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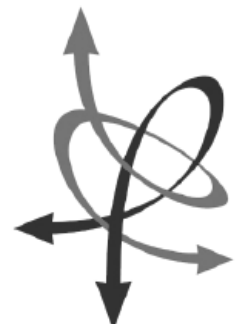
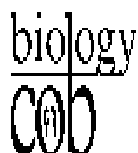
Orientation & Navigation Birds, Humans & Other Animals

6th Conference in this Series

2 - 4 April 2008

University of Reading, UK

FINAL PROGRAMME



Hosted by the Institute's Animal Navigation Group and supported by the Company of Biologists Ltd, the Defence Science and Technology Laboratory and the Office of Naval Research Global.

**Royal Institute
of Navigation**

SIXTH CONFERENCE**Orientation & Navigation
Birds, Humans & Other Animals**

Welcome to the Sixth International Conference on Animal Navigation, hosted by the Animal Navigation Special Interest Group of the Royal Institute of Navigation (RIN). In response to demand, this is three years after RIN 05, rather than the normal interval of 4 years between conferences. This Conference brings together research scientists, from the whole range of disciplines that relate to animal navigation including Orientation, Migration, Ethology, Neurobiology, Sensory physiology, Ecology and Entomology. In keeping with the ethos of the Institute, the Organising Committee extends a warm welcome to professionals and amateurs from all fields of navigation and related scientific disciplines. We are grateful to the Company of Biologists Ltd, familiar to many through the Journal of Experimental Biology, which has provided a grant to provide support for students attending the Conference. We also wish to thank the following for their contribution to the success of the Conference:

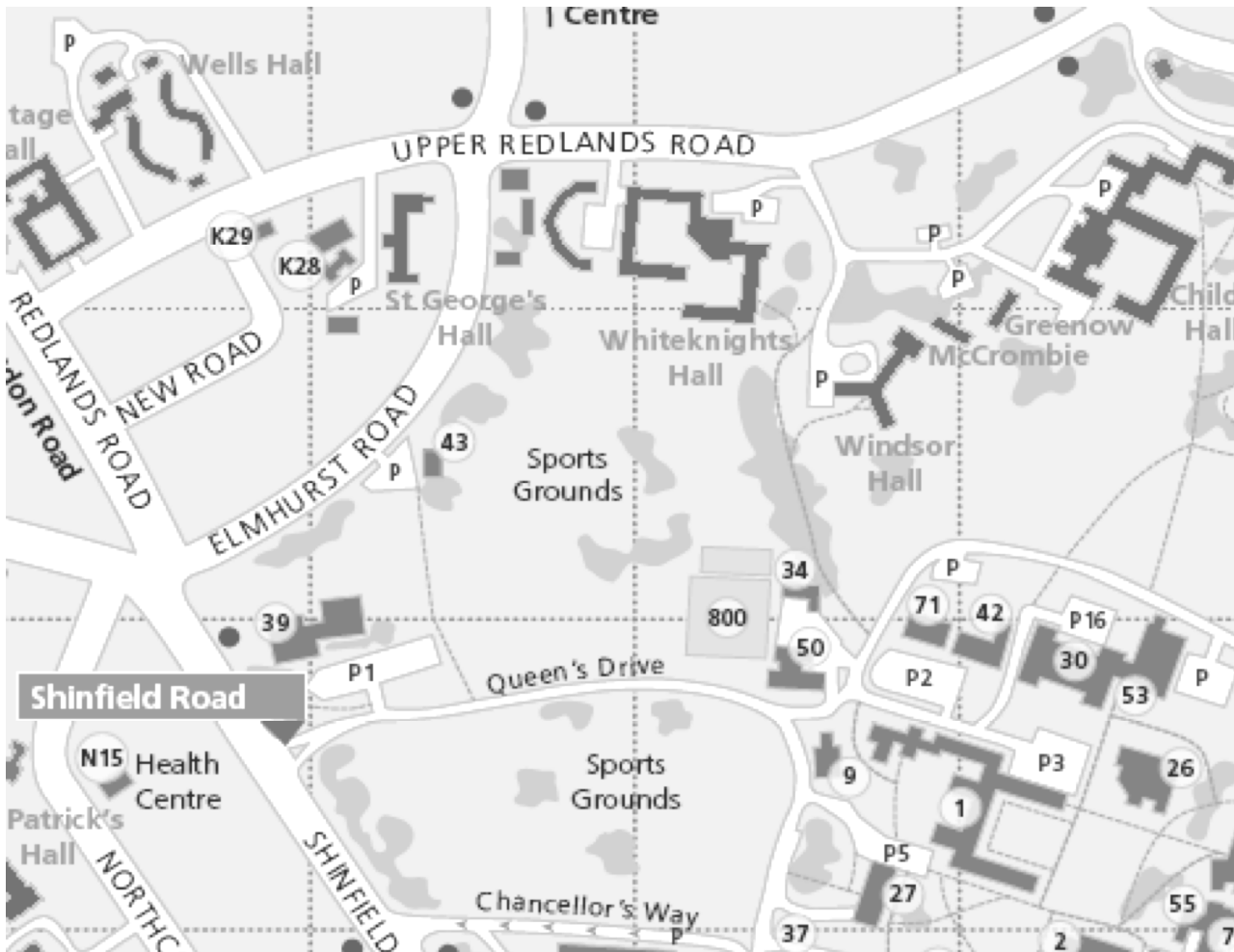
Defence Science & Technology Laboratory (DSTL)
Office of Naval Research Global

