshop was "Conformation activity relationships in peptides and interactions with biomolecules: the legacy of Murray Goodman".

This edition of the Workshop was for various reasons a special one: It was in fact the first edition of the Workshop held in Napoli, while all previous ones were held in the island of Capri. The organizers wanted to give a sign of discontinuity because the tenth edition was the first to which the late Prof. Murray Goodman did not participate. In fact, as well know, two years ago on June 1th Murray, passed away in Münich during a visit to the Max Planck Institut fur Biochemie in Martinsried. Only three weeks before his death he participated for the last time as a distinguished member of the Scientific Committee, as an invited speaker and as a Chairman of one of the session to the 9th Naples Workshop, held in Capri on May 8–11. It was in the island of Capri that on May 10th, 2004 he gave his last lecture on "Protein Mimetics". After the Workshop he flew to Munich, where two weeks later he died.

Ettore Benedetti and Evaristo Peggion presented the Sigillum of the University of Naples to Mrs. Zelda Goodman

The tenth edition was therefore dedicated to his memory and among the participants were many of his former PhD students, collaborators and friends. The sigillum of the University of Napoli "Federico II" was given by the Chairman to his wife Zelda, together with a plaque in recognition of the support given by Murray to the Italian Peptide Community and in particular to the Napoli and Padova research groups.

The scientific programme of lectures and poster presentations amply covered the topic of the workshop. A total of 19 Invited Lectures and 9 Short Oral Presentations were given in the two–days meeting. Poster Presentations were also enriching the programme.

The invited lectures in the first day were given by M. Chorev (Cambridge, USA), who discussed a new paradigm in the development of inhibitors of protein–protein interactions, by R. Wetzel (Knoxville, USA) who presented a lecture on kinetics and thermodynamics of amyloid fibril formation. Receptor subtypes specific contacts of the neuropeptide Y/pancreatic polypeptide hormone were presented by A.G. Beck–Sickinger (Leipzig, Germany), whereas Y. Sohma (Kyoto, Japan) covered a "Click peptide" in the synthesis of amyloid β–peptide analogues. D. Andreu

(Barcelona, Spain) presented data by surface capture methods on the hevein–chitin interaction, while R.S. Hodges (Aurora, USA) give an account of the inhibition of SARS–coronavirus infectivity. The lecture by F. Naider (Staten Island, USA) was centered on a study of ligand–receptor and residue–residue interactions in a G protein coupled receptor, whereas that of I. Toth (Brisbane, Australia) treated liposaccharides in peptides, gene and vaccine delivery. P.A. Temussi (Napoli, Italy) and M. Verlander (Torrance, USA) covered the fields of sweeteners and peptide pharmaceuticals, respectively.

The invited lectures of the second day were devoted to application of cell–penetrating peptides by U. Langel (Stockholm, Sweden) or to antimicrobial and lytic peptides by Y. Shai (Rehovot, Israel). F. Heitz (Montpellier, France) discussed the interactions of amphipathic peptides with membrane component while G. Wagner (Boston, USA) discussed the inhibition of translation initiation factors with respect to the implication for cancer therapy. Membrane–permeable arginine–rich peptides were presented by S. Futaki (Kyoto, Japan), while M. Amblard (Montpellier, France) give account of the synthesis of high–functionalized templates. N. Sewald (Bielefeld, Germany) presented a lecture on probing DNA–peptide interaction forces, while F. Formaggio (Padova, Italy) discussed on developments of peptaibols. Finally, C. Gilon (Jerusalem, Israel) gave a lecture covering backbone cyclic model peptide library to orally active drug lead. Most of the lectures described novel approaches to the discovery, the design or the synthesis of peptide analogues or peptide–based molecules for their application as drugs.

Nine Short Oral Presentations completed the programme of Oral Presentations of the Workshop: these were given by S. De Luca (Napoli, Italy), P. Grieco (Napoli, Italy), M. Spaller (Detroit, USA), V.I. Dodero (Santiago de Compostela, Spain), J. Enback (Helsinki, Finland), C. Palm (Stockholm, Sweden), L. Bracci (Siena, Italy), M. Saviano (Napoli, Italy) and I. Liepina (Riga, Latvia)

In the Poster Sessions a total of 51 additional presentations were discussed: the posters again covered the various aspects of peptides as therapeutics, diagnostics and vaccines.

