

**Chemistry and Human Health (Division VII)**  
**IUPAC Bureau Report, Frankfurt, April 2013**

**Presented by Douglas Templeton, Acting President, Division VII**

### **Executive Summary**

This report presents an update of activities in Division VII (DVII) since the last Bureau meeting in Leiden (April, 2012). The Division has met once in the past year, in Budapest (June 2012). Here I address business arising from this meeting and highlight initiatives being targeted in this Biennium. This Executive Summary deals with Division initiatives and structure, membership, budget, projects, highlights of Subcommittee activities, adherence to IUPAC goals, and current and future initiatives. Annexes provide details of membership, projects, and activities of our individual Subcommittees. DVII will meet next in Istanbul during the General Assembly.

#### ***1. Structure of the Division***

DVII is organized into four Subcommittees (SCs), three of which deal with technical aspects of our mission. These are the SCs on *Medicinal Chemistry and Drug Development* (MCDD); *Nomenclature for Properties and Units* (NPU); and *Toxicology and Risk Assessment* (TRA). The fourth SC manages our *Public Relations and Elections* (PRE). The SCs are chaired by Derek Buckle and Tom Perun (MCDD), Robert Flatman (NPU), John Duffus (TRA), and Tom Perun (PRE). Detailed reports from the four SCs are appended (Annexes 1-4).

Our executive positions consist of a President, Past President or President-elect, and Secretary. Our operating procedures mandate a four-year term for the Division President with the role, effectively of Vice President, being served for the first two years of that term by the Past President, as currently, and in the last two years by the President-elect. After a 6 month replacement by Doug Templeton, Past President and then acting President, according to IUPAC rules and Division VII Operating procedures, Françoise Pontet undertook her office starting on the 1<sup>st</sup> July 2012.

#### ***2. Operating procedures and rules of DVII***

DVII filed rules and operating procedures present rules for declaring DVII Emeritus Fellowship, and for granting IUPAC Sponsorship on a limited Divisional basis. Since last Bureau meeting in Leiden, the Emeritus Fellowship was granted to Prof. Rita Cornelis and Prof. Naofumi Koga, whose biographies and highlighting contributions to IUPAC are posted at <http://www.iupac.org/home/about/members-and-committees/divisions/vii/emeritus-fellows.html>.

IUPAC Division sponsorship was provided to the 7th European Symposium on Clinical Laboratory and *In Vitro* Diagnostic Industry - Molecular genetics in the clinical laboratory, to be held in Barcelona, 28-29 May 2013.

The operating procedures have also helped clarify to our membership and Division Executive, streamlined procedures for reviewing Project Applications, Technical Reports, and Recommendations.

### **3. Membership**

TMs, AMs and NRs elections and selection have just been performed (see the PRE report, Annex 4)

### **4. Budget**

According to the most recent commitment IUPAC report (dated 28 November 2012), Division VII has spent 45.8 % of our total budget for the biennium (\$ 62,300), splitted as follows : 21.7 % (\$ 13 500) for “commitments” (projects), and 24.1 % (\$ 15032) for “operations” (meeting costs). It is recalled that the guidelines are 70 % for projects and 30 % for meeting costs. However, since the date of that IUPAC official report, several project proposals are under review.

### **5. Projects**

Altogether, the three technical SCs are currently involved in 26 projects reported upon monthly by the Secretariat. These are listed in Annex 6. These, together with projects submitted or under discussion, are described in the individual SC reports (Annexes 1, 2, 4). A classification of our current projects shows the following balance (number of projects in parentheses):

Education and Training (3)  
Properties and Units (4)  
Glossaries (9)  
Data Bases (4)  
Drug Discovery (2)  
Clinical Chemistry and Toxicology (4)

### **6. Highlights of SC activities (details are in the appended SC reports)**

6.1. MCDD - This SC remains very active, meeting approximately four times in each Biennium, in addition to regular DVII meetings. They currently manage 11 projects, all of which have arisen within the SC. The IUPAC-Richter prize is awarded by this SC every two years, and was awarded again in 2012 to Prof. Stephen Hanessian from the University of Montreal, Canada (see point 7.6). An Emeritus Fellowship was awarded to Naofumi Koga, Japan. Volume III of the successful book “Analogue-based Drug Discovery” was published (see annex 1).

