



IUPAC
Chemistry and Human Health Division

IFCC
Scientific Division

Committee/Subcommittee on Nomenclature for Properties and Units (C-SC-NPU)

Venue: Hotel Hilton Athens, 46 Vassilissis Sofias Avenue, Athens , Greece

- Monday June 12, 2017 – Committee meeting 9:00 to 17:00, Room Santorini 1
- Tuesday June 13, 2017 - Committee meeting 14:00 to 17:00 Room Thalia 1

Item	
<ul style="list-style-type: none">• The meeting opens • Monday June 12, 2017 at 9:00 a.m. Participants: Karin Toska (KT) Ulla Magdal Petersen (UMP) Rebecca Ceder (RC) Young Bae Lee Hansen (YBLH) (until 15:00 Tuesday) Helle Møller Johannessen (HMJ) Gunnar Nordin (GN) Robert Flatman (RF) Ariadna Padró Miquel (APM) (only Tuesday) Jan Kjartan Dybvik (JKD) Apologies for absence from: Georges Férard Florian Scherrer Daniel Karlsson Urban Forsum Gilbert Hill René Dybkaer Johan den Dunnen	All
<ul style="list-style-type: none">• Approval of the agenda. The agenda was approved. It was agreed to reshuffle items as needed to allow for participation of Ariadna/Daniel/Gunnar/Rebecca at relevant items, as they were not able to be present full time. Items were not always discussed in the order reported in the present minutes.	All
<ul style="list-style-type: none">• Approval of minutes from last meeting, Copenhagen 2016 – minutes were approved.	All
<ul style="list-style-type: none">• Members and corresponding members of the IFCC NPU Committee 2017:	UMP

IFCC Titular members

- R. Flatman Chair AU 2nd 2015 01 - 2017 12
- Young Bae Lee Hansen DK 1st 2017 03 - 2019 12
- A. Jabor Member CZ 2nd 2016 03 - 2018 12
- F. Scherrer Member FR 1st 2015 02 - 2017 12
- K. Toska Member NO 1st 2015 02 - 2017 12

Consultants

- R. Dybkaer Consultant DK

IFCC Corresponding members

- Gilbert Hill Canadian Society of Clinical Chemistry (CSCC)
- Ulla Magdal Petersen Danish Society of Clinical Biochemistry (DSKB)
- Aracelis Germán Colegio Dominicano de Bionalistas (CODOBIO)
- Alessandro Marocchi Italian Society of Clinical Chemistry and Clinical Molecular Biology (SIBioC)
- Naohito Ishii Japan Society of Clinical Chemistry (JSCC)
- Dalius Vitkus Lithuanian Society of Laboratory Medicine
- Aaron Ojule Association of Clinical Chemists Nigeria (ACCN)
- Nada Majkic-Singh Society of Medical Biochemists of Serbia (DMBS)
- Ariadna Padró-Miquel Sociedad Española de Bioquímica Clínica y Patología Molecular (SEQC)
- Murat Bolayirli Turkish Biochemical Society (TBS)
- Carlos Lacava Asociación Bioquímica Uruguay (ABU)
- Arden Forrey American Association for Clinical Chemistry (AACC)
- Dave Armbruster Corporate Member - ABBOTT Diagnostics

Members elected via IUPAC projects

Members of current IUPAC projects initiated by the C-SC-NPU are all Elected Members of the IUPAC subcommittee, with HMJ serving as Chair and UMP as Secretary.

Members Elected via current IUPAC projects are:

- Helle Møller Johannessen
- Ivan Bruunshuus
- Robert Flatman
- Urban Forsum
- Ulla Magdal Petersen
- Gunnar Nordin
- Young Bae Lee Hansen
- Karlsson, Daniel
- Johan den Dunnen
- Xavier Fuentes-Arderiu
- Ariadna Padró i Miquel
- Jens Michael Hertz
- Rebecca Ceder
- Karin Toska
- Gunther Schadow
- Alice Lund
- René Dybkær