The scientific content of the Invited Lectures, Short Oral and Poster Presentations certainly gave in short a rough idea of the state of the art in several specific aspects of the topic of the Workshop; the investigations presented were indeed representative examples of emerging subjects, which highlighted the field of continuously increasing biologically important and "man–made" peptide systems. One common feature, which ideally connected the different subjects covered, was the "molecular approach" used by the various authors in tackling the problem of understanding the structure–activity relationships of bioactive peptide.

The Meeting proved to be once again a highly successful forum for the exchange of ideas on hot subjects and trends in peptide chemistry and an important and decisive stimuli for future work in the area.

In spite of the unusual wet weather for Napoli in late Spring, participants, beside science, had the occasion of enjoying the city with its monuments and natural beauty and the social occasions offered by the Organizing Committee.

Contributed by Ettore Benedetti

A cheerful company at the 10th Naples Workshop

Dr Milan Zaoral's 80th Birthday

Jubilee of the dDAVP discoverer

On 5th of May, the doyen of Czech peptide chemists, Dr. Milan Zaoral celebrated his 80th birthday. The Institute of Organic Chemistry and Biochemistry of the Academy of Sciences of the Czech Republic, Ferring Leciva, and PolyPeptide Institute arranged a meeting on this occasion to show how they appreciate the achievements of his research. The meeting took place in the seat of Ferring Leciva in Jesenice near Prague. It was very nice gathering of Dr. Zaoral's students, colleagues and bosses of the above–mentioned Institutions (see the picture). Dr. Zaoral got the opportunity to visit the production laboratories where Adiuretin (Minirin) was produced. It was only somewhat sad that the production of dDAVP that was running at Ferring Prague was stopped completely at the end of the last year.

For those who do not know Dr. Milan Zaoral personally or who even do not know the name of the father of dDAVP or dDAVP or Adiuretin or desmopressin, we may mention here shortly his life story.

He was born in Olomouc in Moravia. However when he was 9 years old, his family moved to Prague. After finishing the secondary school (at that time called Realne gymnasium) he entered the University of Chemical Technology in Prague. He finished his studies cum laude in 1949. He immediately continued as a PhD student and after establishment of the Institute of Organic Chemistry and Biochemistry at that time of the Czechoslovak Academy of Sciences he started to work there. He worked under the supervision of Prof.V. Herout and later Prof. J. Rudinger. He got his PhD degree and later DrSc degree in 1955 and 1968, respectively. During his studies he spent 6 month in the laboratory of Prof. G. Young in Oxford. In the years 1966–1967 he spent 9 month in the laboratory of Prof. R.B. Merrifield in New York. Peptides were of Dr. Zaoral's interest since the very beginning. He participated at the accomplishment of the second or third synthesis of oxytocin in the world that was realized in the IOCB. He participated also in the preparation of production manual of oxytocin in Czechoslovak enterprise Spofa. His interest in neurohypophysial hormone analogues, especially vasopressin ones, peaked in the first synthesis of deamino–8–D–arginine vasopressin, so called dDAVP or Adiuretin, an analogue having high and selective antidiuretic activity, that later proved as a drug for the treatment of diabetes insipidus and enuresis nocturna (it was introduced into medical practice in 1972). This compound was produced by the Czechoslovak company Leciva and parallel by Swedish firm Ferring AB in Malmo, that bought the licence and marketed the drug under the name Minrin worldwide. dDAVP has however more broad use: it is helpful in mild Factor VIII deficiency, as a test for concentrating capacity of kidneys, it seems to have positive effect in posttraumatic amnesia. In pharmacological and biochemical research dDAVP is frequently used as a standard in structure activity studies and for the study of vasopressin receptors.

Later in his scientific carrier, Dr. Zaoral was interested also in the synthesis of peptides with juvenile hormone activity and glycopeptides from bacterial walls. He is an author of more than 100 original research papers, several patents. During his scientific life he educated a number of PhD students, let us mention some of those who abide by peptides: Dr. M. Flegel, Dr. I. Blaha, Dr. J. Jezek, and Dr. V. Krchnak.

Contributed by Jirina Slaninová

"Drinking health to Dr. Zaoral": Left to right: managing director from PolyPeptide Labs., Dr. Flegel, managing director of Ferring–Leciva, Dr. B. Stana, Dr. M. Zaoral and Dr. Z. Havlas, director of the Institute of Organic chemistry and Biochemistry.