6.2. NPU – As a joint IFCC-IUPAC Committee, the SC has close contacts with the International Federation of Clinical Chemistry (IFCC) in maintaining a web-based terminology (NPU), the ownership of which is shared by both IFCC and IUPAC. They are collaborating on mapping of the terminology to the Systematized Nomenclature of

Medicine - Clinical Terms (SNOMED-CT) through contact with the International Health Terminology Standards Development Organization (IHTSDO) in Copenhagen. Legal arrangements continue to be negotiated for joint IFCC-IUPAC ownership of the NPU terminology. These initiatives finally progress, after continuous efforts from the C-SC-NPU, represented ever since its founder and first Chair, Henrik Olesen († 2012), by all successive Chairpersons. Division VII has now two official representatives (thus strongly supporting this project) for this endeavour : Robert Flatman (*ex officio*, like all former C-SC-NPU Chairs), and Helle Johannessen, on an equal basis. A major initiative with IFCC to update the IUPAC Silver Book (Compendium of Terminology and Nomenclature of Properties in Clinical Laboratory Sciences) is underway, but waiting for the so-called VIN (international vocabulary for nominal properties) to be in a final stage, as a new chapter on that topic will be included (see Annex 2).

6.3. PRE – This year being an election year, the Nominating Committee selected in 2012 worked out the full process for the election of TM and AM positions, now finalized, and NR positions as well, which will be finalized soon by the DP (see annex 3). This SC has been helpful in providing IUPAC material for public dissemination and branding. Divisional posters have been available to travel with the DP and SC Chairs to various meetings throughout the year. They will be updated for the Istanbul GA and Congress.

6.4. TRA - Projects on childhood education, and several glossaries are underway (see annex 4). Contacts with the WHO and its International Program in Chemical Safety (IPCS) are being established in collaboration with COCI. Participation in a Biomonitoring Equivalents Workshop established contacts with the US Environmental Protection Agency, Health Canada, and the American Petroleum Institute, among others.

## **7. Advancing IUPAC Goals**

7.1 Leadership in global chemical issues - Recent highlights include ongoing revision of the *Glossary of terms used in toxicology*, whose predecessor was adopted by a number of legislative bodies. As this expands and incorporates more terminology - e.g. from the glossaries in Ecotoxicology (2009) and Immunotoxicology (2012) -, plans are underway to make an inclusive glossary available on-line with frequent updates by the authors. The NPU terminology and ongoing revision of the Silver Book are also noteworthy. Mapping of terminology with the Danish IHSTDO/SNOMED-CT is a major undertaking described in more detail in the NPU report. The book *Concepts in Toxicology* published by the Royal Society of Chemistry (UK) is intended to clarify a number of issues relevant to risk assessment for legislators, and to the basic science of toxicology for chemists. After the publication of Volume III of the successful series “Analog-based Drug Design” at the end of 2012, a Volume IV will be planned.

7.2 Provision of tools - As noted above, about a dozen glossaries of terminology have recently been published or are currently under construction, including recent projects for a glossary in immunotoxicology, revision of terms in clinical chemistry, and terms in computational drug design, which are underway.

7.3 Assistance to the chemical industry in sustainable development, wealth creation, and improving quality of life - The PRE SC is active in COCI and the TRA is forging links with external bodies in collaboration with COCI. The MCDD has a long-standing association with industry, and its projects on natural products with medicinal value, nutraceuticals in Latin American Plants, and the 3 volumes of the very successful book “Analogue-based Drug Discovery” are examples of current projects with immediate value to the chemical industry.

7.4 Fostering communication - Examples of particular relevance to this goal are the NPU projects *Internationally agreed terminology for observations in scientific communication*, *Mapping of IFCC-IUPAC laboratory coding system to SNOMED-CT*, and *Translation of NPU terminology elements and properties into French*; and the TRA publication *Concepts in Toxicology*, and recent glossaries bridging chemical toxicology with ecology and the environment (Ecotoxicology) and chemistry with the field of immunology (Immunotoxicology).

7.5 Education – Of significant note is the completion of the first phase of Toxiclaro. Other examples are the recently published *Fundamental Toxicology, 2<sup>nd</sup> Edition*, *Analogue-based Drug Discovery*, and *Concepts in Toxicology*. Ongoing projects include *Training of School Children on Pesticides and Health* (TRA), *Medicinal chemistry Course for India and South East Asian Academic and Industrial Scientists* (MCDD), *Revision of the Silver Book* (NPU). TRA Chair John Duffus has close links with CCE and participates globally in designing and delivering toxicology curricula. He is a major contributor to the US Society of Toxicology (SOT) initiative for on-line chemical toxicology curricula (ToxNet).