ORGANISING COMMITTEE

Prof John Kemp, Chairman RIN 08 Org Committee, RIN
Air Cdre 'Pinky' Grocott, Moderator e-mail Animal-forum, RIN
Dr Peter Fraser, SBS Zoology, Aberdeen University
Gp Capt David Broughton, Director, RIN
Kathryn Hossain, Event Manager, RIN

VENUE

UNIVERSITY OF READING, WHITEKNIGHTS CAMPUS, UPPER REDLANDS ROAD, READING,
RG6 6UA



Halls of Residence: Whiteknights
Lecture Theatre: Palmer, Palmer Building – **No. 26** on the map

Contact Details during the Conference:
The University Halls of Residents Reception Desk may be contacted on:
+44 (0)118 378 8800
Emergency contact number for the University Campus on a 24-hr basis:
+44 (0)118 378 7799
Emergency contact number for the Royal Institute of Navigation: +44 (0)7767215512

WEDNESDAY 2 APRIL, 0800 - 0920

OPENING SESSION

Time	
0800	Registration and Coffee
0900	Welcome David Last, <i>President RIN</i>
0910	Opening Address Peter Fraser, <i>Chairman ANG</i>

WEDNESDAY 2 APRIL, 0900 - 1040

SESSION 1A - INSECTS

Time	Chairman: D. F. H. Grocott, <i>Moderator RIN Animal Forum</i>
0920	Do leaf-cutter ants orient their path-integrated, home vector with a magnetic compass? R B Srygley, <i>USDA-Agricultural Research Services</i>
0940	Seasonal effects in <i>Solenopsis interrupta</i> ant magnetic Studies L G Abraçado, <i>CBPF.MCT, Rio de Janeiro</i>
1000	Orientation to artificial landmarks and colour discrimination, in a nocturnal carpenter bee in India H Somanathan, <i>Lund University & Centre for Ecological Sciences, Bangalore</i>
1020	Place recognition in honeybees: New ideas and Experiments R Jander, <i>University of Kansas</i>