Dr. Zaoral and his wife are admiring the production in the Ferring Leciva enterprise in Jesenice near Prague.

Hernani Maia Retires

A relaxed Hernani Maia enjoys his Jubilee symposium as he looks forward to a deserved (though by no means idle) retirement.

In an infromal, emotive session the four Maia children creatively reminisced on their infant perspectives of their father's rather agitated early professional life, which involved Exeter and Angola (twice each) before finally settling in Portugal.

Symposium session. First row: Profs. P. Laszlo (Ècole Polytechnique, Paris), Raquel Gonçalves– Maia (Univ. Lisbon), and Hernani Maia. Second row, centre–right: Mrs. & Prof. Dieter Brandenburg. Third row: Prof. Bernardo Herold (Tech. Univ. Lisbon), Dr. & Mrs. Brian Ridge (Univ. Exeter), Mrs. & Prof. Robert Sheppard. Fourth row, middle: Mrs. & Prof. Ulf Ragnarsson.

Hernani Maia and his «inner circle» of collagues from all times. From left: Prof. P. Laszlo, Mrs. & Prof. U. Ragnarsson, Hernani Maia, Mrs. Ridge, Mrs. & Prof. D. Brandenburg, Prof. B. Ridge.

A substantial, distinguished audience gathered at the auditorium of the Universidade do Minho in Braga (Portugal) the morning of March 17, 2006, to honor Prof. Hernani L.S. Maia on the occasion of his retirement from the Department of Chemistry he had joined (in fact, almost literally helped to build) 22 years ago. The celebrations had started the previous evening with a music recital, and were followed by a full–day symposium entitled «Organic and peptide chemistry in Europe: some roots, branches and fruits».

Opening addresses by the rector and former rector of the University were followed by talks by Profs. Robert Sheppard («The development of peptide chemistry in Cambridge, UK») and Dietrich Brandenburg («Insulin as a cross–link between friends») in a session co–chaired by Prof. David Andreu, who represented the EPS and expressed the Society's recognition for Hernani's contribution to the establishment of peptide science in Portugal, his twelve years of service as national representative in the EPS council, and especially his successful hosting of the 22nd EPS (Braga, 1994).

Other lecturers among Hernani's close colleagues and friends included Profs. Pierre Laszlo (École Polytechnique, Paris, and Université de Liège; «Biot's polariscope, diabetes and sugar chemistry»), Bernardo Herold (Technical University of Lisbon; «Portuguese organic chemists in the XIXth century»), Ulf Ragnarson (Upssala University; «Acylcarbamates, sulfonylcarbamates and Hernani Maia»), Brian Ridge (University of Exeter; «Exeter: the Portuguese connection») and University of Minho's Professor Maria Fernanda Proença («University of Minho: chemistry revisited»). The last talk was especially enlightening with regard to Hernani's substantial contribution to the establishment of a school of chemistry in Braga, a valuable piece of information that, given his self–effacing nature, Hernani would be possibly reluctant to volunteer. His talents, by no means confined to chemistry and ably honed during an unusually peripatetic career, included considerable skills in laboratory design and model building, cabinetry, plumbing, etc., all of which highly useful in setting up the Department of Chemistry at the University of Minho.

The afternoon session included a joint presentation by the four Maia children, who gave a rather touching account of their somewhat hectic childhood, as their father moved from a Ph.D. in Exeter (under H.N. Rydon) to a teaching assignment in Luanda (Angola, then a Portuguese colony), then back to Exeter and again to Luanda before finally settling (first time for most of them) into a newly democratic Portugal in 1974.

Finally, the honoured colleague took himself the podium to deliver an enjoyable closing lecture on «The early origins and development of Organic Chemistry in some fine European schools». The tour d'horizon embraced not only Britain and Portugal, the main reference points in Hernani's scientific biography, but several other countries, and revealed his again little–known though considerable capacities as an amateur yet knowledgeable historian of science, in good command of the facts and with remarkable acumen. So it is probably not too difficult to predict where Hernani's curiosity and scholarly inclination will take him in this new post–retirement phase. Given his previous record on para–professional matters, we predict success and wish him well in these and any other endeavours.