7.6 Public relations - The PRE SC is active in improving the visibility of DVII and of IUPAC. “Limited DVII sponsorship” is used to distribute IUPAC material and make an oral presentation on DVII activities. Details of this process for limited sponsorship are formalized in the DVII operating procedures, and have been implemented successfully on several occasions. Two DVII posters have been produced to complement the individual SC posters, and these can be presented at international meetings by the DP and SC Chairs. The IUPAC-Richter Prize adjudicated through the MCDD SC is gaining prestige, and provides an international forum for scientific presentation by the winner, with IUPAC’s name associated. The winner for 2012 was Prof. Stephen Hanessian, Full Professor since 1969 in the Chemistry Department of the University of Montreal and Chair of the Isis Pharmaceutical Research. He was awarded this prize for his outstanding achievements in natural product chemistry, his Chiron Approach to chiral compound synthesis, and his many seminal contributions that have facilitated the synthesis and discovery of medicinally active compounds and novel drug prototypes (see <http://www.iupac.org/news/news-detail/article/2012-iupac-richter-prize-awarded.html>).

## **List of Attachments**

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## **Annex 1 - Details from *Medicinal Chemistry and Drug Development (MCDD)***

### Meetings and membership

The Subcommittee has continued its biannual meeting schedule by meeting at the spring ACS meeting in the US, and at the EFMC symposium in Europe. The meetings in 2012 were held in San Diego in March, and at the ISMC meeting in Berlin in September. Four new members were among the twelve people attending the MCDD meeting in San Diego.

### IUPAC-Richter Prize in Medicinal Chemistry

The prize is awarded biennially in even years. The 2012 Prize recipient was Prof. Stephen Hanessian from the University of Montreal, Canada. He was recognized for his many achievements in natural product chemistry, and his contributions in facilitating the synthesis and discovery of medicinally active compounds and novel drug prototypes.

The IUPAC-Richter Prize was conferred in May at the ACS National Medicinal Chemistry Symposium in Tucson, Arizona. Prof. Hanessian presented his award address at this meeting, and at the EFMC-International Symposium on Medicinal Chemistry held in Berlin in September. At the Berlin meeting, a discussion was held with the President of EFMC to develop an agreement which will ensure that the IUPAC-Richter Prize is conferred during the opening ceremony of the next ISMC meeting to be held in Lisbon, Portugal in 2014.

### Emeritus Fellows

A former President of the Medicinal Chemistry Section of IUPAC, Naofumi Koga, was honored as an Emeritus Fellow for his many years of service, and his leadership in founding the Asian Federation of Medicinal Chemistry. The award and plaque was presented to Dr. Koga at the Pharmaceutical Society of Japan meeting in November, 2012.

### Selected Project updates

The third volume in the successful series, Analogue-based Drug Discovery (Project 2011-011-1-700) has been completed with 15 chapters and 40 authors. It was published in December, 2012. A fourth volume in the series has been suggested and is in the formulation stage.

The Glossary of Terms in Medicinal Chemistry (2008-010-1-700) has been completed and finished the review process. It is scheduled to be published in Pure and Applied Chemistry and in Annual Reports in Medicinal Chemistry in 2013. It is expected to be used by 10,000 medicinal chemists, like the earlier version.

The Glossary of Terms used in Computational Drug Design (2010-057-3-700) has been recently completed and is being sent out for review. It will likely be published in the same places as the Medicinal Chemistry Glossary.

A new project, Medicinal Chemistry in India, (2012-032-2-700) was proposed and approved in 2012. This training course was modeled after the successful Drew University course which is held every year in the USA. The course in India was held in Chennai on February 11-14, and had over one hundred participants.

## Annex 2 - Details from NPU

### IUPAC/IFCC SC-NPU: Annual Report March 2012 – February 2013

#### (Joint Committee on Nomenclature Properties and Units)

(prepared by R.Flatman, NPU Chair, 3/3/13)

#### Continuing Projects

**2004-023-1-700 (extended 2008-019-1-700): “Vocabulary for nominal properties and nominal examinations — basic and general concepts and associated terms (VIN)”.** Public review is now over and comments are being managed.

