

MEMRO 2006 4<sup>th</sup> International Symposium on Middle Ear Mechanics in Research and Otology

University Hospital Zurich July 27 – 30, 2006

# Final Program



Universität Zürich



Universität Stuttgart



# NEW TRENDS AND DEVELOPMENTS

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VIBRANT MED-EL Hearing Technology GmbH, Fürstenweg 77, A-6020 Innsbruck Tel: +43 (0)512 28 88 89 • vibrant@medel.com Dear colleagues and friends,

We are pleased to announce the final program of the 4<sup>th</sup> Symposium on Middle Ear Mechanics in Research and Otology, MEMRO 2006. We cordially invite you to the University of Zurich for a meeting with a highly attractive program for both the clinical and basic science aspects of modern otology.

The congress combines a great variety of keynote lectures, invited papers, free papers and round table discussions by internationally renowned speakers and moderators. An essential highlight is the extensive poster session with two awards awaiting their laureates. The topics of the symposium focus on clinical and mechanical aspects of the normal, diseased and reconstructed middle ear, evaluation and diagnosis of middle ear function, middle ear surgery and implantable hearing devices.

To facilitate and stimulate an intensive dialogue between all the participants, all contributions will be presented without parallel sessions.

Besides the scientific program we are delighted to invite you to join us for a unique social program including a welcome reception, a congress dinner and an excursion to central Switzerland.

We are looking forward to welcoming you in Zurich

Dr.-Ing. Albrecht Eiber Institute of Engineering and Computational Mechanics University of Stuttgart

PD Dr. Alexander Huber Department of Otorhinolaryngology Head and Neck Surgery University Zurich

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International Guest Faculty	Manohar Bance, Halifax; Canada Vittorio Colletti, Verona; Italy Willem Decraemer, Antwerp; Belgium Joris Dirckx, Antwerp; Belgium Alec Fitzgerald O'Connor, London; UK Bruno Frachet, Bobigny; France Rudolf Häusler, Berne; Switzerland Bo Håkansson, Göteborg; Sweden Thomas Lenarz, Hannover; Germany Thomas Linder, Lucerne; Switzerland Marcus Maassen, Tübingen; Germany Rudolf Probst, Zurich; Switzerland David Proops, Birmingham; UK Sunil Puria, Stanford; USA Daniel Robert, Bristol; UK Tom Roland, New York; USA Bernhard Schuknecht, Zurich; Switzerland Stefan Stenfelt, Göteborg; Sweden Benno Weber, Zurich; Switzerland Urban Willi, Zurich; Switzerland Hans-Peter Zenner, Tübingen; Germany

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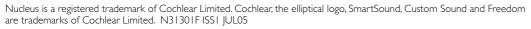
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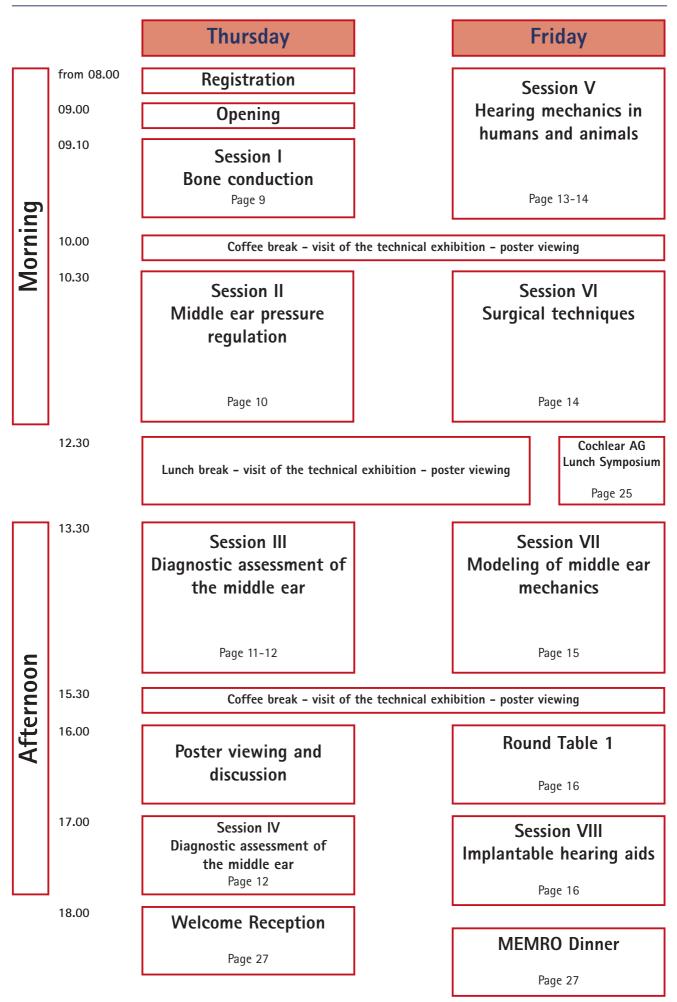


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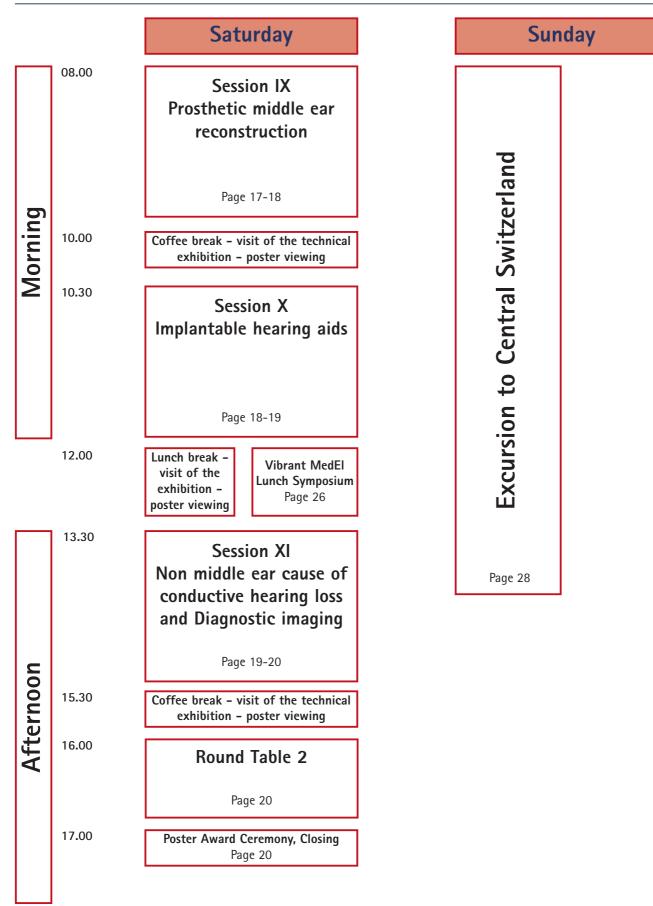
### Program at a glance

