

ASSOCIATION OF APPLIED BIOLOGISTS
President: Professor Michael Jeger PhD, FIBiol, FIMA, FLS
**Integrated Agricultural Systems:
Methodologies, modelling and measuring**

at SAC, Edinburgh, UK

2-4 June 2009

BOOKING FORM

SURNAME: INITIALS:

TITLE (Prof/Dr/Mr/Mrs/Ms or other):

PREFERRED NAME FOR BADGING:

STATUS (Delete as appropriate): AAB/AES/BSAS Member/Retired Member/Student Member
Non-Member*/Student Non-Member*

MAILING ADDRESS:

..... POST CODE:

Tel No: Fax No: E-mail:

NOTES

1. STUDENTS. It is the Association's policy to grant reduced registration fees to students. This provision is subject to space being available and booking forms must be accompanied by a signed statement from the student's supervisor attesting that he/she is a full-time student. If students would like to apply for an AAB Student Travel Grant (travel within the UK only) please send your request in writing to the AAB Office. Forms are available on the AAB Web Page: <http://www.aab.org.uk>
2. Conferences of the Association are private but visitors are most welcome. The publishing of reports of papers given at these conferences should only be done with the permission of the organiser and the authors of the papers concerned, who may require to see proofs before this permission is given.
3. The Association would like to send you details of relevant conferences in the future. Please tick box if you do not want to receive these details
4. Please note that photographs are sometimes taken at AAB conferences which we publish in our Newsletter to members.

Please indicate if there are other topics you would like to see covered in the workshop sessions:

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*AAB full membership for 2009 is £52.00 and £26.00 for students
For further details on membership contact the AAB Office



President: Professor Michael Jeger PhD, FIBiol, FIMA, FLS

In Conjunction with the Agricultural Economical Society & the
British Society of Animal Science

A 3 day conference at SAC, Edinburgh, UK

on 2-4 June 2009

**PROGRAMME &
BOOKING FORM**

**Integrated Agricultural Systems:
Methodologies, Modelling and Measuring**



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Integrated Agricultural Systems: Methodologies, modelling and measuring

SAC, Edinburgh, UK

2-4 June 2009

PROGRAMME

(BASIS Points have been applied for)

TUESDAY 2 JUNE 2009

12.00-13.00 **Lunch and registration**

13.00 **Welcome GRAHAM RUSSELL**

13.05 **Opening Address – Professor Maggie Gill**, Chief Scientist, Scottish Government, RERAD,
Meeting the evidence needs of policymakers through integration across sectors and disciplines

Session 1 Multi-functionality of land use

13.35 **The value of producing food, energy and ecosystem services within an agro-ecosystem**
J PORTER (University of Copenhagen, Denmark)

13.55 **Modelling synergies and scope economies between farm enterprises and ecosystem outputs in the agricultural sector in England and Wales**
E FLEMING (University of New England, Australia), D HADLEY (University of East Anglia, Norwich, UK) & G HOLLOWAY (University of Reading, UK)

14.15 **Prioritising multi-functional land-use - an exploration with stakeholder groups**
E A STOCKDALE, R E CREAMER (University of Newcastle, UK), R M REES (SAC, Edinburgh, UK), K T W GOULDING (Rothamsted Research, Harpenden, UK), C J DOYLE (Larch Research Ltd, Ayr, UK) & C A WATSON (SAC, Aberdeen, UK)

14.35 **The Economic and environmental significance of dairy farming in a regional economy of New Zealand**
C DAKE (AgResearch Limited, Hamilton, New Zealand), O MONTES DE OCA, J LENNOX (Landcare Research, Lincoln, New Zealand) & M E WEDDERBURN (AgResearch Limited, Hamilton, New Zealand)

14.55 **Discussion**

15.10 **Tea**

Session 2 Carbon Management

15.40 **Keynote Speaker**
Title to be confirmed
DR JOHN GILLILAND (Co-Chair of the Defra, Rural Climate Change Forum)