**2010-035-2-700: “NPU definition project for non-referenced terms”.** Working group has reviewed approximately ¼ of terms to date. Guidelines currently under development to assist with progression.

**2001-070-1-700: “Urinary Calculi”.** Urban Forsum will ask a urologist (‘Tiselius’) to participate in finishing the project. It will not be necessary to update the collection of NPU definitions if those already in the document can serve as models for new definitions.

**2006-008-1-700: “Mapping of IFCC-IUPAC laboratory coding system to SNOMED CT (SNOMED CT – Systematized Nomenclature of Medicine Clinical Terms”.**

**Continued also within 2009-005-1-700:** Ongoing negotiations with IHTSDO for future work with NPU, primarily via new NPU Steering Committee. From a strategic point of view, future co-operation with IHTSDO is seen as essential for the longevity of the NPU work. Please also see detailed report attached from Daniel Karlsson.

**Silver Book Revision:** Most recent revision was dated 2/10/2012, revised with the aim of bringing this document in line with ISO 80000. Chapter 4 was revised and Chapter 10 added.

#### New and future Projects

**New project proposal: “Properties and units in clinical molecular biology and genetics”.**

In 2004 the first publication in this field of clinical laboratory science was issued: “Properties and units in the clinical laboratory sciences. Part XVIII. Properties and units in clinical molecular biology (IUPAC Technical Report)”

<http://dx.doi.org/10.1351/pac200476091799>

Since then the field of medical molecular biology has developed rapidly, and many new kinds of properties not mentioned in the 2004 publication are routinely estimated today. The NPU terminology lacks structured definitions of these new kinds of properties.

The project intends to produce semantic models for structured definitions of these new kinds of properties, and demonstrate their validity by examples.

#### **New Project Proposal: “NPU Promotion”**

Following on from 2006-048-2-700 chaired by Francoise Pontet, further funding for NPU promotion is recommended, with activities including:

- Support for Poster and lecture presentations at conference meetings
- Wikipedia article preparation



- Promotion where possible to Industry groups (NPU has a new member, Dr David Armbruster, from Abbott Diagnostics who may be of assistance in this regard)

*In addition to the IUPAC projects described above, a more general summary of NPU activities for the last 12 months follows, with reference to the IFCC/IUPAC Terms of Reference for the group:* **Term of reference 1: To continuously provide advice for the management, updating and publishing of the NPU terminology. 2012**

**Accomplishments under this Term of Reference:**

- Monthly updated versions of the NPU terminology have been available for download from the new IFCC website
- Update search engine functions on new website (co-ordinated by IFCC Communications and Publications Division)
- Agreement to create an NPU Steering committee with representatives from the key stakeholders (IFCC, IUPAC, Danish Board of e-Health). Subsequently a series of teleconferences of the Steering Committee were held discussing NPU goals culminating in the creation of a Statement of Intent between stakeholders

**Meeting with IHTSDO in Stockholm Oct 2012 to pursue co-operation between SNOMED-CT and NPU Terminologies:**

- IHTSDO has been very busy finalising such an agreement with the Regenstrief Institute regarding the LOINC terminology
- There was agreement that a similar process should be undertaken once the LOINC negotiations are finalised

**Term of reference 2: To make recommendations on NPU for reporting clinical laboratory data that conform to or adapt current standards of authoritative organizations, and that will improve their utilization for health care.**

**Accomplishments under this Term of Reference:**

- International vocabulary for nominal examinations in scientific communication (VIN) manuscript is now out for public review (IUPAC 2004-023-1-700, extended 2008-019-1-700)
- The “Silver Book” (Compendium of Terminology and Nomenclature of Properties in Clinical Laboratory Sciences) revision (joint IFCC CPD project + IUPAC 2008-033-3-700) is still undergoing revision (Francoise Pontet and Georges Ferard), latest revision 2/10/2012
- Project for Establishing definitions for non-referenced terms in the NPU terminology ongoing (IUPAC Project 2010-035-700 ) (Chair: Helle Moller Johannessen)
- Wikipedia article/reference to the NPU Terminology being created by RF with input from committee
- A new project for NPU definitions in the field of Molecular Biology and Genetics is planned. UMP has offered to chair, with offers of assistance to

date from Ariadna Padró i Miquel. A formal proposal will be made to IUPAC soon.