MEMRO 2006 Zurich



# Program at a glance

#### MEMRO 2006 Zurich



from 08.00	Registration, welcome coffee, technical exhibition
09.00	Opening
09.10	Session I – Bone conduction Chairs: B. Håkansson, Göteborg; Sweden M. Maassen, Tübingen; Germany
1.1	Keynote Lecture Overview and recent advances in bone conduction physiology S. Stenfelt, Göteborg; Sweden
1.2	Invited Paper CSF jiggler - new insights into the mechanism of bone conduction Th. Lenarz, Hannover; Germany
1.3	Invited Paper The Bone anchored hearing aid (BAHA) and elicited skull vibrations <i>M. Bance, O. Majdalewieh, R. van Wijhe, Halifax; Canada</i>

10.00 Coffee break – visit of the technical exhibition – poster viewing

10.30	Session II – Middle ear pressure regulation Chairs: S. N. Merchant, Boston; USA R. Probst, Zurich; Switzerland
2.1	<b>Keynote Lecture</b> Middle ear static pressure: measurement, regulation and effects on middle ear mechanics <i>J. Dirckx, Antwerp; Belgium</i>
2.2	Ossicular motion during static pressure changes in the avian middle ear R. Mills, J. Zhang, M. Zadrozniak, Edinburgh; Scotland
2.3	Direct measurements and monitoring of middle ear pressure H. Jacobsen <sup>1</sup> , J. Dirckx <sup>2</sup> , M. Gaihede <sup>1</sup> , K. Tveterås <sup>1</sup> , Aalborg; Denmark <sup>1</sup> , Antwerp; Belgium <sup>2</sup>
2.4	Modeling middle ear pressure regulation W. Doyle, Pittsburgh; USA
2.5	Indications of central regulation of middle ear pressure from pressure evoked brain potentials S. Sami <sup>1</sup> , LG.Nielsen <sup>1</sup> , M. Gaihede <sup>1</sup> , AM. Drewes <sup>2</sup> , Aalborg; Denmark <sup>1,2</sup>
2.6	Biomechanical evaluation of eustachian tube function and its role in regulating middle ear pressures SN. Ghadiali <sup>1</sup> , ED. Bell <sup>1</sup> , CM. Alper <sup>2</sup> , JD. Swarts <sup>2</sup> , CD. Bluestone <sup>2</sup> , Bethlehem <sup>1</sup> , Pittsburgh <sup>2</sup> ; USA
2.7	Does mucosa perfusion determine the exchange rate of CO2 in the middle ear? Y. Marcusohn <sup>1</sup> , JJ. Dirckx <sup>1</sup> , A. Ar <sup>2</sup> , Antwerp; Belgium <sup>1</sup> , Tel Aviv; Israel <sup>2</sup>
2.8	The ossicular chain contributes to the effects of static pressure on middle-ear sound conduction <i>JJ. Rosowski</i> <sup>2</sup> , <i>ML. Wood</i> <sup>1</sup> , <i>Boston; USA</i> <sup>1,2</sup>
2.9	Subannular ventilation tubes in treatment of chronic tubal dysfunction – results in 85 consecutive cases. MG. Jensen, H. Jacobsen, M. Gaihede, J. Rosborg, Aalborg; Denmark
12.30	Lunch break – visit of the technical exhibition – poster viewing

13.30	Session III – Diagnostic assessment of the middle ear Chairs: W. Decraemer, Antwerp; Belgium U. Willi, Zurich; Switzerland
3.1	Keynote Lecture Recently developed measurement techniques and diagnostic apparatuses for the middle ear <i>H. Wada, Sendai; Japan</i>
3.2	On the way to differentially diagnosing middle-ear and inner-ear disorders D. Turcanu, E. Dalhoff, A. Gummer, Tübingen; Germany
3.3	Toward a further understanding of middle ear mechanism using otoreflectance F. Zhao <sup>1</sup> , J. Dayalan <sup>2</sup> , R. Meredith <sup>3</sup> , N. Wotherspoon <sup>1</sup> , D. Keefe <sup>4</sup> , Swansea; Wales <sup>1</sup> , Waterford; Ireland <sup>2</sup> , Singleton; Wales <sup>3</sup> , Omaha; USA <sup>4</sup>
3.4	Determination of the specific acoustic input impedance of the ear for diagnostic of middle ear transmission disorders J. Rodriguez Jorge <sup>1</sup> , MM. Maassen <sup>1</sup> , W. Hemmert <sup>2</sup> , HP. Zenner <sup>1</sup> , Tübingen; Germany <sup>1</sup> , Infineon Technologies AG <sup>2</sup>
3.5	A new diagnostic apparatus for ossicular fixation: Evaluation of the usability through the measurements in human temporal bones and patients <i>T. Koike</i> <sup>1</sup> , <i>S. Hamanishi</i> <sup>2</sup> , <i>Y. Yuasa</i> <sup>3</sup> , <i>R. Yuasa</i> <sup>3</sup> , <i>T. Kobayashi</i> <sup>4</sup> , <i>HH. Nakajima</i> <sup>5</sup> , <i>W. Chien</i> <sup>5</sup> , <i>M. Ravicz</i> <sup>5</sup> , <i>SN. Merchant</i> <sup>5</sup> , <i>JJ. Rosowski</i> <sup>5</sup> , <i>RL. Goode</i> <sup>6</sup> , <i>H. Wada</i> <sup>2</sup> , <i>Tokyo</i> <sup>1</sup> , <i>Sendai</i> <sup>2,3,4</sup> ; <i>Japan, Boston</i> <sup>5</sup> , <i>Stanford</i> <sup>6</sup> ; USA
3.6	Measurements of stapes velocity in live human ears W. Chien <sup>2</sup> , JJ. Rosowski <sup>2</sup> , ME. Ravicz <sup>1</sup> , SN. Merchant <sup>2</sup> , Boston; USA <sup>1,2</sup>
3.7	Six years of experience with measurements of tympanic membrane velocity by laser Doppler vibrometry as a clinical diagnostic tool SN. Merchant, HH. Nakajima, W. Chien, JJ. Rosowski, Boston; USA
3.8	Sources of variability in reflectance measurements on normal human ears SE. Voss, NJ. Horton, RR. Woodbury, CA. Shea, Northampton; USA

