



emBARCation



THE OFFICIAL NEWSLETTER OF BARC

FALL/WINTER 2006

BARC is Born

We are pleased to announce the creation of the Bioaccessibility Research Canada (BARC) co-operative, the long-term objective of which is to provide a scientific basis for evaluating and predicting inorganic and organic contaminant bioaccessibility in soils found at contaminated sites in Canada.

BARC grew out of a Health Canada-sponsored workshop in 2005, which hosted a number of government, academic and industry representatives. There was widespread agreement that a group should be formed to address the issue of contaminant bioaccessibility, and Drs. Beverly Hale, University of Guelph, and Ken Reimer, Royal Military College, agreed to be co-chairs. The proceedings of this meeting can be found at http://www.hc-sc.gc.ca/ewh-semt/contamsite/proj_pubs_journal_e.html#articles.



Dr. Beverly Hale
University of Guelph



Dr. Ken Reimer
Royal Military College

BARCs Mission

BARC will develop a matrix of the expected bioaccessibilities of a number of contaminants in a variety of soils, including a number of assumptions (fasting conditions, age of the target population, dietary components, soil characteristics and method of determination). To a limited extent, these bioaccessibility estimates will be validated with *in-vivo* studies.

An initial three-year mandate is proposed. The activities for the first year will be:

- to conduct a round-robin study of laboratory performance of bioaccessibility methods, using a commercial standard reference material;
- to identify and prepare two contaminated soils as standard reference materials;
- to conduct an industry workshop for groups that have an interest in estimating bioaccessibility at contaminated sites;
- to prepare and submit an industry partnership research proposal to a major funding agency for a number of investigators, in order to probe the mechanistic bases of bioaccessibility estimates; and
- to produce two newsletters annually that will disseminate information among bioaccessibility and bioavailability researchers across Canada, including industry participants.

Partner Organizations

BARC has close links with two high-profile bioaccessibility research groups: the Bioaccessibility Research Group of Europe (BARGE), based in the UK, and Dr. Nick Basta's research group at the School of Natural Resources of the University of Ohio, also a prominent BARGE member.



Dr. Nick Basta
University of Ohio

BARGE's research activities are gaining international interest. At last year's CONSOIL meeting in Bordeaux, France, the group organized a special session, representing European and North American members, entitled Developments in Bioaccessibility Measurement and its Application in Human Health Risk Assessment (<http://www.bgs.ac.uk/barge/CONSOIL.html>). From this, the response to bioaccessibility research was overwhelmingly positive. **"The message loud and clear was that bioaccessibility is coming of age and has to be considered in contaminated land analysis."**--*Brownfield Briefing Magazine, October, 2005.*

More recently BARGE has embarked on a round-robin exercise to develop and validate a physiologically based *in-vitro* bioaccessibility test for arsenic, cadmium and lead. The round robin includes all BARGE members that have laboratory capabilities, and has been organized and funded by the British Geological Survey (BGS), members of which currently hold positions as chair and secretary of BARGE.



Dr. Joanna Wragg
BARGE

To utilize the close links established with BARGE, the BARC round robin will be organized with the assistance of current BARGE secretary Dr. Joanna Wragg, who is currently undertaking a postdoctoral fellowship with Dr. Reimer of the Environmental Sciences Group at the Royal Military College of Canada.

Looking to the Future

At the recent meeting of the Society of Environmental Toxicology and Chemistry (SETAC), held in Montreal, members from both BARC and BARGE held an informal meeting with other prominent researchers and government agencies from across North America. This meeting was held after a session dedicated to bioaccessibility related issues and provided an ideal opportunity to:

- raise awareness of the existence of BARC and BARGE
- launch the BARC newsletter
- begin to discuss the way forward for our branch of science

It is hoped that BARC will eventually include every institution in Canada that is interested in bioaccessibility issues, and we encourage the wide circulation of this newsletter, so please forward freely! A questionnaire is attached and, when completed, please click the 'e-mail' button to have your results sent to Dr. Joanna Wragg.