<ul style="list-style-type: none"> Budget for the meeting. <p>The expenses for the meeting itself and the IFCC Titular Members are covered by the IFCC budget. There may be resources for one more meeting this year, e.g. in Copenhagen. Elected members are either supported by project resources or funded from their own organizations.</p>	RF
<ul style="list-style-type: none"> Date and place of next meeting <p>Next meeting will be in Copenhagen November 3rd – 4th this year.</p> <p>In 2018 a possibility is the XXXVI Nordic Congress in Clinical Chemistry, 12. 15. June 2018 Helsinki, Finland. KT will find a contact for information on venue etc. . The date November 11th was suggested. We should aim for a presentation or a poster.</p> <p>On-line meetings are needed as supplement – GN find out how many users WebEx licence is for. Set up meeting early for setup.</p>	All
<ul style="list-style-type: none"> Project report: IUPAC project 2004-023-1-700, Vocabulary for nominal properties and nominal examinations — basic and general concepts and associated terms. <p>Participants:</p> <ul style="list-style-type: none"> Gunnar Nordin (chair) René Dybkær Urban Forsum Xavier Fuentes-Arderiu Gunther Schadow <p>A first version of the vocabulary has been published, according to IFCC procedures, in Clinical Chemistry and Laboratory Medicine (Nordin G et al. An outline for a vocabulary of nominal properties and examinations - basic and general concepts and associated terms. Clin Chem Lab Med. 2010 Nov;48(11):1553-66.)</p> <p>The planned parallel publication in Pure and Applied Chemistry (PAC) has unfortunately been delayed. In the review process for the publication in PAC some substantial improvements in consistency for the entries have been suggested, and have now been incorporated in the vocabulary. In addition, inspired by suggestions from some of the reviewers, the language has been simplified. An improved manuscript has therefore been accepted for publication by all reviewers, except for one. One remaining reviewer demands, for accepting the manuscript for publication, that the language should return to that of the former versions, with full, complex and unique terms used for all concepts defined.</p> <p>The author group has therefor accepted to reconvert the language of the paper into the complex and unique one, to the cost of readability for the general reader, to finalize the project. A language conversion of this type, with exchange of all short terms for full terms with remaining internal consistency, is a complicated and cumbersome process.</p> <p>A version number 10 of the manuscript, hopefully the final version, will be submitted for publication in PAC in a few days.</p> <p>Differences between the CCLM and PAC versions should be marked.</p> <p>GN asks for help with examples that are easy to read and understand. Especially in Molecular Genetics as a new field in many ways.</p> <p>Concepts 'principle', 'method', and 'procedure' need definitions.</p>	GN
<ul style="list-style-type: none"> Project report: Silver Book Revision (Completed) – report from GF <ul style="list-style-type: none"> The revised SB is now published: Férard G, Dybkaer R, Fuentes-Arderiu X. Compendium of Terminology and Nomenclature of Properties in Clinical Laboratory Sciences 	

<p>(Recommendations 2016) on behalf of IFCC and IUPAC. Royal Society of Chemistry, Cambridge, 2017 (182 pp.).</p> <ul style="list-style-type: none"> • A paper related to SB has been published: Flatman R, Féraud G, Dybkaer R. Understanding the ‘Silver Book’ – An important reference for standardised nomenclature in clinical laboratory sciences. Clin Chim Acta 2017;467:4-7. • An information on the SB is given in Chem. Int. 2017; 39(2):29 • A summary on SB and the NPU format is included in Chem. Int. 2017;39: The Silver Book and the NPU format for clinical laboratory science reports regarding properties, units, and symbols by G Féraud , R Dybkaer R, X Fuentes-Arderiu on behalf of the joint IFCC and IUPAC Committee- Subcommittee on Nomenclature for Properties and Units 	
<ul style="list-style-type: none"> • Project report: 2001-070-1-700 (Properties and units for urinary calculi) <p>The IUPAC homepage reports the project as completed in 2010. The project is outdated and has been abandoned.</p> <p>GN will contact Fabienne Myers on updating the IUPAC information on the project.</p>	
<ul style="list-style-type: none"> • Project report: The definition project for non-referenced terms (IUPAC project 2010-035-2-700) <p>Participants:</p> <ul style="list-style-type: none"> • Helle Møller Johannessen (chair) • Ivan Bruunshuus • Robert Flatman • Urban Forsum • Ulla Magdal Petersen • Gunnar Nordin • Young Bae Lee Hansen <p>The project is active, with most of the 3000 concepts now having a suggested definition. For about 1500 of them, the definition has been through an internal validation process. Guidelines for the definitions will be ready for circulation to C-NPU soon.</p>	HMJ
<ul style="list-style-type: none"> • Project report: Piloting CNPU-SNOMED CT mapping. (IUPAC project 2014-017-1-700) <p>Participants:</p> <ul style="list-style-type: none"> • Daniel Karlsson (chair) • Robert Flatman • Urban Forsum • Ulla Magdal Petersen • Helle Møller Johannessen • Karin Toska <p>Report received from Daniel Karlsson:</p> <p>The project has aimed to explore possibilities of large scale mapping between the NPU terminology and SNOMED CT. A selection of 863 unique NPU codes in use in Denmark, Norway, and Sweden were chosen for the pilot. The NPU codes had 598 distinct system, system specification, component, and kind-of-property elements of which 376 (63 %) could be assigned a SNOMED CT code. Large groups of non-matching elements were antibodies (n=99) and genes (n=20) which are both represented slightly differently in SNOMED CT. The 376 mapped elements can be used to represent approximately 500-600 of the 863 NPU codes. The project aims at finishing within the first half year of 2017.</p>	DK