1040 COFFEE AND TEA BREAK

WEDNESDAY 2 APRIL, 1110 - 1250

SESSION 1B - REPTILES AND AMPHIBIA

Time	Chairman: F Scapini, <i>University of Florence</i>
1110	Short and long distance homing in the marsh frog, <i>Rana ridibunda</i> Pallas V V Shakhparonov, <i>Moscow State University</i>
1130	Spatial learning and use of the parietal eye in sun compass orientation of the lacertid lizard <i>Podarcis sicula</i> A Foà, <i>University of Ferrara</i>
1150	The maps, compasses and sensory biology of sea turtle Navigation K J Lohmann, <i>University of North Carolina</i>
1210	Navigational performances of magnetically-disturbed green sea turtles subjected to experimental displacement P Luschi, <i>University of Pisa</i>
1230	Homing in newts: a case for bi-coordinate magnetic Navigation R Muheim, <i>Virginia Tech.</i>

1250 LUNCH

WEDNESDAY 2 APRIL, 1350 - 1550

SESSION 2A - PHYSIOLOGICAL BASIS FOR MAGNETORECEPTION (1)

Time	Chairman: J Phillips, <i>Virginia Tech</i>
1350	Cryptochromes and magnetoreception in night-migratory Songbirds M Liedvogel <i>University of Oxford & University of Oldenburg</i>
1410	Magnetite and Photochemical Magnetoreceptors in Birds: What can they do best? T Ritz, <i>University of California Irvine</i>
1430	A conceptual model for encoding of magnetic field intensity by magnetite-based magnetoreceptor cells M M Walker, <i>University of Auckland</i>
1450	Developing a behavioural assay of magnetic field sensitivity in homing pigeons: Is it a question of vision? S Migalski, <i>Cardiff University</i>
1510	A chemical compass model of avian magnetoreception P J Hore, <i>University of Oxford</i>
1530	Two different types of directional responses based on different physical principles in migratory birds. R Wiltschko, <i>J.W. Goethe-University, Frankfurt</i>

1550 COFFEE AND TEA BREAK

WEDNESDAY 2 APRIL, 1620 - 1740

SESSION 2B - PHYSIOLOGICAL BASIS FORMAGNETORECEPTION (2)

Time	Chairman: K J Lohmann, <i>University of North Carolina</i>
1620	Magnetoreception based on two iron minerals: a critical Reassessment M Winklhofer, <i>University of Munich</i>
1640	Iron mineral-based magnetoreception: Consequences of a new receptor concept for the evaluation and design of navigational tasks G Fleissner, <i>J W Goethe-University, Frankfurt</i>
1700	Geophysical constraints on the biophysics of Magnetoreception J L Kirschvink <i>California Institute of Technology</i>
1720	Earth Magnetic Field Orientation in a non-migrating Songbird J Voss, <i>University of Bielefeld</i>

1740 Close

1800 RECEPTION - Sponsored by the Royal Institute of Navigation

1900 DINNER on campus

THURSDAY 3 APRIL, 0900 - 1020

SESSION 3A - USE OF OLFACTION AND SOUND IN BIRDS

Time	Chairman: S Åkesson, <i>Lund University</i>
0900	Atmospheric Rawinsonde and pigeon release data implicate infrasound as the long-range map cue in avian navigation J T Hagstrum, <i>U.S. Geological Survey, California</i>
0920	Development of navigational abilities in pigeons deprived of olfactory or trigeminally mediated magnetic information when young A Gagliardo, <i>University of Pisa</i>
0940	Evidence of olfactory search in wandering albatross G A Nevitt, <i>University of California</i>
1000	Do olfactory cues contribute to a mosaic map of familiar & reference sites in the loft's vicinity? P Jorge, <i>Lisbon University</i>

1020 COFFEE AND TEA BREAK

THURSDAY 3 APRIL, 1050 - 1250

SESSION 3B - BIRD MIGRATION

Time	Chairman: M M Walker, <i>University of Auckland</i>
1050	A long distance avian migrant compensates for longitudinal displacement during spring migration N Chernetsov, <i>Zoological Institute Rybachy, Kalingrad</i>
1110	Great circle migration of arctic birds T Alerstam, <i>Lund University</i>
1130	A visual pathway links brain structures active during magnetic compass orientation in migratory birds D Heyers, <i>University of Oldenburg</i>
1150	Avian migratory orientation in the high Arctic S Åkesson, <i>Lund University</i>
1210	Orientation cage tests: Application in bird migration Studies A Ożarowska, <i>University of Gdańsk</i>
1230	Migratory behaviour as a factor influencing the evolution of avian brain organisation V P Bingman, <i>Bowling Green State University Ohio</i>