Contributed by David Andreu

in *Memoriam*

Bruce Merrifield (1921–2006)

We were sad to learn that Professor Robert Bruce Merrifield passed away on May 14, 2006, in his home of Cresskill, New Jersey. Bruce was professor of biochemistry at the Rockefeller University since 1966 (John D. Rockefeller Jr. Professor since 1984, emeritus since 1991).He is survived by his wife Libby, his six children and 16 grandchildren.

Readers of this Newsletter hardly need any enlightenment about the chemical aspects of the solid phase method invented by Bruce Merrifield, nor of its decisive impact on the spectacular progress of molecular sciences (peptide–protein, nucleotide, combinatorial) along the last decades of the 20th century. Still, as we mourn the loss of one of the leading lights of peptide chemistry of all times (see below), a few reflections would seem to be in order, not so much about Bruce's well–known achievement but on the individual himself.

Bruce hailed from a socio–cultural background where hard work, integrity, resolve and loyalty had no substitutes. Growing up during the American Depression, he could not rely on wealth or privilege but on personal effort to make his way into a UCLA Ph.D. degree and eventually into the select environment of late forties–early fifties' Rockefeller Institute and Cornell University, where titans like Bergmann, Craig, Du Vigneaud, Moore, Stein, Zervas etc., following on Emil Fischer's steps, were setting the foundations of protein chemistry. Along with them, Dilworth Wayne Woolley, Merrifield's first boss at Rockefeller, was, in Bruce's own words, "surely the most brilliant man I have ever known". Blinded by diabetes, Woolley was a gifted experimentalist who, despite his disability, remained active at the bench with only minimal assistance, kept current of literature, and supervised the research projects of associates whom he treated with kindness and consideration. The resolution, lack of self–pity, and humanity that distinguished Woolley had a powerful impact on Merrifield and inspired his future, not only professionally but including also an uncomplaining endurance during a relentless fight with cancer. Among Woolley's qualities, Merrifield would mention the support he was given during the long fruitless period before a practical solid phase peptide synthesis model was realized.

It is no secret that Merrifield's idea did not meet with instant acclaim, particularly at this side of the Atlantic. There were legitimate, though often exaggerated or caustic, criticisms of the initial shortcomings of solid phase synthesis. Unfazed by such premature disapproval, Bruce and an enthusiastic group of resourceful co–workers continued to perfect the method, developing improved protecting groups, solid supports, cleavage chemistries, etc. Concurrent progress in other areas, particularly the advent of HPLC, made also substantial contributions to the overall process of peptide production so that, by the early 80s, solid phase synthesis had become a keystone of biomolecular chemistry, with far–reaching applications into practically all areas of the life sciences. By that time chemists, peptide and otherwise, were no longer sceptical, and there was unanimous agreement that the Nobel Prize in Chemistry awarded to Bruce in 1984 was totally deserved. With even better historical perspective, the American Chemical Society has recently placed Bruce's 1963 JACS paper in the middle of a distinguished short list of 10 pivotal papers that have fostered breakthrough discoveries (C&EN, July 3 2006).

When the news of Bruce's death reached Europe, some of us were attending the 5th Hellenic Forum on Bioactive Peptides. That afternoon we were visiting a chemical plant where literally tons of building blocks and resins are prepared as synthetic intermediates for Fuzeon, a peptide pharmaceutical effective against AIDS. In the midst of the luxuriant, gleaming Greek spring landscape, the sharp contrast between death and life, between the sad notice of Bruce's departure and the reality of a life–prolonging drug was not lost on us. By his brilliant insight, Bruce gave chemistry an enduring legacy whose benefits will continue to be reaped by humanity for years to come.

Contributed by David Andreu

in *Memoriam*

Andrej Surovoy (1959–2006)

Dr. Andrej Surovoy passed away at the end of March, 2006. Heart attack caught him skiing on the mountain slopes near Alma–Ata where he was on short vacation with his friends. His sudden death is a cruel and tragic loss for his family, the wife Vera, the daughter Alexandra and the son Yury, for all colleagues, relatives and friends.