**Term of reference 3: To provide a connection with other organizations concerned with NPU such as the Bureau International des Poids et Mesures (BIPM), the European Committee for Standardization (CEN) and the International Organization for Standardization (ISO), and, by extension, clinical laboratory sciences societies, such as the International Union of Pure and Applied Chemistry (IUPAC), and the in vitro diagnostics industry, to ensure that problems encountered by health care professionals in the area of NPU are considered by those organizations.**

- As per above, primary development was signing of a Statement of Intent between NPU Stakeholders for the ongoing development of the NPU system
- Helle Moller Johannessen elected to IUPAC Division VII position

#### **Term of reference 4**

**To act as a consultant group on NPU in clinical chemistry and, by extension, in the rest of clinical laboratory sciences to international scientific panels, regional and national clinical laboratory sciences organizations, editors of scientific journals, manufacturers of clinical laboratory instrumentation and products, and to individual clinical laboratory professionals and other health care professionals.**

- The majority of NPU support is provided through the Danish Board of eHealth and the Swedish NPU Release Centre
- No new news to report

#### **Publications**

“The NPU terminology for clinical laboratories”, Danish Board of eHealth general information, published at: <http://www.sst.dk/English/NPULaboratoryTerminology.aspx>

“Properties and units in the clinical laboratory sciences. Part XXIII. The NPU terminology, principles, and implementation: A user’s guide (IUPAC Technical Report)”, Petersen U.M., Dybkaer R., Olesen H., Pure and Applied Chemistry, 2012, Vol. 84, No. 1, pp 137-165. (<http://iupac.org/publications/pac/84/1/0137/>)

“Ordinal quantities in clinical laboratory sciences”, Fuentes-Arderiu X., Accreditation and Quality Assurance, June 2012, Vol 17, Issue 3, pp 349-351.

“The NPU Terminology: Contributing to Patient Safety”, IFCC-IUPAC News May-June 2012 . (<http://www.ifcc.org/media/172643/2012%203%20-%20May-Jun.pdf>)

“Recommendations for clinical laboratory science reports regarding properties, units, symbols: the NPU format”, Férard G, Dybkaer R., Clin Chem Lab Med, Jan 2013:1-8  
“Taxonomy of quantities”, Fuentes-Arderiu X., Biochimica Medica 2012;22(3):pp274-275

“A complement for the WHO laboratory manual for the examination and processing of human semen”, Sanchez-Alvarez J., Cano-Corres R., Fuentes-Arderiu X., Journal of the International Federation of Clinical Chemistry and Laboratory Medicine, eJIFCC Vol. 23, No. 3, pp 1-4

“Vocabulary for Nominal Properties and Nominal Examinations. Basic and General Concepts and Associated Terms”, public review closing Feb 28<sup>th</sup> 2013  
(<http://www.iupac.org/home/publications/provisional-recommendations/currently-under-public-review/currently-under-public-review-container/vocabulary-for-nominal-properties-and-nominal-examinations-basic-and-general-concepts-and-associated-terms.html>)

Upcoming revised version of the “Silver book” (“Compendium of Terminology and Nomenclature of Properties in Clinical Laboratory Sciences”) (Project no.: 2007-033-3-700)

With great regret, the NPU mourned the passing of Dr Henrik Olesen in April 2012, a long time contributor and member/Chair of the NPU.

### **Meetings Held**

#### **C-NPU committee (IUPAC subcommittee) plenary meetings**

Copenhagen, Denmark 26, 27th April 2012  
Linköping, Sweden 4, 5th October 2012

#### **NPU terminology ownership teleconferences**

21st January 2012  
4th April 2012  
6th June 2012  
5th July 2012  
3rd September 2012  
20<sup>th</sup> December 2012

#### **C-NPU Steering Committee Teleconferences/Meeting**

28th September 2012  
October 2012 – NPU Steering Committee meeting with IHTSDO representatives during IHTSDO congress  
20<sup>th</sup> December 2012  
13<sup>th</sup> February 2013

### **Meetings Proposed**

C-NPU planning to next meet at the Istanbul IUPAC congress in 2013. Dates and meeting rooms to be set.

