



Geologiliitto ry
The Finnish Union of Geologists



Best practice geochemical (and structural) workflows for geologists, using ioGAS™

Espoo, 30.-31.3.2020

At GTK's Espoo headquarters, Vuorimiehentie 5, Otaniemi



NICK OLIVER

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A two full day's course presented by Nick Oliver (HCOVGlobal) and colleagues on behalf of Geologiliitto ry

Assisted by Nick Cook of Mawson Resources and James Cleverley of IMDEX. Includes a great opportunity to use your own datasets during the practical components of the workshop

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ioGAS™ is the premium geochemical package for geologists, but also has high-level capacity in enhanced mapping, structural geology, fusing geochemistry and structure, and easy export of 2D and 3D outputs into GIS and 3D modelling packages (including GoogleEarth, Mapinfo, ArcGIS, QGIS and Leapfrog). More than a decade of development and knowledge transfer from ioGAS™ experts has resulted in optimised workflows and easy-to-use tools that incorporate industry best practice in interpretive techniques. Over 500 commercial, government and academic research organizations are using ioGAS, and the global impact on efficient workflows is now widely recognised. This recognition has been attained by the easy and intuitive user interface, the logical yet flexible structure of the program, the easy translation of results into other mapping and 3D modelling software (especially Leapfrog), on-line webinars and support within the IMDEX network, data transfer and management excellence (including via IMDEXHUB-IQ™) and the consequent excellent value-for-money equation.

This course is intended for geologists working in the minerals sector, geological surveys, and research organizations, to learn and/or improve their ioGAS skills, no matter their level of experience. Until you've used ioGAS, you won't understand how effective it is for optimising workflows, teaching you new geochemical, geostatistical and structural skills, and generally making your life easier and more productive through its cleverly engineered interface.

The course also offers a unique opportunity to use your own datasets (with confidentiality maintained) during the second day of the workshop, thus maximising the potential that you will gain direct and immediate benefit from the use of ioGAS. Irrespective of whether you choose to use your own data, the workshop will involve a strong, hands-on practical component, via access to a fully enabled ioGAS server link during the course.

The workshop will cover:

- Data suitability and QAQC of data, types of geochemical (and other) data suitable for use in ioGAS
- Principles of the use of geochemistry in primary (sedimentary, igneous) and secondary (metamorphic, hydrothermal) environments, focussed on how to subsequently solve with ioGAS
- Data import, using 'Data Doctor', how to get up and running
- Basic tools of data classification
- Functionality of embedded diagrams
- Using published mineral and rock compositions to help understand your system
- Distinguishing protolith variability from alteration, metamorphism and veining
- Intermediate to advanced data classification, geostatistics in ioGAS
- Visualization in ioGAS – 2D, 3D, down-hole, maps, grids
- Speaking with other systems – export styles for GIS and 3D packages and the ioGAS/Leapfrog link
- Linking other datasets within and around ioGAS – structural data cleanup, alpha/beta to dip/dir conversion, attributing structure data with geochemistry and vice versa, linking to down-hole/3D and mapped surface data (e.g. spectral, geophysics), extracting vein abundance and identifying replacement trends
- Applying all the above to your own data, or a provided dataset
- Developing time-saving workflows in ioGAS

Who should attend

The course is suitable for geologists of any experience (students, researchers, industry, geological surveys) who are wanting to learn how to best handle geochemical (and structural) datasets. A basic geochemical understanding is useful, but the course will be suitable for novice geochemists, geologists with geochemical skills who have not yet tried ioGAS, and existing ioGAS users with a range of experience. On the second day, an extra ioGAS training expert will be available, ensuring that people that already have substantial ioGAS experience will still be able to develop further by focussing on aspects of the program that are more closely related to their own data and problems.

The presenters: **Nick Oliver** (PhD, FSEG, FAIG, MSGA) is a consultant specialising in the assessment and fusion of geochemical, structural, and geophysical datasets and application of these to solving field-, drill core- and mine-based geological problems. He has used ioGAS on over 50 projects in the last 10 years, including consulting jobs in northern Finland and Sweden since 2013. Nick Oliver ran several collaborative research, training, and graduate student programs with the GTK in the 1998-2005 period, when he was Professor of Economic Geology and Director of the Economic Geology Research Unit at James Cook University in northern Australia. He has delivered short courses to over 4500 geologists, including courses on fusing geochemistry and structure in Helsinki and Luleå in 2018, and together with **Nick Cook** (PhD, Mawson Resources) and **James Cleverley** (PhD, Reflex/Imdex) presented a successful course on drill core analysis and interpretation at FEM, Levi, in October 2019, where he also delivered a keynote talk. Together with Rod Holcombe (HCOVGlobal) and REFLEX geoscientists, Nick Oliver assisted in the development of linked stereographic projections and geochemical analysis in REFLEX's ioGAS software package. **Nick Cook** has a wealth of practical exploration experience in the Fennoscandian context, and has used ioGAS successfully in the progressive development of the Rajapalot Au-Co resource in Lapland. **James Cleverley's** background in hydrothermal geochemistry R&D puts him in a major technical leadership role within the IMDEX family of companies, and he has been intimately involved with some of the 'cutting-edge' capabilities of ioGAS as well as across the spectrum of IMDEX's geoscientific, industrial platforms.

Nick Oliver and Nick Cook are Promoters for ioGAS but are not employees of IMDEX/REFLEX. HCOVGlobal is a consortium of independent consultants and Nick Oliver trades as HCO Associates Pty Ltd within that consortium. Nick Cook is acting as an independent consultant for the purposes of this course, but his involvement is endorsed by Mawson Resources.

Costs and logistics

Standard price 400€. Loimu & Geologiliitto members 350€. Ph.D. students 150€.

Vuorimiehentie 5 can be easily accessed by Subway from Helsinki city centre. Closest hotel is Radisson Blu Otaniemi.

Dinner will be on Monday at 19.00 in Fat Lizard restaurant in Otaniemi. Registration: <https://forms.gle/r9Hxh1CsL3P6tfmu9>

COURSE SPONSORS