Andrej Surovoy was born April 12, 1959 in Moscow. After graduation from the 1st Moscow Medical Institute he entered in 1982 the Ivanovskii Institute of Virology (Academy of Medical Sciences) which directed him to Shemyakin (since 1989 Shemyakin –Ovchinnikov) Institute of Bioorganic Chemistry (Russian Academy of Science) for post–graduate study in the area of synthetic vaccines. At the new place Surovoy quickly learned the skills of peptide synthesis maintaining at the same time molecular immunology background required for successful design and adequate biological testing of peptide immunogens. He prepared a series of peptides inducing in a free state, without conjugation with protein carriers virus neutralizing antibodies protecting from O1K and A22 strains of foot and mouth disease. He also discovered participation of the viral RGD sequence in binding with the cellular receptor. In 1990, after presentation of his PhD Thesis Surovoy received one of the prestigious Humboldt Research Stipend and moved to the laboratory of Guenther Jung (Tuebingen University) where he spent 7 years.

His scientific interest was focused on the design, synthesis and testing of gene transfer peptides for human therapy. In Tuebingen Surovoy became a group leader and established different modular systems with combinations of functional peptide segments. The functional domains of the synthetic constructs enable binding, protection and condensation of nucleic acids, specific cellular receptor targeting of peptide/DNA complexes, internalization in the cytoplasm via a fusion domain and specific receptor mediated translocation to the nucleoplasm via a nuclear receptor ligand. He also developed efficient cationic lipids for gene transfection. To the major experimental achievements in the synthesis of complex and large peptides belongs the nucleocapsid protein NCp7 of HIV–1 and its conjugation with numerous modules for gene transfer and the construction of large peptide tools for biophysical uptake studies. The results of these studies are published in highly recognized biochemical journals, such as J/ Mol/ Biol. and EMBO J.

Having returned in 1997 to the Shemyakin–Ovchinnikov Institute Surovoy joined the ongoing structure–functional studies of endogenous hemoglobin derived peptides. At the same time,

inspired by the success in developing agents for intracellular delivery of genetic material Surovoy attempted search for peptide based agents capable of transmembrane delivery of proteins. A series of peptide constructs have been obtained, based on gramicidin A sequence, that displayed the desired property. Unfortunately, the initiator of that promising work will not be able to taste its fruits.

Andrej Surovoy was a generous and bright personality with a broad and deep scientific knowledge in biochemistry and cell biology. His vision, energy, the sense of humor always attracted to his group young students. A skilled kayaker, Andrej won in his twenties the national championship in kayak slalom. Later he became an enthusiast extreme traveler. On vacations he conquered several rapid mountain rivers in remote parts of Soviet Union. In fact, his last trip was a tribute to that hobby.

We shall all miss him.

Contributed by Vadim Ivanov

MISCELLANEOUS NOTES and News in Brief

YEAR 2006 AWARDS

EPS–29, Gdańsk September 2006

JOSEF RUDINGER MEMORIAL LECTURE

Sponsored by PolyPeptide Laboratories

This Award is presented «in commemoration of Josef Rudinger's role in the foundation of the European Peptide Symposia and of diverse contributions he made to peptide chemistry». There is no restriction as to nationality, age or position of those nominated, but they must be distinguished.

The Josef Rudinger Memorial Lecture Award for 2006 is for
Ettore Benedetti and Claudio Tomiolo *(shared)*

LEONIDAS ZERVAS AWARD

Sponsored by Bachem AG Switzerland

This Award is presented «to the scientist who has in the opinion of the Council of the Society made the most outstanding contribution to the chemistry, biochemistry, or biology of peptides in the five years preceding the date of selection». There is no restricion as to nationality or position of the candidate, but regulations give preference to younger candidates.

The Leonidas Zervas Awardee for 2006 is
Carlos Garcia–Echeverria

Ferenc Hudecz
Secretary

ANNOUNCEMENTS FOR JOB VACANCIES

At Merck/IRBM, our mission is to discover, develop and deliver breakthrough medicines and vaccines to people around the world. The IRBM basic research site is located in Pomezia – Rome, Italy. The Institute employs about 200 scientists from around the world, and is fully integrated into Merck Research Laboratories worldwide research projects, with close collaboration at all levels.

We are seeking a **Senior PEPTIDE CHEMIST**

The successful candidate will have responsibility for the synthesis and purification of complex peptides and peptidomimetic molecules, including their analytical and physico–chemical characterization. He/She will be able to work on medium to large scale (mgs to grams). This will often be done to specific time scales. The job requires: the ability to take responsibility, a high level of independence, and the ability to work with project teams.