1250 LUNCH

THURSDAY 3 APRIL, 1350 - 1550

SESSION 4A - AQUATIC ORIENTATION

Time	Chairman: C C ten Hallers-Tjabbes, <i>CaTO Marine Ecosystems</i>
1350	Nocturnal orientation and object recognition through active electrolocation G von der Emde, <i>University of Bonn</i>
1410	Coral reef soundscapes, and the use of acoustic cues in the orientation of coral reef fish S D Simpson, <i>University of Edinburgh</i>
1430	Three-dimensional orientation in fish R I Holbrook, <i>University of Oxford</i>
1450	Depth: A forgotten dimension P J Fraser, <i>University of Aberdeen</i>
1510	<i>A clock for locomotion and orientation in amphipods</i> C Rossano, <i>University of Florence</i>
1530	Polarization – the 3rd quality of light: Can it be used for navigation in the marine environment? A Lerner, <i>The Hebrew University, Jerusalem</i>

1550 COFFEE AND TEA BREAK

THURSDAY 3 APRIL, 1620 - 1740

SESSION 4B - PIGEON HOMING

Time	Chairman: H Mouritsen, <i>University of Oldenburg</i>
1620	Inferring sensory influence of the visual landscape non-invasively in freely flying pigeons R Mann, <i>University of Oxford</i>
1630	The relationship between landscape factors and familiar route development C Armstrong, <i>University of Oxfo</i>
1640	Modelling group navigation: dominance and democracy in homing pigeons R Freeman, <i>Microsoft Research, Cambridge</i>
1700	Where and when do pigeons decide to head home? I Schiffner, <i>J W Goethe-University, Frankfurt</i>
1720	Can the phenomenon of release site bias be explained by local variations in the Earth's magnetic field? C V Mora, <i>University of Auckland</i>

1740 CLOSE

1900 CONFERENCE DINNER

FRIDAY 4 APRIL, 0900 - 1020

SESSION 5A - MECHANISMS OF ORIENTATION (1)

Time	Chairman: F Vollrath, <i>University of Oxford</i>
0900	Functional properties, physical basis and origin of the avian magnetic compass W Wiltschko, <i>J.W. Goethe-University, Frankfurt</i>
0920	New perspectives for comparative studies on spatial cognition in birds, H Prior, <i>J.W. Goethe-University, Frankfurt</i>
0940	In search of the neural basis of magnetic orientation: cues from African mole-rats and homing pigeons P Nemeč, <i>Charles University Praha & J.W. Goethe University Frankfurt</i>
1000	Orientation and navigation in bats: known unknowns and unknown unknowns R A Holland, <i>Princeton University</i>

