

Certification and Proficiency Testing Workshop 17–19 March 2014

In line with one of its core aims to improve the assessment of measurement uncertainty and data quality through proficiency testing and the development of reference materials, the IAG occasionally organises workshops that enable Council members and external experts discuss latest developments.

The venue for this workshop was the Kavli Royal Society International Centre at Chicheley Hall near Milton Keynes, UK, a stunning early 18th-century mansion set in 80 acres of beautifully kept grounds. The secluded location meant there were few distractions to lure participants (see photo) away from their main purpose, which was to consider the effectiveness of the IAG Proficiency Testing and Certification Protocols and to recommend revisions as necessary. The IAG was very pleased to welcome Steve Ellison (LGC Group) and Christophe Quélet (IRMM) as external mentors on the certification of geological reference materials under ISO Guide 35 and some of the challenges this represents, particularly those involving the assessment of uncertainties and traceability.



Members of the IAG Certification and Proficiency Testing Committee at their specialist workshop at Chicheley Hall, UK, in March 2014

The workshop reviewed the operational aspects of GeoPT, IAG's proficiency testing scheme for powdered silicate rocks. Since its inauguration in 1996, GeoPT has amassed a large amount of data, with some 90 laboratories contributing 3000–3500 values in recent rounds. Trends in reported data and overall performance of the scheme were used as a basis for proposing possible modifications. Outcomes from these sessions will be presented at a GeoPT user's forum during the Geoanalysis 2015 conference on 8–14 August 2015, in Leoben, Austria.

Discussions on the role of G-Probe, IAG's microanalytical proficiency testing programme, highlighted the difficulties in developing test materials for *in situ* analytical techniques as diverse as EPMA and LA-ICP-MS. In this case, one technique requires major element homogeneity at the 2 μm spot size, whereas the other requires trace element (mg kg^{-1}) homogeneity at 20–50 μm . The production of materials for the G-Probe programme has already resulted in several advances pertinent to the development of microanalytical reference materials.

Future G-Probe efforts offer a multitude of opportunities with respect to the development of new materials, including synthetic minerals, with an expanded range of major element, trace element and isotopic compositions, unusual element matrices, and mixtures of glasses and powders that will expand the usefulness to techniques such as LIBS and LA-ICP-MS. The format of the workshop enabled participants to propose ideas that might have been regarded as heretical in other situations and led to a common understanding of many of the fundamental issues raised.

Thanks to some splendid organisation behind the scenes by Phil Potts and Jenny Cook, the workshop successfully laid the groundwork for implementing the agreed priorities for the IAG's proficiency testing and certification programmes.