3.9	Higher frequency variability in external ear resonance - why so much and can we improve poor functioning ears? <i>R. Goode, Stanford; USA</i>
15.30	Coffee break – visit of the technical exhibition – poster viewing
16.00	Poster viewing and discussion in the poster exhibition
17.00	Session IV – Diagnostic assessment of the middle ear Chairs: N. Dillier, Zurich; Switzerland T. Zahnert, Dresden; Germany
4.1	Invited Paper Closure of the ear canal opening and its effects on hearing tests K. Gyo, T. Maetani, Matsuyama; Japan
4.2	Invited Paper Estimation of stapes piston-motion with uni-directional measurements is prone to error WF. Decraemer, Antwerp; Belgium
4.3	Acoustic transmission properties of the eustachian tube A. Khwaja, M. Bance, Halifax; Canada
4.4	Experimental investigations on the functional effect of ossicular joint fixation C. Offergeld <sup>1</sup> , N. Lasurashvili <sup>2</sup> , M. Bornitz <sup>2</sup> , T. Beleites <sup>2</sup> , T. Zahnert <sup>2</sup> , Freiburg <sup>1</sup> , Dresden <sup>2</sup> ; Germany
4.5	Postoperative tympanogram in tympanoplasty with thin section cartilage island CS. Cho, JS. Lee, DS. Chang, MS. Choi, KY. Park, Daejeon; Korea
18.00	Welcome Reception

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08.00	Session V – Hearing mechanics in humans and animals Chairs: J. J. Rosowski, Boston; USA S. Puria, Stanford; USA
5.1	Keynote Lecture Mechanics of hearing in other species D. Robert, Bristol; UK
5.2	<b>Invited Paper</b> The catenary principle of tympanic membrane function – time to put it to rest? <i>R. Goode, Stanford; USA</i>
5.3	Do non-piston components contribute to scala vestibuli pressure behind the footplate in gerbil? WF. Decraemer <sup>1</sup> , O. de la Rochefoucauld <sup>2</sup> , W. Dong <sup>2</sup> , EL. Olson <sup>2</sup> , SM. Khanna <sup>2</sup> , JJ. Dirckx <sup>1</sup> , Antwerp; Belgium <sup>1</sup> , New York; USA <sup>2</sup>
5.4	Mechanical excitation of complex stapes motion in guinea pigs C. Breuninger <sup>1</sup> , D. Sequeira <sup>2</sup> , A. Huber <sup>2</sup> , A. Eiber <sup>1</sup> , Stuttgart; Germany <sup>1</sup> , Zurich; Switzerland <sup>2</sup>
5.5	The effects of complex stapes motion on the response of the cochlea in guinea pigs <i>D. Sequeira</i> <sup>1</sup> , <i>C. Breuninger</i> <sup>2</sup> , <i>A. Eiber</i> <sup>2</sup> , <i>A. Huber</i> <sup>1</sup> , <i>Zurich; Switzerland</i> <sup>1</sup> , <i>Stuttgart; Germany</i> <sup>2</sup>
5.6	Canal obliquity and stapes velocity transfer function T. Maetani <sup>1</sup> , S. Puria <sup>2</sup> , R. Goode <sup>2</sup> , Toon; Japan <sup>1</sup> , Stanford; USA <sup>2</sup>
5.7	Fresh tympanic membrane perforations heal without significant loss of strength M. von Unge <sup>1</sup> , A. Rahman <sup>1</sup> , JJ. Dirckx <sup>2</sup> , M. Hultcrantz <sup>1</sup> , Västerås; Sweden <sup>1</sup> , Antwerp; Belgium <sup>2</sup>
5.8	Boost of transmission at the pedicle of the incus in the chinchilla middle ear MA. Ruggero <sup>1</sup> , L. Robles <sup>2</sup> , AN. Temchin <sup>1</sup> , YH. Fan <sup>1</sup> , H. Cai <sup>1</sup> , Evanston; USA <sup>1</sup> , Santiago; Chile <sup>2</sup>

5.9	Equivalent noise levels generated by the rotating burr on the ossicular chain as measured by Laser Doppler Vibrometry: A temporal bone study D. Jiang <sup>1</sup> , A. Bibas <sup>2</sup> , C. Santulli <sup>3</sup> , N. Donnelly <sup>1</sup> , G. Jeronimidis <sup>3</sup> , A. Fitzgerald O' Connor <sup>1</sup> , London; UK <sup>1</sup> , Athens; Greece <sup>2</sup> , Reading; UK <sup>3</sup>
10.00	Coffee break – visit of the technical exhibition – poster viewing
10.30	Session VI – Surgical techniques Chairs: R. Häusler, Berne; Switzerland B. Weber, Zurich; Switzerland
6.1	Invited Paper From imaging of the mastoid to robotic surgery: The ROBIN-Project M. Maassen, Tübingen; Germany
6.2	Storage of the incus in the mastoid bowl for use as a columella in staged tympanoplasty K. Gyo <sup>1</sup> , T. Maetani <sup>2</sup> , N. Hato <sup>1</sup> , Y. Shinomori <sup>2</sup> , Matsuyama <sup>1</sup> , Toon <sup>2</sup> ; Japan
6.3	Incusinterposition: surgical highlights and audiological results Ch. Röösli, A. Luiz de Ataide, Ch. Schlegel-Wagner, T. E. Linder, Lucerne; Switzerland
6.4	Tympanic membrane blunting: prevention and treatment TL. Eby, Birmingham; USA
6.5	Preservation of the intact ossicular chain in cholesteatoma surgery J. Hamilton, Gloucester; UK
6.6.	Tympanoplasty today - an analysis of 11000 cases of reconstructive middle ear surgery - the Würzburg experience J. Müller, F. Schön, S. Brill, J. Helms, R. Hagen, Würzburg; Germany
6.7	The efficacy of one-stage tympanoplasty with mastoid obliteration and a tympanoplasty by an endaural approach using ceramic prosthesis KE. Hayashi, AT. Shinkawa, Hadano; Japan
12.00	Lunch break – visit of the technical exhibition – poster viewing

12.15	Lunch Symposium Cochlear see page 25
13.30	Session VII – Modeling of middle ear mechanics Chairs: H. Wada, Sendai; Japan S. Stenfelt, Göteborg; Sweden
7.1	Keynote Lecture The development and utility of quantitative models of middle-ear function JJ. Rosowski, Boston; USA
7.2	"Conceptual design" of the human middle ear H. Hudde, Bochum; Germany
7.3	Acoustic-structural coupled finite element analysis for sound transmission in human ear - middle ear transfer function RZ. Gan <sup>1</sup> , T. Cheng <sup>1</sup> , MW. Wood <sup>2</sup> , Norman <sup>1</sup> , Oklahoma City <sup>2</sup> ; USA
7.4	Effects of middle ear suspensory ligaments on acoustic-mechanical transmission in human ear RZ. Gan <sup>1</sup> , T. Cheng <sup>1</sup> , D. Nakmali <sup>2</sup> , MW. Wood <sup>2</sup> , Norman <sup>1</sup> , Oklahoma City <sup>2</sup> ; USA
7.5	A new model for training in tympanoplasty G. Hofmann, M. Bornitz, N. Lasurashvili, H. Seidler, T. Zahnert, Dresden; Germany
7.6	Evaluation of laser vibrometry as diagnostic utility by means of a simulation model of the middle ear <i>M. Bornitz</i> <sup>1</sup> , <i>T. Zahnert</i> <sup>1</sup> , <i>HJ. Hardtke</i> <sup>2</sup> , <i>Dresden; Germany</i> <sup>1,2</sup>
7.7	Imaging, physiology and biomechanics of the malleus-incus complex JH. Sim, S. Puria, CR. Steele, Stanford; USA
7.8	Basilar membrane displacement with opened and occluded oval window and bone conduction F. Böhnke <sup>1</sup> , A. Arnold <sup>2</sup> , T. Fawzy <sup>1</sup> , Munich; Germany <sup>1</sup> , Berne; Switzerland <sup>2</sup>
7.9	Linearity of the middle ear before and after reconstruction O. Majdalawieh, M. Bance, R. van Wijhe, Halifax; Canada