Planning currently underway for a Face to Face NPU Steering Committee meeting including IHTSDO in Copenhagen in April 2013

### **Strategic Overview**

The SC-NPU joint IUPAC/IFCC subcommittee has sought over many years to capture valuable guidance on terminology and units in the NPU database, with this information grounded on the strong principles of SI. In recent years the rapid growth of eHealth has made this knowledge and the NPU database even more valuable. At a time when the newer LOINC and SNOMED-CT systems are receiving greatly increased funding the NPU finds itself struggling to survive in terms of funding, the available time of contributing committee members and unilateral support from stakeholder organisations.

High level IUPAC support during recent stakeholder negotiations has been greatly appreciated and now more than ever that continued support is needed to reach agreement on the future administration and operation of the NPU.

The NPU Steering Committee strongly recommends that links be forged with the IHTSDO. Rather than risking losing intellectual property to SNOMED-CT the committee believes this is the most likely mechanism for high level support and recognition of the terminology.

## **NPU and IHTSDO**

Section written by Daniel Karlsson 2012-10-05

In 2009, from April to September, there was a joint project where C-SC-NPU and Regenstrief Institute provided mappings from NPU and LOINC properties to SNOMED CT concepts in order to test a division of work and to test a proposed SNOMED CT model. From the C-SC-NPU side, the result of the project was that issues were identified but that the division of work was found reasonable and that the model was generally applicable to C-SC-NPU content.

During the time since the 2009 the IHTSDO has been in negotiations with Regenstrief Institute about mapping of LOINC properties with the plan to start C-SC-NPU negotiations following a Regenstrief agreement. These negotiations have been lengthy but currently the target is to have an agreement in October 2012. Thus, it is expected that work may be resumed shortly after this date.

As a further result of discussions in 2009 in the C-SC-NPU SNOMED CT mapping<sup>1</sup> project, three specific activities in relation to SNOMED CT was identified: (1) the mapping of all elements of C-SC-NPU properties to SNOMED CT, (2) the mapping of the current C-SC-NPU dedicated kinds-of-property, and (3) the maintenance of mappings including the continuous mapping of new C-SC-NPU content to SNOMED CT. The first two are projects with a finite scope while the latter is a long term maintenance function.

The mapping of C-SC-NPU elements to SNOMED CT, e.g. the mapping of substance names used in C-SC-NPU kind-of-property definitions, will include proposals to IHTSDO for addition of missing concepts and housekeeping of existing C-SC-NPU content. Currently there are approximately 15000 (?) elements in use.

The mapping of current C-SC-NPU dedicated kinds-of-property to SNOMED CT, i.e. the mapping of the active content of the current NPU Database, will include the mapping

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1 By “mapping” is meant the activity in establishing a relation between an entity in one system to an entity in another system, systems here being terminological systems, entities being terms, codes, concepts or classes. The relation could be an equivalence relation meaning that the two entities are said to be of equivalent meaning, but other kinds are possible including e.g. subclass or superclass relations.

from the C-SC-NPU model to the more detailed IHTSDO model, to be finally decided upon by the IHTSDO given input from stakeholders. The project also includes the development of methods for doing this mapping, including mapping rules.

In terms of what's needed in an IHTSDO agreement, to be able to perform the two projects, the C-SC-NPU would need some SNOMED CT license and the possibility of submitting change requests to IHTSDO. In terms of resources, both projects would include the development and/or procurement of tools to support the activities as well as significant amount of human resources.

The third activity, i.e. the continuous maintenance of existing mappings and the mapping of new C-SC-NPU content, given the successful results of the previous projects and current estimations, the mapping of new C-SC-NPU content (elements and dedicated kinds-of-property) to SNOMED CT would require a relatively small amount of extra resources compared to the current work on developing C-SC-NPU content. This third activity may also include the C-SC-NPU to do content development from requests sent to the IHTSDO. This was part of the discussions in 2009 but the current position of the IHTSDO on this matter it should be a question put at the Stockholm meeting. In this case, the agreement with IHTSDO would be more complex, with responsibilities on both ends. Details of this would have to be worked out.

All three activities would require funding and availability of resources, including staff, knowledge, tools, hardware etc. This funding will to a large extent have to come from NPU Terminology users, but it should be established before and in discussions with IHTSDO that C-SC-NPU and supporting organizations has the resources to perform these activities.

