



NuGO Association

2013 Annual Report



NuGO, the world-leading network on nutrigenomics (www.nugo.org), is a partnership of 25 academic and research institutes, and a virtual centre of excellence:

- Integrating genomic technologies for the benefit of European nutritional science
- Facilitating application of these technologies in diet and health research
- Training a new generation of European scientists to use them

This, the first NuGO Association Annual Report, summarises the highlights of 2013:

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› 01: Management

In September 2013, Dr Ben van Ommen resigned as CEO of NuGO although he remains an active participant. Ben coordinated writing of the project proposal, submitted in April 2003, which resulted in the FP6 grant for the NuGO Network of Excellence (NoE, 2004-2010), and he was the scientific coordinator for the subsequent six and half years. In 2008-2010, he combined this position with that of the NuGO Association CEO.

Professor Hannelore Daniel has also resigned as member of the Executive Committee. Professor Michael Muller, already member of the Executive Committee, has agreed to act as interim CEO until September 2014.

As of end of 2013, the NuGO Executive Committee comprises:

- Dr Lorraine Brennan, University College Dublin (IE)
- Prof. Lars Dragsted, University of Copenhagen (DK)
- Prof. Christian A. Drevon, University of Oslo (NO)
- Dr Jim Kaput, Nestle Institute of Health Sciences, Nestlé (CH)
- Dr Giuditta Perozzi, CRA-NUT (formerly INRAN) (IT)
- Dr Baukje de Roos, University of Aberdeen (UK)
- Dr Marjukka Kolehmainen, University of Eastern Finland (FI)



Dr Ben van Ommen (TNO, NL)

Meetings of the Executive Committee were held in March (Madrid), June (Amsterdam) and September (Munich) 2013.

The annual meeting of the NuGO Association (Participants' Assembly) took place on Thursday, 12th September in Munich (DE) at the end of NuGOweek 2013. Of the then 24 member organisations, 19 were present, and it was decided NuGOweek 2014 would be held in Italy (near Naples) and NuGOweek 2015 in Barcelona (ES).

› 02: Events

› 02:1 NuGOweek 2013

NuGOweek 2013 'Nutrigenomics & more' was held in Freising-Weihenstephan, hosted by Professor Hannelore Daniel (Ziel Research Center for Nutrition and Food Sciences, Technische Universität München, DE), and co-organised with Deutsche Gesellschaft für Ernährung e.V. (German Nutrition Society) and NuGO.



The conference attracted 190 participants and topics included:

- Evolution & genomes
- Genes and what we like
- Genes and BMI
- Genetics and genomics in metabolic syndrome research
- Diet and genome in cancer development
- Genetics and genomics in diabetes research
- Biology of omega-3-fatty acids
- Diet responses on the background of genetic variation
- Nutrigenomics technologies
- New projects – new approaches
- The future of diet – health research in Europe



› 02:2 Workshops & Symposia

Phenotypic flexibility, February 2013

In February 2013, the NuGO Secretariat supported ILSI Europe to deliver the 'Phenotypic Flexibility' Symposium in Madrid (ES), an output of the EU-funded projects BIOCLAIMS and NutriTECH as well as a TNO-lead project PhenFlex. There were more than 200 participants, and several NuGO members received a travel grant from either NuGO or NutriTECH:

NuGO-funded:

- Sergio Polakof - INRA, Clermont Ferrand (FR)
- Sara Tulipiani - Universitat de Barcelona (ES)

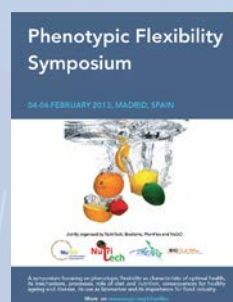
NutriTECH funded via ILSI:

- Lidia Daimiel-Ruiz - IMDEA, Madrid (ES)
- Valentini Kostantnidou - IMDEA, Madrid (ES)
- Kerstin Ehlers - Technische Universität München
- Femke Hoevenaars - Wageningen University (NL)
- Yaona Kiselova - Medical University Varna (BG)

Translational Research in Human Nutrition, March 2013

The Second International Congress of Translational Research in Human Nutrition in Clermont Ferrand (FR, 8-9th March 2013) was supported with eight NuGO travel grants:

- Maria Arregui - DiFE (DE)
- Rafael Llorach Asuncion - Universitat de Barcelona (ES)
- David Liesenfeld DFKZ (DE)
- Lesley Hamill - University of Ulster/ University of Belfast (UK)
- Besim Ozyel - IFR (UK)
- Rosaria Piga - Wageningen University (NL)
- Mireia Urpi Sarda - Universitat de Barcelona (ES)
- Maj-Britt Schmidt Andersen - University of Copenhagen (DK)



Systems biology and the Millenium Development Goals

November 2012: The workshop 'Can systems biology add to the Millennium Development Goals of optimal nutrition?' (7-9th November 2012, Wageningen, NL) organised under the "neutral leadership" of NuGO, and with financial support from the Bill & Melinda Gates Foundation, resulted in a publication: Kaput et al. (2014) Consensus statement understanding health and malnutrition through a systems approach: the ENOUGH program for early life. *Genes & Nutrition* 9(1):378. doi: [10.1007/s12263-013-0378-y](https://doi.org/10.1007/s12263-013-0378-y)

June 2013: Dr Jim Kaput (Nestlé Institute of Health Sciences, CH) hosted a follow up workshop with 20 participants (17-18th June 2013). During this workshop, a four-tiered research approach was proposed, which includes capitalising on (1) existing data from publications or consortia funded by philanthropic organisations, (2) samples collected from these consortia, (3) new research studies with one harmonised intervention at sites with well established programmes (Gambia, Ghana, Malawi) or (4) building capacity. The organisers are in discussions with the Bill & Melinda Gates Foundation.