15.30	Coffee break – visit of the technical exhibition – poster viewing
16.00	Round Table 1 - Surgical techniques: Principles and outcomeModerator:HP. Zenner, Tübingen; GermanyPanelists:A. Eiber, Stuttgart; GermanyA. Fitzgerald O'Connor, London; UKR. L. Goode, Stanford; USAKB. Hüttenbrink, Cologne; GermanyS. N. Merchant, Boston; USAR. Probst, Zurich; Switzerland
17.00	Session VIII – Implantable hearing aids Chairs: A. Fitzgerald O'Connor, London; UK HP. Zenner, Tübingen; Germany
8.1	Mechanical problems in human hearing A. Eiber, C. Breuninger, Stuttgart; Germany
8.2	The round window approach for MED-EL VSB in difficult-to-treat middle ear problems V. Colletti, M. Carner, L. Colletti, L. Sacchetto, Verona; Italy
8.3	The transcanal approach for the Vibrant Soundbridge: the experience of the clinic in Pisa L. Bruschini, Pisa; Italy
8.4	Vibrant Soundbridge clinical investigations: expanding indications for use JM. Opie <sup>1</sup> , M. Huetter <sup>1</sup> , P. Grasso <sup>1</sup> , S. Labassi <sup>1</sup> , N. Giarbini <sup>1</sup> , N. Dillier <sup>2</sup> , A. Huber <sup>2</sup> , Innsbruck; Austria <sup>1</sup> , Zurich; Switzerland <sup>2</sup>
8.5	Bypassing insufficient sound transfer in the chronically disabled middle ear by an active/passive prosthesis KB. Hüttenbrink <sup>1</sup> , TH. Zahnert <sup>2</sup> , M. Bornitz <sup>2</sup> , G. Hofmann <sup>2</sup> , Cologne <sup>1</sup> , Dresden <sup>2</sup> ; Germany
20.00	MEMRO Dinner

#### **MEMRO** Dinner

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08.00	Session IX – Prosthetic middle ear reconstruction Chairs: M. Bance, Halifax; Canada S. Schmid, Zurich; Switzerland
9.1	Keynote Lecture From evolutionary principles to middle ear reconstruction: What can we learn from nature? KB. Hüttenbrink, Cologne; Germany
9.2	Invited Paper Coupling problems in middle ear reconstruction T. Zahnert, Dresden; Germany
9.3	Induction of bone formation by titanium implants coated with immobilized recombinant human bone morphogenetic protein-2 in the rabbits petrous bone A. Neumann <sup>1</sup> , M. Chatzinikolaidou <sup>2</sup> , C. Unkel <sup>1</sup> , S. Dazert <sup>3</sup> , HP. Jennissen <sup>2</sup> , K. Jahnke <sup>1</sup> , Duisburg-Essen <sup>1,2</sup> , Bochum <sup>3</sup> ; Germany
9.4	Comparison of hydroxyapatite PORP efficacy in ossicular chain reconstruction with autograft incus NE. Berjis, SA. Soheilipour, Isfahan; Iran
9.5	Initial experience with titanium MVP clip prosthesis PP. Singh, New Delhi; India
9.6	Development of a new clip-piston prosthesis for the stapes <i>G. Schimanski</i> <sup>1</sup> , <i>U. Steinhardt</i> <sup>2</sup> , <i>A. Eiber</i> <sup>3</sup> , <i>Luenen</i> <sup>1</sup> , <i>Dusslingen</i> <sup>2</sup> , <i>Stuttgart</i> <sup>3</sup> ; <i>Germany</i>
9.7	Partial ossicular reconstruction - experimental and clinical comparison of three different prostheses N. Lasurashvili, M. Neudert, M. Bornitz, Z. Lavcheva, T. Zahnert, Dresden; Germany
9.8	Functional evaluation of middle ear prostheses H. Mojallal <sup>3</sup> , M. Stieve <sup>3</sup> , C. Turck <sup>3</sup> , I. Krueger <sup>1</sup> , F. Dimpfel <sup>2</sup> , N. Witteck <sup>1</sup> , B. Süß <sup>1</sup> , P. Behrens <sup>1</sup> , P. Mueller <sup>2</sup> , T. Lenarz <sup>3</sup> , Hannover <sup>1,3</sup> , Braunschweig <sup>2</sup> ; Germany

9.9	No more crimping in stapedotomy? A multicentre trial with the Nitinol stapes piston GP. Rajan <sup>1</sup> , AM. Huber <sup>2</sup> , R. Blackham <sup>3</sup> , RH. Eikelboom <sup>3</sup> , MD. Atlas <sup>1</sup> , Perth; Australia <sup>1,3</sup> , Zurich; Switzerland <sup>2</sup>
10.00	Coffee break – visit of the technical exhibition – poster viewing
10.30	Session X – Implantable hearing aids Chairs: K. Gyo, Matsuyama; Japan Th. Linder, Lucerne; Switzerland
10.1	A new implantable middle ear hearing device for mixed hearing loss: A feasibility study in human temporal bones G. Ball <sup>1</sup> , A. Huber <sup>2</sup> , Innsbruck; Austria <sup>1</sup> , Zurich; Switzerland <sup>2</sup>
10.2	On the optimal coupling of an implantable hearing aid – measurements and simulations A. Eiber <sup>1</sup> , C. Breuninger <sup>1</sup> , J. Rodriguez Jorge <sup>2</sup> , HP. Zenner <sup>2</sup> , MM. Maassen <sup>2</sup> , Stuttgart <sup>1</sup> , Tübingen <sup>2</sup> ; Germany
10.3	Optimizing the coupling load for the Otologics middle ear transducer MET: intra operative measurements J. Rodriguez Jorge, M. Pfister, R. Ciuman, HP. Zenner, MM. Maassen, Tübingen; Germany
10.4	Acoustical gain of a non-implantable electromagnetic hearing aid: Experiments using human temporal bones S. Hamanishi <sup>1</sup> , T. Koike <sup>2</sup> , W. Chien <sup>3</sup> , ME. Ravicz <sup>3</sup> , SN. Merchant <sup>3</sup> , JJ. Rosowski <sup>3</sup> , H. Wada <sup>1</sup> ,Sendai <sup>1</sup> , Tokyo <sup>2</sup> ; Japan, Boston <sup>3</sup> ; USA
10.5	Implantable Microphone: A Middle Ear Ossicular Vibration Sensor H. Seidler <sup>1</sup> , I. Hochmair <sup>2</sup> , Dresden <sup>1</sup> ; Germany, Innsbruck <sup>2</sup> ; Austria
10.6	The effect of cochlear implant electrode insertion on middle ear transfer function as measured by in-vivo laser doppler vibrometry <i>N. Donnelly</i> <sup>1</sup> , <i>A. Bibas</i> <sup>3</sup> , <i>D. Jiang</i> <sup>1</sup> , <i>C. Santulli</i> <sup>2</sup> , <i>A. Fitzgerald O'Connor</i> <sup>1</sup> , <i>London</i> <sup>1</sup> , <i>Reading</i> <sup>2</sup> ; <i>UK</i> , <i>Athens</i> ; <i>Greece</i> <sup>3</sup>