<p>DK joined the meeting via Skype on Tuesday, and demonstrated mapping methods and issues. Different models for the syntax and granulation level, and for combining concepts ('xxx type' 'yyy+zzz', qqq antibody) may make point-to-point mapping impossible. (Some of these issues had also been problematic in the LOINC mapping). The mapping project has demonstrated types of inconsistency in the NPU terminology, which will have to be cleaned up.</p> <p>A suggestion from CNPU to the Steering Committee is to concentrate on smaller, high quality mappings in relevant fields, rather than on a total map. RC and GN suggested that Swedish microbiology work would supply the limited scope and be valuable.</p> <ul style="list-style-type: none"> A related project, 2009-005-1-700 Demonstration of NPU-SNOMED CT mapping/harmonization of terms used in clinical laboratory sciences, is suspended, replaced by 2014-017-1-700: <p>Participants:</p> <ul style="list-style-type: none"> Forsum, Urban (chair) Karlsson, Daniel Magdal Petersen, Ulla Nordin, Gunnar 	
<ul style="list-style-type: none"> Project report: On-line dynamic NPU manual (IUPAC project 2016-044-2-700) <p>Participants:</p> <ul style="list-style-type: none"> Young Bae Lee Hansen (Chair) Rebecca Ceder Robert Flatman Alice Lund <p>According to the Steering Committee meeting on Sunday June 11th, no supplementary monetary support should be expected from either IFCC or IUPAC</p> <p>The complexity and format for publication is discussed - one or several documents? Website in tabbed format? Download as one document possible?</p> <p>JK: shared Norwegian e-learning material as examples.</p> <p>GN: next edition of VIM should be electronic too – any ideas? IUPAC is rethinking the Gold Book.</p> <p>KT: explanations in everyday language are needed. Agreement that there is a need.</p> <p>Members are asked to send suggestions on how best to communicate the 'NPU concepts'.</p>	YBLH
<ul style="list-style-type: none"> New projects. <p>No new projects have been launched recently. There is a recognized need for updates on terminology in almost all laboratory fields, with suggestions from many members:</p> <p>Microbiology update suggested in 2015 (KT)</p> <p>Immunology update suggested (HMJ)</p> <p>Clinical physiology – user demand rising (UM). There may be some early work – GN will check.</p> <p>Neurophysiology suggested (KT)</p> <p>How to use NPU with other data for reimbursement/ordering (GN)</p> <p>To keep the terminology updated, members need to chair projects and find participants.</p>	All

