16TH INTERNATIONAL SYMPOSIUM ON HEARING, 2012

ISH 2012
16th International Symposium on Hearing
St John's College
Cambridge
July 23-27, 2012

SCIENTIFIC AND ORGANIZING COMMITTEE

Hedwig E. Gockel
Brian C. J. Moore
Roy D. Patterson
Ian M. Winter
Robert P. Carlyon

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16th International Symposium on Hearing

**SYMPOSIUM PROGRAM** (SUBJECT TO CHANGE)

**Sunday 22 July 2012**

18:30-21:00  Welcome reception with canapes (light snacks) and drinks

**Monday 23 July 2012**

**PERIPHERAL PROCESSING (Presenters’ names are in bold)**

Chair: Roy D. Patterson

09:00-09:20  **Geoffrey A. Manley**  
Mosaic evolution of the mammalian auditory periphery

A computer model of the auditory periphery and its application to the study of hearing

09:40-10:00  **Peter Heil, Heinrich Neubauer, Manuel Tetschke, Dexter R.F. Irvine**  
A probabilistic account of absolute auditory thresholds and its possible physiological basis

10:00-10:20  **Christopher J. Plack**  
Cochlear compression: Recent insights from behavioural experiments

10:20-11:00  Tea, Coffee and Posters

11:00-11:20  **Ifat Yasin, Vit Drga, Christopher J. Plack**  
Improved psychophysical methods to estimate peripheral gain and compression

11:20-11:40  **Enrique A. Lopez-Poveda, Enzo Aguilar, Peter T. Johannesen, and Almudena Eustaquito-Martin**  
Contralateral efferent regulation of human cochlear tuning: Behavioural observations and computer model simulations

11:40-12:00  **Elin M. Roverud, Elizabeth A. Strickland**  
Modeling effects of precursor duration on behavioral estimates of cochlear gain

12:00-12:20  **Mark Fletcher, Jessica de Boer, Katrin Krumbholz**  
Is overshoot caused by an efferent reduction in cochlear gain?

12:20-14:10  Lunch

14:10-14:30  **Toshio Irino, Satoshi Fukawatase, Makoto Sakaguchi, Ryuichi Nisimura, Hideki Kawahara, Roy D. Patterson**  
Accurate estimation of compression in simultaneous masking enables the simulation of hearing impairment for normal-hearing listeners

14:30-14:50  **Roy D. Patterson, D. Timothy Ives, Thomas C. Walters, Richard F. Lyon**  
Modelling the distortion produced by cochlear compression
TEMPORAL FINE STRUCTURE AND PITCH

Chair: Robert P. Carlyon

14:50-15:10 Shigeto Furukawa, Shiho Washizawa, Atsushi Ochi, Makio Kashino
How independent are the pitch and the interaural-time-difference mechanisms that rely on temporal fine structure information?

15:10-15:30 Philip X. Joris, Eric Verschooten
On the limit of neural phase-locking to fine-structure in humans

15:30-16:10 Tea, Coffee and Posters

16:10-16:30 Sushrut Kale, Christophe Micheyl, Michael G. Heinz
Effects of sensorineural hearing loss on temporal coding of harmonic and inharmonic tone complexes in the auditory nerve

16:30-16:50 Frédéric Apoux, Eric W. Healy
A glimpsing account of the role of temporal fine structure information in speech recognition

16:50-17:10 Brian C.J. Moore, Olivia Kenyon, Brian R. Glasberg, Laurent Demany
Assessing the possible role of frequency-shift detectors in the ability to hear out partials in complex tones

18:30 Pre-performance talk on the merry wives of Windsor

19:30 Dinner

Tuesday 24 July 2012

TEMPORAL FINE STRUCTURE AND PITCH (CONT.)