10.7	A new implantable hearing system for moderate-to-severe mixed hearing loss H. Mojallal <sup>1</sup> , C. Stieger <sup>2</sup> , E. Grasshof <sup>1</sup> , R. Haeusler <sup>2</sup> , T. Lenarz <sup>1</sup> , Hannover; Germany <sup>1</sup> , Berne, Switzerland <sup>2</sup>
12.00	Lunch break – visit of the technical exhibition – poster viewing
12.15	Lunch Symposium Vibrant Med-El Hearing Technology GmbH see page 26
13.30	Session XI – Non middle ear cause of "conductive" hearing loss and Diagnostic imaging Chairs: J. Dirckx, Antwerp; Belgium B. Schuknecht, Zurich; Switzerland
11.1	Keynote Lecture A clinical perspective on non-middle ear causes of an air-bone gap SN. Merchant, Boston; USA
11.2	The effects of superior semicircular canal dehiscence on hearing: does size of the dehiscence have an impact? GP. Rajan <sup>1</sup> , A. Whyte <sup>2</sup> , MD. Atlas <sup>1</sup> , RH. Eikelboom <sup>3</sup> , Perth; Australia <sup>1,2,3</sup>
11.3	Measurements of human inner-ear function with superior semicircular canal dehiscence (SCD) ME. Ravicz <sup>1</sup> , W. Chien <sup>2</sup> , JE. Songer <sup>3</sup> , JJ. Rosowski <sup>2</sup> , SN. Merchant <sup>2</sup> , Boston <sup>1,2</sup> , Cambridge <sup>3</sup> ; USA
11.4	Interest of measuring the resonance frequency of the ear using TEFLAG test in Menière patients exposed to changes in atmospheric pressure <i>M. Camicas<sup>1</sup>, P. Avan<sup>2</sup>, St. Martin<sup>1</sup>, Clermont-Ferrand<sup>2</sup>; France</i>
11.5	First application of fully implantable hearing aids in patients with congenital auricular atresia S. Mattheis, R. Siegert, Recklinghausen; Germany

11.6	Invited Paper Middle ear morphometry from cadaveric temporal bone micro-CT imaging S. Puria, J. Sim, J. Tuck-Lee, C. Steele, Stanford; USA	
11.7	3-Dimensional virtual models of the human middle ear and temporal bone N. Merchant <sup>1</sup> , H. Wang <sup>1</sup> , C. Northrop <sup>1</sup> , MS. Sorensen <sup>2</sup> , Boston; USA <sup>1</sup> , Copenhagen; Denmark <sup>2</sup>	
11.8	Demonstration of aeration pathways in the human epitympanum <i>D. Morris</i> <sup>1,2</sup> , <i>R. van Wijhe</i> <sup>1,2</sup> , <i>K. Kirkpatrick</i> <sup>1</sup> , <i>S. Levine</i> <sup>3</sup> , <i>C. Northrop</i> <sup>3</sup> , <i>B. Manohar</i> <sup>1,2</sup> , <i>Halifax; Canada</i> <sup>1,2</sup> , <i>Boston; USA</i> <sup>3</sup>	
15.30	Coffee break – visit of the technical exhibition – poster viewing	
16.00	Round Table 2 - Implantable hearing aidsModerator:R. L. Goode, Stanford; USAPanelists:V. Colletti, Verona; ItalyN. Dillier, Zurich; SwitzerlandB. Håkansson, Göteborg; SwedenR. Häusler, Berne; SwitzerlandS. Puria, Stanford; USA	
17.00	Poster Award Ceremony Invitation to MEMRO 2009	
17.30	Closing	

Posters	MEMRO 2006 Zurich
P1	Tympanic membrane structure analysis and tissue engineering KS. Anandacoomaraswamy <sup>1</sup> , T. Robertson <sup>2</sup> , N. Dutton <sup>2</sup> , RH. Eikelboom <sup>1</sup> , MD. Atlas <sup>3</sup> , GP. Rajan <sup>3</sup> , Perth; Australia <sup>1,2,3</sup>
P2	Bone conduction and air conduction hearing comparison <i>M. Bance, Halifax; Canada</i>
Р3	Investigation on bone conduction thresholds in otosclerosis A. Arnold <sup>1</sup> , T. Fawzy <sup>2</sup> , F. Böhnke <sup>2</sup> , Berne; Switzerland <sup>1</sup> , Munich; Germany <sup>2</sup>
Ρ4	Transcranial attenuation of bone conducted sound measured acoustically and psycho acoustically S. Reinfeldt <sup>1</sup> , S. Stenfelt <sup>2</sup> , B. Håkansson <sup>1</sup> , Göteborg <sup>1</sup> , Linköping <sup>2</sup> ; Sweden
Р5	Infectious etiology of SNHL in cochlear implant child in Iran SA. Noorbakhsh <sup>1</sup> , MO. Farhadi <sup>2</sup> , AZ. Tabatabaei <sup>3</sup> , Tehran; Iran <sup>1,2,3</sup>
P6	The effects of slight and rapid pressure oscillations on the pars flaccida in gerbil and rabbit ears. LA. Didyk <sup>1</sup> , VB. Bogdanov <sup>2</sup> , VA. Lysenko <sup>2</sup> , YP. Gorgo <sup>2</sup> , J. Dirckx <sup>3</sup> , Kiev; Ukraine <sup>1,2</sup> , Antwerp; Belgium <sup>3</sup>
Р7	Biomechanical modeling and design optimization of cartilage myringoplasty using finite element analysis CF. Lee <sup>1</sup> , LP. Hsu <sup>2</sup> , PR. Chen <sup>2</sup> , YF. Chou <sup>3</sup> , JH. Chen <sup>3</sup> , TC. Liu <sup>3</sup> , Taipei; Taiwan <sup>1,2,3</sup>
Р8	Computer modelling of static pressure changes in the middle ear <i>EW. Abel</i> <sup>1</sup> , <i>C. Mao</i> <sup>2</sup> , <i>RP. Mills</i> <sup>3</sup> , <i>Dundee; UK</i> <sup>1,2</sup> , <i>Edinburgh; Scotland</i> <sup>3</sup>
Р9	High resolution 3-D imaging and modelling of middle ear ossicles and soft tissue structures of intact Gerbil temporal bones, using orthogonal-plane fluorescence virtual sectioning J. Buytaert, J. Dirckx, Antwerp; Belgium
P10	Hyperelastic warping applied to x-ray micro CT images for the study of human middle ear chain deformations under static pressure load SL. Gea <sup>1</sup> , SA. Maas <sup>2</sup> , WF. Decraemer <sup>1</sup> , H. Maier <sup>3</sup> , JJ. Dirckx <sup>1</sup> , Antwerp; Belgium <sup>1</sup> , Utah; USA <sup>2</sup> , Hamburg; Germany <sup>3</sup>