<ul style="list-style-type: none"> Report from IUPAC Division VII – asking for suggestions for input to IUPACs 100 years jubilee 2019 in Paris. Poster? Demo? Presentation? 	HMJ
<ul style="list-style-type: none"> Report from the NPU Steering Committee <p>The minutes will be available at npu-terminology.org.</p> <p>There are no resources available for a full SCT mapping. The need may be reconsidered, as the demand seems to have lessened.</p>	HMJ
<ul style="list-style-type: none"> News from Norway. <p>More than 8000 NLK (Norwegian Laboratory codes are in use, most of them NPU based Using NPU Terminology for reimbursement poses challenges. NPU definitions may cover results made by different techniques, having different costs and producing results on different levels. More information is needed to discern between both price and result types, and technology should be developed to handle this information.</p> <p>Work on archetypes is ongoing in Norway.</p>	KT/AL
<ul style="list-style-type: none"> News from Denmark <p>New EHR system in Denmark is under implementation - will cover about half the population by 2018. The standardization process is causing many new NPU requests.</p> <p>New WHO standard preparation for IgE is in use – replacement of about 600 NPU codes with new ones is causing user complaints, and requests for either redefinition of codes or new codes without references.</p>	UMP
<ul style="list-style-type: none"> News from Sweden <p>EQUALIS survey on NPU use shows that percentage of NPU coding is increasing. NPU coding also in use for EQUALIS QC analytes</p> <p>Ordering is a general problem, it is suggested to use a combination of SNOMED CT (laboratory procedures) and NPU definitions for ordering</p>	RC
<ul style="list-style-type: none"> Terminology issues <ul style="list-style-type: none"> Allergen preparations – we have references to three different (and not quite consistent) editions of the CLSI catalog I/LA20 (1997, 2006, 2016). Decision: update references to latest edition where no inconsistencies. Cooperation with CLSI in the future is desirable – GN will initiate work on a new project, with Karin Toska, and e.g. Eli Taraldsrud and Per Mattson. NOTE: Immunology problems of same type with conflicting references exist in flow cytometry. Biochemical substances reference databases– which of them have sufficient authority, and how do we prioritize using them to identify data elements? Decision: NLMs databases (PubChem, ChemIDplus) have priority, CheBI next, then HMBD. Use of greek letters in component names – do we still transcribe ‘α’ and ‘β’ to ‘alpha’ and ‘beta’ because local technology has limited character sets?. Decision: keep transcribing, until we know local technology can handle Greek letters (ask around!) The enzyme ‘alpha-amylase’ has erroneously been termed ‘amylase’ for decades – do we stick to NPU principles and rename it, or do we ignore it? Decision: Leave well enough alone. Use of ‘screen’ and ‘confirm’ as procedure specifications – can we work out definitions, and agree on reasonable contexts for the use of them?. Decision: Abandon ‘screen’, determine rules for using ‘Confirm’ – HMJ, RC, JK each to investigate national usage and try for a common international set of contexts where ‘confirm’ can be used. Use of ‘free’, ‘conjugated’ and ‘unconjugated’ as component specification – definitions? Not discussed at the meeting 	HMJ, UMP, YBLH

<ul style="list-style-type: none"> • DNK codes for blood pressure – can they be replaced by NPU codes? Decision: GN try to get an opinion when EQUALIS reference group for clinical physiology meet in Copenhagen this fall. • Function test for Cortisol secretion over 24 hours – not a load test, so what is the start event? Decision: No NPU code is justified for reporting, as each result value has a time stamp. Coding for ordering may be needed, part of the greater problem of investigation requests. • Nucleated cell types – identify how? by development stages, cell functions or CD markers? Not all cell types reported on belong to a stable classification yet – can they be reported at all via the NPU terminology? A small fast track group is needed. GN will contact Swedish experts, KT will contact Norwegian experts. • Nomenclature for CD markers (proteins and carbohydrates etc.) as components – UniProt or CD nomenclature? Further review is needed, GN: Discussed at an earlier meeting (in Paris?) – will check notes. • Use of the International Chemical Identifiers InChI or InChIKey. Many new drugs have no CAS code yet – can they be identified with an InChIKey? <ul style="list-style-type: none"> • It is not possible to identify the compound from the InChIKey if it is not filed in any authoritative database yet. • If an InChIKey is used as ID, because no CAS code yet, should it be replaced with CAS later? <p>No decision reached, more work is needed.</p>	
<ul style="list-style-type: none"> • Project report: The Molecular Diagnostics revision project 2013-009-5-700 (Properties and units in clinical molecular biology and genetics – supplement) <p>Participants:</p> <ul style="list-style-type: none"> • Ulla Magdal Petersen (chair) • Johan den Dunnen • Xavier Fuentes-Arderiu • Ariadna Padró i Miquel • Jens Michael Hertz • Rebecca Ceder <p>The project was started in 2013, and scheduled to finish in 2016. Development in the field is continuous and rapid, and the NPU Terminology will need further adjustments in the future. Draft of the Technical report had been circulated for possible approval for finalizing. Definitions of a set of new kinds-of-property specifically for genetics were discussed and accepted with minor changes.</p>	<p>UMP</p>
<ul style="list-style-type: none"> • Items for further work after the meeting <ul style="list-style-type: none"> • Use of 'free', 'conjugated' and 'unconjugated' as component specification – definitions? • Categories for nucleated cell types • Nomenclature for CD markers • Use of 'Confirm' specification • Use of chemical Identifiers InChI or InChIKey <p>Virtual meetings (via e.g. Skype, Lync (Skype for Business), Google Hangout, WebEx) needed to supplement the physical C-NPU meetings</p>	
<ul style="list-style-type: none"> • The meeting closed Tuesday June 13, 2017 at 17:00 	