James Rennie Bequest Report

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Purpose for which James Rennie Bequest funds were obtained

Funds awarded by the James Rennie Bequest Fund made it possible for me to attend the 2001 European Science Foundation (ESF) Spring School in Portugal. This was the first spring school within the ESF Programme **LINKECOL: Linking community and ecosystem ecology**, co-ordinated by Professor Nina Buchmann at the Max Planck Institute for Biogeochemistry, Germany and hosted by Dr Joao Pereira at the Instituto Superior de Agronomia, Lisbon, Portugal. The theme of the spring school was 'Stable isotopes in community and ecosystem studies'.

The main aim of the spring school was to bring together PhD students, post-docs and established researchers involved in using stable isotope techniques to answer community and ecosystem problems. All the participants at the spring school were currently studying and completing research in European Research Institutes or Universities.

The underlying rational for such a school is that the use of stable isotopes in ecological research is a very young but very promising discipline. Experience in these techniques is still rather limited and concentrated in a few national centres, and there is a definite need to increase expertise throughout Europe. Participants came from a wide range of backgrounds and covered many organisational scales from the individual to the community, from the ecosystem to the region and from both terrestrial and aquatic ecosystems. Participants also had experience of using many different stable isotopes (Oxygen 18, Carbon 13, Carbon 14, Nitrogen 15 and Deuterium) to answer both general and specific ecological questions.

The format of the school was as follows,
Mornings – Lectures
Lunch – Informal discussion of topics raised in the morning lectures
Afternoon – Presentations

Lectures

The lecture series covered many isotopes and ecosystems, e.g.,

Carbon isotope fractionation in plants – Dr Enrico Brugnoli, CNR Istituto per l'Agroselvicoltura
^{18}O in leaf and soil waters – Dr Dan Yakir, Weizmann Institute of Science
^{15}N tracer experiments – Professor Nina Buchmann, MPI, Germany
^{34}S and air pollution – Dr Anette Giesemann, Federal Agricultural Research Centre, Germany
Tree rings and climate reconstruction using H and O – Dr Rolf Siegwolf, Paul Scherrer Institute, Switzerland

All the lecturers were extremely friendly and open to discuss their research with individuals. They were very happy to look at graphs from participants own data

collection and gave possible avenues of exploration and lots of encouragement. Also part of the lecturer requirement for attendance on the course was that they should stay for a minimum of three days, thereby allowing participants to get to know the lecturers and creating a very relaxed environment, which aided fluid scientific discussion.

Informal lunches

This I feel was the strength of the spring school, sitting down, usually outside on the ground, with 4-6 individuals (both participants and lecturers) and going over the details of a lecture. Having opportunities to discuss new concepts, to work through calculations with others and to try to make links between different research interests and topics was immensely valuable. The relaxed and informal setting allowed everyone to make their contribution, and to clarify sometimes complex ideas.

Presentations

Participants presented ideas for projects they were about to start or results obtained from recent projects to obtain feedback on scientific content and also to obtain constructive criticism on presentation style and content. My own presentation was concerned with the measurement of photosynthetic fluxes and the instantaneous discrimination of ^{13} C and ^{18} O during this process.

Much of my own work and reading into the use of stable isotopes was clarified and put in a broader context during these seminars. It was great to have the opportunity to question these lecturers and provide increased depth to my knowledge through the subsequent discussions. Furthermore, it was also beneficial to meet and make friends with other students at the same stage of study, these people will become my peers as my scientific career progresses.

Follow on

After attending the spring school, I have maintained contact with many of the participants, and have established both scientific collaborations and personal friendships. I have hosted the visit of a PhD student, Fernando Lattanzi from Technische Universitat Munchen, Germany to my own institute to give a seminar on 'Sources of carbon and nitrogen utilised in leaf growth in C_3/C_4 mixed swards after defoliation'. I have also hosted the visit of one of the lecturers, Dr Natacha Poirier, University of Bristol who gave a seminar in the Institute seminar series, entitled 'Determination of carbon dynamics in soils using ^{13}C as a natural tracer'.

Through contacts made at the spring school I also made a visit to the Max Planck Institute, Jena Germany to work on my data.

The spring school experience was extremely positive and I would like to thank the James Rennie Bequest Fund for making the trip possible.