Chair: Robert P. Carlyon

09:00-09:20 Andrew J. Oxenham, Christophe Micheyl
Pitch perception: Dissociating frequency from fundamental-frequency discrimination

09:20-09:40 Minoru Tsuzaki, Chihiro Takeshima, Toshie Matsui
Pitch perception for sequences of impulse responses whose scaling alternates at every cycle

09:40-10:00 B. Englitz, S. Akram, S. V. David, C. Chambers, D. Pressnitzer, D. Depireux, J. B. Fritz, S. A. Shamma
Putting the tritone paradox into context: insights from neural population decoding & human psychophysics

ENHANCEMENT AND PERCEPTUAL COMPENSATION

Chair: Brian C. J. Moore

10:00-10:20 Neal F. Viemeister, Andrew J. Byrne, Mark A. Stellmack
Spectral and level effects in auditory enhancement

10:20-11:00 Tea, Coffee and Posters
11:00-11:20  **Samuele Carcagno, Catherine Semal, Laurent Demany**  
Enhancement of increments in spectral amplitude: further evidence for a mechanism based on central adaptation

11:20-11:40  **Francisco Cervantes-Constantino, Maria Chait**  
Differential sensitivity to appearing and disappearing objects in complex acoustic scenes

11:40-12:00  **Anthony J. Watkins, Andrew P. Raimond,**  
Perceptual compensation when isolated test words are heard in room reverberation

12:00-12:20  **Robert A. Lutfi, Ching-Ju Liu, Christophe N.J. Soelinga**  
A new approach to sound source identification

12:20-14:10  Group photograph followed by lunch

### BINAURAL PROCESSING

**Chair:** Ian M. Winter

14:10-14:30  **Catherine Carr, Sahil Shah, Go Ashida, Thomas McColgan, Hermann Wagner, Paula Kuokkanen, Richard Kempter, Christine Köppl**  
Maps of ITD in the Nucleus Laminaris of the Barn Owl

14:30-14:50  **Mathias Dietz, Torsten Marquardt, David Greenberg, David McAlpine**  
The influence of the envelope waveform on binaural tuning of neurons in the inferior colliculus and its relation to binaural perception

14:50-15:10  **Hedwig E. Gockel, Louwai Muhammed, Redwan Farooq, Christopher J. Plack, Robert P. Carlyon**  
No evidence for ITD-specific adaptation in the frequency following response

15:10-15:30  **William M. Hartmann, Larisa Dunai, Tianshu Qu**  
Interaural time difference thresholds as a function of frequency

15:30-16:10  Tea, Coffee and Posters

16:10-16:30  **Christopher A. Brown, William A. Yost**  
Interaural time processing when stimulus bandwidth differs at the two ears

16:30-16:50  **Mitchell L. Day, Bertrand Delgutte**  
Neural correlates of the perception of sound source separation

16:50-17:10  **Leslie R. Bernstein, Constantine Trahiotis**  
When and how envelope “rate-limitations” affect processing of interaural temporal disparities conveyed by high-frequency stimuli

17:55  **Dinner**

19:30  **Outdoor Shakespeare**
09:00-09:20  **Heath G. Jones, Kanthaiah Koka, Jennifer Thornton, Daniel J. Tollin**  
The sound source distance dependence of the acoustical cues to location and their  
encoding by neurons in the inferior colliculus – implications for the Duplex theory

09:20-09:40  **Sarah Verhulst, Federica Bianchi, Torsten Dau**  
Cochlear contributions to the precedence effect

09:40-10:00  **Steven van de Par, Bjoern Luebken, Jesko Verhey, Armin Kohlrausch**  
Off-frequency BMLD: the role of monaural processing

10:00-10:20  **William M. Whitmer, Bernhard U. Seeber, Michael A. Akeroyd**  
Measuring the apparent width of auditory sources in normal and impaired hearing

10:20-11:00  **Tea, Coffee and Posters**

11:00-11:20  **Sven Schörnich, Virginia L. Flanagan, Ludwig Wallmeier, Nikodemus Gessele,**  
**Andreas Nagy, Michael Schranner, Daniel Kish, Magnus Wahlberg, Thomas Stephan, Lutz Wiegrebe**  
Psychophysics of human echolocation