September 2013: In September 2013, DSM hosted a third workshop on state-of-the-art laboratory technologies used for analysing one or more essential nutrients. Participants (27) enjoyed presentations on water- and fat-soluble vitamins, amino acids and minerals as well as new developments. A review paper describing the methods is under development.

› 02:3 Courses

NuGO will support the following courses in 2014:

- Microarray analysis using R & Bioconductor (January 2014 – Maastricht, NL)
- Introduction to nutritional metabolomics (February 2014 – Copenhagen, DK)
- Advanced visualization, integration and biological interpretation of – omics data (May 2014 – Wageningen, NL)
- Signal proteins related to diet and exercise (June 2014 – Oslo, NO)
- Nutrigenomics studies in humans: from epidemiology to intervention (September 2014 - NuGOweek 2014, Naples, IT)

The annual 'Master Class in Nutrigenomics' (Wageningen, NL - August 2013) was cancelled.



› 03: Partnerships

› 03:1 Nutrigenomics research and infrastructure projects

› **Food4Me** (coordinated by Prof. Mike Gibney, University College Dublin, IE) - www.food4me.org

NuGO is tasked with constructing personalised nutrition information systems, which will be delivered by Dr Keith Grimaldi (Eurogenetica, GR) as 3rd Party under NuGO.

Three Masters students (NL and IT) have assisted in the activities, which include several workshops. NuGO is working in collaboration with TNO (NL) on tasks based around diet-gene-health interactions, and the work completed can be summarised as:

- Creating a list of 30+ genetic variants and choosing five to use in the PoP study
- Building a database of diet-gene interactions
- Developing a framework for the assessment of the scientific validity and the impact on health of a diet-gene interaction – the draft framework is complete and is under review by a network of experts in the Food4Me
- Initiating ‘nutritional gene cards’ series, which will be a regular feature in Genes & Nutrition – each card summarises the evidence for a particular diet-gene interaction, and concludes with an opinion based on the framework for assessment



› **NutriTECH** (coordinated by Dr Ben van Ommen, TNO, NL) - www.nugo.org/nutritech

NuGO was tasked with delivering the ‘Phenotypic Flexibility’ Symposium, which was undertaken by Ingeborg van Leeuwen-Bol and Dr Fré Pepping (Wageningen University, NL).



› **EuroDISH** (coordinated by Stichting Dienst Landbouwkundig Onderzoek and Wageningen University, NL) - www.eurodish.eu

NuGO is engaged in exploration of ‘research infrastructure for innovative mechanistic studies’ (WP8) and activities involve TNO (NL), Maastricht University (NL), University of Oslo (NO) and the University of Copenhagen (DK) as 3rd Parties under NuGO, coordinated by Dr Giuditta Perozzi (CRA-NUT, IT).



› **QualiFY** (coordinated by RTD Services, AT) - www.qualify-fp7.eu

Under the umbrella of NuGO, Technische Universität München (DE), University of Copenhagen (DK), University of Eastern Finland (FI), Wageningen University (NL) aim to valorise and integrate of concepts, tools and infrastructures developed by various FP6 and FP7 projects.



QualiFY

› 03:2 Nutrigenomics resources

› Nutritional Phenotype Database (dbNP)

NuGO provides financial assistance to some pilot activities for dbNP and, in 2013, dbNP was developed fully as a 'study capture and storage' database. The fundamental difference with dbNP is it does not store 'minimal data', as most omics databases do (e.g. MIAME), but all the data available, e.g. study design, analytical assays and data pre-processing. A series of 43 human intervention and mouse model studies have been uploaded with three publicly (wholly) available. All data from the NuGO Proof-of-Principle Study (PPS) are available at studies.dbnp.org.



› Nutrition Researcher Cohort (NRC)

The idea to launch a nutrition researcher cohort was presented by Ben van Ommen during the closing session of NuGOweek 2012 in Helsinki (FI). This research initiative aims to develop a new concept of nutrition and health research with participants self-reporting on a series of measurements (do-it-yourself or lab-based) at the frequency and specificity chosen by the individual. The 'NRC initiation study' was launched during NuGOweek 2013; there was a kick-off meeting on 4-5th December 2013 and a subsequent workshop (Rome IT, April 2014). NRC is financed through in-kind contributions from (mainly) TNO (NL) and some NuGO member organisations performing analyses of dried blood spots. NuGO has provided support for the workshops and meetings.