Posters	MEMRO 2006 Zurich
P11	Three-dimensional reconstruction and modeling of middle ear biomechanics using high resolution computed tomography and finite element analysis TC. Liu <sup>1</sup> , CF. Lee <sup>2</sup> , WJ. Lee <sup>3</sup> , JH. Chen <sup>2</sup> , Taipei; Taiwan <sup>1,2,3</sup>
P12	Imaging findings in Otosclerosis, a review study UL. Lachmund <sup>1</sup> , AT. Pangalu <sup>1</sup> , A. Huber <sup>2</sup> , AN. Valavanis <sup>1</sup> , Zurich; Switzerland <sup>1,2</sup>
P13	Morphology of the tympanic membrane insertion into the temporal bone in humans <i>I. Leuchter</i> <sup>1</sup> , <i>A. Pollak</i> <sup>2</sup> , <i>I. Hegyi</i> <sup>3</sup> , <i>A. Huber</i> <sup>2</sup> , Lausanne <sup>1</sup> , Zurich <sup>2,3</sup> ; Switzerland
P14	Real-time opto-electronic holographic measurements of sound-induced tympanic-membrane displacements JJ. Rosowski <sup>2</sup> , C. Furlong <sup>3</sup> , ME. Ravicz <sup>1</sup> , MT. Rodgers <sup>3</sup> , Boston <sup>1,2</sup> , Worcester <sup>3</sup> ; USA
P15	Tele-otology – a tool for education and telemedicine RH. Eikelboom <sup>1</sup> , MA. Gallop <sup>1</sup> , R. Marino <sup>1</sup> , F. Sutherland <sup>3</sup> , MD. Atlas <sup>2</sup> , GP. Rajan <sup>2</sup> , Perth <sup>1,2</sup> , Darwin <sup>3</sup> ; Australia
P16	Anatomy of the distal incus and lenticular process in the human W. Chien <sup>1</sup> , WT. Peake <sup>2</sup> , C. Northrop <sup>1</sup> , SN. Merchant <sup>1</sup> , Boston <sup>1</sup> , Cambridge <sup>2</sup> ; USA
P17	Do mesenchymal stem cells enhance the healing of chronic tympanic membrane perforations? AN. Rahman <sup>1</sup> , M. von Unge <sup>2</sup> , PE. Olivius <sup>2</sup> , GR. Mergolin <sup>2</sup> , MA. Hultcrantz <sup>2</sup> , Stockholm; Sweden <sup>1,2</sup>
P18	ldentification of human papilloma virus DNA in chronic otitis media and middle ear neoplasms B. Rydzewski <sup>1</sup> , A. Gozdzicka-Józefiak <sup>2</sup> , R. Podskarbi-Fayette <sup>1</sup> , M. Matusiak <sup>1</sup> , Poznan; Poland <sup>1,2</sup>
P19	In vitro study of the coupling load required for the otologics middle ear transducer MET MM. Maassen, M. Pfister, HP. Zenner, R. Ciuman, J. Rodriguez Jorge, Tübingen; Germany

Posters	MEMRO 2006 Zurich
P20	Influence of the cochlear implant electrode on the mechanical function of the inner ear <i>D. Bodmer</i> <sup>1</sup> , <i>S. Bonabi</i> <sup>2</sup> , <i>A. Huber</i> <sup>3</sup> , <i>Zurich; Switzerland</i> <sup>1,2,3</sup>
P21	Laser doppler velocimetric data in young normal hearing subjects J. Rodriguez Jorge, J. Tielemans, MM. Maassen, HP. Zenner, Tübingen; Germany
P22	Prognostic factors of chronic otitis media V. Chrobok, A. Pellant, M. Meloun, K. Pokorn", E. `imáková, Hradec Králové; Czech Republic
P23	Relative rate of otosclerosis among first and second degree relatives of otosclerotic patients referred to otolaryngology department of Isfahan medical university - Iran SA. Soheilipour, NE. Berjis, SH. Nemati, Isfahan; Iran
P24	An animal model of hearing loss in superior-canal dehiscence syndrome J. Songer, M. Wood, J. Rosowski, Boston; USA
P25	Sensory hearing loss in children with Mumps infection SA. Noorbakhsh <sup>2</sup> , AH. Siadati <sup>2</sup> , Tehran; Iran <sup>1,2</sup>
P26	Epidemiology of pressure regulation. Incidence of ventilation tube treatments and its preliminary correlation to subsequent ear surgery <i>M. Gaihede</i> <sup>1</sup> , <i>K. Hald</i> <sup>1</sup> , <i>M. Nørgaard</i> <sup>2</sup> , <i>P. Wogelius</i> <sup>2</sup> , <i>D. Buck</i> <sup>2</sup> , <i>K. Tveterås</i> <sup>1</sup> , <i>Aalborg; Denmark</i> <sup>1,2</sup>
P27	Morpho-functional partition of the middle ear cleft <i>B. Ars</i> <sup>1</sup> , <i>J. Dirckx</i> <sup>2</sup> , <i>Antwerp</i> ; <i>Belgium</i> <sup>1,2</sup>
P28	DPOAE following stapes surgery: Stapedectomy versus stapedotomy L. Migirov ,Tel Hashomer; Israel
P29	Stapesplasty: Comparison of conventional technique with CO2-laser-stapedotomy using single-shot technique J. Rodriguez Jorge, MM. Maassen, HP. Zenner, Tübingen; Germany
P30	The deep exploration of tympanum JÁ. Szócska, ER. Füle, Nyíregyháza; Hungary

Posters	MEMRO 2006 Zurich
P31	Histological assessment of the ossicular autografts used in Tympanoplasty SA. Tawfik <sup>1</sup> , SH. Rady <sup>2</sup> , MA. Bassiouny <sup>1</sup> , Alexandria; Egypt <sup>1,2</sup>
P32	Laser doppler vibrometry data of the Clip piston MVP A. Arnold, CH. Stieger, R. Häusler, Berne; Switzerland
P33	Ossiculoplasty with titanium prostheses M. Romer, M. Vorburger, A. Huber, Zurich; Switzerland
P34	Long-term study of "Vibrant® Soundbridge" implantable hearing aids H. Mojallal, S. Rose, T. Lenarz, Hannover; Germany
P35	Testing a method for quantifying the output of implantable middle ear hearing devices JJ. Rosowski <sup>1</sup> , W. Chien <sup>2</sup> , ME. Ravicz <sup>1</sup> , SN. Merchant <sup>2</sup> , Boston; USA <sup>1,2</sup>