### **Annex 3 – Details from *Public Relations and Elections (PRE)***

The election of new titular members of the Chemistry and Human Health Division began in 2012 with the selection of a Nominating Committee comprised of Thomas Perun, (Chair), John Duffus, Janos Fischer, Helle Johannessen, and Birger Heinzow. Three current TMs who had completed two years of their term were renominated for another two years. Four other TM positions were open, to replace members who are completing their four year terms. Seven candidates were chosen to represent a diversity of disciplines and geographic locations. All of the candidates had made important contributions in their fields, and had expressed interest in participating in IUPAC activities. Four new TMs were elected to take office in the 2014-2015 term. Three of the new members were women.

The current summary of Division VII activities has been used by Division members in talks given to other organizations, and a poster depicting the organizational structure of the Division, its major accomplishments, and current projects has been prepared. These will be updated before the General Assembly in Istanbul.

## **Annex 4** – Details from the *Subcommittee on Toxicology and Risk Assessment (TRA)*

*REPORT FROM JOHN DUFFUS, Friday, 1 March 2013*

### Continuing Projects

2006-020-1-700: “Explanatory dictionary of terms used in toxicology (Part 2)”. The project, is chaired by M. Nordberg. The project was successfully completed, but has been kept open for possible development.

2009-034-2-700: “Risk Assessment of Effects of Cadmium on Human Health”. The SCTM (International Commission on Occupational Health Scientific Committee on Toxicology of Metals) PHIME (Public health impact of long-term, low-level mixed element exposure in susceptible population strata) project, supported by the European Commission, has completed its review on cadmium, which is now ready for submission. On this basis, the chairman of the working group, G. Nordberg is preparing a draft of the IUPAC report for eventual submission to "Pure and Applied Chemistry". A meeting of the Working Group to discuss and finalise the draft will take place in 2013, perhaps during the IUPAC GA in Istanbul.

2010-051-1-700: “Advances in Immunochemistry and Application in Human Health” is chaired by M. Schwenk. Four manuscripts are being prepared as technical reports describing the present state of art in antigen-recognition, immune-receptors, diagnostics and therapeutics. It is the planned to bring all 4 manuscripts to a prefinal state in March 2013 and then to finalize all manuscripts thereafter, with the aim of publishing them, if possible, in the same issue of PAC.

2011-032-1-700: “Concepts in Toxicology, Instructional Materials” chaired by J. Huggins: This project to prepare concise teaching material based on the IUPAC approved book, "Concepts in Toxicology", in a format designed for internet platforms, using Adobe Captivate software, is making good progress and will be subjected to beta testing by various groups of students in the near future. It is expected that the material will be finalised by the end of this year or early next year.

### New and future projects

#### Under Review:

There are presently 3 projects under review.

2013-001-1: "Glossary of terms used in neurotoxicology and reproductive/developmental toxicology". D. Templeton has submitted a project to develop glossaries of terms used in neurotoxicology and reproductive toxicology, both of which are areas of increasing activity and which use specialised terms not in the current "Glossary of Terms used In Toxicology".

2013-006-1: "Preparation of a consolidated and extended IUPAC Glossary of Terms Used in Toxicology". J. Duffus has submitted a project to amalgamate all the existing IUPAC Glossaries of terms used in toxicology, adding the new glossaries which may arise from project 2013-001-1 above and revising terms in the original "Glossary of Terms used In Toxicology" as required by changes in usage.

2013-007-1: "Recent advances in nanoparticles and colloidal systems and their impact on human health". V. Gubala has submitted a joint project between Division VII and Division IV. The project will deal with following aspects: preparation of nanoparticulate systems and colloids; analytical methods for assessment of particle features; health related applications; and related nanotoxicology.