**SPEECH AND TEMPORAL PROCESSING**

Chair:  Hedwig E. Gockel

11:20-11:40  **Brian Roberts, Robert J. Summers, Peter J. Bailey**  
Formant-frequency variation and its effects on across-formant grouping in speech perception

11:40-12:00  **Birger Kollmeier, Marc René Schädler, Arne Meyer, Jörn Anemüller, Bernd T. Meyer**  
Do we need STRFs for cocktail parties? - On the relevance of physiologically motivated features for human speech perception derived from automatic speech recognition

12:00-12:20  **Søren Jørgensen, Torsten Dau**  
Modeling speech intelligibility in adverse conditions

12:20-14:10  **Lunch**

14:10-17:55  **Sight-seeing and punting**

17:55  **Concert in Clare Hall**

19:30  **Dinner**

21:00-22:30  **Poster session/Social (with drinks)**

**Thursday 26 July 2012**

**SPEECH AND TEMPORAL PROCESSING (CONT.)**

Chair:  Hedwig E. Gockel

09:00-09:20  **Yoojin Chung, Kenneth E. Hancock, Sung-II Nam, Bertrand Delgutte**  
Better temporal neural coding with cochlear implants in awake animals

09:20-09:40  **Robert P. Carlyon, John M. Deeks**
Effects of auditory nerve refractoriness and adaptation on auditory perception

09:40-10:00  **Nai Ding, Jonathan Z. Simon**
Robust cortical encoding of slow temporal modulations of speech

10:00-10:20  **Joseph W. Hall III, Emily Buss, John H. Grose**
Wideband monaural envelope correlation perception

10:20-11:00  *Tea, Coffee and Posters*

11:00-11:20  **Laurel H. Carney, Angela D. Ketterer, Kristina S. Abrams, Douglas M. Schwarz, Fabio Idrobo**
Detection thresholds for amplitude modulations of tones in budgerigar (Melopsittacus undulatus)

11:20-11:40  **Astrid Klinge-Strahl, Timo Parnitzke, Rainer Beutelmann, Georg M. Klump**
Phase discrimination ability in Mongolian gerbils provides evidence for possible processing mechanism of mistuning detection

**AUDITORY CORTEX AND BEYOND**

Chair: Roy D. Patterson

11:40-12:00  **Israel Nelken, Amit Yaron, Ana Polterovich, Itai Hershenhoren**
Stimulus-specific adaptation beyond pure tones

12:00-12:20  **Pim van Dijk, Dave R. M. Langers**
Mapping tonotopy in human auditory cortex

12:20-15:30  *Lunch (extended break to allow for shopping and sightseeing)*

15:30-15:50  **André Rupp, André Spachman, Anna Detlaff, Roy D. Patterson**
Cortical activity associated with the perception of temporal asymmetry in ramped and damped noises

15:50-16:10  **Stefan Uppenkamp, Christian H. Uhlig, Jesko L. Verhey**
Cortical representation of the combination of monaural and binaural unmasking

16:10-16:50  *Tea, Coffee and Posters*

16:50-17:10  **Clara Suied, Trevor R. Agus, Simon J. Thorpe, Daniel Pressnitzer, Juan Huang, Darik Gamble, Kristine Sarnlertophon, Xiaojin Wang, Steven Hsiao**
Processing of short auditory stimuli: The Rapid Audio Sequential Presentation paradigm (RASP)

17:10-17:30  **Sukhbinder Kumar, Katharina von Kriegstein, Karl J. Friston, Timothy D. Griffiths**
A dynamic system for the analysis of the acoustic features and valence of aversive sounds in the human brain

17:30-19:30  *Free*

19:30  *Banquet*
Friday 27 July 2012

AUDITORY SCENE ANALYSIS

Chair: Brian C. J. Moore

09:20-09:40 Jesko L. Verhey, Bastian Epp, Arek Stasiak, Ian M. Winter
Can comodulation masking release occur when frequency changes would promote perceptual segregation of the on-frequency and flanking bands?