16.10 **Climate change and agriculture: Integrating agricultural greenhouse gas emissions into an agricultural trade model to assess the economic and environmental implications of extreme weather events and bio-energy policy**
A WREFORD (SAC Edinburgh, UK), S CAGATAY (Dept of Economics, Akdeniz University, Turkey) & C SAUNDERS (AERU, Lincoln University, Canterbury, New Zealand)

16.25 **Moving from reactive to proactive modelling of agricultural greenhouse mitigation**
M MACLEOD, D MORAN, V EORY, A McVITTIE, A BARNES, C F E TOPP, R M REES & E WALL (SAC Edinburgh, UK)

16.40 **Environmental impacts of UK pig production systems: Analysis using Life Cycle Assessment**
K L STEPHEN, B T TOLKAMP, C F E TOPP, J G M DIUDIJK (SAC, Edinburgh, UK) & I KYRIAZAKIS (University of Thessaly, Greece)

16.55 **Modelling methane output from lactating and dry dairy cows**
M J BELL, E WALL (SAC Edinburgh, UK), G RUSSELL (University of Edinburgh, UK) & G SIMM (SAC Edinburgh, UK)

17.10 **Discussion**

17.30 **Poster Session**

18.30 **Drinks reception followed by the Conference dinner (BBQ) at the Arcade, SAC**

WEDNESDAY 3 JUNE 2009

Session 3 Analysis across-scales, Chair GRAHAM RUSSELL

09.00 **Keynote Speaker**
Integration across disciplines: the lessons learnt from the integrated project SEAMLESS
M K VAN ITTERSUM (Wageningen University, the Netherlands)

09.30 **Meeting the challenges of bio-economic modelling in practice: a catchment study from Eastern Scotland**
I MOURATIADOU (University of Edinburgh, UK), C F E TOPP (SAC Edinburgh, UK) & G RUSSELL (University of Edinburgh, UK)

09.45 **Modelling the regional economic effects of the Water Framework Directive - the usefulness of a system dynamic approach**
H BERGMANN (Georg-August-University of Göttingen, Germany) & K J THOMSON (University of Aberdeen, UK)

10.00 **Integrated cost benefit analysis of agricultural diffuse pollution control**
R GOODAY, S ANTHONY, D DUETHMANN, P NEWELL-PRICE, D HARRIS (ADAS, Wolverhampton, UK) & D CHADWICK (North Wyck Research, Okehampton, UK)

10.15 **The trade and environmental impact of the abolition of milk quotas in Scotland**
L TOMA, A BARNES & A RENWICK (SAC Edinburgh, UK)

10.30 **Discussion**

10.50 **Tea**

- 11.15 **Workshop sessions**
(1) Quantifying the Environmental Impact of Livestock Systems - The Role of Life Cycle Analysis
(2) Modelling on the web - development of an online model repository and web-based tools for displaying and running models
(3) Component Models – Short presentations selected from posters* followed by discussion
(4) Other topics suggested by the participants (see booking form)

12.45 **Lunch**

Session 4 Integrated Assessment, Chair ALAN RENWICK

- 13.45 **Keynote Speaker**
Title to be confirmed
R NELSON (CSIRO, Australia)
- 14.15 **Investigating climate change impacts and adaptation options using integrated assessment methods**
M RIVINGTON, K B MATTHEWS, K BUCHAN, D MILLER (MLURI, Aberdeen, UK) & G RUSSELL (University of Edinburgh, UK)
- 14.35 **Combining systems thinking with a qualitative stakeholder process: a case study in regional land fragmentation in New Zealand**
M WEDDERBURN, D SMALL (AgResearch, Hamilton, New Zealand), M O'CONNOR (University de Versailles Saint-Quentin-en-Yvelines, Paris, France), T BARNARD (SCION, Roturua, New Zealand), D T RUTLEDGE (Landcare Research, Hamilton, New Zealand), B HUSER, U TREBILCO (Environment Waikato, Hamilton, New Zealand), D HOOD (Waikato District Health Board, Hamilton, New Zealand) & M BUTLER (Environment Bay of Plenty, Whakatane, New Zealand)
- 14.55 **The bias danger of incorporating business risk into biophysical-economic models: a critical review of the existing economic approaches**
D MAY & G J TATE (University of Wolverhampton, UK)
- 15.15 **Discussion**
- 15.35 **Tea**