# Friday, July 28, 2006



12.15 - 13.15	Lunch Symposium Cochlear	
	Panelists:	B. Håkansson, Göteborg; Sweden R. Häusler, Berne; Switzerland Th. Lenarz, Hannover; Germany D. Proops, Birmingham; UK T. Roland, New York; USA

#### Saturday, July 29, 2006



#### 12.15 - Lunch Symposium Vibrant Med-El Hearing Technology GmbH

13.15

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Introduction R. Markert, Innsbruck; Austria

Vibroplasty techniques in mixed hearing losses *A. Huber, Zurich; Switzerland* 

The Vibrant Soundbridge on the round window for difficult-to-treat middle ear problems *V. Colletti, Verona; Italy* 

Vibrant Surgical Roundtable: New indications for middle ear implants Moderator: W. D. Baumgartner, Wien; Austria

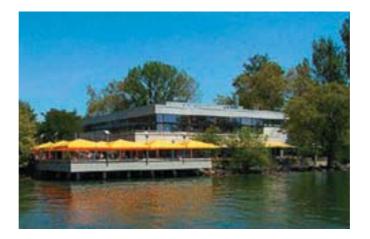
#### Thursday, July 27, 2006

18.00 - 20.00	Welcome Reception
	All participants are cordially invited to take part at the welcome reception at the "ETH Dozenten Foyer" located at the ETH (Swiss Federal Institute of Technology) Main Building, Rämistrasse 101, Zurich (see on page 30).

#### Friday, July 28, 2006

20.00 -	MEMRO Dinner
23.30	
	Aperitif and Dinner at the Lake Side Casino Zürichhorn.

Costs: EUR 50.00 per person (includes aperitif, dinner and beverages).



(www.lakeside.ch)

Accompanying Program

A program for accompanying persons will be organised on demand.

07.00 -15.00

#### Sunday, July 30, 2006

#### Excursion to Central Switzerland

Bus ride to Lucerne where the boat takes us to Alpnachstad. With the world's steepest cogwheel railway to Mount Pilatus and lunch on the summit. The gondola takes us back to Lucerne.

Bus ride back to Zurich.

07.00 Bus departure in Zurich from the Hospital

11.30 Lunch on Mount Pilatus

15.00 Back in Zurich

Costs: EUR 80.00 per person (includes bus, railway, aerial cableway, lunch, boat trip)



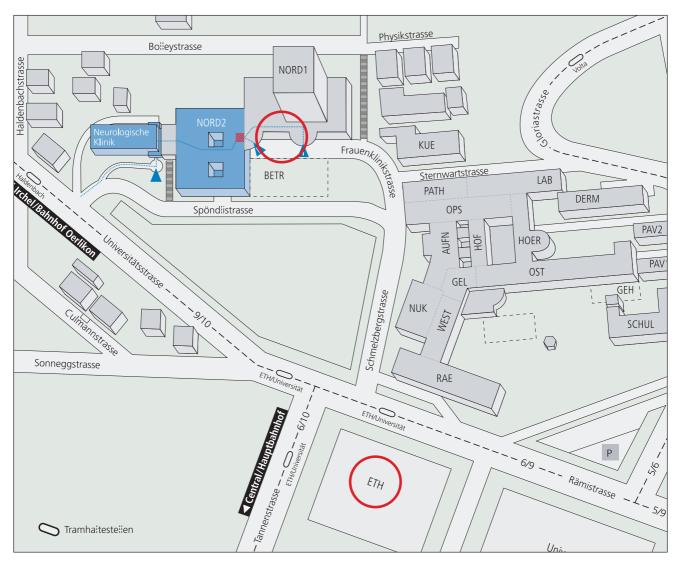
www.pilatus.ch



Oral Presentations and Posters	Keynote lectures last 30 minutes; for invited and free papers 10 minutes presentation time are reserved, additionally 2 minutes are allotted for discussion.
	The posters will be presented in a poster exhibition.
	The highest rated posters will receive a prize in the <b>Poster Award Ceremony.</b>
	Prize sponsored by VIBRANT MED-EL
	Poster Jury: Scientific Committee and International Guest Faculty
Speaker Service	All accepted abstracts will be published in an abstract book and distributed onsite to all congress participants.
	The audio-visual preview center is located next to the regi- stration. Please note that only digital material will be allo- wed for oral presentations. The material must be in English and must be provided on CD-ROM or USB Memory Stick to be placed on the central server onsite. It will not be possi- ble to use your own laptop computer for your presenta- tion in the session room. It is mandatory that the data carriers are delivered to the AV & Preview Desk at least 1 hour prior to the session. The com- puters in the lecture rooms are equipped with Microsoft Windows XP and Microsoft Office XP. The material remains the property of the speakers and will not be re-used by MEMRO 2006 without your permission. Your data will be deleted after the congress.
Credit Allowance	MEMRO 2006 is accredited by the European Accreditation Council for Continuing Medical Education (EACCME). The EACCME is an institution of the European Union of Medical Specialists (UEMS), www.uems.be. MEMRO 2006 is designa- ted for European external CME credits. EACCME credits are recognized by the American Medical Association towards the Physician's Recognition Award (PRA). To convert EACC- ME credit to AMA PRA category 1 credit, please contact the AMA. The EACCME has granted 18 European CME credits (ECMEC) to the symposium. MEMRO 2006 is given 24 credit points by SGORL.

#### **Congress Venue**

University Hospital Zurich, Lecture Hall NORD 1 Frauenklinikstrasse 10 CH-8091 Zurich Phone/Fax: +41 44 255 96 06 (only valid during the meeting)