09:40-10:00 Lars Riecke, Christophe Micheyl, Andrew J. Oxenham
Illusory auditory continuity despite neural evidence to the contrary

10:00-10:20 John C. Middlebrooks
High-acuity spatial stream segregation

10:20-10:40 Barbara Shinn-Cunningham, Dorea Ruggles, Hari Bharadwaj
How early aging and environment interact in everyday listening: From brainstem to behaviour through modelling

10:40-11:20 Tea, Coffee and Posters

11:20-11:40 John F. Culling
Energetic and informational masking in a simulated restaurant environment

11:40-12:00 Makio Kashino, Eisuke Adachi, Haruto Hirose
A computational model for the dynamic aspects of primitive auditory scene analysis

12:00-12:20 Ervin Hafter, Jing Xia, Sridhar Kalluri
A naturalistic approach to the cocktail party

12:20-12:40 Shihab Shamma, Mounya Elhilali, Ling Ma, Christophe Micheyl, Andrew Oxenham, Daniel Pressnitzer, Pingbo Yin, Yanbo Zu
Temporal coherence and the streaming of complex sounds

12:40-14:10 Farewell Lunch

Note: The contents of the programme may change slightly and the timings may also change

POSTERS

1. The learning of tone clouds: Parametrically controllable stochastic stimuli to investigate auditory memory
   Trevor R. Agus, Daniel Pressnitzer

2. Signal-detection reaction times as a measure of binaural sluggishness
   Michael A. Akeroyd

3. Speech enhancement inspired by auditory modeling
   Stefan Bleeck, Matthew C. M. Wright, Ian M. Winter

4. On the role of pitch in binding auditory streams
   Michael A. Carlin, Mounya Elhilali

   Didier Depireux, Bernhard Englitz, Matthew J. Goupell
6. **Gold on activity**  
H. (Diek) Duifhuis

7. **Another word of caution about exceptionally sharp behavioral estimates of human cochlear tuning**  
Almudena Eustaquio-Martin, Enrique A. Lopez-Poveda

8. **Robust fundamental frequency estimation in an auditory model**  
Stephan D. Ewert, Carolin Iben, Volker Hohmann

9. **Modeling interaural correlation change detection in Gaussian and low-fluctuation noises**  
Matthew J. Goupell

10. **Effect of presentation of cue tones on active tuning of auditory filters derived from simultaneous notched-noise masking**  
Shunsuke Kidani, Ryota Miyauchi, Masashi Unoki

11. **Is the perception of auditory distance in rooms binaural?**  
Mathieu Lavandier and Arnaud Bidart

12. **Tonic firing neurons in the cochlear nucleus can encode the temporal fluctuations of noisy input stimulation**  
Katrina M. MacLeod, Arslaan Arshed, Lauren J. Kreeger

13. **Modeling sound-localization performance in vertical planes: level dependence**  
Piotr Majdak, Bernhard Laback, Thibaud Necciari, Katharina Egger, Robert Baumgartner

14. **Evidence for time-averaged summary statistics in auditory perception**  
Josh H. McDermott, Eero P. Simoncelli

15. **Effects of TFS information on perceptual learning and transfer of fundamental frequency discrimination**  
Hiromitsu Miyazono, Brian C. J. Moore

16. **Effects of noise on speech perception, event-related potentials and feedback control of the auditory periphery in children**  
Kyoko Nagao, Matthew R Cardinale, L Ashleigh Greenwood, Thierry Morlet

17. **Towards a new measure of auditory stream segregation based on molecular psychophysics**  
Daniel Oberfeld

18. **Behavioural and brain bases for piano tuning**  

19. **Temporal processing deficits revealed by ribbon synapse and auditory nerve disorders**  
Fan-Gang Zeng, Dwight Wynn, Arnold Starr