Session 5 Tools for analysing farm-scale systems, Chair NEIL MCROBERTS

- 16.00 **Keynote Speaker**
Models of agricultural systems to guide research and optimal management of soil-water-nutrient resources and enhance environmental quality under varying climatic conditions
L R AHUJA, L MA, S A SASEENDRAN & Q X FANG (USDA-ARS, Fort Collins, CO, USA)
- 16.30 **Development and application of a profit maximising whole farm model for milk production systems**
D ANDERSON, A CARSON (Agri-Food and Biosciences Institute, Northern Ireland, UK) & S MAYNE (Dept of Agriculture and Rural Environment, Northern Ireland, UK)
- 16.50 **Modelling agri-environment interactions and trade-offs using *Farm-adapt* - integration of models, investigation of scale, dynamics and uncertainty**
S RAMSDEN (University of Nottingham, UK) & J G GIBBONS (Bangor University, UK)
- 17.10 **Contribution of integrated crop management practices (IFM) to Defra objectives**
S COOK (ADAS, Boxworth), R H COLLIER (Warwick HRI, UK), J H CLARKE (ADAS Boxworth, UK) & R LILLYWHITE (Warwick HRI, UK)

17.30 **Discussion**

19.30 **Optional dinner at the Hard Rock Cafe, Edinburgh**

THURSDAY 4 JUNE 2009

Session 6 Public Goods from farming systems and contrasting farming systems

- 9.00 **An application of agri-environmental indicators to panels of New Zealand farms**
C SAUNDERS, D KOLANDAI, G GREE, W KAYE-BLAKE & L-C SORENSEN (Lincoln University, New Zealand)
- 9.20 **The development of a single strategy for the integration of quantitative and qualitative data types for the production of agricultural decision support systems**
R BURGESS (SAC Edinburgh, UK)
- 9.40 **Evaluating the sustainability of extensive hill farming - simple farming systems but difficult to model**
A WATERHOUSE, J P HOLLAND & C MORGAN-DAVIES (SAC Edinburgh, UK)
- 10.00 **Evaluating extensive sheep farming systems**
A W STOTT, B VOSOUGH-AHMADI, C MORGAN-DAVIES, C DWYER (SAC Edinburgh, UK), P GODDARD (MLURI, Aberdeen, UK), C E MILNE (ADAS Drayton, Stratford-upon-Avon, UK), C MILNE, B KUPIEC, S RINGROSE & A WATERHOUSE (SAC Edinburgh, UK)
- 10.20 **Assessing the environmental impacts of contrasting farming systems**
H TUOMISTO (University of Oxford, UK), I D HODGE (University of Cambridge, UK), P RIORDAN & D W McDONALD (University of Oxford, UK)
- 10.40 **Discussion**
- 11.00 **Tea**
- 11.30 **Panel Discussion:** How can our knowledge of integrated agricultural systems be used to support government policy making in relation to agri-environmental challenges such as climate change?
- 12.30 **Packed lunch and end of Conference**

Posters

- 1. Across scales**
Agricultural Policy Optimiser (APoI): A new class of model for integrated analysis of multiple policy objectives
N McROBERTS, K VERVERIDIS & A BARNES (SAC Edinburgh, UK))

Use of multivariate methods to summarise the results from an evolutionary policy optimisation model (APoI): A case study for Scottish Agriculture
N McROBERTS, K VERVERIDIS & A BARNES (SAC Edinburgh, UK))
- 2. Tools for analysing farm-scale systems**
A dynamic programming model for estimating the value of genetic improvements in the pig*
J NIEMI, M-L SEVÒN-AIMONEN & K PIETOLA (MTT Economic Research, Finland)

Identification of strategic drivers for extensive hill sheep farms post CAP reform
C MORGAN-DAVIES, A WATERHOUSE, C DWYER (SAC Edinburgh, UK), P GODDARD (MLURI, Aberdeen, UK), K PHILLIPS (ADAS Wolverhampton, UK), C E MILNE, B KUPIEC, S RINGROSE & A W STOTT (SAC Edinburgh, UK)