› 04: Other activities

› NuGO-net and public relations

The NuGO website continues to be hosted and maintained by Topshare International BV, and is used by NutriTECH as a repository for project documents. In October 2013, a start was made with 'weekly news items', which are posted on the home page. This activity is supported by an updated address book (5000 people logged on since 2004) and should result in better dissemination of information about what is going on within the Association. Facebook and/or Twitter might follow in 2014.

› NuGO shared licenses

The use of software packages from Genomatix and Metacore continued in 2013. A 'quick and dirty' inventory was made among key users and, as a result, it was decided to extend the licenses until end of 2015.

› NuGO Association Grants

The following received a grant in 2013 to attend NuGO sponsored activities (apart from those listed elsewhere):

- Karl Cogan - University College Dublin (IE)
- Cecile Gladine - INRA, Clermont Ferrand (FR)

for the Sysdiet-Nordfood workshop: Health effects of the Nordic Diet (13-15th November 2013, Oslo, NO).

› NuGO Secretariat

The NuGO Secretariat is based at Wageningen University (NL) in the office of the Graduate School VLAG. Ingeborg van Leeuwen-Bol takes care of the course coordination, communication and financial administration whilst Dr Fré Pepping is the Executive Secretary responsible for overall coordination and management issues.

› 05: Membership

NuGO membership is open to organisations only, but individuals are welcome to participate in the events organised by NuGO. In 2013 Agroscope, Institute of Food Sciences from Bern (CH) and the Medical University of Varna (BG) joined the NuGO Association.

As of January 2014, the following organisations are a member of the NuGO Association (listed as partners in NuGO NoE and then members joining later):

1. Wageningen University (NL) - www.wageningenuniversity.nl
Dr Lydia Afman (lydia.afman@wur.nl)
2. TNO Innovation for Life (NL) - www.tno.nl
Dr Nard Clabbers (nard.clabbers@tno.nl)
3. Maastricht University (NL) - www.maastrichtuniversity.nl
Dr Chris Evelo (chris.evelo@maastrichtuniversity.nl)
4. Technische Universität München (DE) - www.nutrition.tum.de
Prof. Hannelore Daniel (nutrition@tum.de)
5. Deutsches Institut für Ernährungsforschung Potsdam-Rebrücke (DE) - www.dife.de
Prof. Hans-Georg Joost (joost@dife.de)
6. Institute of Food Research (UK) - www.ifr.ac.uk
Prof. David Boxer (david.boxer@ifr.ac.uk)
7. University of Aberdeen - Rowett Institute of Nutrition and Health (UK) - www.abdn.ac.uk/rowett
Prof. Peter Morgan (p.morgan@abdn.ac.uk)
8. University of Newcastle - Human Nutrition Research Centre (UK) - www.ncl.ac.uk/hnrc
Prof. John Mathers (john.mathers@newcastle.ac.uk)
9. University of Ulster (UK) - www.biomed.science.ulster.ac.uk/bmsri
Prof. Sean Strain (jj.strain@ulster.ac.uk)
10. University College Dublin (IE) - www.ucd.ie/foodandhealth
Dr Lorraine Brennan (lorraine.brennan@ucd.ie)
11. University of Oslo (NO) - www.med.uio.no/imb/english
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12. Lund University (SE) - www.lunduniversity.lu.se
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13. Universitat de les Illes Balears (ES) - www.uib.eu
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14. University of Copenhagen (DK) - www.ku.dk/english
Prof. Lars Dragsted (ldra@nexs.ku.dk)
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16. University of Eastern Finland (FI) - www.uef.fi/uef/english
Dr Marjukka Kolehmainen (marjukka.kolehmainen@uef.fi)
17. Centre Tecnològic de Nutrició i Salut (ES) - www.ctns.cat/en
Dr Francesc Puiggròs (francesc.puiggròs@ctns.cat)
18. Universitat de Barcelona (ES) - www.ub.edu/web/ub/en
Prof. Cristina Andres-Lacueva (candres@ub.edu)
19. Centro di ricerca per gli alimenti e la nutrizione (CRA-NUT) - <http://sito.entecra.it>
Dr Giuditta Perozzi (giuditta.perozzi@entecra.it)
20. São Paulo State University (BR) - www.unesp.br/eng
Prof. Lucia Regina Ribeiro (lribeiro@fmb.unesp.br)
21. Nestlé Institute of Health Sciences (CH) - www.nestlehealthsciences.com
Dr Jim Kaput (james.kaput@rd.nestle.com)
22. Deutsches Krebsforschungszentrum (DE) - www.dkfz.de/en
Dr Nina Habermann (nina.habermann@nct-heidelberg.de)
23. Eurogenetica (GR) - www.eurogenetica.gr
Dr Keith Grimaldi (keith.grimaldi@gmail.com)
24. Agroscope, Institute of Food Sciences (CH) - www.agroscope.ch
Dr Guy Vergères (guy.vergeres@agroscope.admin.ch)
25. Medical University Varna (BG) - mu-varna.bg/EN
Prof. Diana Ivanova (dg_ivanova@yahoo.com)

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