# Registration and<br/>PaymentOnline registration is accepted on www.memro.org.<br/>Registrations will be confirmed after your payment.<br/>Please use online registration to your earliest convenience.<br/>Onsite registration is reserved for exceptional cases only.Registration FeesEUR 400.00 Regular registration<br/>EUR 200.00 Residents/Students\*<br/>\*to be accompanied by certificate signed by head of department and faxed<br/>to +41 44 809 42 81The registration fee includes access to the scientific sessions, congress documents, coffee breaks, lunches and the

welcome reception on Thursday. Please note, that the

Public Transport	Participant's Dinner (EUR 50.00) on Friday and the Excursion on Sunday (EUR 80.00) are not included in the registration fee. A reservation is necessary and can be booked together with your registration on www.memro.org. Transfer from the airport to the town by railway (in the air- port building) every ten minutes. Transfer from Zurich main station to the Hospital with Tram 6 (direction Zoo or Fluntern) and 10 (direction Irchel). Tramstation ETH/Universität. Only very limited parking space at the Hospital.
Certificate of Attendance	You will obtain your certificate of attendance onsite at the registration desk.
Proceedings	A volume of contributions will be published after the symposium. Manuscripts can be submitted until <b>July 30, 2006</b> by e-mail to proceedings@memro.org. Please find layout and formatting instructions on www.memro.org.
Badges	For organizational and security reasons, badges have to be worn at the congress venue. In case of loss, a replacement badge will only be provided against payment of EUR 30.00.
Disclaimer	MEMRO 2006 and the congress organizer cannot accept any liability for the acts of any suppliers to this meeting nor the safety of any attendee while in transit to or from this event. All participants are strongly advised to carry proper travel and health insurance as MEMRO 2006 and the congress organiser cannot accept any liability for any accidents or injuries that may occur.
Language	English is widely spoken and understood throughout the country. The official congress language is English.
Industrial Exhibition	An industrial exhibition is organized at the Congress Venue. It will be open throughout the congress.

#### Museums & Art

Zurich and the surrounding region is home to the biggest number of museums and exhibitions in the whole of Switzerland. The Kunsthaus is one of Europe's foremost museums of art and host to a series of constantly changing exhibitions. Art, architecture, painting and objects of interest from the past and present. Zurich is culture!

For example: Kunsthaus Zurich www.kunsthaus.ch

Swiss National Museum www.musee-suisse.ch

#### Places of interests

#### For example:

#### Bahnhofstrasse

The main shopping zone is concentrated in the city center, which makes it ideal for pedestrians. The famous Bahnhofstrasse – one of the most beautiful shopping areas in Europe – is a must. Elegant fashion stores, department stores, boutiques with top quality products (shoes, furs, accessories, porcelain, jewellery and watches), banks and pastry shops. www.bahnhofstrasse-zuerich.ch

#### Fraumünster Church

Founded in 853 by King Louis the German, this church with its convent was inhabited by the female members of the aristocracy of southern Germany. Important architectural features include the Romanesque choir and the high vaulted transept. In addition to the largest organ in the canton (5'793 pipes), its most stunning jewels are the stained glass windows: those in the north transept are by Alberto Giacometti's cousin, Augusto (1945), the five-part cycle in the choir (1970) and the rosette in the southern transept (1978) are by Marc Chagall.

#### Masoala Rainforest in Zurich

At the Zurich Zoo you will find an authentic rainforest experience with animals and plants. The display of these treasures and wonders of nature on an area of around 10'000 m<sup>2</sup> will certainly fascinate young and old. The zoo shows the causes of the disappearance of forests, but also projects that help conserve the forests. www.zoo.ch

#### Please find more information about Zurich on www.zuerich.com

Hotel Booking Special congress rates are available in a number of selected hotels. Participants are requested to make their reservations individually mentioning the code name MEMRO 2006. Rates are in CHF, per night, per room including breakfast, services and taxes. All rooms with bath/shower. More information about other hotels or any information about Zurich on www.zuerich.com.

Location (see map)			Single CHF	Double CHF	Homepage
1 *	****	Rigihof	120.00	180.00	www.hotel-rigihof.ch
2 '	****	Claridge Hotel Tiefenau	179.00	299.00	www.tiefenau.ch
3 '	****	Central Plaza Hotel	250.00	250.00	www.central.ch
4 '	****	Sorell Hotel Zürichberg	240.00	270.00	www.zuerichberg.ch
5 '	****	Storchen	305.00 - 405.00	530.00	www.storchen.ch
6 '	****	ArabellaSheraton	325.00 - 375.00	425.00	www.arabellasheraton.com
7	***	St. Josef	145.00	185.00	www.st-josef.ch
8	***	Romantik Hotel Florhof	245.00	360.00	www.florhof.ch
9	***	Novotel	185.00	185.00	www.novotel-zurichcity.ch
10	**	lbis	115.00	129.00	www.ibishotel.com

Currency

The currency of Switzerland is the Swiss Franc. Euro and all major credit cards are widely accepted. The congress fees will be in Euro.

1 Swiss Franc = approx. 0.65 Euro (date of printing) 1 Swiss Franc = approx. 0.82 USD

#### **Travel Arrangements**



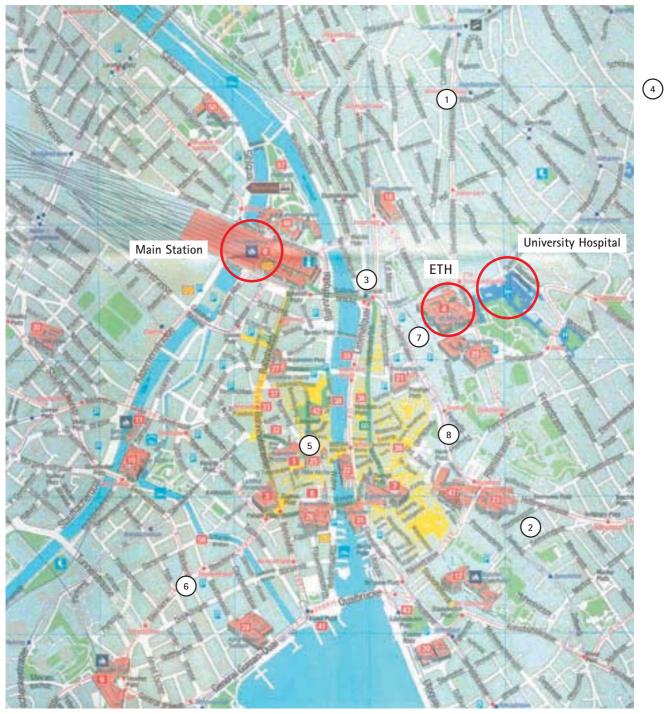
Swiss International Air Lines is the official carrier of MEMRO 2006 and is offering special congress fares to all participants.

These congress fares offer reductions of up to 25% depending on the fare type, route and space availability. Congress fares are valid for all flights to Switzerland on the entire SWISS network, including flights operated by partner airlines under the LX flight number (except British Airways operated flights).

To take advantage of these special congress fares, please contact your local SWISS travel office or any designated ticketing agent (http://www.swiss.com/web/contacts-worldwide-offices.htm) and quote the tourcode CXX6065.

Map of Zurich

#### 9 10



The walking distance between the main station and the University Hospital is approx. 15 minutes.

MEMRO 2006 wishes to express its gratitude to all collaborators and volunteers for this meeting. Particulary the participation and contribution of the following companies is much appreciated and gratefully acknowledged.

#### Main Sponsors





VIBRANT MED-EL GmbH, A-6020 Innsbruck Symposium, Poster Prize

Cochlear AG, CH-4053 Basel Symposium



#### Sponsor

Heinz Kurz GmbH, DE-72144 Dusslingen Coffee Break



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