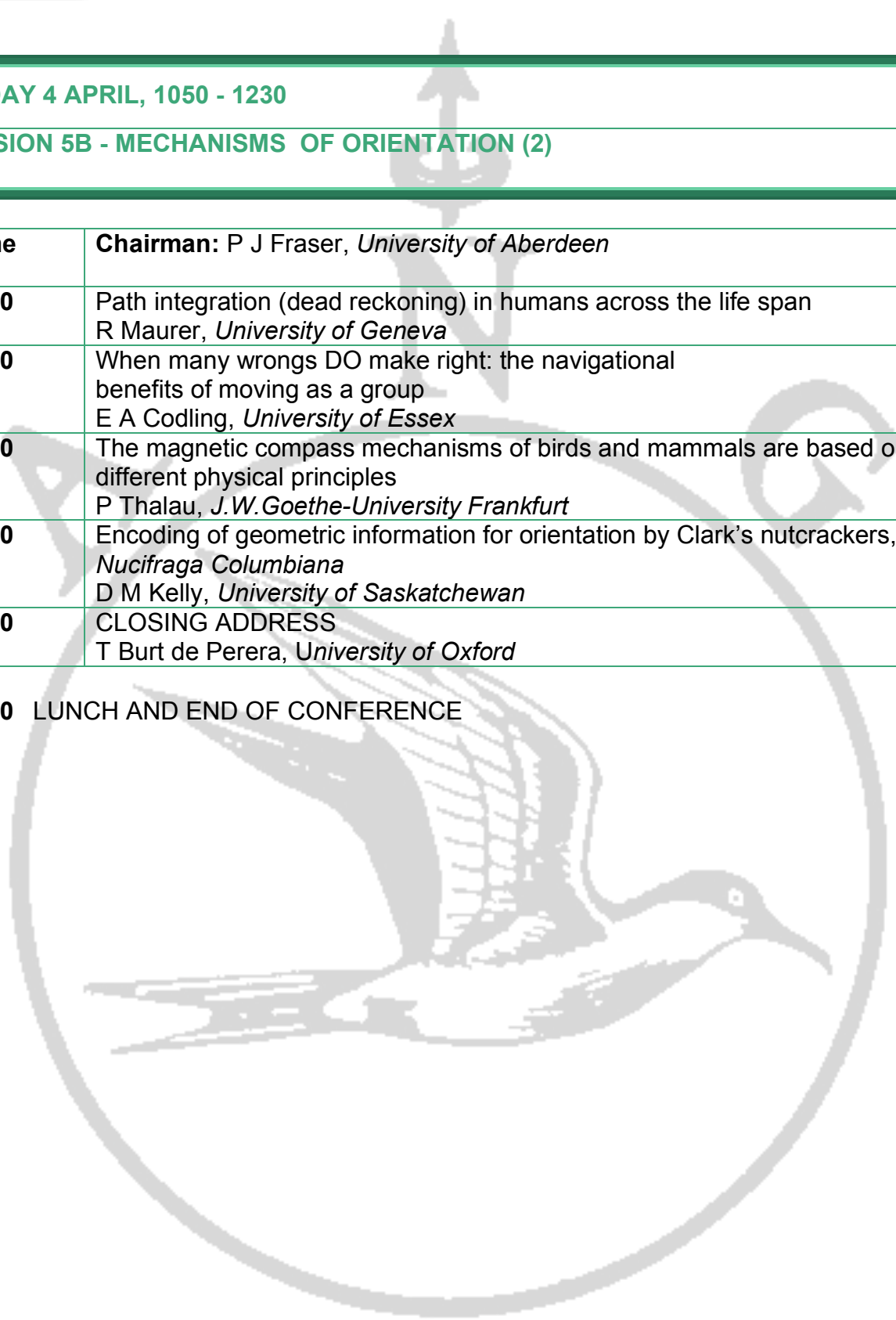
1020 COFFEE AND TEA BREAK

FRIDAY 4 APRIL, 1050 - 1230

SESSION 5B - MECHANISMS OF ORIENTATION (2)

Time	Chairman: P J Fraser, <i>University of Aberdeen</i>
1050	Path integration (dead reckoning) in humans across the life span R Maurer, <i>University of Geneva</i>
1110	When many wrongs DO make right: the navigational benefits of moving as a group E A Codling, <i>University of Essex</i>
1130	The magnetic compass mechanisms of birds and mammals are based on different physical principles P Thalau, <i>J.W.Goethe-University Frankfurt</i>
1150	Encoding of geometric information for orientation by Clark's nutcrackers, <i>Nucifraga Columbiana</i> D M Kelly, <i>University of Saskatchewan</i>
1210	CLOSING ADDRESS T Burt de Perera, <i>University of Oxford</i>

1230 LUNCH AND END OF CONFERENCE





ROYAL INSTITUTE OF NAVIGATION

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