- **Senior Peptide Chemist – Ref. Code # SPC0306** — Ph.D. and 2+ years of experience in synthetic peptide chemistry, with hands–on practical experience is required. Experience in peptidomimetic synthesis would be particularly appreciated.
- Effective oral and written communication skills, demonstrated leadership skills, and good knowledge of the English language are essential.

Our commitment to our employees resonates in the benefits we offer including competitive compensation, work–life balance initiatives and opportunities for personal and professional enrichment.

Candidates can send a detailed resume, including the reference code # in the subject line (a list of scientific publications and reference letter will be appreciated) to: **IRBM_Human_Resources@merck.com**

IRBM is an equal opportunity employer (Italian Law # 903/77). You are invited to read the Privacy informative statement and request for consent to process your personal data (Lg.D. # 196/03)at http://www.irbm.it/notification_sensitive_data.html

New Products

New Evaporative Light Scattering Detector for Enhanced Detection of Semi–Volatile Compounds, PL–ELS 2100 Ice

For improved analysis of pharmaceutical compounds at low temperatures, Polymer Laboratories, now a part of Varian, Inc. (Nasdaq:VARI), has launched a new option for its highly acclaimed PL–ELS 2100 Evaporative Light Scattering Detector (ELSD), the PL–ELS 2100 Ice (Integrated Cooled Evaporator).

In order to meet the requirements for pharmaceutical analysis of non–UV absorbing, low molecular weight semi–volatile analytes, for example, drug candidates, ELSDs must be operated at low temperatures in order to maximize detection for these compounds. To reduce the operating temperature to below ambient for low molecular weight, low boiling point compounds, e.g. short chain hydrocarbons, Polymer Laboratories has introduced the unique option of sub–ambient operation to provide greater sensitivity.

The PL–ELS 2100 Ice operates at temperatures down to 10ГС. The detector applies a stream of dry nitrogen during the evaporation step to reduce the relative humidity of the surroundings. The addition of evaporation gas not only allows low temperature operation with aqueous mobile phases but also facilitates the removal of water at sub–ambient temperatures. This provides high sensitivity detection of semi–volatile compounds and a more universal response across all compounds.

For more information, contact Polymer Laboratories Ltd, Essex Road, Church Stretton, Shropshire SY6 6AX, UK,
Tel (+44) 01694 723581, Fax (+44) 01694 722171, email: PLInfo@polymerlabs.com, www.polymerlabs.com.

CALENDAR of Forthcoming Events

9th CHINESE INTERNATIONAL PEPTIDE SYMPOSIUM
Shanghai, China
3–6 July, 2006
For further information please contact:
Prof. Hongyan Xu
Shanghai Institute of Organic Chemistry
Chinese Academy of Sciences
354 Fenglin Rd
Shanghai 200032, China
Tel: 0086–21–54915326
Fax: 0086–2164189186
Email: xhongyan@mail.sioc.ac.cn
Website: www.glschina.com/cps/home.htm

1st FECS EUROPEAN CHEMISTRY CONGRESS
Budapest, Hungary
27–31 August, 2006
For further information please contact:
Prof. Gábor Náray–Szabó
Department of Theoretical Chemistry
Eötvös Loránd University
H–1117 Budapest, Hungary
Email: naraysza@para.chem.elte.hu
Website: www.chemsoc.org/fecs

29th EUROPEAN PEPTIDE SYMPOSIUM
Gdansk, Poland
3–8 September, 2006
For further information please contact:
29th EPS Secretariat,
Faculty of Chemistry,
University of Gdansk,
Sobieskiego 18, 80–952 Gdansk, Poland
Tel.: +48 58 3450363
Fax: +48 58 3412681
E–mail: 29eps@chem.univ.gda.pl
Website: www.29eps.univ.gda.pl

FRENCH PEPTIDE SYMPOSIUM
Dinard, Manoir de La Vicomté
20 – 25 May, 2007
For further information please contact:
Dr. Michèle Baudy–Floch,
President of the Organizing Committee
UMR CNRS 6226
Website: www.gfpp.free.fr

30th EUROPEAN PEPTIDE SYMPOSIUM
2008, Finland

31st EUROPEAN PEPTIDE SYMPOSIUM
2010, Denmark