## Annex 5 – DVII Membership

### Membership 2013

Name	Status	Term	NAO
Dr. Françoise Pontet	TM-President	2012-2015	France
Prof. Michael Schwenk	TM-Secretary	2010-2013	Germany
Prof. Douglas M. Templeton	TM-Past President	2012-2013	Canada
Prof. Sergey O. Bachurin	TM	2010-2013	Russia
Dr. Derek R. Buckle	TM	2010-2013	United Kingdom
Dr. János Fischer	TM	2012-2013	Hungary
Dr. Christopher Hill	TM	2012-2013	United Kingdom
Dr. Paul A. Illing	TM	2010-2013	United Kingdom
Dr. Yvonne C. Martin	TM	2010-2013	USA
Prof. Wayne Temple	TM	2012-2013	New Zealand
Dr. Xavier Fuentes-Arderiu	AM	2012-2013	Spain
Dr. Mirja Kiilunen	AM	2012-2013	Finland
Dr. Serge Mignani	AM	2012-2013	France
Helle Møller Johannessen	AM	2012-2013	Denmark
Prof. Monica Nordberg	AM	2012-2013	Sweden
Dr Aimin Wang	AM	2012-2013	USA
Dr Sulejman Alihodzic	NR	2012-2013	Croatia
Prof. Eliezer Jesus Barreiro	NR	2012-2013	Brazil
Prof. Pavlina Dolashka	NR	2012-2013	Bulgaria
Prof. Emeritus Matityahu Fridkin	NR	2012-2013	Israel
Prof. Rob Leurs	NR	2012-2013	Netherlands
Prof. Nilufar Nahar	NR	2012-2013	Bangladesh
Dr. Shahnaz Perveen	NR	2012-2013	Pakistan
Dr. Poonsakdi Ploypradith	NR	2012-2013	Thailand
Prof. Anjali M. Rahatgaonkar	NR	2012-2013	India
Prof. Mei Xiang Wang	NR	2012-2013	China
	10 TM, 6 AM, 10 NR		

AM = Associate Member  
 NR = National Representative  
 TM = Titular Member

## **Annex 6 – Current Div VII Projects**

- 2000-009-1-700 Glossary of Drug Metabolism Terms (Paul Erhardt)
- 2001-049-2-700 Glossary of Terms in Pharmaceutical Technology (Eli Breuer)
- 2001-070-1-700 Properties and Units for Urinary Calculi (Gunnar Nordin)
- 2002-001-1-700 Compendium of Glossaries (Robin Ganellin)
- 2003-044-1-700 Glossary of Combinatorial Chemistry Terms (A. Ganesan)
- 2004-023-1-700 Internationally Agreed Terminology for Observations in Scientific Communication (Françoise Pontet)
- 2004-045-1-711 Training of School Children on Pesticides and Health - "Toxiclaro" (Wayne Temple)
- 2005-049-1-700 Biological Context by Data Mining (Michael Liebman)
- 2005-050-1-700 Prototype Analysis of Molecular Biomarkers in Cancer (Michael Liebman)
- 2006-008-1-700 Mapping of IFCC-IUPAC Laboratory Coding System to SNOMED CT (Ulla Magdal)
- 2006-020-1-700 Explanatory Dictionary of Terms in Toxicology - Part 2 (Monica Nordberg)
- 2007-033-3-700 Revision of the "Silver Book" : Compendium of Terminology and Nomenclature of Properties in Clinical Laboratory Sciences (Georges Férard)
- 2007-053-1-700 Glossary of Terms Used In Immunotoxicology (Doug Templeton)
- 2008-010-1-700 Glossary of Terms in Medicinal Chemistry Updated (Derek Buckle)
- 2009-005-1-700 Demonstration of NPU – SNOMED CT mapping/harmonization of terms used in Clinical Laboratory Sciences (Urban Forsum)
- 2009-033-1-700 A Survey of Research into New Drugs for Neglected Diseases in Latin America (Antonio Monge)
- 2009-034-2-700 Risk Assessment of Effects of Cadmium on Human Health (Gunnar Nordberg)

2010-035-3-700 Establishing definitions for non-referenced terms in the NPU terminology (Helle Møller Johannessen)

2010-051-1-700 Advances in Immunochemistry and Applications to Human Health (Michael Schwenck)

2010-057-3-700 Update of Glossary Terms used in Computational Drug Design (Yvonne Martin)

2011-002-1-700 Extension of Revision of the Silver Book (Georges Férard)

2011-011-1-700 Analogue-based Drug Discovery Vol. III (János Fischer)

2011-018-1-700 Human Drug Metabolism Database (hDMdb) (Paul Erhardt)

2011-032-1-700 Concepts in Toxicology - Instructional Materials (Jane Huggins)

2012-032-2-700 Medicinal chemistry Course for India and South East Asian Academic and Industrial Scientists (Balu Balasubramanian)

2013-001-1-700 Glossary of terms used in neurotoxicology and reproductive/developmental toxicology (Douglas Templeton)